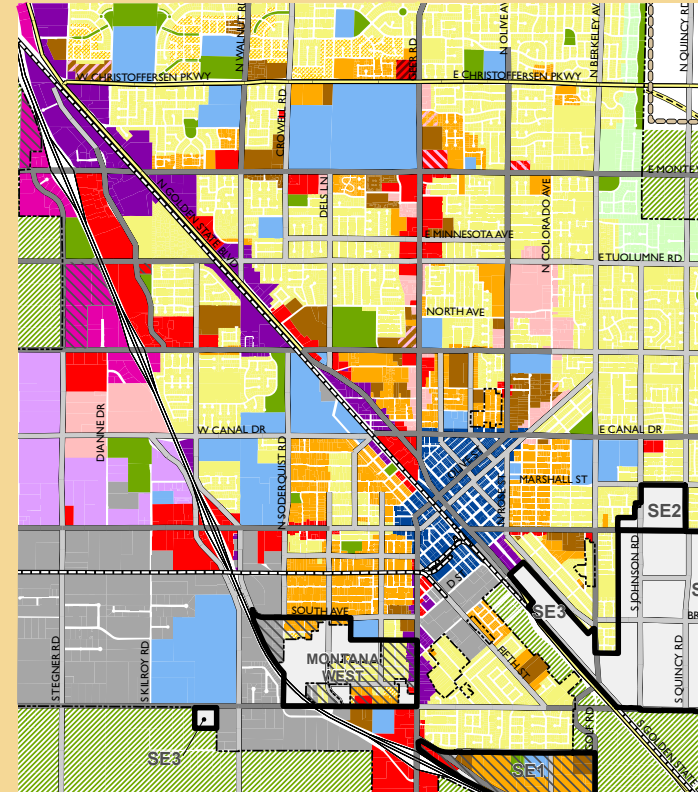


# TURLOCK GENERAL PLAN



Adopted September 2012





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# 1 Introduction

Twenty years after the last comprehensive General Plan Update in 1992, it is an appropriate time for the City of Turlock to take stock of what it has accomplished in the past two decades and lay out a vision for its future. As a thriving community of over 70,000 in the heart of California's Central Valley, Turlock has held firm to its agricultural roots while diversifying economically and expanding opportunities for its residents. It has become a very desirable community, attracting many people to both live and work locally. The City's rapid growth is expected to continue, adding some 35,000 new residents over the next 20 years. A new General Plan is needed to guide the City in providing critical services, amenities, infrastructure, and growth management.

Turlock has had a long history of planning. A general plan for the City was prepared in the early 1950s, and although it was never adopted, it served as a point of departure for future plans. The General Plan prepared in 1969, much before general plans acquired their present political and legal stature, addressed such contemporary issues as urban sprawl and unnecessary destruction of farmland, and was updated in the early 1980s. The next General Plan (formally adopted in 1993 and partially updated in 2002) has served the City well, guiding the creation of attractive new neighborhoods, parks, and major new retail and employment areas.

The present effort, begun in 2008, represents a continuation of this planning tradition. The General Plan articulates a vision for Turlock that draws on the ideas of the many citizens, business owners, and elected officials who participated in the planning process. Designed to guide growth and development, the Plan emphasizes the creation of attractive new neighborhoods and successful employment centers, while preserving the valuable farmland in which the city has its roots.



*Turlock's new General Plan reflects the changes the city has seen over the last 20 years and presents a vision for the next 20.*



*The General Plan enables and encourages the development of housing to suit all types of residents.*

## 1.1 GENERAL PLAN THEMES

City Council Resolution 2009-063, passed and adopted on April 23, 2009, established the following vision statement for the General Plan:

“Turlock will grow sensibly and compactly, maintaining its small-town feel, while enhancing quality of life, meeting housing needs, and providing high quality jobs and recreation opportunities for its diverse population.”

Supporting this vision statement are eight General Plan Themes, which are reflected in this plan’s elements and policies:

1. **Establish limits to urban growth that will maintain Turlock as a freestanding city surrounded by productive agricultural land.**

The City’s identity, history, and economy derive from its site in the center of one of the richest agricultural regions in the country. Preserving farmland and maintaining Turlock as a free-standing community surrounded by farmland emerged as high priorities for residents. At the same time, new neighborhoods are needed to support the city’s growing population and the Westside Industrial Specific Plan adopted in 2002 as a 2,500-acre industrial job area. The General Plan balances these needs by limiting the development footprint of the city, promoting infill development, and planning for compact, mixed use neighborhoods that offer a high quality of life to new residents and are logical extensions of the current city limits. These strategies together can minimize conversion of prime agricultural land, one of the city’s greatest assets.

2. **Maintain an economically and socially diverse population by promoting a greater variety of housing types citywide and a localized mix of housing types in some areas.**

Numerous factors contribute to the need for Turlock to provide a wide variety of housing choices: changing demographics, an aging population, increasingly diverse family types, and the continued high cost of housing in California. Turlock residents come from many different household structures, circumstances, and income groups, and the General Plan calls for a more diverse housing stock to allow opportunities for all. Elderly persons, students, single-parent households, adults sharing housing, multifamily households and multigenerational households are household types that evolve from economic need or personal preference. Turlock’s economically and socially diverse population deserves a wide range of housing options.



**3. Attract new businesses to Turlock to create well-paying jobs and maintain a good jobs/housing balance.**

Population and economic growth in Turlock are intertwined. The city seeks to attract new industries and create jobs in order to boost revenue, remain competitive, attract new residents and provide opportunities for existing ones. The growing resident population demands increased goods and services which in turn fuel economic growth. The General Plan takes a multi-pronged approach to economic development in order to achieve these goals: supporting the buildout of the Turlock Regional Industrial Park (established by the Westside Industrial Specific Plan), drawing new businesses Downtown, identifying new industries to target, and building on existing assets such as California State University, Stanislaus.

**4. Improve the local and regional circulation system to serve businesses and new residential development.**

In order to foster balanced, sensible growth, it is critical that land use and transportation planning proceed hand in hand. Turlock's General Plan defines a comprehensive transportation network, emphasizing connectivity, logical spacing, multimodal service, and "right-sizing" of roads to match the travel demand generated by new homes and businesses in the city. Additionally, the plan identifies and responds to potential regional transportation developments, such as commuter and high speed rail, ensuring that Turlock residents can take full advantage of connections to the rest of the region and beyond.

**5. Implement sustainable development and green building principles in City projects and new development projects. Foster development that encourages alternatives to auto use, especially for non-commute trips.**

Issues of sustainability are addressed in elements throughout the General Plan: in Land Use, City Design, Circulation, Conservation, and more. By enabling alternatives to automobile travel and encouraging green building construction and sustainable site design, General Plan policies help achieve the increasingly important goals of protecting the natural environment and reducing greenhouse gas emissions. Turlock's level topography makes it ideal for pedestrians and bicyclists. However, many destinations, such as shops, services, parks, and schools, are difficult or



*Complete, mixed use neighborhoods place residences closer to jobs, stores, and services; reduce long car trips; and create vibrant communities.*



*Downtown Turlock is the city's heart, with a unique character and sense of place. The General Plan includes policies to continue strengthening Downtown and other older neighborhoods.*

inconvenient to access from existing neighborhoods without a car. General Plan policies counter these trends by calling for the renewed use of traditional neighborhood street patterns and more provisions for bicycle use, including extension of the bicycle route system throughout the whole city. Related policies call for mixed use neighborhood centers, where services and amenities are easily accessible.

**6. Revitalize and enhance older areas of Turlock. Create an economic and social balance among different city sectors. Enhance the County islands within the City limits, and annex them into the City if feasible.**

While the General Plan expects Turlock's growing population to require the development of new neighborhoods outside current city limits, it is an equal priority for current residents to maintain and improve Turlock's older neighborhoods and the Downtown. Numerous infill sites—including those in currently unincorporated County Islands—spread throughout the city's existing urban fabric offer opportunities to enhance the streetscape, raise property values, improve public services, and add housing and jobs close to where current residents live. Public realm improvements also help reduce crime and raise residents' quality of life, bringing greater socioeconomic balance to Turlock's various neighborhoods. Promoting infill development will also improve the economic viability of Downtown by increasing the number of residents who can walk there to enjoy central Turlock's historic charm and small-town ambiance.

**7. Manage growth using the Master Planning process to implement General Plan policies and enhance Turlock's quality of life.**

Growth management has been a key component of planning in Turlock since the early 1990s. The City's proactive approach to master planning, phasing, and service and infrastructure provision to new development areas has distinguished it amongst Central Valley cities. The General Plan continues this planning tradition and strengthens it with a New Growth Areas and Infrastructure Element, which supports the City's area-wide planning, rezoning, and annexation policies. New master plan development areas are defined, with minimum and maximum densities, and the phasing of growth is established. This ensures that city services, public investment, and infrastructure can keep pace with development while still maintaining high standards for the existing urban area.

8. Provide a wide variety of recreation and cultural activities for all ages.

A key component of the General Plan is the enhancement of Turlock’s park system and network of community and cultural facilities. While the City has built successful new parks in recent years, including popular sports facilities, the amount of projected population growth necessitates a new community park to serve the southeastern area of town. Turlock’s existing parks will also be augmented by a system of multiuse linear parks and trails, linking new housing to neighborhood schools, parks, and shopping centers, providing space for walking/jogging for health and time with neighbors, and serving additional purposes of storm drainage and agricultural buffering.

## 1.2 STATE AND REGIONAL PLANNING CONTEXT

Turlock’s new General Plan comes at a time when issues of sustainability, global climate change, and smart growth are being actively addressed at the State and regional levels. New legislation and regional planning efforts have framed this update to Turlock’s General Plan in new and innovative ways, and underscore the way in which each California community plays its part in confronting these larger challenges.

### CALIFORNIA’S GREENHOUSE GAS EMISSIONS LEGISLATION

#### California Global Warming Solutions Act of 2006 (AB 32)

The California Global Warming Solutions Act of 2006 (Chapter 488, Statutes of 2006, also known as Assembly Bill (AB) 32) directed the California Air Resources Board (CARB) to perform numerous tasks aimed at achieving the state’s reduction targets, including approving a statewide greenhouse gas (GHG) emissions estimate that is equivalent to the 1990 GHG emissions level to be achieved by 2020. As the roadmap for achieving AB 32’s reduction goals, the CARB Scoping Plan outlined the combination of policies, programs, and measures necessary to reduce statewide GHG emissions to 1990 levels by 2020, the equivalent of reducing emissions by 15 percent below current levels and 30 percent below projected business-as-usual levels in 2020. Many of the measures would, when implemented, contribute to emission reductions statewide as well as in local communities. CARB continues to adopt measures outlined in the Scoping Plan



*New park and recreation facilities will augment Turlock’s existing network of parks and open space.*

and is in the process of preparing rules to implement these measures. Turlock's General Plan responds to CARB's implementation strategy as it pertains to cities' general planning efforts.

### **Sustainable Communities and Climate Protection Act of 2008 (SB 375)**

The Sustainable Communities and Climate Protection Act of 2008 (Chapter 728, Statutes of 2008, also known as Senate Bill (SB) 375) promotes better integration of transportation and land use planning throughout California. The statute was intended to complement efforts under AB 32 by requiring CARB to develop regional GHG emission reduction targets for passenger vehicles. CARB was tasked with establishing targets for the years 2020 and 2035 for each region covered by the state's 18 federally-designated metropolitan planning organizations (MPOs), which in turn would be required to meet that target by considering the impacts of land use and transportation on GHG emissions. CARB adopted regional GHG emission reduction targets for cars and light trucks on September 23, 2010.

Pursuant to SB 375, each of California's MPOs must prepare a Sustainable Communities Strategy outlining how the region will meet its GHG reduction target by integrating land use planning, transportation planning and funding, and housing needs. The SCS will be incorporated into the regional transportation plan, typically prepared by each MPO every 4 to 5 years. CARB is required to review each SCS to determine whether it would achieve the necessary GHG emission reduction for each region. SB 375 sets new requirements for coordinating the RTP process with the regional housing needs allocation and housing element update processes, and also provides incentives for implementation by establishing new California Environmental Quality Act streamlining opportunities. The Stanislaus Council of Governments, the MPO to which Turlock belongs, is responsible for developing an SCS pursuant to SB 375.

### **California Environmental Quality Act and Guidelines Amendments**

Senate Bill 97 (Chapter 185, Statutes of 2007) amends the California Environmental Quality Act statute to say GHG emissions and the effects of GHG emissions are appropriately analyzed under CEQA. Pursuant to SB 97, the Governor's Office of Planning and Research prepared amendments to the CEQA Guidelines in a public process, and the California Natural Resources Agency adopted the proposed amendments in December 2009. The amendments became effective March 18, 2010.

### California Complete Streets Act (AB 1358)

This act requires all cities and counties to plan for the development of multimodal transportation networks in their general plans, beginning in January 2011. “Complete Streets” meet the travel needs of all users of streets, roads, and highways, and of all modes of travel (walking, cycling, driving, etc.). Turlock’s General Plan responds directly to the Complete Streets Act in its Circulation Element, Chapter 5.

## REGIONAL EFFORTS

### San Joaquin Valley Blueprint and Smart Valley Places Partnership

Communities in California’s San Joaquin Valley have been engaged in an eight-county planning process known as the San Joaquin Valley Blueprint since 2005. The Blueprint is a regional planning process aimed at engaging communities in the region in developing a shared vision for land use and transportation that will guide growth in the area over the next 50 years. The “Blueprint Roadmap Summary Final Report” was released in September 2010. It describes the Preferred Scenario and 12 Smart Growth Principles adopted by the Regional Policy Council that resulted from the process, and it outlines steps for implementation.

As a partner city in the Valley Blueprint process, Turlock is also participating in the Smart Valley Places Partnership, a formal network of cities, agencies, institutions, and nongovernmental organizations with the goal of implementing a regional plan for sustainable development in the San Joaquin Valley. With the assistance of a Sustainable Communities Planning Grant from the U.S. Department of Housing and Urban Development, the partnership is continuing the work of the Blueprint with the development of a shared Regional Sustainability Toolbox and individual cities’ projects and plans.

The Smart Valley Places Partnership adopted the HUD-EPA-DOT Livability Principles, which Turlock’s General Plan also reflects through its themes and policies. The Principles are:

- Provide more transportation choices;
- Promote equitable, affordable housing;
- Enhance economic competitiveness;



*Planning for the needs of pedestrians, cyclists, and other transportation modes helps meet State requirements for greenhouse gas reductions and “Complete Streets.”*

- Support existing communities;
- Coordinate and leverage policies and investment; and
- Value communities and neighborhoods.

Turlock’s involvement in these and future regional planning processes will ensure that the city’s interests are represented in the region and will contribute positively to creating a consistent and feasible strategy for regional growth.

### **1.3 SCOPE AND PURPOSE**

The General Plan governs all City actions relating to Turlock’s growth and development. It is both a long-range vision and a guide to ongoing decision-making and near-term actions. It expresses the general ideas and desires of the community; the seven themes described above together convey a sense of what is most important to the City’s residents and how the community will focus its efforts in dealing with change during the coming decades. The defined policies, maps, standards, and guidelines outline what actions must be implemented in order to accommodate population and employment growth over a 20-year time period. Guiding policies in each chapter are statements of vision and overall intent.

However, the Plan will be in use long before the City’s vision is achieved. The Plan is a document for landowners and developers to consult prior to formulating development proposals, and for City officials to consult when reviewing proposals for private development and public projects. As a guide to the City’s physical development, the Plan offers criteria for evaluating the consistency and desirability of development proposals, and it also sets forth actions to be undertaken by the City. These range from public works projects to revisions of the Zoning Ordinance. Because of the requirements that a variety of other City actions be consistent with the General Plan, regular ongoing use of the Plan is essential. Additionally, the General Plan can help guide shorter term strategic and financial planning for the City. As each City Council engages in visioning for the future, the shorter-term strategic plans should be consistent with and reflect the overall long-range goals of the General Plan.

## 1.4 REGIONAL LOCATION AND PLANNING BOUNDARIES

### REGIONAL LOCATION

The City of Turlock is located in Stanislaus County, on the eastern side of California’s San Joaquin Valley, 100 miles east of the San Francisco Bay Area. The City is on the State Highway 99 corridor, linking it to other Central Valley cities including Stockton and Sacramento to the north and Fresno and Bakersfield to the south. Turlock remains a stand-alone city surrounded by productive agricultural land. Figure 1-1 shows Turlock in its regional Northern California context.

Turlock’s largest neighbor is the City of Modesto, which lies 14 miles north. The communities of Keyes, Denair, and Ceres are the closest neighboring communities to the north; Delhi, Hilmar, and Livingston are located within 10 miles to the south. Twenty miles to the west and southwest, Patterson and Newman are along the I-5 corridor. This collection of communities represents the area in which most Turlock residents work, as well as the area from which people come to Turlock for employment and shopping.

### PLANNING BOUNDARIES

#### Planning Area

The Planning Area is the geographic area for which the General Plan establishes policies about future urban growth, long-term agricultural activity, and natural resource conservation. The boundary of the Planning Area was determined in response to State law requiring each city to include in its General Plan all territory within the boundaries of the incorporated area as well as “any land outside its boundaries which in the planning agency’s judgment bears relation to its planning” (California Government Code Section 65300).

The Planning Area, shown in Figure 1-2, extends beyond Turlock’s city limits and includes the unincorporated communities of Keyes and Denair. They have been included because the City believes these unincorporated communities and lands bear relation to planning activities the City undertakes, and in some cases, benefit from City services. For example, Turlock provides wastewater treatment services to Keyes and Denair. However, the City recognizes Stanislaus County’s role in land use planning for these unincorporated but urbanized areas. The extension







of the Planning Area to these communities underscores the importance of interjurisdictional cooperation and planning in key areas. The Planning Area occupies 29,800 acres or 46.5 square miles.

### Study Area

The Study Area represents the greatest extent to which Turlock’s urban development may take place over the next 20 years. Only land within the Study Area has been assigned urban uses or designated as Urban Reserve. Urban Reserve is land that would likely be developed in the next 20 to 50 years—beyond the scope of this General Plan, but may be considered for possible longer term development. The Urban Reserve includes land for future urban neighborhood development, future jobs west of Highway 99, regional shopping centers, and a greenbelt surrounding the city to the maximum extent possible.

The majority of existing conditions research, analysis, and policy formulation pertains only to the Study Area, and this is the area that is depicted on the Land Use Diagram and other supporting maps in the General Plan. The Study Area is roughly bounded by Taylor Road to the north, Waring and Verduga roads to the east, Harding Road to the south, and Commons and Washington roads to the west. It also includes some additional land at the northwest corner, along the State Route 99 Corridor, encompassing the Taylor Road interchange. The Study Area comprises 17,460 acres or 27 square miles.

### Sphere of Influence

The General Plan must cover Turlock’s adopted Sphere of Influence (SOI) as well as any land outside of it that is relevant to the city’s planning. The SOI is a boundary that encompasses lands that are expected to ultimately be annexed by the City, and it will be updated to match the extent of planned urban development as part of the General Plan Update. The SOI is determined by the Stanislaus County Local Agency Formation Commission (LAFCO), which is an entity empowered to review and approve proposed boundary changes and annexations by incorporated municipalities. Portions of the Planning Area beyond the SOI may or may not be annexed to Turlock, but are still considered to be related to and influenced by the City’s planning.

## 1.5 GENERAL PLAN REQUIREMENTS

California’s tradition of allowing local authority over land use decisions means that the State’s cities have considerable flexibility in preparing their General Plans. However, though land use policies are not mandated, the issues to be addressed in the Plan are prescribed by State law. California Government Code Sections 65300 *et seq.* establish requirements for the content of General Plans, as well as for their adoption and subsequent amendments.

### GENERAL PLAN ELEMENTS

Seven general plan elements are required by State law, which permits the required contents of the elements to be combined at the discretion of the local government producing the Plan. The seven required elements are: Land Use, Circulation, Housing, Open Space, Conservation, Noise, and Safety. Section 1.8 describes how this plan meets State requirements and how the material required to be in these elements is organized and integrated with optional elements in the Turlock General Plan. The Housing Element is the part of the Plan for which the most detailed and extensive requirements are prescribed. Because the Housing Element is required by State law to be updated at specific times—more frequently than the rest of the General Plan—it is published as a separate document. However, the Housing Element is written to be consistent with the rest of the General Plan.

### COMPREHENSIVENESS

The General Plan must be comprehensive. This requirement has two components. First is a geographic component, which requires that the Plan cover the entire incorporated area of the City, as well as any other land which bears relation to the City’s planning. Figure 1-2 illustrates the planning boundaries. Second, the Plan must address the full range of issues associated with the City’s physical development.

### INTERNAL CONSISTENCY

The consistency requirement established by State law (Government Code Section 65300.5) and interpreted in several significant judicial decisions requires the separate parts of the Plan to be fully integrated and to relate internally without conflict. This horizontal consistency requirement extends to the diagram and figures, as well as to text, data, and analysis in addition to policies.



*Residents weighed in on all aspects of the General Plan through a series of workshops, open houses, and focus group meetings.*

All portions of the Plan, whether required by the State or included at the option of local government, have equal legal weight. None may supersede another. Furthermore, if a single element of the General Plan is judged to be inadequate with respect to legal requirements, the entire Plan may be considered inadequate. Comprehensive General Plan revisions provide an ideal opportunity to satisfy the requirements of both comprehensiveness and consistency.

## 1.6 RELATIONSHIP TO OTHER CITY REGULATIONS, POLICIES, AND PROGRAMS

The General Plan provides the basis for all of the City’s regulations, policies and programs that relate to issues addressed in the Plan. In addition to requiring that the Plan be internally consistent, the State requires what is sometimes called vertical consistency — i.e., consistency between the General Plan and other City actions. This requirement means that the City’s zoning and subdivision ordinances, specific plans and redevelopment plans, all development approvals, public works projects, and open space implementation programs have to be consistent with the General Plan.

The State’s *General Plan Guidelines* provides the following rule for defining consistency: “An action, program, or project is consistent with the general plan if, considering all its aspects, it will further the objectives and policies of the general plan and not obstruct their attainment.” This rule clarifies that consistency does not require all subsequent city actions to be specifically anticipated by the General Plan. Because the Plan is both general and long-range, there are many circumstances where future City actions will be addressed only generally in the Plan.

### CONSISTENCY BETWEEN THE PLAN AND ZONING

The City’s Zoning Ordinance is one of the most important tools for implementing the Plan. Requirements for consistency between the General Plan and zoning can be broken down into three aspects:

- **Uses and Standards.** The General Plan’s land use classifications are more general than the Zoning Ordinance classifications. For example, the Plan has four different categories for residential use, while the zoning ordinance may have more. Multiple zoning districts may be consistent

with a single General Plan residential classification, as long as all of the densities and unit types allowed in each zoning district are also permitted in the relevant General Plan category.

- **Spatial Correlation.** The Zoning Map should reflect the general pattern of land use depicted on the Plan Diagram. However, the two need not be identical. Boundaries of land use classifications depicted on the General Plan Diagram are typically more precise in developed areas and more generalized in undeveloped properties. In particular, future master plan areas are given a single General Plan land use designation with overall density requirements; precise master or specific planning and pre-zoning is required prior to annexation. Following the adoption of a master or specific plan, establishment of zoning, and annexation, the General Plan must then be updated.
- **Timing.** There are two main issues related to timing. The first addresses the time frame for bringing zoning into compliance with the General Plan; State law allows a “reasonable time” for reconciling the zoning ordinance with the General Plan. The General Plan has a 20-year horizon, while zoning focuses on the immediate appropriate uses for individual sites. In many cases, zoning will only gradually fulfill the prescriptions of the General Plan, particularly as it pertains to new growth areas, which are expected to be master planned, pre-zoned and brought into the city in phases over a number of years.

The second issue relates to the timing and sequencing of development. All land within City limits should be zoned in accordance with the General Plan land use designations. In instances where land outside the City is designated for non-agricultural uses on the General Plan Diagram, the designated General Plan uses can be applied for at the time of annexation using master planning, specific plans, and pre-zoning, as is currently the practice in Turlock.

Many General Plan policies, in particular those in the Land Use and Economic Development, Housing, and City Design elements, call for specific changes to be made to the Zoning Ordinance.



*The General Plan is a reflection of the Turlock community's vision for the future of their cities. Residents participated in a variety of ways throughout the process.*

## 1.7 PLANNING PROCESS

Because the General Plan is intended to be a statement of community preferences, and because it will result in significant changes to the City, public participation in making the Plan is very important. Broad outreach and news coverage, including a newsletter, continually-updated project website, and press releases published prior to the first workshop, served to offer education to the City's citizens early in the Plan Update process. Additionally, interviews were held with approximately 40 community leaders (elected officials, City staff, leaders of local organizations, and other members of the planning and development community) in order to identify specific technical issues that the Plan would need to address.

During General Plan preparation, community participation was solicited at a number of well-attended workshops. The first focused on visioning and issue identification, the second on land use alternatives, and the third on proposed new plan policies, held in an open-house format. In each case, written and graphic material was prepared in advance and made available to participants. A City mailing list was maintained and used to advertise the workshops; these were also announced on the project website. Other forums for public comment on the Plan have been City Planning Commission and City Council meetings at which staff has provided updates on the progress of the Plan.

Groups with special interests have also contributed. The Housing Element was prepared separately from the rest of the Plan, in order to comply with State requirements. Preparation of this element involved two public forums held specifically for groups associated with affordable housing in the City. Two focus groups were held for property owners whose land was likely to be redesignated in the new General Plan, and additional meetings were held with the Turlock Chamber of Commerce, the Downtown Property Owners Association, and other economic groups regarding economic development strategies.

The final stages of public participation were the hearings, at which the Environmental Impact Report that analyzes the Plan and the General Plan was certified and adopted, respectively. Following a public open house on the plan and Final EIR in June 2012, the Planning Commission and City Council held two public hearings during the formal Plan Consideration process. Final adoption of the updated General Plan took place on September 25, 2012.

## 1.8 PLAN ORGANIZATION

The organization of the General Plan is summarized in Table 1-I. Throughout the Plan, cross-references guide the reader to related policies in other sections and elements. A Financing Plan and Capital Facility Fee Nexus Study will also accompany the General Plan.

TABLE 1-1: ORGANIZATION OF THE GENERAL PLAN			
GENERAL PLAN ELEMENT	STATE-MANDATED?	MAJOR ISSUES ADDRESSED	CLOSELY RELATED ELEMENTS
Land Use and Economic Development	Yes (Land Use); No (Economic Development)	Distribution of land uses, standards for density and intensity, growth management, intergovernmental relations, jobs and employment growth, economic strategies	All
New Growth Areas and Infrastructure	No	Overall growth management strategy, phasing and design of new neighborhoods, utility infrastructure	All
Parks, Schools, and Community Facilities	Yes (Open Space)	Parks, schools, libraries, recreational facilities	Land Use, New Growth Areas, Conservation
Circulation	Yes	Street classifications, transit service, pedestrian and bicycle needs, rail, air, truck routes	Land Use, New Growth Areas
City Design	No	City form, residential neighborhoods, public space, Downtown	Land Use, Housing, Circulation
Conservation	Yes <sup>1</sup>	Agriculture and soils, biological resources, water quality and hydrology, cultural resources, mineral resources, waste management	Land Use, Air Quality and Greenhouse Gases, Public Facilities and Services
Air Quality and Greenhouse Gases	Yes <sup>2</sup>	Air quality, climate change, energy use	Land Use, Transportation, Conservation and Environmental Protection
Noise	Yes	Noise attenuation and reduction	Land Use, Circulation
Safety	Yes	Seismic safety, emergency preparedness, hazardous sites and materials, police and fire services	Land Use
Housing	Yes	Production and conservation of housing for low income households and households with special needs	Land Use, City Design

1. Combines two required elements: Open Space and Conservation.

2. General Plans for cities and counties in the San Joaquin Valley must address air quality per Assembly Bill (AB) 170. Greenhouse gases must be analyzed per AB 32.

The General Plan Land Use Diagram found in Chapter 2 (Land Use and Economic Development) illustrates a number of policies relating to land use, circulation, conservation, and public facilities. The Land Use Diagram is an important part of the plan that contains information not presented anywhere else. However, General Plan policies cannot be interpreted from the Diagram alone. Policies throughout the Plan complement the information in the Diagram. Other maps and diagrams illustrating existing conditions and desired planning outcomes are found throughout other chapters in the Plan as well.

Each section of the Plan includes narrative text providing information about the topics addressed, followed by two sets of policies:

- **Guiding Policies** are statements of philosophy or intent;
- **Implementing Policies** are commitments to specific actions that are to be undertaken in order to achieve the results called for by the Guiding Policies.

Many policy statements are followed by explanatory text, additional descriptive information, or cross-references, which are in italic type. The General Plan Land Use Diagram, other figures, and the Land Use Classifications in Section 2.2 are also adopted parts of the General Plan.

## 1.9 PLAN ADMINISTRATION

The General Plan is intended to be a dynamic document. As such, it may need to be updated over time to address site-specific or comprehensive needs, to respond to new State or federal law, or to modify policies that may become obsolete or unrealistic over time.

### AMENDMENTS TO THE PLAN

The Plan may be amended from time to time, but opportunities for such amendments are limited to four times per year. Each amendment may make an unlimited number of changes to the Plan. However, this restriction does not apply to optional elements (such as Community Design), to amendments needed to comply with a court decision, or to allow for the development of affordable housing. Because the requirement for internal consistency is never relaxed, particular care must be taken to ensure that amendments maintain consistency with text and diagrams in all Plan elements.



## ANNUAL REPORT

The California Government Code requires that City staff submit an annual report to the City Council on the status of the General Plan and progress in its implementation. This report is submitted to the Governor's Office on Planning and Research and the Department of Housing and Community Development. The report must include an analysis of the progress made in meeting the City's share of regional housing needs (identified in the Housing Element) and local efforts to remove governmental constraints to the maintenance, improvement, and development of affordable housing. Also, any mitigation monitoring and reporting requirements prescribed in the General Plan Environmental Impact Report (EIR) should be included in the annual report. Finally, the report should also include a summary of all General Plan amendments adopted during the preceding year, a description of upcoming projects or issues to be addressed in the coming year, and a work program and budget.

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# 2 Land Use and Economic Development

The way in which a City allocates its land to meet the needs of residents and businesses is central to the General Plan. In order to accommodate a growing, changing population and increasingly diversifying employment, Turlock must meet the needs of these groups and uses while still maintaining the aspects of the built environment that current citizens value: a compact city with a small-town feel.

Chapter 2, the Land Use and Economic Development Element, begins by describing the City’s existing land use pattern, and then describes land use classifications and the City’s development potential. Policies and a land use plan, referred to as the General Plan Land Use Diagram, designate the proposed general location and extent of each use category. The Element also includes policies to manage growth and inter-jurisdictional relationships. The following chapter, Chapter 3: New Growth Areas and Infrastructure, focuses on detailed standards for land use, design, infrastructure, and development phasing in the areas for new urban development. Issues related to city form, design, and character are addressed in Chapter 6: City Design.

The General Plan Land Use Diagram and the land use policies will have a major impact on Turlock’s form and character over the life of the General Plan. Critical issues faced by Turlock that are addressed in this Element include: direction of urban expansion and phasing of growth, location of retail and neighborhood centers, revitalization of downtown, and location of proposed parks and recreational facilities. The General Plan Land Use Diagram is a graphic representation of the planning values and ideals of the community as expressed throughout the Plan. General Plan text should be read in conjunction with the Land Use Diagram.



*Land use decisions affect residents and business interests alike.*

## 2.1 CURRENT LAND USE PATTERN

### Overview

Turlock's current land use pattern and built form are products of the City's historical growth within an agricultural area. Turlock was incorporated in 1908. Like many San Joaquin Valley towns from the time period, the original downtown core was focused around the railroad station, with streets arranged in a grid oriented to the tracks. The town proceeded to grow outward, shifting to an orthogonal north-south grid matching the rural road and parcel pattern around it. Golden State Boulevard, paralleling the railroad, was part of the original highway through the Central Valley, which became U.S. 99 roadway in 1926.

The city's growth since the 1940s has mainly occurred north of the downtown area and east of the railroad. When the California State University, Stanislaus campus opened in 1965, it was still well to the north of town. By the end of the 1980s housing boom, Turlock had reached Zeering Road on the north and Daubenberger Road on the east. Completion in 1973 of the Route 99 freeway bypass, a long arc to the west, also drew development west of the railroad.

Beginning in the 1990s, Turlock's growth occurred through a master planning process, one area at a time. Almost all the recent residential development has occurred north of Monte Vista Avenue on the east side of the railroad. The "Northwest Triangle," north of Fulkerth Road between the railroad and Highway 99, has also grown to be a major new commercial area.

It is the City's goal to continue to provide a balance of jobs and housing in Turlock, which stimulates the local economy, reduces commuting, and maintains Turlock's competitiveness in the region. Therefore, the master planning process has extended to the non-residential sector, as well. In 2006, Turlock completed the Westside Industrial Specific Plan (WISP), which identified land use, transportation improvements, infrastructure improvements, and design guidelines for industrial and business park uses for some 2,500 acres west of Route 99. Aided by this specific plan, the city's industrial sector is expanding and shifting to this area.

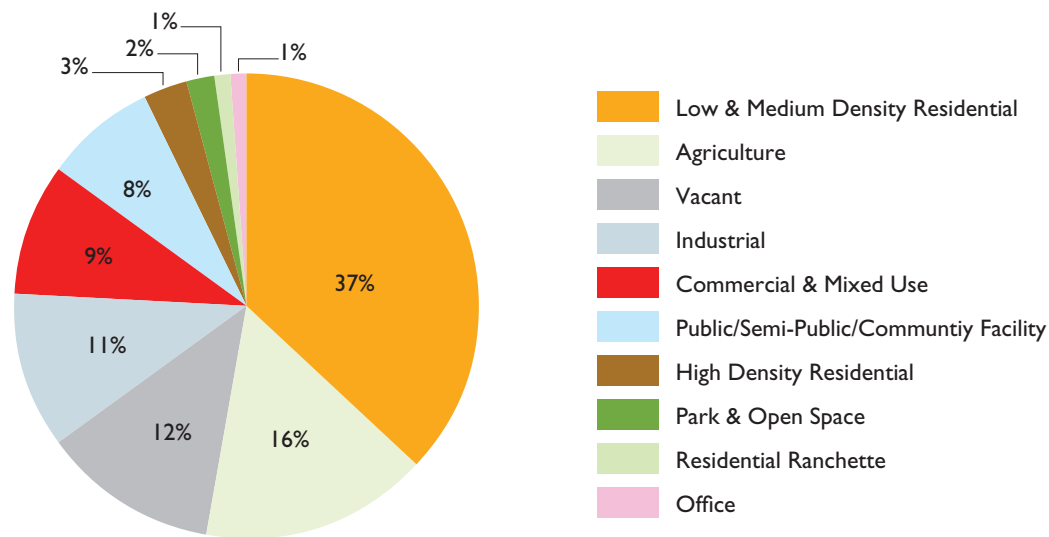
### LAND USE DISTRIBUTION AND MAGNITUDE

There are approximately 8,730 acres in the current city limits (not including the County islands), and an additional 8,560 acres of land are contained within the Study Area outside of city limits. Figure 2-1 and Table 2-1 show the breakdown of existing land uses in the city limits, and each

TABLE 2-1: EXISTING LAND USE IN THE CITY LIMITS		
LAND USE	ACRES	PERCENT OF CITY LIMITS
Residential	3,589	41%
Very Low Density "Ranchettes" (< 3 du/ac)	125	1%
Low and Medium Density (3-15 du/ac)	3,235	37%
High Density (15-30 du/ac)	229	3%
Agriculture	1,413	16%
Vacant	1,023	12%
Industrial	934	11%
Commercial and Mixed Use	760	9%
Public/Semi-Public/Community Facility	683	8%
Park and Open Space	209	2%
Office	118	1%
<b>Total</b>	<b>8,730</b>	<b>100%</b>

Sources: City of Turlock; Dyett & Bhatia, 2009

Figure 2-1: Existing Land Use in Turlock City Limits





*The majority of the developed land in Turlock is traditional single family detached homes, built at less than seven units per acre.*

land use is discussed in more detail in the paragraphs that follow. It is important to note that the existing land uses shown in these figures and described below, which illustrate how land is currently actually developed and/or being used, are not the same as the General Plan land use *classifications*, which express desired land uses, as described in the following section.

### Residential

Altogether, residential land uses occupy 41 percent of the land in the city limits. The majority of existing residential development is located on the east side of the railroad, north of Downtown. There are also several residential neighborhoods on Turlock's west side, between the railroad and Highway 99. Of the 3,589 acres of residential development, 90 percent is low- and medium-density (3 to 15 units per acre), 6 percent is high density or multifamily (15 to 30 units per acre), and three percent is residential "ranchettes," which are very low density homes on large lots (less than 3 units per acre). The majority of Turlock's residential development is low density single family homes, ranging from three to seven dwelling units per acre. Older neighborhoods close to Downtown also consist of predominantly single family homes, but have slightly higher densities than the more recently developed areas. While multifamily housing types occupy just three percent of the land area in Turlock, these high density projects contain many more units than single family development on comparable acreage. Some of the more recently developed neighborhoods in the northwest quadrant of the city include a greater diversity of housing types, including townhouses and three-story apartment complexes.

Residential "estate" lots, with densities from 0.2 to 3.0 units per acre, make up much of the eastern border of the city near Denair. They function as part of the rural buffer between the two communities. Residential development outside of the city limits, in the southeastern quadrant of the Study Area, is primarily very low density "ranchette" style homes, generally on five- to ten-acre parcels.

### Commercial, Office, and Mixed Use

Commercial development in Turlock is comprised of several specific nodes in different locations, and makes up approximately nine percent of the land within city limits. Mixed use development, which generally involves a mix of commercial and residential or office uses, is also included in this category. The largest concentration of retail development is Monte Vista Crossings, located just east and south of the Monte Vista interchange of SR 99. Developed over the last ten years, Monte

Vista Crossings includes numerous large anchor tenants such as Target, Safeway, Home Depot, and Kohl's; two hotels; and numerous smaller national-brand specialty stores and restaurants.

Community-oriented shopping areas, comprising both national chains and locally-owned businesses, characterize the Downtown core and the Geer Road corridor. Much of the development Downtown can be characterized as mixed use, though it is primarily commercial with some office and residential uses mingled throughout. Emanuel Medical Center is a large office land use northeast of downtown, with the hospital anchoring a collection of smaller medical offices surrounding it. Older automobile-oriented commercial development lines Golden State Boulevard and is also concentrated just south of Downtown.

### Industrial

Eleven percent of the Study Area (934 acres) is currently developed with industrial uses. The industrial development east of Highway 99 is located immediately south of the downtown core, on both sides of the railroad tracks. Additional industry is located just west of the SR 99/Lander Avenue interchange. In 2006, approximately 2,000 acres were designated for industrial and industrial business park uses in the Turlock Regional Industrial Park (TRIP). Approximately 450 acres has been developed as such. Most of Turlock's industrial users are in the food processing industry, including Foster Farms, Sensient Flavors, and Kozy Shack.

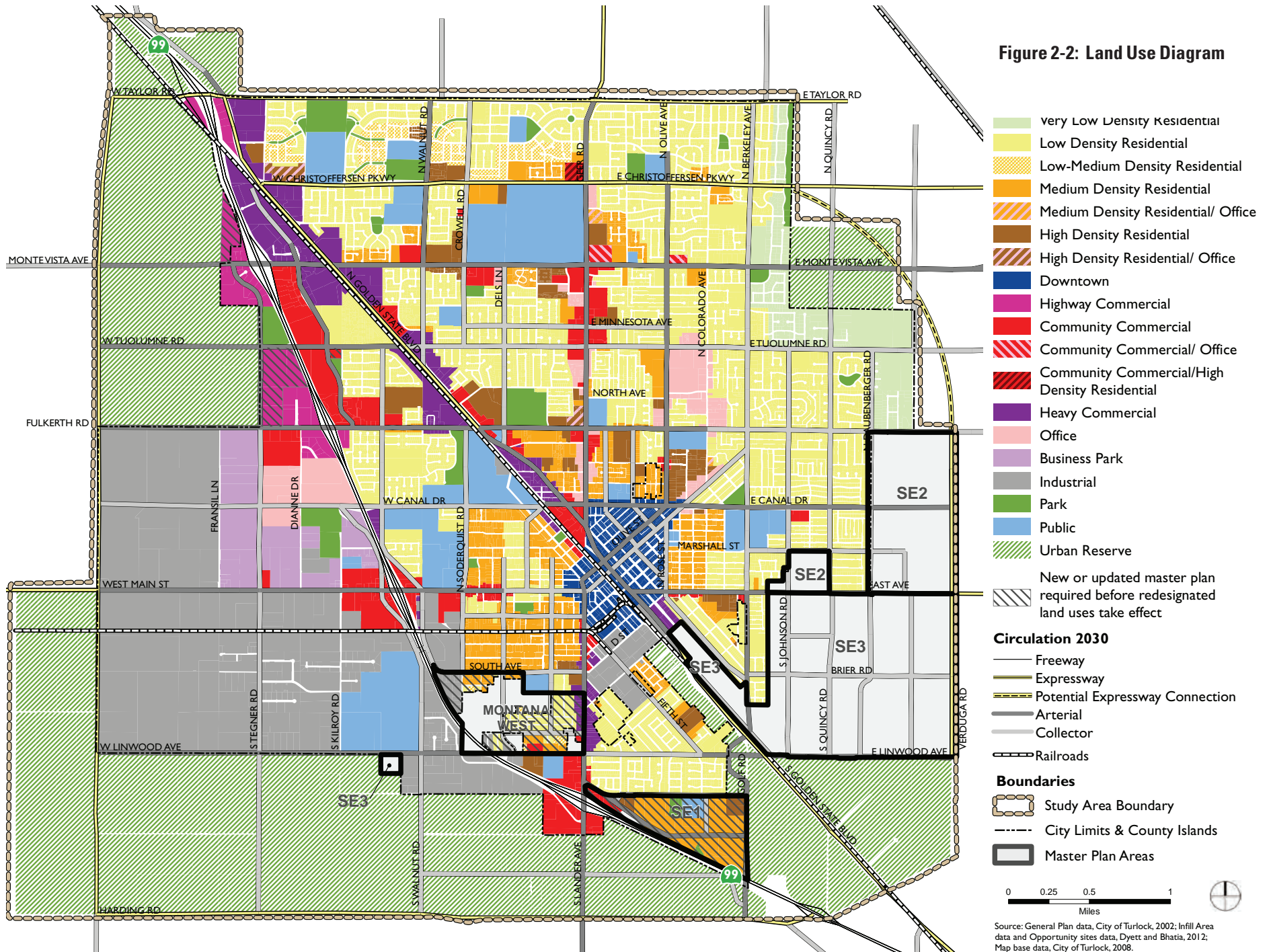
### Public, Semi-Public, and Community Facility

Public, semi-public, and community facility uses account for approximately eight percent of development within city limits. These uses include city buildings, schools and other government-owned facilities. Several large public and institutional users have sizable land holdings in Turlock. The California State University, Stanislaus (CSUS) occupies 210 acres along Monte Vista Avenue and Geer Road. The Stanislaus County Fairgrounds are on 67 acres, just northwest of the downtown core on the west side of the railroad. The City wastewater treatment facility is on 166 acres in the TRIP. The remainder of acreage in public, semi-public or community facility use consists primarily of public school grounds and stormwater detention areas.



*Prior to the adoption of the Westside Industrial Specific Plan, the majority of industrial development in Turlock was centrally located, south of Downtown.*

**Figure 2-2: Land Use Diagram**





### Vacant Sites

Vacant land is scattered throughout the city. Parcels range from small urban infill sites measuring less than one acre to large, formerly agricultural parcels measuring up to 25 acres. Some vacant parcels are clustered, creating larger development opportunity sites of 100 acres or more. Altogether, vacant sites make up around 12 percent of the land area within the city limits, approximately 1,020 acres. Areas where vacant land is more concentrated include along SR 99, in the TRIP, along major corridors such as Geer and Golden State Boulevard, and near CSU-Stanislus. The County islands in the southern part of town also contain vacant sites, though most are a quarter acre or less in size.

### Larger Study Area and Agricultural Uses

Agriculture is the predominant existing land use in the unincorporated area outside of city limits but inside the Study Area boundary. Additionally, many vacant parcels within city limits are currently in agricultural use, especially those in the TRIP and in the undeveloped portions of the far eastern edge of the city. In the TRIP, there are over 1,000 acres of farmland, while the area is zoned for industrial uses.



*Agriculture characterizes most large undeveloped parcels in the Study Area.*

## 2.2 LAND USE CLASSIFICATIONS

The following descriptions apply to land uses indicated on the Land Use Diagram (Figure 2-2) and the Master Plan Area Diagram (Figure 2-3). The legend on the diagram is an abbreviated version of the descriptions. The classifications are adopted as General Plan policy and are intentionally broad enough to avoid duplicating existing City or County zoning regulations. More than one zoning district may be consistent with a single General Plan land use category, and revisions to the zoning regulations will be necessary to implement the General Plan.

According to State law, the General Plan must establish standards of population density and building intensity for each land use classification. The General Plan stipulates residential densities in housing units per gross acre; population density can be obtained by applying average persons per housing unit count<sup>1</sup> to the housing unit densities. For nonresidential uses, the Plan specifies a maximum permitted ratio of gross floor area to site area (Floor Area Ratio or FAR).

<sup>1</sup> Based on 2000 U.S. Census data, the number of persons per total housing units is 2.9.

Table 2-2 shows gross density standards for residential categories and FAR standards for the other uses. Assumed averages for residential categories are listed in the descriptions that follow.

## RESIDENTIAL

Residentially-designated areas permit housing, as well as childcare facilities, places of religious assembly, retail grocery stores not exceeding 2,500 square feet in size, and Residential Care Facilities consistent with applicable Federal and State Laws. A brief description of each of the Residential General Plan designations follows.

Residential densities are per gross acre of developable land, provided that at least one housing unit may be built on each existing legal parcel designated for residential use. State-Mandated second dwelling units and density bonuses for the provision of affordable housing are in addition to densities otherwise permitted.

Assumed average densities and persons per unit (based on Census information and recent demographic trends) are used to calculate probable housing unit and population holding capacity for each residential classification; however, neither the averages nor the totals constitute General Plan policy. The housing types referred to in the discussion below are illustrated in the City Design Element.

### Very Low Density (VLDR)

The Very Low Density Residential uses allows 0.2 - 3.0 units per gross acre. It assumes three persons per unit, resulting in population density of one to nine persons per gross acre. Typical lots will be one-third of an acre in size. This designation is proposed primarily for the northeast edge of Turlock and is to act as a residential, large lot buffer between the higher density urban uses in Turlock and the lower density rural uses in Denair; the intent is to maintain parcel sizes that can serve to keep both Turlock and Denair as separate, independent communities. The average density assumed for General Plan calculations is 1.6 units per gross acre.

### Low Density (LDR)

The Low Density Residential designation allows 3.0 to 7.0 units per gross acre and assumes 3.2 persons per household resulting in a range of population density of 13 to 22 persons per gross acre. Housing in this density range is typical of recent subdivisions built throughout Turlock, though

**TABLE 2-2: LAND USE CLASSIFICATIONS AND DENSITY – MINIMUMS AND MAXIMUMS**

LAND USE		MINIMUM AND MAXIMUM RESIDENTIAL DENSITY (GROSS DWELLING UNITS PER ACRE)	TYPICAL NON-RESIDENTIAL DENSITY (FAR) <sup>1</sup>
VLDR	Very Low Density Residential	0.2 – 3.0	
LDR	Low Density Residential	3.0 – 7.0	
LDR_MDR	Low and Medium Density Residential	5.0 – 10.0	
MDR	Medium Density Residential	7.0 – 15.0	
HDR	High Density Residential	15.0 – 40.0	
DT	Downtown Mixed Use <sup>2</sup>	7.0 – 40.0	Plus 4.0
O	Office		0.35
CC	Community Commercial		0.25
HC	Heavy Commercial		0.35
HWC	Highway Commercial		0.35
RC	Regional Commercial		0.35 <sup>3</sup>
I	Industrial		0.60
BP	Business Park		0.35
PUB	Public/Semi-Public (includes detention basins)		NA
P	Park		NA
UR	Urban Reserve		NA

1. FAR = Floor Area Ratio, defined as the ratio between gross floor area of structures on a site and gross site area. Thus, a building with a floor area of 100,000 square feet on a 50,000 square-foot lot will have a FAR of 2.0.

2. Downtown Mixed Use allows a combination of residential development of 7.0-40.0 units per acre as well as non-residential development of FAR 4.0 maximum.

3. FAR for a hotel in the Regional Commercial designation may be up to 3.0.



*Low-Medium Density Residential development in North Turlock.*

few subdivisions have achieved densities at the high end of the range. The intent of the classification is to provide locations for construction of single-family homes with a range of lot sizes. The typical density assumed for General Plan calculations is 5.0 units per gross acre.

### Low-Medium Density (LDR-MDR)

Low-Medium Density Residential areas have between 5.0 and 10.0 units per gross acre. At three persons per unit, this translates to a population density of 15 to 30 persons per gross acre. The intent of the LDR-MDR designation is to accommodate a range of more compact housing types in a traditional neighborhood environment, including small-lot single family homes as well as single family attached townhouse units. The establishment of an RL4.5 zoning district as part of the new zoning ordinance adopted in January of 1997, allows for 4,500 square foot lots (gross density = 9 units per acre), which are typically located in the LDR-MDR area. Because housing at this density accommodates a range of traditional single family homes, small-lot single family homes, and townhouses, it will reach Turlock's largest residential market and is expected to account for about half of all housing added in the Study Area during the next twenty years. The typical density assumed for General Plan calculations is 7.5 units per gross acre.

### Medium Density (MDR)

The Medium Density Residential area allows 7.0 to 15.0 units per gross acre and assumes 2.7 persons per household, with an equivalent population density of 19 to 41 persons per gross acre. Virtually all new attached residences are expected to be built in this density range, which recognizes that attached townhome and multifamily units will make up an increasing percentage of the City's housing stock in years to come. Attached family units offer a way to reduce the cost of owner-occupied housing. Housing of this type is consistent with the General Plan policies seeking to limit the expansion of the City in order to preserve agricultural lands and maintain a compact urban form, while responding to many households' preference for family units. Mobile home parks and apartments within this density range will meet the needs of many households without the financial means or the desire to be homeowners.

At the lower end of the range, this designation allows zero-lot-line homes, semi-detached houses and duplexes, typically built at 7 to 11 units per acre. The upper end of the density range accommodates townhouses (ranging from 12 to 15 units per acre) and low-rise garden or "walk-up" apartments (around 15 units per acre). Most existing mobile-home parks at full occupancy are

also within the Medium Density range. The typical density assumed for General Plan calculations is 11.0 units per gross acre.

In some cases, particularly in older residential neighborhoods immediately surrounding the Downtown core, the MDR designation is applied to lots that are smaller than one acre in size. Traditionally, these lots have been developed with single family homes, but recent “tear-downs” and redevelopment have created small multifamily projects amidst single family neighborhoods. While a mix of housing types within a neighborhood is desirable, the General Plan puts additional standards describing “graduated density” in place for development of medium density multifamily housing on traditional single family lots so as to ensure continued neighborhood quality and character (see Section 2.5).

### High Density (HDR)

The High Density Residential designation allows 15.0 to 40.0 units per gross acre and assumes 2.4 persons per household (plus State-mandated bonus for affordability where applicable). The resulting range of population density will be approximately 36 to 84 persons per gross acre. Similar to MDR, the HDR classification supports the policy direction of achieving more compact development as Turlock grows over the next 20 years. High density housing supports compact development, provides housing choices to match changing demographics, and facilitates needed affordable housing. The State-mandated density bonus could result in net densities as high as 48 units per acre at the top end of the range. The resulting housing type will to a great extent be determined by unit size, parking, and open space requirements but will include triplexes and quadruplexes, stacked townhouses, walk-up garden apartments, and apartment buildings with elevators. The typical density assumed for General Plan calculation is 22.5 units per gross acre.



*The Sierra Oaks apartments, High Density Residential development in northwest Turlock, are built at approximately 22 units per acre.*



*Professional and medical office uses are found along Geer Road, Downtown, and close to the Emanuel Medical Center (top). Community commercial uses serve residents' daily shopping needs and are primarily located along major corridors (bottom).*

## COMMERCIAL AND MIXED USE

The General Plan includes a number of commercial land use classifications, each with a separate purpose. This category also includes mixed use designations, which generally consist of a combination of commercial and residential and/or office uses.

### Downtown Mixed Use (DT)

This classification is applied to Turlock's traditional Downtown and indicates the area in which the Downtown Overlay zoning districts apply. The classification provides for a full range of retail and personal services uses, including apparel stores, restaurants, specialty shops, entertainment uses, bookstores, travel agencies, hotels/motels and other similar uses serving a community-wide market and a larger daytime employment population. It is also intended to accommodate banks, financial institutions, medical and professional offices, and other general offices and community institutional uses. Additional use limitations and special development standards, including separate parking requirements, are applicable to the downtown core area as identified in the Downtown Turlock Plan (centered on Main Street) and Overlay Zoning regulations. Nonresidential development in this classification shall generally not exceed a FAR of 4.0. The DT classification also applies to the older residential neighborhoods in the downtown area and provides for both single and multiple-family uses at densities ranging from 7.0 to 40.0 units per gross acre. Residential development either as a mixed use or as an independent use in the downtown area is encouraged.

### Office (O)

The Office category includes business and professional offices, with a maximum FAR of 0.35. The areas near the Police Services/TID headquarters, Emanuel Medical Center, and on Geer Road between West Canal Drive and Hawkeye Road are suitable for offices but not for retail businesses (except for employee-serving uses such as restaurants and child care).

### Community Commercial (CC)

This designation provides for a full range of retail and personal service uses, including retail stores, food and drug stores, apparel stores, specialty shops, home furnishings, durable goods, offices, restaurants and other similar uses that serve a neighborhood or community wide market. Scale, rather than use, distinguishes areas serving a neighborhood versus community wide

market. Large scale commercial uses (large discount centers, big box retailers, etc.) serving a region wide market are specifically excluded from this designation. Development in this designation shall not exceed 0.25 FAR. While facilitating automobile access and parking, Community Commercial areas shall also be designed such that they are pedestrian- and bicycle-oriented, in order to enable nearby residents to accomplish their daily shopping needs without a vehicle.

### Regional Commercial (RC)

This designation provides for region-serving commercial uses, including large-scale shopping centers, discount “club” type stores, factory outlets, and other commercial uses such as retail stores, food and drug stores, apparel stores, specialty shops, motor vehicle sales, home furnishings, commercial entertainment facilities, hotels/motels and other similar uses that serve a region wide market. Development in this designation shall not exceed 0.35 FAR, except for hotels/motels, which may have FARs up to 2.0. In the future, as development shifts from the north Turlock area to the south, the area east of State Route 99 south of Glenwood Avenue could also be an attractive site for region serving retailers, in close proximity to the proposed new freeway interchange. Regional Commercial and/or large-scale region serving uses are not permitted on Geer Road and other areas classified for Community and Neighborhood Commercial development.

Market analysis has demonstrated that as of the time of this General Plan Update, regional commercial uses (specifically discount superstores) are currently not economically prudent land uses in Turlock. While the Land Use Diagram does not designate any areas in Turlock as Regional Commercial, City Council has determined that further study should be undertaken on this topic once the city reaches approximately 27,000 housing units, at which time the land use can be reconsidered. Policy 2.6-e provides detail on implementation.

### Highway Commercial (HWC)

This designation provides for uses designed to serve motorists traveling along State Route 99 at or near interchanges that are convenient and safe for such uses, and to a lesser extent along Golden State Boulevard. This designation is also intended to provide locations for uses that depend on high visibility from the freeway. Allowable uses in this designation include service stations, hotels/motels, restaurants, auto sales and other similar types of automobile-dependent uses. This designation corresponds to the Commercial Thoroughfare zoning district. The maximum allowable FAR is 0.35.



*Multiple use designations allow, but do not require, horizontal and/or vertical mixed use developments.*

### Heavy Commercial (HC)

This designation provides for heavy, wholesale and service commercial uses that do not need highly visible locations, or in locations where noise levels or other conditions may limit the suitability for other more retail-oriented uses. These uses can often serve as a buffer, transitioning between industrial activities or major transportation corridors and residential areas. Typical uses in this classification include repair facilities, distributing uses, sales of building materials, motor vehicle sales and service, contractor's yards and storage-oriented uses. The uses in this classification are often similar in character to industrial uses. Historically, many of these types of uses have been located along Golden State Boulevard. Development in this designation shall not exceed a FAR of 0.35.

### Multiple Use Designations

The General Plan Land Use Diagram also shows several "multiple use" designations, which combine several land use designations. Examples include "CC\_O" and "O\_HDR." In these cases, the property may be developed either as a mixed use project (horizontal or vertical) or developed as any one of the single uses in the designation. In other words, a site designated O\_HDR may be developed as high density residential, office, or both. The project is permitted to develop at the highest density or FAR allowed by the multiple designations.

## INDUSTRIAL

### Industrial (I)

This designation provides for large and small scale industrial, manufacturing, distributing and heavy commercial uses such as food processing, fabricating, motor vehicle service and repair, truck yards and terminals, warehousing and storage uses, wholesale uses, construction supplies, building material facilities, offices, contractors' yards and the like. The majority of Industrial uses are found in the Turlock Regional Industrial Park (TRIP), encompassing approximately 2,500 acres west of S.R. 99 between Fulkerth Road and Linwood Avenue. Incidental retail and services may also be permitted provided they are primarily oriented to employees and businesses within the area. Development in the designation shall not exceed a FAR of 0.6.



### Business Park (BP)

This designation provides for office centers, research and development facilities, medical and professional offices, institutional uses, limited light industrial uses, warehousing and distributing, “back-office” uses, and other similar uses locating in a low intensity, landscaped setting with high design and development standards. Similar to the Industrial designation, Business Park uses are found primarily in the TRIP. Incidental retail and services may also be permitted provided they are primarily oriented to provide services to employees and businesses within the area. Development in this designation shall not exceed a FAR of 0.35.

### PUBLIC / INSTITUTIONAL (PUB)

This classification is applied to the city’s major public and private institutional uses, including public safety facilities, public schools, California State University Stanislaus (CSUS), the State fairgrounds, and other prominent public uses and facilities. The Land Use Diagram shows the specific locations of existing major Public/Institutional facilities. Stormwater detention basins are also designated as public uses on the Land Use Diagram. Except for sites that have been acquired, the Land Use Diagram shows only the general location of future public or institutional uses in the area they will be needed. Selection of specific sites is the responsibility of the applicable governmental agencies and/or private institutions serving the Turlock area.

The designation on the Land Use Diagram of any future public or institutional site that has not been acquired shall not be construed to limit the existing or future use of the designated land. The predominant land use designation surrounding any property designated for public facilities shall be used to determine the potential use of the property prior to its acquisition by the applicable governmental agency or private institution.

### PARKS (P)

This designation is applied to existing and planned public parks and open space, including specialized public recreational facilities such as Pedretti Park and the Regional Sports Park. Except for sites that have been acquired, the Land Use Diagram shows only the general location of future parks in the areas they will be needed.

The designation on the Land Use Diagram of any future park site that has not been acquired shall not be construed to limit the existing or future use of the designated land. The predominant



*The Westside Industrial Specific Plan designates a large area as Business Park, accommodating office, research & development, light industrial, and similar uses (top). Public and institutional uses in Turlock include schools, public safety facilities, CSUS, and the County Fairgrounds (bottom).*

land use designation surrounding any property designated for a future park site shall be used to determine the potential use of the property prior to its acquisition by the City of Turlock.

Parks shown on the Land Use Diagram are those that the City has determined are required to support the needs of Turlock's future population, and will be funded. However, this does not preclude additional parkland from being developed. Parks are also allowed in residential districts upon approval of a Minor Discretionary Permit (MDP). Also, given their small size, some the mini-park sites may not be large enough to be displayed on the Land Use Diagram, but this shall not prevent a site from being considered to have been appropriately classified. Chapter 4: Parks, Schools, and Community Facilities contains information and policies pertaining to park locations, types, and standards both within existing city limits and in new growth areas.

### **URBAN RESERVE (UR)**

This classification is established for the purpose of identifying land that is reserved for future unspecified urban uses. Additional environmental analysis, a General Plan amendment, master planning, and annexation, if located outside the city, will be required before urban uses and/or development is permitted on land classified Urban Reserve. However, given the master plan programming and phasing described in Chapter 3, it is unlikely that areas designated Urban Reserve on the Land Use Diagram will be required for urban uses during the buildout period of this General Plan. Agricultural uses are permitted on property classified Urban Reserve, although they may eventually be replaced by permanent urban development. Public facilities and recreation facilities may also be located on land classified Urban Reserve.

In some cases, areas designated as Urban Reserve may already have some developed uses (for example, in the area north of Taylor Road to Barnhart Road, near State Route 99). Should these properties desire incorporation, the City shall work with the property owners on annexation agreements (see Policy 2.10-b).

### **MASTER PLAN AREAS**

The Land Use Diagram also shows areas that are designated as new Master Plan Areas. These correspond to areas that shall be planned, pre-zoned, and annexed to the city one at a time, according to the phasing diagram (see Section 3.1). Rather than depicting specific plan uses on parcels, the Master Plan Area designation requires that each area achieve a specific mix of land

uses, intensities, and other requirements (described in detail in Section 3.2) that are to be determined through the preparation of a master plan for each one. Figure 2-3 shows the residential density ranges planned for each new Master Plan Area.

## 2.3 DEVELOPMENT POTENTIAL

Development potential is calculated based on assumptions about new residential and commercial development that could be built under the General Plan land use designations and their respective densities and intensities over the timeframe of the General Plan. It also takes into account properties that have approved or pending development project applications associated with them at the time of the General Plan's writing, which, along with vacant and underutilized properties, accommodate a portion of the city's expected future growth. A detailed list of the proposed, pending, and approved development projects at the time of the General Plan's writing is found in the *Existing Conditions and Key Issues* report (March 2009).

### POPULATION AND EMPLOYMENT PROJECTIONS

Over the next 20 years, Turlock is expected to attract a substantial number of new residents and new jobs. Historical and recent growth trends give some indication of the amount and type of growth that Turlock can expect to see. The General Plan plays an important role in projecting these growth numbers, estimating how much land for housing and employment the new growth will require, analyzing Turlock's existing capacity for new development, and determining where the remaining demand for urban land uses should go.

This section describes Turlock's projected population and employment in 2030, the time horizon of the General Plan. The location, phasing, and land uses of this growth are described in Chapter 3: New Growth Areas and Infrastructure.

#### Residential Population

##### *Population Projections*

Turlock has grown rapidly since the 1970s. Its 2000 population of 55,810 was a 32 percent increase over the 1990 count. The 2007 American Community Survey shows 26 percent growth between 2000 and 2007, bringing the estimated population to 70,412. Turlock added some 3,644 housing



units in the 1990s and issued permits for another 4,745 units between 2000 and 2008. Since 2000, housing development has kept pace with estimated population growth.

Population projections for the City of Turlock in 2030 are derived from countywide forecasts from a variety of public and private sources. These sources cite a variety of factors driving growth in the Central Valley in general and Stanislaus County in particular. According to the Public Policy Institute of California (PPIC), over half of the growth in the Central Valley has been due to migration. Job growth, affordable housing, and strong family relationships are the primary reasons for migrating to the Central Valley. Although most of the migration comes from coastal California where housing is less affordable, an additional component is also generated from outside the U.S. (e.g. Latin America, Asia). Additionally, the Central Valley's newest residents are more likely than its out-migrants to be married and have children.

This trend is supported by analysis from the Center for the Continuing Study of the California Economy (CCSCE). According to the CCSCE, net migration (the difference between immigration into and emigration from the area) now accounts for the majority of the population growth in the San Joaquin Valley. Additionally, net migration has been the largest component of growth in Stanislaus County since 2000.

At the outset of the General Plan Update process, Turlock was estimated to gain between 36,000 to 55,000 new residents by 2030. The low end forecast projects 106,500 people by 2030, or a 51 percent increase over current levels; this forecast assumes the City's percentage share of County population of 13.2 percent remains constant. In contrast, the high end forecast projects 127,000 people by 2030, or a 76 percent increase over current levels; this forecast assumes that the change in the City's population growth rate relative to historic trends will mirror the projected change in the County's population growth rate.

### *Buildout Population*

At buildout, assuming construction at midpoint densities and intensities, the Study Area could support approximately 104,500 residents. This represents an average 1.9 percent annual growth rate from 2008 through 2030. In light of an extended period of slower growth in California between 2008 and 2012, this General Plan uses the low end population forecast as its guidance for buildout. This is also more consistent with recently developed forecasts that revise downward the amount of projected growth in the San Joaquin Valley by 2030.

With an average household size of 2.92 persons per household, 36,000 new residents equates to approximately 12,300 new households and 12,800 new housing units (assuming a vacancy rate of approximately 3.6 percent). Different housing types often attract different household sizes. Traditional single family homes are assumed to have 3.1 to 3.3 persons per household, whereas multifamily housing types may average 2.4 to 2.8 persons per household. Overall, Turlock's average household size across all housing types is around three persons per household.

However, it is important to note that current economic conditions have placed a strain on the Central Valley that may require a longer recovery period than other areas of the State. Until unemployment and housing market conditions stabilize, growth will likely occur at a substantially slower rate in the short term, and the ultimate buildout of the General Plan may not occur by 2030. In order to accommodate population and job growth at the pace at which it occurs, this plan stipulates that development occur in phases. These are discussed in more detail in Chapter 3.

### Non-Residential

Similar to population, employment projections for the City of Turlock are based on forecasts provided at the County level. Given the various economic factors that could influence future growth in the City, the General Plan relies on these county-wide forecasts to provide a high and low range estimate for Turlock and bracket potential outcomes. Again, the actual outcome will depend on a variety of demographic and policy considerations as well as differences between the City and County growth patterns.

A number of factors drive job growth in the Central Valley in general and Stanislaus County in particular. A significant proportion of the future job growth in the County will be related to providing goods and services to the local and regional population. In other words, growth in the local population and workforce will be an important driver for future employment growth. North San Joaquin's economy (Merced, Stanislaus, and San Joaquin) is also likely to get a boost from the continued expansion of educational facilities such as CSU Stanislaus and UC Merced, as well as spill-over from the San Francisco Bay Area economy. The presence of lower-skilled workers, inexpensive land, and central location in the State will also ensure that the region remains competitive for manufacturing.

According to the Stanislaus Council of Governments (StanCOG), the region anticipates more rapid growth in the Service and Retail Trade industry sectors relative to education or other

industries. Government jobs are expected to experience minimal growth. Additionally, because of the changing nature of the local economy, StanCOG anticipates unemployment levels will gradually decrease by 2030, and become more reflective of statewide rates.

Turlock is estimated to gain between 17,200 and 35,000 new jobs by 2030. The low end forecast (46,200 total jobs or a 59 percent increase over current levels) assumes the City’s percentage share of County employment of 14.3 percent remains constant. The high end forecast (64,000 total jobs by 2030 or a 121 percent increase over current levels) assumes that the change in the City’s employment growth rate relative to historic trends will mirror the projected change in the County’s employment growth rate. At buildout, the land uses described in the General Plan would support around 51,000 total jobs—close to the midpoint of the jobs forecast.

TABLE 2-3: GENERAL PLAN BUILDOUT BY LAND USE DESIGNATION: RESIDENTIAL				
LAND USE	ACRES	AVERAGE GROSS DENSITY (DU/AC)	HOUSING UNITS	POPULATION
Very Low Density Residential	289	1.6	460	1,300
Low Density Residential	2,916	5.0	14,580	41,050
Low/Medium Density Residential	408	7.5	2,930	8,230
Medium Density Residential	875	11.0	8,890	25,030
High Density Residential	345	22.5	7,130	20,070
Office and/or High Density Residential <sup>1</sup>	15	22.5	170	470
Office and/or Medium Density Residential <sup>2</sup>	6	11.0	30	100
Community Commercial and/or Office and/or High Density Residential <sup>3</sup>	9	22.5	60	180
Downtown Mixed Use <sup>4</sup>	164	22.5	2,780	7,810
Neighborhood Center <sup>5</sup>	22	22.5	80	230
<b>Total</b>	<b>5,049</b>		<b>37,120</b>	<b>104,480</b>

Note: Items may not sum to totals due to rounding.

1. Assumes 50% buildout as residential. Assumption supported by Housing Element analysis. Actual buildout may vary.
2. Assumes 50% buildout as residential. Assumption supported by Housing Element analysis. Actual buildout may vary.
3. Assumes 33% buildout as residential. Assumption supported by Housing Element analysis. Actual buildout may vary.
4. Assumes 75% buildout as residential. Assumption supported by Housing Element analysis. Actual buildout may vary.
5. Neighborhood Center classification applies only to master plan areas and is defined in Chapter 3. Assumes 25% buildout as residential. Actual buildout may vary.

### General Plan Development Potential

Full buildout of the General Plan, including all master plan areas, would result in a total of around 37,120 housing units citywide (including existing) and a cumulative population of around 104,500 (Table 2-3). Of these, new housing units and population would be 12,800 and 36,000 respectively. More detail on phasing and buildout by phase is found in Chapter 3: New Growth Areas and Infrastructure.

Table 2-4 shows the potential non-residential buildout in terms of square feet of new buildings and number of jobs. Jobs are calculated based on standard assumptions about square footage per employee for various employment types. An average vacancy rate of 7 percent is also assumed.

TABLE 2-4: GENERAL PLAN BUILDOUT BY LAND USE DESIGNATION: NON-RESIDENTIAL				
LAND USE	ACRES	TYPICAL FAR	SQUARE FEET	JOBS
Downtown Mixed Use <sup>1</sup>	164	1.0	1,791,120	4,160
Office	255	0.35	2,541,250	7,820
Office and/or High Density Residential <sup>2</sup>	15	0.35	112,770	350
Community Commercial	510	0.25	5,550,210	10,320
Community Commercial and/or Office	15	0.30	198,380	460
Community Commercial and/or Office and/or High Density Residential <sup>3</sup>	9	0.30	75,580	180
Office and/or Medium Density Residential <sup>4</sup>	6	0.35	47,620	150
Heavy Commercial	367	0.35	5,593,930	8,670
Highway Commercial	172	0.35	2,618,140	4,870
Industrial <sup>5</sup>	1,857	0.60	12,555,430	11,680
Business Park <sup>6</sup>	272	0.35	621,110	1,925
Neighborhood Center <sup>7</sup>	22	0.30	215,260	400
<b>Total</b>	<b>3,664</b>		<b>31,920,900</b>	<b>51,040</b>
<p>Note: Items may not sum to totals due to rounding.</p> <p>1. Assumes 25% buildout as non-residential. Actual buildout may vary.</p> <p>2. Assumes 50% buildout as office. Actual buildout may vary.</p> <p>3. Assumes 50% buildout as non-residential. Actual buildout may vary.</p> <p>4. Assumes 50% buildout as non-residential. Actual buildout may vary.</p> <p>5. Assumes 15% buildout of available land inventory, per employment projections.</p> <p>6. Assumes 15% buildout of available land inventory, per employment projections.</p> <p>7. Neighborhood Center classification applies only to master plan areas and is defined in Chapter 3. Assumes 75% buildout as non-residential. Actual buildout may vary.</p>				



An important consideration to recognize in this calculation is that the TRIP in particular represents an approximately 50-year (or more) industrial land supply—far beyond the time horizon of this General Plan. Altogether, available land in the TRIP alone (Industrial and Business Park designations) could support nearly 56,000 jobs. However, employment projections for Turlock indicate that over the course of the General Plan buildout, through 2030, the city is likely to gain between 6,000 and 8,000 industrial jobs. This corresponds to roughly 15 percent of the TRIP being built out, or around 390 acres. Using this assumption regarding the TRIP, and assuming full buildout of the other non-residential land uses, Turlock will be able to support approximately 51,000 jobs at General Plan buildout.

It should be noted that for the purposes buildout calculations, approximate acreages of various residential and non-residential land uses are assumed for the master plan areas. These amounts are based on the conceptual plans for these areas, described in Chapter 3. Actual buildout of each land use type will depend on subsequent master planning processes. Similarly, for the purpose of infrastructure capacity calculations, the General Plan and supporting documents assume a 25 percent buildout of the TRIP. By using this higher buildout assumption for capacity calculations, the plan allows for a “cushion” in industrial development, as many large industrial users require substantial flexibility in site size and location.

## 2.4 DOWNTOWN

The Downtown is roughly one quarter-mile square (160 acres), consisting of a core commercial area of approximately 90 acres, and residential, civic and heavy commercial uses at the periphery. It owes its location and geometry to the Union Pacific Railroad. Historic records indicate that the town survey started at what is now the southeast corner of the intersection of Center and East Main streets. From there, as in most towns of the San Joaquin Valley, an orthogonal street network was extended out parallel and perpendicular to the railroad tracks. Newer parts of the town were laid out in true cardinal directions; the transition between the new grid and the older diagonal one is never clean and is often disorienting.

The emergence of newer shopping centers in recent years, first along Geer Road and then at Monte Vista Crossings, has significantly reduced Downtown’s share in the retail and commercial growth experienced by the City. The shopping complexes along Geer Road rival the retail



*Downtown Turlock is home to many thriving small businesses in a walkable, mixed use environment.*



*Implementation of the Downtown Design Guidelines has contributed to a cohesive aesthetic and improved streetscape.*

in Downtown in size and proximity to residents and exceed it in activity. Both Geer Road and Monte Vista Crossings have better access and orientation to the automobile, proximity to newer neighborhoods, easier parking and larger sites than Downtown.

Compared to the newer shopping centers, Downtown, with its narrow streets, short blocks (typically 400-foot square), and historic buildings, is more appealing and better suited to exploration on foot. However, it lacks both a critical mass of supporting activity and attractions that could draw people from afar.

A survey conducted as part of the 1992 Downtown Plan estimated the amount of commercial space in Downtown to be about 1.4 million square feet. Of the 0.8 million square feet of retail space in the Downtown, automobile dealers and home furnishings accounted for the two largest groups of businesses. Eating and drinking establishments, specialty retail and apparel stores together constituted about 350,000 square feet of space. The survey did not consider Downtown's condition at that time as being prosperous. Banking establishments, the post office and other service establishments have been strong stabilizing elements, and cooperative marketing efforts, such as the Farmer's Market, have increased Downtown's visibility.

A second study of Turlock's Downtown was completed in 2008, which focused on marketing and branding opportunities. The study identified wedding planning and bridal shopping as a brand for Downtown, which, driven by a concerted marketing effort, could guide local business development and spur tourism and visitor spending.

### **LONG-TERM VIABILITY**

Downtown's long-term economic viability will depend on its ability to compete not only with the newer shopping centers, but more critically with regional discount and retail operations, such as Wal-Mart and freeway-oriented regional shopping centers. Its success will depend on specialty stores offering wider selection than department stores, competitive pricing by merchants, and a pleasant environment for pedestrians where one-of-a-kind shops, restaurants and entertainment facilities can attract patronage from the entire City and beyond.

### The 1992 Downtown Master Plan

The 1992 Downtown Master Plan offered a comprehensive urban design, parking-landscape framework, and a funding mechanism for implementation. It helped to identify infrastructure and beautification improvements for Downtown Turlock, which were implemented successfully and are responsible for many positive aspects of Downtown's environment today..

### The 2003 Downtown Design Guidelines and Zoning Regulations

Adopted in 2003, the Downtown Design Guidelines and Zoning Regulations build on the vision for Downtown Turlock outlined in the Downtown Master Plan. The Zoning Regulations and Guidelines are intended to encourage and facilitate appropriate private investment within the Downtown Area that reflects the historic commercial character of the core and the traditional residential character of the adjoining neighborhoods. The documents contain guidelines and standards for physical design and land use in the area, emphasizing the importance of pedestrian access and accessibility throughout the Downtown Area, making it a place people can access easily and where they will want to linger and spend time.

The goals for the Zoning Regulations and Design Guidelines include:

- To ensure the current and future success of the Downtown by preserving and enhancing its unique historic character.
- To encourage future development that is compatible with the overall feel of Downtown.
- To protect and enhance the pedestrian environment and accessibility in and around the Downtown Core Area.
- To conserve the traditional character of the immediate surrounding residential neighborhoods while guiding future development for use and reinvestment through alternative uses.
- To promote renovation of historic buildings in Downtown and promote new investment and construction.

### Downtown Planning Update

Using a portion of the funding that the city received through the Smart Valley Places Partnership, Turlock initiated an update to the Downtown Design Guidelines and Zoning Regulations in January 2011. Issues to be addressed in this update include the location of a potential train station downtown, as well as the possibility of allowing heights up to 60 feet in certain zones (Office/Residential and Industrial/Residential) for the purpose of providing additional housing. The infrastructure analysis in the General Plan will ensure that adequate infrastructure exists to support this potential increased intensity.

## POLICIES

### Guiding Policies

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*The Downtown Plan offers specific recommendations for guiding Downtown's growth into the future.*

- 2.4-a Preserve and enhance Downtown Turlock.** Continue efforts to preserve and enhance Downtown. Encourage development of Downtown as a mixed-use, day and evening activity center. Encourage office and residential development near Downtown.

*Continuing viability of the Downtown is of economic as well as symbolic value to the City. Downtown has scale and character that is hard to replicate in shopping centers elsewhere. Downtown should be the preferred location for accountants, attorneys, dentists, realtors, engineers, and other local-serving office tenants, unless they provide medical services and need to be near the Emanuel Medical Center. Downtown provides a good location for the concentration of non-medical offices.*

### Implementing Policies

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*See also policies in Section 2.II, Economic Development, concerning economic support for Downtown; and in Section 7.5, Cultural and Historic Resources, concerning preserving Downtown's historic character.*

- 2.4-b Update the Downtown Zoning Overlay District and Design Guidelines.** Undertake a comprehensive update to the 2003 Downtown Zoning and Design guidelines to update uses and standards to respond to current economic needs and trends. Evaluate

potential locations for intermodal hub, public parking needs, design standards, and maximum densities.

- 2.4-c Downtown Property-Based Improvement District (PBID).** Support the continuation of the Downtown Property-Based Improvement District (PBID) for the Plan’s funding and implementation.
- 2.4-d Preserve and promote historic character.** Work with the Turlock Historical Society and the Turlock Downtown Property Owners’ Association to provide information and guidance to property owners interested in restoring or recapturing the original architectural style and integrity of historical buildings.
- 2.4-e Support arts and culture Downtown.** Continue to demonstrate the City’s commitment to the arts and historic resources by supporting private and nonprofit arts and cultural efforts.
- 2.4-f Continue to improve access and wayfinding.** Continue to improve access to and within Downtown. Issues addressed should include entrances to Downtown and signage.  
*For detailed policies refer to the Downtown Master Plan.*
- 2.4-g Facilitate mixed use.** Facilitate and encourage development of mixed-use projects in Downtown through the development review, permitting, and fee process.
- 2.4-h Preserve residential adjacency.** Preserve residential areas north and east of Downtown.

*These areas are well established and contribute to the diversity of scale and use near Downtown. Permitting non-residential uses will create pressure on surrounding residences to convert to other uses as well.*



*General Plan policies encourage a mix of housing types in compact, walkable neighborhoods, to provide for Turlock’s diverse population.*

## 2.5 RESIDENTIAL AREAS

The General Plan promotes the development of walkable, compact, mixed use residential neighborhoods in new development areas. Compact neighborhoods use resources more efficiently, conserve valuable farmland, and are convenient to residents. New residential development will include a broad mix of housing types, from traditional single family homes to townhouses and apartments, in order to serve the needs of Turlock's diverse population and changing demographics.

Some community facilities that are appropriate for residential environments, such as day care, elderly care, and alcohol and drug abuse treatment facilities, shall be allowed within neighborhoods in accordance with State and federal law.

Below are the land use policies related to residential areas. For detailed information on housing types and program policies, refer to the Housing Element, and for design policies, refer to the City Design Element.

### POLICIES

#### Guiding Policies

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**2.5-a Housing type diversity.** Increase the diversity in the citywide mix of housing types by encouraging development of housing at a broad range of densities and prices, including small-lot single-family, townhouses, apartments, and condominiums. Aim to achieve an overall housing type mix of 60 percent traditional single family, 40 percent medium and higher density housing types.

*The current mix is 70 percent single family and 30 percent medium and high density.*

**2.5-b New neighborhood character.** Foster the development of new residential areas that are compact, mixed use, and walkable, with a distinct identity, an identifiable center, and a "neighborhood" orientation.

*See also Chapter 3: New Growth Areas and Infrastructure; and Chapter 6: City Design.*

**2.5-c Infill and existing neighborhoods.** Preserve the scale and character of existing neighborhoods while allowing and encouraging appropriate infill development.

## Implementing Policies

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- 2.5-d Zoning ordinance revision to match General Plan.** Revise the zoning ordinance and residential design guidelines to be consistent with the objectives and classifications in the General Plan, including the General Plan Land Use Diagram. These would include, but are not limited to:
- Establishing minimum and maximum densities consistent with the Plan
  - Establishing graduated density standards (see Policy 2.5-l)
  - Establishing overlay districts for traditional neighborhoods (see Policy 2.5-m)
  - Accommodating potential future regional retail uses, such as discount superstores (see Policy 2.6-e)
- 2.5-e “No net loss” of housing.** Do not allow development at less than the minimum density prescribed by each residential land use category, without rebalancing the overall plan to comply with the “no net loss” provisions of State housing law.
- 2.5-f Master planning required.** Require comprehensive master planning of new residential neighborhoods in expansion areas consistent with the requirements in the General Plan. Also require that 70 percent of one master plan area is completed (building permits issued) before another starts.
- See Chapter 3: New Growth Areas and Infrastructure.*
- 2.5-g Locations for high density development.** Maintain the highest residential development intensities Downtown, along transit corridors, near transit stops, and in new neighborhood centers.
- 2.5-h Transit and pedestrian accessibility from housing.** Work with developers of affordable and multifamily housing to encourage the construction of transit-oriented and pedestrian-oriented amenities and appropriate street improvements that encourage walking and transit use.

- 2.5-i Housing downtown.** Create incentives to increase residential development Downtown, on infill sites and in existing buildings. Examples include:
- Providing public subsidies for the development of affordable housing
  - Utilizing Historic Building Code where applicable to encourage development of the second floors in Downtown Turlock
  - Reducing on-site parking requirements
  - Updating the Capital Facility Fee program to more closely reflect the reduced contribution of walkable neighborhoods to the need for additional roadway and operational infrastructure (see Policy 5.3-k).
- 2.5-j Redevelopment in existing neighborhoods.** Preserve and enhance existing pedestrian-oriented neighborhoods and commercial districts by pursuing redevelopment that reinforces activity, making investments in the public realm, establishing overlay districts to preserve the neotraditional character of development, and avoiding designating competing commercial areas in close proximity.
- 2.5-k Improvements in existing neighborhoods.** Enhance the character of existing neighborhoods by implementing public realm improvements where needed, and by allowing changes in scale and/or use on specified sites.
- 2.5-l Graduated density.** Amend the zoning ordinance to establish graduated density standards for medium and high density residential development in neighborhoods with narrow lots, by today's standards, generally located south of Canal, east of Soderquist, north of South Avenue and west of Golden State Boulevard. In these neighborhoods, the narrow lots often cannot support Medium Density Residential development unless combined with neighboring parcels. The standard would tie allowable density to lot size, ensuring that the maximum residential density is only permitted on single lots over a certain minimum size, or on adjacent lots being developed as a single site.
- 2.5-m Traditional Neighborhood Overlay Zones.** Establish overlay zoning districts for areas immediately adjacent to the Downtown, but outside the Downtown Overlay Districts which were developed post-WWII to preserve the historic quality and cohesiveness of these neighborhoods. Areas include Southwest Turlock generally bounded by Canal, Golden State, Linwood and Highway 99. Other neighborhoods may also qualify for special overlay zoning based upon prior zoning practices.



TABLE 2-5: PER CAPITA TAXABLE RETAIL SALES, 2000 AND 2008						
TYPE OF BUSINESS	TURLOCK		MODESTO		STANISLAUS COUNTY	
	2000	2008	2000	2008	2000	2008
Retail Stores						
Apparel	\$139	\$438	\$539	\$730	\$247	\$398
General Merchandise	1,879	3,160	2,516	2,286	1,504	1,692
Food Stores	724	763	591	668	509	596
Eating and Drinking Places	977	1,398	1,052	1,296	734	982
Home Furnishings and Appliances	262	357	556	485	313	323
Building Materials and Farm Imple- ments	680	1,079	861	570	649	727
Auto Dealers and Auto Supplies	1,830	1,372	1,123	750	1,720	1,472
Service Stations	949	1,655	586	878	641	1,472
Other Retail Stores	985	1,328	1,816	1,553	1,358	1,255
Retail Total	8,426	11,549	9,642	9,217	7,675	8,720
Other Outlets	2,905	2,607	1,888	2,271	3,004	3,704
<b>Total All Outlets</b>	<b>\$11,332</b>	<b>\$14,156</b>	<b>\$11,530</b>	<b>\$11,489</b>	<b>\$11,124</b>	<b>\$12,795</b>
Notes:						
Population in 2000: Turlock = 55,810; Modesto = 188,856; Stanislaus County = 466,997						
Population in 2008: Turlock = 70,158; Modesto = 209,936; Stanislaus County = 525,903						

Sources: Census 2000; California Department of Finance, 2008; California Board of Equalization, 2000 and 2008

## 2.6 RETAIL, COMMERCIAL AND MIXED USE AREAS

Retail areas offer convenience to Turlock residents and help shape the City’s image. As of 2007, about 14 percent of Turlock’s residents are employed in the retail trade sector. (See Table 2-7 in Section 2.10: Economic Development for more information on employment by industry.) Shopping and use of services are activities that enable social contact as well as business transactions. Though residents may not be familiar with neighborhoods outside their own, community shopping areas are likely to be equally well known by people living in all areas of the City. Therefore, retail districts are a critical element of people’s perception of their city.

Retail and related uses within the City are also important ingredients in the City’s success from a fiscal and employment viewpoint. Sales tax revenues represent the largest single revenue source



*Mixed use developments with ground-floor retail are encouraged in new neighborhood centers (top). Regional retail serves both Turlock residents and the surrounding area, and can be an important source of tax revenue. However, its development also runs the risk of hurting existing local businesses if not timed appropriately (bottom).*

in the City's General Fund: in fiscal year 2008-2009, sales tax revenues accounted for over 26 percent of General Fund revenue (approximately \$10.6 million). Moreover, such businesses also provide jobs in the community.

As shown in Table 2-5, per capita sales in Turlock in 2000 were above the average for Stanislaus County but below the city of Modesto. By 2008, per capita sales in Turlock were higher than both Modesto and the county as a whole, showing substantial increases in many categories, including apparel, general merchandise, building materials, and service stations. The strong increases in general merchandise and apparel is related to the opening of Monte Vista Crossings Shopping Center in 2000, and its subsequent growth, with Home Depot and Target as the main anchors. Additionally, residents of smaller communities (Patterson, Newman, Delhi, and Hughson, as well as Keyes and Denair) come to Turlock to make purchases.

However, despite Turlock's per capita sales growth in apparel, it is still small relative to Modesto. This is also the case with home furnishings and appliances, which are types of merchandise for which shoppers like to have a wide selection. Turlock's relatively weak per capita sales in these categories reflect continuing weak selection in the City compared to other nearby destinations. Plan policies support the addition of retail facilities that will provide more choice in these and other categories.

Turlock's previous General Plan succeeded in considerably expanding the retail sector in the City. As such, there remains ample land designated for retail uses that is yet undeveloped. Regarding retail, the focus of this plan is to maintain the viability of existing retail, allow regional-serving retail to develop at key locations along the freeway, and encourage the development of small, neighborhood-serving commercial uses in new neighborhoods that are walkable to a majority of new homes. The following policies relate to the land use aspects of retail and related uses. For urban design policies relating to neighborhood center design, refer to the City Design Element.

## **POLICIES**

### **Guiding Policies**

- 2.6-a Regional retail areas.** Foster strong, attractive regional retail developments in the City along the Highway 99 corridor that serve both local and regional needs, at a time when market conditions indicate that Turlock can support these uses without undermining existing local businesses.

**2.6-b Neighborhood and community commercial areas.** Facilitate the development of neighborhood and community commercial areas, which will: (a) conveniently serve current and future residential needs, (b) provide employment opportunities, (c) contribute to the attractiveness of the community, and (d) contribute to the City's tax base. Mixed use commercial areas are also encouraged, and shall be incorporated into new master plan areas.

**2.6-c Downtown retail.** Make Downtown a unique shopping district emphasizing specialty shops, entertainment opportunities, restaurants, and professional services.

*See Section 2.4 for discussion and policies on Downtown.*

**2.6-d Pedestrian orientation of commercial areas.** Emphasize compact form and pedestrian orientation in new community and neighborhood commercial areas, in locations that many residents can reach on foot, by bicycle, or by short drives.

*Local-serving shopping centers are key elements of the neighborhoods described in Section 3.2.*

## Implementing Policies

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**2.6-e Timing and location of regional retail.** Once Turlock grows to approximately 27,000 housing units, conduct an updated Discount Superstore Market Demand Analysis to determine the economic impacts of allowing this type of retail use within the city. As appropriate, evaluate a range of zoning options to accommodate discount superstores, including, but not limited to:

- Increasing the allowable percentage of non-taxable floor area for discount superstores; or
- Designating a new Regional Commercial zoning district or an overlay district that may include areas along State Route 99 located adjacent to Monte Vista Avenue, Fulkerth Road, Lander Avenue, or by the new southeast interchange.

**2.6-f Regional commercial developments fund transportation improvements.** Require regional commercial center developers to fund transportation improvements that will be necessary to accommodate the level of activity anticipated.

**2.6-g Local-serving shopping in new neighborhoods.** In new master-planned residential neighborhoods, ensure development of neighborhood-oriented mixed-use centers that provide convenience shopping for nearby residents. Local shopping centers



*The adoption of the Westside Industrial Specific Plan has enabled substantial new industrial development on large parcels west of Highway 99.*

should be collocated with uses such as parks, schools, offices, and community facilities in order to create a neighborhood center where multiple tasks can be accomplished in one trip.

*Section 3.2 includes more detail on requirements for neighborhood centers in master plans.*

**2.6-h Incentives for mixed use projects.** Encourage the development of mixed use (vertical and horizontal) developments on sites that have dual use designations by providing incentives. These could include:

- Updating the Capital Facility Fee program to more closely reflect the reduced contribution of walkable neighborhoods to the need for additional roadway and operational infrastructure
- FAR or residential density bonuses
- Reduced parking requirements and opportunities for shared parking

**2.6-i Limit future retail on Geer Road.** Limit additional “neighborhood/community commercial” and “strip commercial” centers along Geer Road by restricting changes in zone districts from residential or office to commercial.

**2.6-j Distribution of retail.** Distribute shopping areas so that new neighborhood centers will be located in conjunction with new housing development in master plans or in areas currently underserved by existing retail.

*This policy will improve access to neighborhood centers and avoid proposals for more shopping centers than can be supported. A rule of thumb is that at least 5,000 households are needed to support a supermarket that must compete with large existing stores. In each trade area only one is likely to succeed, and duplication will cause vacancy, substandard development, or attempts to locate inappropriate uses on sites that are unable to attract a supermarket.*

**2.6-k Small neighborhood groceries allowed.** Continue to allow neighborhood grocery stores not exceeding 2,500 square feet in areas wherever they can be supported and will not create unacceptable traffic problems or nuisance due to hours of operation.

*The Land Use Diagram does not recognize all existing neighborhood groceries or indicate sites at all locations suitable for additional stores.*

**2.6-I Retail in the Downtown Master Plan.** Continue to implement the Downtown Master Plan, emphasizing the creation of a retail district that serves both everyday and specialty retail needs.

*See Section 2.4 for discussion of the Downtown.*

## 2.7 INDUSTRIAL AREAS

Turlock’s agricultural setting has historically provided a basis for the City’s industry. Food processing is the primary industry, providing the largest number of industrial jobs in Turlock. Four of the top ten employers in the city are food processors, and Foster Farms, the third-largest employer in the city, employs 1,500 workers. Fourteen percent of jobs in Turlock are in manufacturing, and four percent are in the warehousing and transportation industries, which are large users of industrial space. More detail on employment by industry is found in Section 2.11, Economic Development.

Through the creation and implementation of the Westside Industrial Specific Plan (WISP), Turlock has reaffirmed the continuing importance of industrial development as a main source of jobs and economic growth in the City. Policies in this section reinforce the WISP and aim to make industrial development a viable enterprise without negatively impacting other land uses in the city.

### POLICIES

#### Guiding Policies

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**2.7-a Concentrate industrial uses in the TRIP.** Minimize conflicts between industry and other land uses by concentrating industrial activity west of Highway 99, specifically in the Turlock Regional Industrial Park (TRIP) area.

*Though some industry, including major poultry processing operations, is located east of the freeway, future industrial growth will be directed to the west, into the TRIP, where land use conflicts will be minimized.*

**2.7-b Attract industry to Turlock.** Enhance the positive factors that have made the City attractive to industry, including freeway access, available large parcels of land,

inexpensive power, a streamlined development process, and an appropriately-skilled workforce.

*Some of the factors that affect industrial location are not within the control of the City; for example, the long-term availability of water. The City's investigation of alternative water sources including well-head treatment may result in a solution to this problem before it becomes a constraint on future development. Plan policies in section 3.3 address these issues.*

### Implementing Policies

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- 2.7-c Focus industrial uses west of Highway 99.** Focus industrial development west of Highway 99 by continuing to implement the Westside Industrial Specific Plan.
- 2.7-d Incentives for public amenities.** Offer added incentives to industrial projects in the TRIP that contribute to the pedestrian, bicycle, or transit networks and/or public amenities and open space.
- 2.7-e Truck routes and industrial streets.** Designate appropriate truck routes and “industrial streets” in order to accommodate industrial traffic and avoid unanticipated conflicts.  
*See Policy 5.5-k.*
- 2.7-f Design to minimize impacts.** Design industrial development to minimize potential community impacts adversely affecting residential and commercial areas in relation to local and regional air quality and odor, adequacy of municipal service, local traffic conditions, visual quality, and noise levels.
- 2.7-g Buffers between uses.** Buffer industrial and heavy commercial areas from adjacent residential, commercial, and recreation areas using public infrastructure, right-of-way, landscaping, or a combination thereof.
- 2.7-h Single-use industrial areas.** Designate industrial areas to be solely utilized by industrial uses to maintain and encourage mutually supportive, attractive, and compact industrial environments and to be protected from encroachment or preemption by other incompatible uses.

## 2.8 PROFESSIONAL OFFICE AND BUSINESS PARK AREAS

In recent years, office employment in Turlock is provided by jobs in education (Turlock school districts and CSUS), government (City of Turlock and Turlock Irrigation District), and the health care industry (Emanuel Medical Center). The City's largest concentrations of office space are along East Main Street and Canal Drive in the central part of the city, City Hall on South Broadway, around Emanuel Medical Center, and Downtown. Offices are also found along the southern part of Geer Road, mixed with retail businesses. As the City grows, it is likely that the space needed for both government services and health-care related services will increase.

While office employment has not historically been a major contributor to the City's economy, there are good reasons to implement strategies to increase office activities. Growth in trade, manufacturing and service sectors, projected to account for the largest increase in employment over the next 20 years, is likely to spur office development. Office employment does not create heavy demands on the City's water supply and wastewater treatment facilities, or directly generate air pollution emissions. Further, expansion of office activities such as those in the finance, insurance and real estate (FIRE) category would diversify the City's economic base and offer more varied employment opportunities for Turlock area residents.

### POLICIES

#### Guiding Policies

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- 2.8-a Provision of sites for office and business park uses.** Contribute to diversifying the City's employment base by maintaining large sites designated for office/business park use, including sites on Golden State Boulevard and business park sites in the TRIP.
- 2.8-b Office locations.** Encourage local-serving offices to locate in and near Downtown and in proximity to existing professional office clusters, such as the Emanuel Medical Center.

#### Implementing Policies

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- 2.8-c Nodes of offices throughout the city.** Continue creating a concentration of medical offices in the vicinity of Emanuel Hospital, while still encouraging new nodes of office development along Geer Road and North Golden State Boulevard.

- 2.8-d Offices linking destinations.** Link two prominent office clusters—Emanuel Medical Center and Downtown—by extending the Office designation along Colorado Avenue to East Main Street. These offices may be part of mixed use developments that include retail and/or residential uses.
- 2.8-e Largest office users in the TRIP.** Direct the largest office users to appropriately designated sites in the TRIP office and business park areas.
- 2.8-f City administrative offices located Downtown.** Prioritize Downtown as a preferred location for the construction of any new City administrative offices, to maintain the government’s central location and to set a precedent for Downtown office development.

## 2.9 THE PLANNING AREA AND CITY/COUNTY RELATIONSHIPS

As described in Section 1.3, The Planning Area is the geographic area for which the General Plan establishes policies about future urban growth, long-term agricultural activity, and natural resource conservation. The boundary of the Planning Area, which encompasses approximately 40 square miles, was determined by the City Council in response to State law requiring each city to include in its General Plan all territory within the boundaries of the incorporated area as well as “any land outside its boundaries which in the planning agency’s judgment bears relation to its planning” (California Government Code Section 65300). The Planning Area is defined as such because it is that portion of the unincorporated area that has a direct impact on City services and infrastructure demands.

Turlock also defines a Study Area, which is a smaller area (27 square miles) defining the outer limit of where urban development may take place over the next 20 years. The Study Area includes land that is currently unincorporated, as well. As described in Chapter 3: New Growth Areas and Infrastructure, unincorporated areas within the Study Area shall be annexed into Turlock following an explicit phasing and master planning process. Inclusion of unincorporated land in the Planning Area and the Study Area does not mean that the City disagrees with County policies—in many cases the intent of the General Plan is to support or express agreement with County policies for surrounding areas. Additional policies relating to City/County relationships are addressed in Chapter 3: New Growth areas and Infrastructure; and Section 7.2: Agriculture and Soil Resources.



## POLICIES

### Guiding Policies

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- 2.9-a Agriculture belongs in unincorporated areas.** Support Stanislaus and Merced County policies that promote continued agricultural activity on lands surrounding the urban areas designated on the General Plan Diagram.
- 2.9-b Urban land uses belong in incorporated areas.** Work with Stanislaus County to direct growth to incorporated areas and established unincorporated communities.
- A key policy of the General Plan is the limited and orderly expansion of the City. This policy would be undermined by approval of urban activities in unincorporated areas.*
- 2.9-c Encourage infill and more compact development to protect farmland.** Relieve pressures to convert valuable agricultural lands to urban uses by encouraging infill development.
- 2.9-d Incorporate existing urbanized areas.** Seek to include in the City all urbanized areas contiguous with City territory. The City’s first priority for annexation shall be the numerous unincorporated County islands located wholly within Turlock (see accompanying policies in Section 3.1). A second area of priority, should property owners desire it, is the area of commercial uses north of Taylor Road on both sides of State Route 99 to Barnhart Road. While the City shall not initiate the annexation of these properties, it will work with property owners on developing financing and infrastructure improvement strategies to facilitate annexation should they express interest.
- 2.9-e Work with County on regional projects.** Cooperate with County agencies in planning for transportation improvements and other major projects affecting multiple agencies.
- The Stanislaus County Expressway Study and the County’s Congestion Management Program are two of the major projects in which the City and County are participating. Both projects are led by the Stanislaus Council of Governments (StanCOG), the County’s Regional Transportation Agency.*
- 2.9-f Work with County on mitigating impacts of growth.** Work with Stanislaus County to implement financing mechanisms to ensure that development within the Planning Area pays its fair share of both City and County improvements required to mitigate the impacts of growth.

## Implementing Policies

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**2.9-g Stanislaus County plans for Denair and Keyes.** Stanislaus County shall remain responsible for land use planning for the unincorporated communities of Keyes and Denair. However, the City of Turlock shall review development proposals in these communities to ensure that they are consistent with the City's ability to provide wastewater treatment services, on which they depend.

**2.9-h Cooperate at the City/County line.** Seek Stanislaus County cooperation in designating unincorporated land for uses compatible with adjacent City lands.

**2.9-i LAFCO approval for Sphere of Influence changes.** Seek LAFCO approval of Sphere of Influence changes to reflect the General Plan Diagram, upon completion of the master plan updates for the sewer, water, and wastewater treatment systems, and upon completion of the Capital Facilities Fee update (within two years of adoption of the General Plan).

*LAFCO action would clearly demarcate those areas that are expected to be urbanized and incorporated in the future. Lands not within the City's Sphere of Influence (and outside of Keyes and Denair) are to remain subject to the County's regulations for lands designated for agricultural use. Including Turlock's expansion areas in the City's sphere will mean that rezoning and annexation criteria relating to orderly expansion of the City will have to be met before development proposals will be considered.*

**2.9-j Phasing of annexations.** Annexations to the City should proceed according to the phasing plan described in Section 3.1.

**2.9-k Fee-sharing programs.** Update the City's agreement with Stanislaus County regarding collection of the public facilities fee. The agreement should stipulate that the City will collect and pass on to the County development fees for County improvements, and the County will refer to the City applications for development in the City's Sphere of Influence.

*The fee sharing agreement helps avoid the fiscalization of land use decisions in the county, discourage urban commercial development in unincorporated areas, and promote urban infill and redevelopment.*

*This policy is consistent with the Stanislaus County General Plan, which was amended following a pioneering agreement made between the City and County. Subsequent to that time, the County entered into similar agreements with each of the cities in the*

*County. However, the agreement between Turlock and the County lapsed without renewal. This policy advocates renegotiation of the agreement without provision of a sales tax revenue pass-through.*

- 2.9-l County island incorporation.** Work with Stanislaus County to identify possible revenue tools for underwriting necessary improvements in order to encourage incorporation of County islands.

*Development standards in the islands differ from those in the surrounding areas. Incorporation should be made a condition of project approval on any property in any of the islands. See also policies in Section 3.1, Growth Strategy, for timing strategies related to County island incorporation.*

- 2.9-m Work with StanCOG on regional issues.** Continue to participate with StanCOG on matters of mutual concern to the City and County. These include programs such as regional expressway studies, housing needs determination, the Regional Transportation Plan (RTP), the Sustainable Communities Strategy (SCS), and others.

## 2.10 URBAN RESERVE

The General Plan Diagram classifies land in the Turlock Study Area for a variety of land uses, which the City believes addresses future community needs through the year 2030. Land classified as Urban Reserve in this General Plan is that which is believed may remain committed to agricultural uses for the foreseeable future. On the other hand, land outside current city limits that is believed to be necessary to accommodate future growth is designated as master plan areas. It is the City's intent that land classified as Urban Reserve should remain agricultural in use over the course of the planning period (through 2030), but may eventually give way to urban uses as the community's economic needs continue to evolve over time (likely beyond the time horizon of this General Plan). The timing of conversion of Urban Reserve land to urban uses may be reconsidered if development occurs at a substantially slower or faster pace than projected in this Plan. However, this conditions would generally give way to another update of the General Plan.

Policies that address the timing and circumstances for the reclassification of land classified Urban Reserve to specific land use classifications to accommodate urban uses are outlined below. The conversion of Urban Reserve land to urban uses is treated in more detail in Chapter 3: New Growth Areas and Infrastructure.



*Land in Urban Reserve is predominantly agricultural in nature, and is anticipated to remain as such through the buildout of this General Plan.*

## POLICIES

### Guiding Policies

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**2.10-a Consider needs beyond the year 2030.** Ensure the City’s ability to accommodate future urban growth and development beyond the 2030 time horizon of the General Plan.

### Implementing Policies

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**2.10-b Reclassifying Urban Reserve land.** Land classified Urban Reserve, located within the Study Area but situated outside the city’s Sphere of Influence, may not be reclassified to accommodate specific urban uses and annexed until the following occurs:

- a) the City Council finds that the City has less than a four year supply of vacant land for development in its inventory and all master plans identified in this General Plan have been fully developed; or
- b) the City Council, by a 4/5ths affirmative vote, finds in the public interest to reclassify property to accommodate an industrial or commercial use that will be the source of significant employment. A comprehensive General Plan Amendment shall accompany any secondary residential use in this area.

*In either case, the reclassification must take place as part of a master planning process, or, ideally, trigger an update to the General Plan.*

## 2.11 ECONOMIC DEVELOPMENT

Turlock's economy has traditionally been based on agriculture, agriculture-related industries (primarily food processing), and other manufacturing. Its location in the heart of the San Joaquin Valley, home to some of the most fertile farmland in the world, naturally led to Turlock's agricultural heritage and employment base.

Over the past 50 years, Turlock's population has grown from 9,000 in 1960 to 70,000 today. The economy has shifted to focus on schools, government, and service businesses to serve the population. The largest single employer is now the Turlock Unified School District. The largest industry sectors are state and local government (15 percent), retail (14 percent), manufacturing (14 percent), health care and social assistance (12 percent) and accommodation and food services (10 percent). These activities will likely remain the strongest components of the city's job base as the population continues to grow.

While most economic activity occurs in the private sector, the City can take an active role in furthering its economic prosperity. Examples of what the City can do to spur economic development include:

- Ensuring that local policies do not impede the needs of businesses to move or expand;
- Facilitating and acting as a catalyst for development in strategic market segments, especially those that may spur other activities or provide fiscal benefits;
- Coordinating and providing for infrastructure improvements; and
- Generating revenue to support community development objectives.

This section describes Turlock's economic development strategy and provides policies to implement the City's goals.

### ECONOMIC CONTEXT AND EMPLOYMENT PROFILE

Overall, the key economic drivers in Stanislaus County are retail trade, manufacturing, and public or non-profit (e.g. health care) related sectors. While the manufacturing sector reflects the regions' competitive location and labor force characteristics, the latter two sectors are primarily

population driven. Modesto currently serves as the primary employment center in Stanislaus County, providing about 70 percent of the total jobs, with Turlock in second at about 20 percent.

Turlock's employment composition is reflective of the County as a whole. Turlock's major sectors are State and Local Government (15 percent), Retail Trade (14 percent), Manufacturing (14 percent), Health Care and Social Assistance (12 percent) and Hotel and Food Services (10 percent). For the County, Manufacturing and Retail Trade represent the largest employment sectors, followed by "Health Care & Social Assistance." These three sectors account for about 40 percent of total jobs in Turlock and 45 percent Countywide (Table 2-6).

The leading employers in Turlock and the County reflect the trends described above. As shown in Table 2-7, the Turlock Unified School District (TUSD) employs the highest number of employees in the City with 2,200 employees. Emanuel Medical Center is second, with over 1,500 employees. The City's poultry processing plant, Foster Farms, is the third-largest employer in the City with a total of 1,500 employees. Overall, the top ten employers employ a total of approximately 8,000 employees in the City or close to 30 percent of the total. Four of the top employers within the County are located in the City, which includes California State University (CSU) Stanislaus, Emanuel Medical Center, Foster Farms, and Stanislaus County Community Services.

For the most part, historical employment growth has reinforced the economic patterns described above and substantiates the declining importance of agriculture both regionally and locally (near and within urbanized areas). Specifically, population-driven sectors such as State and Local Government, Health Care & Social Assistance and Accommodations & Food Services have provided the largest contributions to employment growth in Turlock and the County as a whole since 2000. Meanwhile, agriculture was the only sector to experience declining employment across all jurisdictions during this period. Turlock also experienced a significant decrease in Management of Companies and Enterprises (with 1,100 jobs) and Construction (with 300 jobs).

### Jobs/Housing Balance

Commute patterns play an increasingly important role in population growth and thus, urban land demand. Information on Turlock's jobs-housing balance and the travel patterns of both local residents and employees provide important insight into its evolving role in the regional economy. In the long-run, areas such as Turlock that are not centrally located relative to major job centers need to expand economically in order to sustain future population.

**TABLE 2–6: EMPLOYMENT BY INDUSTRY IN STANISLAUS COUNTY AND TURLOCK CITY (2007)**

MAJOR INDUSTRY <sup>1</sup>	STANISLAUS COUNTY		TURLOCK CITY	
	#	%	#	%
Accommodation & Food Services	13,629	7.8%	2,693	9.5%
Admin & Support & Waste Mgmt.	7,732	4.4%	1,140	4.0%
Agriculture, Forestry, Fishing & Hunting	12,880	7.3%	1,840	6.5%
Arts, Entertainment, & Recreation	1,660	0.9%	N/A	N/A
Construction	11,164	6.4%	1,793	6.3%
Educational Services <sup>2</sup>	2,246	1.3%	100	0.4%
Federal Government	1,100	0.6%	90	0.3%
Finance & Insurance	3,985	2.3%	725	2.6%
Health Care & Social Assistance	19,821	11.3%	3,398	12.0%
Information	2,331	1.3%	203	0.7%
Local Government	23,500	13.4%	2,908	10.3%
Mgmt. of Companies and Enterprises	1,866	1.1%	207	0.7%
Manufacturing	22,771	13.0%	4,004	14.2%
Mining	29	0.0%	0	0.0%
Non-Classified	71	0.0%	N/A	N/A
Other Services	7,595	4.3%	1,211	4.3%
Professional, Scientific, & Tech Skills	5,460	3.1%	676	2.4%
Public Administration	66	0.0%	0	0.0%
Real Estate & Rental & Leasing	2,166	1.2%	252	0.9%
Retail Trade	22,111	12.6%	4,018	14.2%
State Government (Includes CSU Stanislaus) <sup>2</sup>	1,800	1.0%	1,227	4.3%
Transportation, Warehousing, and Utilities	5,600	3.2%	1,034	3.7%
Wholesale Trade	6,027	3.4%	739	2.6%
<b>Total Employment (All Industries)</b>	<b>175,610</b>	<b>100.0%</b>	<b>28,258</b>	<b>100.0%</b>
<b>Total Employment as a % of County</b>	<b>100.0%</b>		<b>16.1%</b>	

1. Based on the annual average employment for each industry. N/A represents confidential data.

2. According to the U.S. Census NAICS code for 2007, public schools and college universities are generally categorized in the Educational Services industry. However, California EDD included the primary and secondary public schools in Local Government and higher education (e.g. CSU Stanislaus) employees in the State Government category.

Sources: California EDD and EPS

TABLE 2-7: CITY OF TURLOCK TOP 10 MAJOR EMPLOYERS		
EMPLOYER	INDUSTRY	NUMBER OF EMPLOYEES <sup>1</sup>
Turlock Unified School District	School District	2,202
Emanuel Medical Center	Healthcare Facility	1,549
Foster Farms	Poultry Processor	1,500
CSU, Stanislaus	Public University	1,100
Turlock Irrigation District	Water & Electric Utility	495
Wal-Mart	Retailer	415
City of Turlock	City Government	351
Mid-Valley Dairy (Sunny Side Farms)	Dairy Products	215
Sensient Dehydrated Flavors Inc.	Food Manufacturer	180
<b>Subtotal</b>		<b>8,007</b>
<b>Estimated Jobs in Turlock in 2008</b>		<b>28,995</b>
<b>% of Total Turlock Jobs</b>		<b>27.6%</b>
1. Information as of March 2008.		

Sources: Indicators (Stanislaus Economic Development & Workforce Alliance) and City of Turlock.

Historical data on Turlock’s jobs-housing balance and jobs to employee ratios suggest that the City has maintained relatively balanced population and employment growth. Specifically, since 1991 the City has consistently provided about 1.1 jobs per household (Table 2-8). This ratio compares favorably to the County as a whole which provides about one job per household. In addition, the City provided about one job per resident in the workforce in 2007, a 12 percent increase from 1991. Again, the City has out-performed the County in this regard as the County currently provides about 0.8 jobs per resident in the workforce.

The 2000 Census provides detailed data on travel patterns by both place of work and place of residence. Although relatively dated, this data also suggest that most of Turlock’s residents and employees work and live locally. Specifically, about 48 percent of the City’s employed residents worked in Turlock while about 82 percent worked in the County in 2000 (Table 2-9). In addition, about 54 percent of Turlock employees live in the City and about 81 percent live in the County. Turlock is a city where most people work locally: over 50 percent of jobs in Turlock are held by Turlock residents, and 82 percent of Turlock residents work somewhere in Stanislaus County.



TABLE 2-8: JOBS TO EMPLOYEES RATIO AND JOBS TO HOUSING UNIT RATIO			
COUNTY/CITY	1991	2001	2007
<i>Stanislaus County</i>			
Jobs to Housing Unit Ratio			
Jobs	133,549	164,475	175,124
Housing Units	132,027	150,807	176,622
<b>Jobs to Housing Unit Ratio</b>	<b>1.01</b>	<b>1.09</b>	<b>0.99</b>
Jobs to Employees Ratio			
Employees	159,100	196,400	210,900
<b>Jobs to Employees Ratio</b>	<b>0.84</b>	<b>0.84</b>	<b>0.83</b>
<i>City of Turlock</i>			
Jobs to Housing Unit Ratio			
Jobs	18,720	22,906	28,258
Housing Units	15,921	19,096	23,993
<b>Jobs to Housing Unit Ratio</b>	<b>1.18</b>	<b>1.20</b>	<b>1.18</b>
Jobs to Employees Ratio			
Employees	19,800	24,900	26,700
<b>Jobs to Employees Ratio</b>	<b>0.95</b>	<b>0.92</b>	<b>1.06</b>

Sources: California EDD Quarterly Census of Employment and Wages; California Department of Finance; California Employment Development Department Labor Market Info

Over 75 percent of the Turlock workforce commutes less than 30 minutes to work. Less than five percent of Turlock workers commute to the San Francisco Bay Area.

## ECONOMIC DEVELOPMENT STRATEGY

Over the time frame of this General Plan, the City of Turlock is expected to add around 45,000 new residents, an increase of nearly 65 percent. In order to support this population, the City will need to add jobs. While many jobs will “naturally” arise from the services needed to support this growing population (such as schools, retail and personal services, police and fire protection, and others), additional jobs in other sectors—appropriate for workers with a range of skill types—will also be necessary.



*A healthy, active Downtown is an important economic asset.*

TABLE 2-9: SUMMARY OF EMPLOYED RESIDENTS' PLACE OF WORK AND RESIDENCE IN 2000		
PLACE <sup>1</sup>	TOTAL	% OF TOTAL
<i>Local Residents</i>		
Place of Work		
Turlock	10,000	48.6%
Modesto	3,920	19.0%
Ceres	555	2.7%
Other Cities	1,055	5.1%
Remainder of County	2,305	11.2%
<b>Subtotal Stanislaus County</b>	<b>16,780</b>	<b>81.5%</b>
<i>Other Counties</i>		
Alameda	213	1.0%
San Joaquin	754	3.7%
Merced	2,090	10.1%
Remainder of Other Counties	756	3.7%
<b>Subtotal Other Counties</b>	<b>3,813</b>	<b>18.5%</b>
<b>Total Employed Residents</b>	<b>20,593</b>	<b>100.0%</b>
<i>City Jobs</i>		
Place of Residence of Employees		
Turlock	10,000	54.4%
Modesto	2,360	12.8%
Ceres	775	4.2%
Other Cities	1,850	10.1%
Remainder of County	1,815	9.9%
<b>Subtotal Stanislaus County</b>	<b>14,950</b>	<b>81.3%</b>
<i>Other Counties</i>		
Alameda	38	0.2%
San Joaquin	338	1.6%
Merced	2,764	13.4%
Remainder of Other Counties	307	1.5%
<b>Subtotal Other Counties</b>	<b>3,447</b>	<b>18.7%</b>
<b>Total City Jobs</b>	<b>18,397</b>	<b>100.0%</b>

1. Data available for the year 2000 only.

Source: U.S. Census

The City recognizes that while its location in the Central Valley lends many advantages in job attraction, it is also a competitive environment. Many similar cities in the Valley possess the same assets—central location, available inexpensive land, freeway and rail access—and therefore Turlock must build upon its unique strengths and differentiate itself from its neighbors.

### Turlock's Strengths

Turlock's strongest assets for economic development include:

- **CSU-Stanislaus**, a four-year public university campus with approximately 6,800 full-time equivalent students. Disciplines seeing the most significant growth include business, health sciences and services, psychology, security and protective services, agriculture, and biomedical sciences. Similarly, Turlock has a well-educated workforce, with education levels exceeding those of Stanislaus County overall (23 percent of Turlock residents had a bachelor's degree or higher in 2007, versus 16 percent countywide).
- Adoption of the **Westside Industrial Specific Plan (WISP)** in 2006, which allocated over 2,600 acres for industrial and business park development on the west side of Highway 99. Through development of the TRIP, Turlock aims to enable significant industrial development and improve the jobs-housing balance in the area. The plan covers land use regulations, design guidelines, and phasing. Through the creation and nurturing of an 'Agri-Science' industry cluster, which would include biotech, life sciences, and agri-business, the TRIP aims to create a "bridge" for Turlock's current agriculture and manufacturing industries to transition to newer products and technologies.
- **A strong existing food processing sector**, including such large employers as Foster Farms, Sensient Flavors, Supherb Farms, and Mid-Valley Dairy. These businesses form an "anchor" and may help attract similar establishments by appearing as a long-time successful industrial node.
- **Emanuel Medical Center**, with its 209-bed acute care hospital, 145-bed skilled nursing facility, 49-bed assisted living facility, and outpatient medical offices for primary care on Colorado Avenue and Monte Vista Avenue, is both a community and a regional asset and a source of high paying, high-skilled jobs.



*Many unincorporated county islands are in need of substantial investment and public infrastructure improvements.*

- **Downtown Turlock**, anchored by City Hall, is home to historic building stock, recently implemented streetscape and public realm improvements, and a number of restaurants and specialty shops. The Downtown Property Owners Association is actively involved in the betterment and continued development of Downtown and works closely with the City. Additionally, in 2008, a Branding, Development, and Marketing Action Plan was completed for the Downtown that posed the idea of a bridal shopping and wedding planning theme for the area.
- **Youth Sports**. Particularly with the completion of the Regional Sports Park, Turlock has become a center for youth sports competitions attracting teams from across the State. This activity has had noticeable positive “spin-off” impacts, providing business for hotels and restaurants. With the establishment of more community parks through 2030, as well as increased utilization of the County Fairgrounds, Turlock can further establish itself as a youth and amateur sports destination.
- **Competitively priced electricity**. Turlock’s homes and businesses receive electric power from the Turlock Irrigation District (TID), which offers power at significantly lower rates than many other providers. For many industrial users with large power needs, such as cold storage facilities, this is a significant asset.
- **An active Chamber of Commerce**. The Turlock Chamber of Commerce, comprised of over 500 members, plays an active role in advocating for business interests and a strong local economy. The Chamber facilitates networking and business opportunities amongst its members, and it maintains a strong working relationship with the City.
- **Available water and wastewater treatment capacity**. With the development and recent upgrade of the Turlock Regional Water Quality Control Facility (TRWQCF), Turlock is well positioned to accommodate future growth in the residential, commercial and industrial sectors. The TRWQCF now produces recycled water suitable for reuse in city landscaping and in industrial processes. The current and planned treatment facilities will occupy less than half of the facility’s 140 acre site, allowing for ample future expansion.
- **Land available at low cost**. Not only does the TRIP enable significant industrial development in Turlock, but the specific plan area has ample developable land. Land costs in Turlock are significantly lower than those in coastal California or even the outer edges of the Bay Area; this is the case for both industrial/commercial as well as residential land.

- **Presence of County Fairgrounds.** Turlock hosts the Stanislaus County Fairgrounds, a major asset for business generation and tourist attraction. The Fairgrounds are used not only for the annual County Fair but also for other regional events throughout the year. The County has also expressed interest in expanding the fairgrounds.

### Turlock's Challenges

Turlock's economic development strategy must not only capitalize on the City's strengths, but also recognize and address its challenges. Some challenges that Turlock faces regarding economic growth include:

- **Location.** While Turlock is ideally located for distribution to west coast markets, particularly the San Francisco Bay Area, other nearby cities enjoy this same advantage, including Modesto, Manteca, and Lodi. Moreover, Turlock has excellent access to Highway 99 but limited access to Interstate 5. The City cannot change its location, but it can direct its efforts toward economic development that benefits from the City's location but is not entirely dependent upon it. Additionally, planning efforts are underway with Stanislaus County and the City of Patterson to develop West Main Street as an east-west expressway that would connect Turlock more efficiently to I-5.
- **Downtown Turlock.** While Downtown has made great strides in recent years, the current economic downturn has taken a toll on the area's vitality. The deep recession that has affected the entire nation has also impacted Downtown Turlock, raising vacancy rates and turnover in the past few years. The existing stores and the presence of City Hall create activity during the day, but the area experiences less activity at night. More people living close to Downtown, and more active uses in Downtown buildings (or new buildings) would be of great benefit.
- **Lack of linked economic activities.** While Turlock has numerous economic assets and several employers with over 1,000 jobs, they have not attracted a significant amount of linked economic activities—either because they take care of their needs in-house, or because they rely on suppliers and other businesses outside of Turlock or even the State. Some examples of linked activities and economic synergies do exist, such as between the hospital and the university's nursing program, but more horizontal and vertical linkages could be made.



*Economic development policies aim to both attract new economic growth as well as support and strengthen the city's existing business establishments.*



*New industrial establishments are an important employment generator for the city.*

- **Social Issues and Public Safety.** Turlock, like many other communities in the Central Valley, struggles with a number of social issues such as homelessness. While the majority of Turlock’s neighborhoods are safe and secure, the persistence of some of these social and public safety issues may affect the city’s image.
- **Perception of Permit Process for Small Businesses.** Many involved in Turlock’s economic development have voiced concern over the City’s practices as not being sufficiently “business friendly” to attract new employers. Even though the City has made strides in improving its permitting process, some involved in Turlock’s economic development voice concern over the perception of the City’s practices as not being sufficiently easy and welcoming to attract new employers. Rigid code enforcement for small businesses and renovations were cited as potential problem areas.
- **Transportation and Infrastructure Maintenance.** The City has struggled to maintain the quality of existing city streets that are seeing heavy industrial truck traffic, and those in the western neighborhoods. Much of this is attributable to fiscal issues. Investment in infrastructure is critical to attracting businesses, but at the same time, the City must maintain a fee structure that requires major users to help pay the way.
- **County Islands.** Turlock has several areas of unincorporated county land surrounded on all sides by the incorporated city, creating “county islands.” Because the county lands are not served by city infrastructure, the lack of improvements and the quality of development is generally below the City’s standards and therefore negatively impacts Turlock’s image. The City is engaged in developing a strategy with Stanislaus County to incorporate and upgrade these areas.

Economic development policies aim to both leverage the City’s assets and address its challenges in order to foster continued economic growth through 2030. The policies presented in this section include specific economic development programs as well as more generalized strategies for improving the City’s overall business climate and image, and promote a positive working relationship with the private sector. Other related policies, especially pertaining to Downtown, transportation and utilities, and public safety can be found elsewhere in this Chapter, as well as in Chapter 3 (New Development Areas), Chapter 5 (Circulation), Chapter 6 (City Design), and Chapter 10 (Safety).

## POLICIES

### Guiding Policies

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- 2.11-a Support existing businesses.** Retain, improve, and promote existing businesses in Turlock and foster local start-up businesses.
- 2.11-b Attract businesses to serve local residents and regional shoppers.** Attract community-serving retail, and basic industrial and service activities to meet the needs of our residents, while continuing to promote and develop Turlock as a regional shopping destination.
- 2.11-c Facilitate new development.** Define clear development standards and process development applications expeditiously.
- 2.11-d Support and maintain Downtown Turlock.** Support and contribute to a clean, safe, pedestrian-friendly, and well-maintained Downtown.
- 2.11-e Strengthen the City's image.** Create an image for Turlock that will help attract and retain economic activity, and proactively market that image regionally and statewide.
- 2.11-f Sustain fiscal health.** Ensure the continued economic sustainability of the community and fiscal health of the City government.
- 2.11-g Maintain the jobs-workers balance.** Maintain a balance between jobs and the number of employed residents.
- 2.11-h Recognize and promote strength in the food processing sector.** Even as Turlock pursues jobs in new industries, continue to recognize and promote the City's current strength as a food processing center, with a workforce highly skilled in this industry.

### Implementing Policies

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#### ***Industry Targeting and Recruitment***

- 2.11-i Monitor new industrial trends.** Monitor regional, state, and national economic trends in order to identify new and emerging industries suitable for Turlock.

*Among others, industries to watch include agricultural and food sciences, clean technology manufacturing, and health care,*

- 2.11-j Engage in strategic planning.** Every five years, complete a citywide economic development strategic plan that focuses on industry targeting, job creation, marketing, and local business support. Evaluate progress, accomplishments, and challenges every year in an annual report that will help guide subsequent efforts.
- 2.11-k Increase linked activities and businesses.** Work with large existing employers to identify and recruit related businesses and those that provide goods and services to meet their business needs.
- 2.11-l Attract jobs for local residents.** Set economic development target and implementation measures to increase the percentage of employed residents who work in the City to 60 percent of the total by 2020.  
  
*As of 2000, 49 percent of employed Turlock residents worked in the city.*
- 2.11-m Bolster sports tournament industry.** Incorporate sports facilities suitable for tournaments into the design of new community parks and recreation areas. Encourage local hotels and other traveler-supported businesses to sponsor sports tournaments and contribute to the upkeep of the facilities in exchange for advertising and marketing rights.

***Promoting and Facilitating Industrial Development***

- 2.11-n Direct industrial users to the TRIP.** Direct new industrial users to the TRIP and continue to implement the WISP.
- 2.11-o Advertise available land.** Continue to market the availability of development sites by routinely updating the City’s database of available vacant and underutilized parcels and making it available on the City’s website. These can include both large industrial and business park parcels in the TRIP as well as smaller office or retail sites in shopping centers, along major roads, and Downtown.
- 2.11-p Promote the TRIP.** Develop and implement a marketing strategy aimed at potential large industrial, R&D, and business park employers in order to attract more development and jobs to the TRIP.
- 2.11-q Continue to review permit streamlining.** Ensure that the City’s permitting procedures are streamlined through the continuing review of the system by the Development Collaborative to solicit input from the business community and work with the City to improve business processes.



- 2.11-r **Continue to offer economic incentives.** To the extent possible, continue to offer economic development incentives in specific economic zones.  
  
*At present, this includes the Enterprise Zone 40. All of the TRIP is included in this zone. The zone makes available a number of beneficial tax deductions, credits, and incentives that reduce the cost of development, hiring, and capital investment.*
- 2.11-s **Re-evaluate fees.** Continue the current effort to update the City’s building permit fees to better reflect actual costs to the city. Periodically reevaluate development impact fees to reflect any adjustments in the cost of construction, any outside grant funding awarded to the City, and any other appropriate adjustments.
- 2.11-t **Improve connection to Interstate 5.** Work with Stanislaus County and the City of Patterson to establish West Main Street as an expressway connecting Turlock to I-5.
- 2.11-u **Encourage land assembly.** Continue to encourage landowners of small parcels to assemble their properties to better facilitate commercial or industrial development. Strategies can include hosting informational meetings at the City, contacting property owners directly, developing financial incentives for land assembly, and promoting new graduated density zoning amendment (forthcoming; see Policy 2.4-l).

***Fostering Partnerships***

- 2.11-v **Engage business organizations.** Maintain a strong working relationship between the City and the Turlock Chamber of Commerce, as well as other local and regional business groups such as the Downtown Property Owners Association and the Stanislaus County Workforce Alliance.
- 2.11-w **Continue to participate in annual meetings with Chamber of Commerce and the Workforce Alliance.** Continue to participate in the annual summits and business conferences sponsored by the Chamber of Commerce and the Stanislaus County Workforce Alliance in order to identify how the City can best assist them or improve City services.
- 2.11-x **Continue to participate in local business organizations’ meetings.** Continue to attend and participate in all meetings of the Chamber of Commerce and the Downtown Property Owners Association.
- 2.11-y **Support business outreach strategies.** Continue to support the business outreach strategies of the Development Collaborative Advisory Committee to solicit input on how the City can improve its services.

- 2.11-z Foster ongoing and new partnerships with CSUS.** Maintain the City’s relationship with CSUS, and continue to pursue new opportunities to work with the university on workforce training, community services, sharing of facilities, and employer recruitment efforts, among others.
- 2.11-aa Provide a City resource for regional events management.** Establish a “go-to” person at the City who will be a source of information on upcoming regional events, such as youth sports tournaments. This City resource will be someone that businesses, such as hotels, can contact for information on when large groups of visitors will be coming to Turlock and pursue business opportunities accordingly. Also establish a monthly calendar on the City’s website that shows local events.
- 2.11-ab County Fairgrounds strategy.** Work with the Stanislaus County Fair Board to either expand the County Fairgrounds at its current site, or to identify a new site west of State Route 99 for relocation.

***Workforce Training and Local Start-up Support***

- 2.11-ac Partner with CSU-Stanislaus in workforce training.** Coordinate with CSU-Stanislaus to publicize available educational and training programs by using the City’s website and making information available through the library and City Hall.
- 2.11-ad Support new start-ups.** Continue to support the assistance program for local start-up businesses.

*Continue to work with the Stanislaus Economic Development and Workforce Alliance and CSU-Stanislaus to establish a branch of the Central California Small Business Development Center (SBDC) in Turlock. SBDCs offer classes in starting and operating a small business.*

***Supporting Downtown and Neighborhood Commercial Centers***

- 2.11-ae Enable renovation of Downtown buildings.** Work with the Building Division and a structural engineer to identify less expensive seismic retrofit, fire safety, and ADA compliance options for older buildings Downtown in order to encourage their renovation.

**2.11-af Market the Downtown Turlock commercial district.** Continue working with the Chamber of Commerce and the Downtown Property Owners Association to support marketing, promotions, and events that bring people to Downtown.

*In particular, the focus should be on establishing ongoing events (weekly, monthly) that will bring people Downtown on a regular basis. Examples include an additional farmers' market or craft market, children's activities, or an outdoor performing arts/ concert series.*

***Fostering a Positive Image***

**2.11-ag Pursue beautification projects.** Continue implementation of the Downtown Design Guidelines, and begin implementation of the Turlock Beautification Master Plan.

**2.11-ah Market Turlock's assets.** Market information about Turlock's livability, great schools and parks, relative affordability, and other features to prospective employers to help encourage businesses to locate in the city.

**2.11-ai Educate users about the improved permitting process.** Work to diffuse any lingering negative perceptions about Turlock's permitting process by showcasing improvements that have been made in recent years, as well as any future improvements.

**2.11-aj Promote Turlock's workforce.** In addition to marketing Turlock as a desirable destination for new employees, strongly promote the quality of Turlock's existing workforce (high educational attainment, specific skill sets, etc.) to potential employers. Similarly, promote the City's capacity for additional workforce training through partnerships with CSUS.

**2.11-ak Master Wayfinding Program.** Continue to implement Turlock's Master Wayfinding Sign Program, aimed at improving signage and wayfinding throughout the City, improving visitors' experiences in Turlock, and promoting the City's assets.

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# 3 New Growth Areas and Infrastructure

The New Growth Areas and Infrastructure element builds on Turlock’s successful history of growth management and master planning, which has been a main contributor to the city’s enduring compact form, cohesive neighborhoods, and lack of “leap frog” development patterns. By formalizing the master planning process in the General Plan, as well as identifying the City’s infrastructure needs and priorities necessary to serve this new growth and maintain service to the existing urbanized area, Turlock is ensuring that this means of development continues in the future. Moreover, new standards and policies in this element identify important land use and urban design aspects of new developments so that future master plans help achieve the City’s overall goals of providing diverse, compact, walkable neighborhoods.

## 3.1 GROWTH STRATEGY

### BACKGROUND

Turlock has adopted a very wise growth management strategy, which has enabled the city to maintain fiscal stability, preserve farmland, and develop desirable new neighborhoods for its growing population. One logically sized growth area is selected at a time and a master plan is established for its development. Seventy percent of the master plan area must be issued building permits before the next can commence. Turlock has distinguished itself this way over the last planning period and wants to carry forward this successful method of growth and development over the next planning period. The strategy has resulted in attractive new neighborhoods, complete infrastructure, and well maintained new roads and public facilities. Area-wide plans must address land use, circulation, housing, open space, infrastructure, public facilities, and public services consistent with the General Plan.

This chapter summarizes the existing growth management and master planning strategy and adds some key new provisions, such as how to incorporate compact development types, how to achieve neighborhood commercial centers, and how to integrate the City’s parks plan into new residential areas.



*This element guides the development of active, vibrant new neighborhoods to serve Turlock’s growing population.*



*Turlock's growth management strategy has produced a strong "edge" of urban development.*

## TURLOCK'S GROWTH MANAGEMENT HISTORY

Turlock's rapid growth in the late 1980s led to concerns about adequacy of public facilities and impacts of expansion on agriculture, which in turn led to adoption of the Growth Management Program (GMP). Due to reduced demand for building permits as a result of the early 1990s recession, the GMP was rescinded by City Ordinance 914-CS on January 14, 1997 as part of the Zoning Ordinance Update.

In 1998, the City of Turlock adopted a Residential Annexation Policy that focuses annexations and growth to one quadrant of the city at one time (City Council Resolution No 98-036). New residential development was designated to occur first in the northwestern quadrant of the City. Focusing development in one area at a time has allowed for the timely and efficient construction of infrastructure and use of resources. Furthermore, in 1999, the City adopted a policy that requires area-wide planning in conjunction with future annexations (City Council Resolution No 99-021).

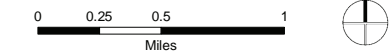
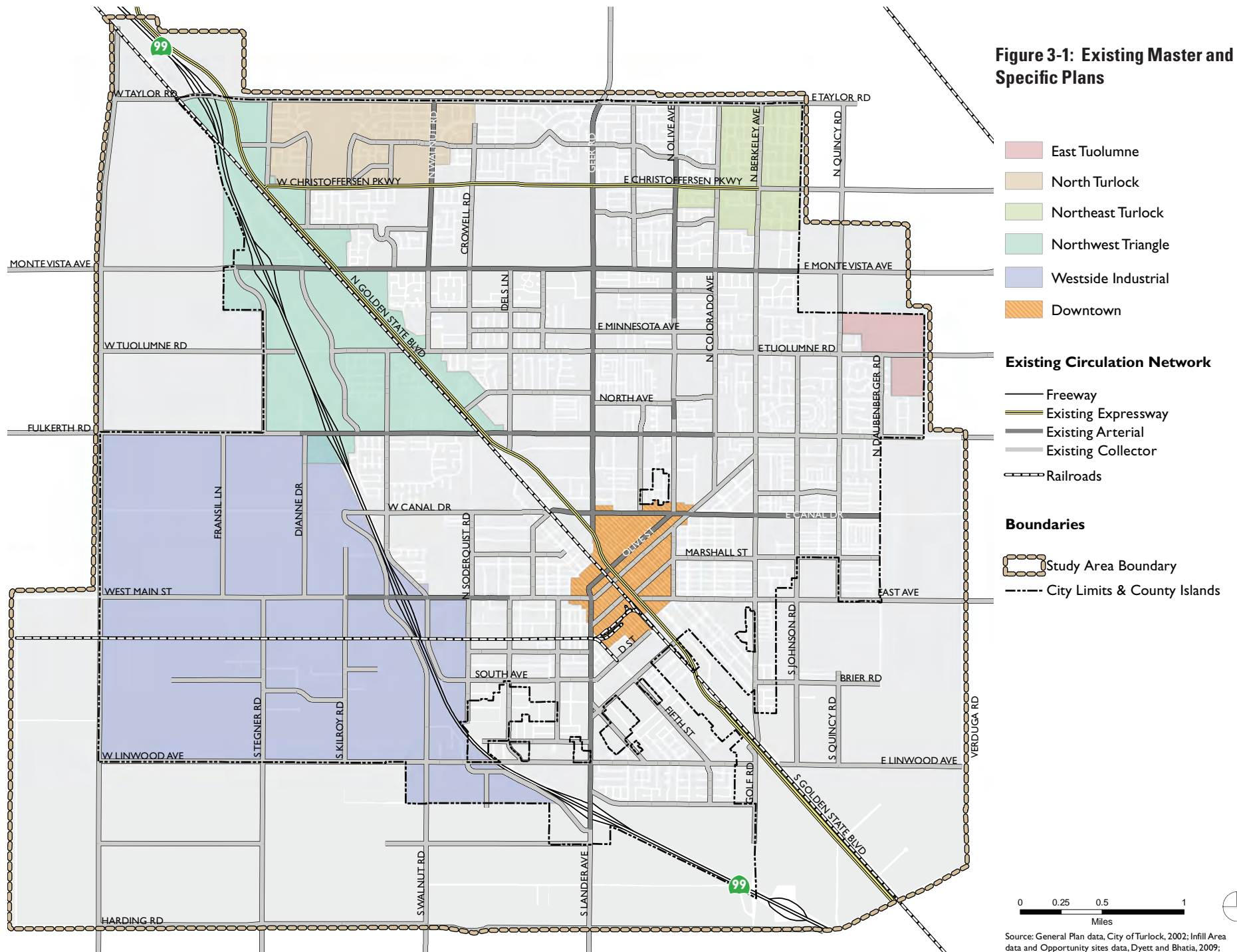
## Existing Master Plans and Specific Plans

In accordance with its growth management strategy, Turlock has adopted a number of Specific Plans and Master Plans following the adoption of the 1992 General Plan, which guide growth in the specified areas. Specific and Master Plans implement General Plan policies by analyzing the land use, circulation, public facilities, infrastructure, and financing issues of particular areas to evaluate their development potential, often prior to annexation by the City. The existing Specific and Master Plan policies are still in effect, and in some cases, the plan areas are still being built out. Figure 3-1 shows the areas where Master Plans and Specific Plans have been established.

### *Northwest Triangle Specific Plan (1995, amended 2004)*

New residential development was designated to occur first in the Northwest quadrant of the City, and the Northwest Triangle Specific Plan was adopted in 1995 to allow development in that area. The Northwest Triangle Specific Plan (NWTSP) covers an area of approximately 800 acres in the triangle created by Golden State Boulevard to the east, Highway 99 to the west, and Fulkerth Road to the south. Its four goals are to implement the General Plan; allow development to proceed without unnecessary delay (by facilitating the approval of subsequent development projects consistent with the Specific Plan policies); provide for efficient extension of services; and establish funding mechanisms for the improvements.

**Figure 3-1: Existing Master and Specific Plans**



Source: General Plan data, City of Turlock, 2002; Infill Area data and Opportunity sites data, Dyett and Bhatia, 2009;



*Development in the North Turlock Master Plan includes linear parks, or 'paseos,' through the neighborhoods.*

The plan covers land use and urban design; transportation and circulation; infrastructure (including sewer, water, storm drainage, and energy); public services; natural resources and public health; and implementation. A Master EIR was completed in conjunction with the Specific Plan.

Much of the NWTSP area has been built out. Low density residential and community commercial development dominates the southern part of the plan area. Highway-oriented commercial uses occupy the northern part of the plan area along Monte Vista Avenue. Some agricultural land still remains in the southwest area, along West Tuolumne Road. The Pedretti Park community ball fields are also in the plan area. Additionally, there are several other parcels adjacent to the plan area that were not included in the plan or annexed that could be included in the Specific Plan area, but this would necessitate an update to the Specific Plan and associated environmental documentation.

#### *North Turlock Master Plan (2001)*

The North Turlock Master Plan (NTMP), completed in 2001, guided development in the Northwest quadrant of the City. The NTMP plan area is just east of the NWTSP, bounded by Tegner Road to the west, Christofferson Parkway to the south, Crowell Road to the east, and Taylor Road and the Turlock Irrigation District Lateral 3 to the north. The plan area encompasses approximately 370 acres. At the time of the plan's creation, the land under study was not yet annexed to the city.

The primary objective of the NTMP was to incorporate "smart growth" planning and design principles into the development of cohesive neighborhoods. The plan established a wide range of land uses, including low, medium, and high density residential, commercial, office, schools, and park sites. Furthermore, the residential, school, and open space areas were to be linked by a network of pedestrian and bike trails. As built, the neighborhoods in the NTMP include other "neo-traditional" design elements such as narrower streets, a diversity of housing types, homes oriented towards the street, and several streets with wide landscaped medians.

The NTMP plan area also includes Turlock's second high school, John H. Pitman (the first high school to be built in Turlock since 1904), and the new Regional Sports Complex.



*Northeast Turlock Master Plan (2004)*

The next master plan, the Northeast Turlock Master Plan (NETMP), focused on an area at the northeast corner of the City. Covering approximately 255 acres, the plan area is bounded on the north by Taylor Road and the Turlock Irrigation District Lateral 3; on the east by the rear parcel lines of the lots that front the east side of Berkeley Avenue; on the south by the midpoint between Christofferson Parkway and Monte Vista Avenue; and on the west by Colorado Avenue, with a rectangular “finger” that stretches along Christofferson Parkway to Olive Avenue. At the time of the plan’s creation, the subject area was not yet annexed to the city.

The NETMP pursued the goal of expanding carefully guided development (primarily residential) to the northeastern edge of Turlock and integrating it into the rest of the city. At the same time, the NETMP endeavored to create a well-defined “edge,” maintaining a clear separation between Turlock and the neighboring community of Denair. Nearly all of the land in the plan area prior to development was productive agriculture, but the area had been designated for growth in the General Plan.

As built, the NETMP area consists primarily of low density residential development, transitioning into very low density residential development toward the plan area’s eastern edge. A greenbelt buffer, creating a transition zone from urban to rural uses between Turlock and Denair, includes detention areas and a community trail.

*East Tuolumne Master Plan (2005)*

The East Tuolumne Master Plan (ETMP) was adopted by the City in 2005. The plan area covers approximately 100 acres along East Tuolumne Road between North Quincy and North Waring Roads. The purpose of the ETMP is similar to the Northeast Turlock Master Plan—to create a smooth transition from urban to rural land uses along the City’s eastern border, while creating a distinct boundary between Turlock and Denair.

The plan calls for the development of very low density (generally less than three dwelling units per acre) single family homes, with some open space and trails. However, since the plan’s adoption, the market conditions in Turlock have not supported developing the land in this manner. The planning area remains largely agricultural with a few existing estate homes.



*The Northeast Turlock Master Plan includes a well-designed buffer area between urban and agricultural uses, including landscaping, a multiuse trail, and a linear stormwater basin.*

*Westside Industrial Specific Plan (2006)*

The Westside Industrial Specific Plan (WISP) is the most recent of the City’s Specific Plans, and the first to focus exclusively on non-residential development. The Plan Area covers 2,615 acres, bounded by Fulkerth Road to the north, Highway 99 to the east, Linwood Avenue and Simmons Road to the south, and Washington Road to the west. The Plan Area, also referred to as the Turlock Regional Industrial Park or TRIP, is partially developed with industrial and commercial uses, and the majority of the site is currently used for agriculture.

The City prepared the plan in order to facilitate economic growth in the industrial sector, with an emphasis on agricultural products, food processing, and related businesses. Through development of the WISP, Turlock aims to implement the General Plan’s goal for a major industrial center in Turlock, simultaneously improving the jobs-housing balance in the area. The plan covers land use regulations, design guidelines, and phasing. Through the creation and nurturing of an ‘Agri-Science’ industry cluster, which would include biotech, life sciences, and agri-business, the WISP aims to create a “bridge” for Turlock’s current agriculture and manufacturing industries to transition to newer products and technologies.

## MEETING GROWTH PROJECTIONS

### Household Growth Projections

Section 2.3 of the Land Use and Economic Development Element (Chapter 2) establishes low and high range population growth estimates (Table 3-1).

The General Plan uses the low end of these projections as the target number of households to accommodate over the course of the planning period (through 2030). However, the City acknowledges that due to this current climate of slow growth and economic recovery, it is also possible that Turlock’s population will not even achieve this low end projection by 2030.

TABLE 3-1: PROJECTED ADDITIONAL HOUSING NEED	
	APPROXIMATE ADDITIONAL HOUSING UNITS NEEDED BY 2030
Low Range	12,000
High Range	18,000
Midpoint	15,000

*Source: EPS, 2009*

### Development Sites within City Limits

According to their General Plan Land Use designations, infill sites (those that are vacant or substantially underutilized) have a maximum capacity for approximately 5,000 new housing units. However, given site constraints, property owners' intentions, and other factors, it is likely that only a portion of these sites will actually develop over the next 20 years; an estimate is 60 percent (3,000 units). The remainder of the development needed to house Turlock's expected growth would be within new neighborhoods in master plan areas, several of which are outside of the current city limits. The phasing and capacity of these areas is described below.

### Growth Phasing and Development of Master Plan Areas

Total development permitted under the General Plan land use diagram accommodates a reasonable amount of growth given regional projections and current market conditions, and historical trends. In fact, there is substantial capacity for new residential development within city limits on infill parcels throughout Turlock as well as in partially built out master plan areas (specifically the Northeast Turlock Master Plan and the East Tuolumne Master Plan areas). In addition to these master plans, the General Plan defines three additional new master plan areas: Southeast 1 (also known as Morgan Ranch, and located within city limits), Southeast 2, and Southeast 3. Areas 2 and 3 are outside of city limits. Policy 3.1-p requires that 70 percent of the aggregate housing units in the Northeast Turlock Master Plan, the East Tuolumne Master Plan, and Southeast 1 (Morgan Ranch) must be issued building permits before annexation, master planning, and development of Southeast 2 may begin. Table 3-2 shows the development potential and cumulative development by area.

### PREZONING AND ANNEXATION

Turlock's current pre zoning and annexation ordinance allows the City to prezone unincorporated land adjacent to the city limits for the purposes of establishing the zoning that will apply in the event that the land is annexed to the City. The purposes are twofold:

1. To promote the orderly development and expansion to boundaries of the City and
2. To protect, preserve, and promote the quality of life in the City by establishing control over the quality, distribution, and rate of growth in the City of Turlock.



*A substantial amount of development needed to support future growth can be accommodated on vacant and underdeveloped sites within city limits.*

TABLE 3-2: RESIDENTIAL DEVELOPMENT POTENTIAL BY AREA				
AREA	HOUSING UNITS BY AREA	CUMULATIVE HOUSING UNITS	POPULATION BY AREA	CUMULATIVE POPULATION
Existing (2010)	24,400	24,400	70,000	70,000
Approved Projects	1,400	25,800	3,800	73,800
Infill	4,800	30,600	12,700	86,500
Southeast 1 (Morgan Ranch)	1,200	31,800	3,300	89,800
Southeast 2	2,000	33,800	5,500	95,300
Southeast 3	3,400	37,200	9,300	104,500
<b>Total</b>		<b>37,200</b>		<b>104,500</b>
Note: Totals may not sum due to rounding. Totals are an approximation and may not represent precise future buildout due to the range in allowable density for all land use types and master plan areas.				

Land to be rezoned (and subsequently annexed) must be adjacent to the current city limits, located within the primary sphere of influence, and be planned for development consistent with the designations in the General Plan. The proposed development must also show that it fully mitigates all potential impacts to the schools, public park and recreation facilities, public safety facilities, and infrastructure.

The ordinance also requires that proposed annexations be accompanied by an area-wide plan, which may be accomplished either by a Specific Plan (subject to State government code requirements) or a Master Plan, with requirements specified by the City. Master Plans must describe the location and development standards for land uses and intensities; roads, utilities, and other public infrastructure; and parks, schools, and other public space. It must include a phasing plan and identify means of financing public improvements. The plan must also identify and describe any mitigation measures needed to offset any environmental impacts, and finally discuss consistency of the proposed Master Plan with the General Plan (including the Housing Element).

The General Plan supports the continuation of Turlock’s rezoning, annexation, and master planning strategy. It has proven to be a successful tool for creating desirable new neighborhoods, ensuring that new development pays its way and does not strain the City fiscally, and allowing Turlock to become a growth management model for other Valley cities facing similarly rapid population growth. New policies in this section build on Turlock’s development strategy, strengthening it to ensure that new growth areas create complete neighborhoods with a mix of uses and a range of housing types to best serve the city’s current and future population.

## COUNTY ISLAND STRATEGY

Turlock has a number of unincorporated “County Islands,” areas of unincorporated county land that are surrounded by incorporated Turlock on all sides. The islands are a result of piecemeal annexation over the years and property owners’ interests and preferences. Generally, the county islands are not served by City infrastructure or services; some have no curb and gutter improvements and their roads are not maintained to City standards. Similarly, Stanislaus County is technically responsible for their public safety services.

Turlock has an interest in incorporating the county islands and bringing their public infrastructure up to City standards, as this would help ameliorate public health and safety concerns. However, willingness on the part of landowners and Stanislaus County is necessary for incorporation, as is funding for infrastructure upgrades. Turlock is in the process of negotiating a cost-sharing strategy with the County that would split the cost burden between the two jurisdictions. For the largest of the islands (the “Montana-West” area), incorporation would likely take place through a master planning process similar to that for other unincorporated areas outlined later in this chapter. The boundary of the Montana-West master plan area is shown on Figure 2-2. It is also designated as a master plan area similar to Southeast 1, Southeast 2, and Southeast 3, but is not subject to the phasing policy that restricts when master plan development may proceed; in other words, development of Montana-West could proceed at any time.

While a formal master planning process may not take place for incorporation of the smaller county islands, property owners seeking annexation must still demonstrate that they have a plan to finance the needed improvements to bring their properties up to City infrastructure standards. At the time that annexation is being considered, the City and property owners may also reexamine the General Plan land uses designated on the properties and determine whether higher density/intensity uses are warranted or desirable, especially if increasing the intensity of development would improve the financial feasibility of incorporation.

The City’s overall strategy for County Island incorporation is described in Policy 3.1-m. The preliminary approach to the Montana-West area—treating it as a master plan area—is described in further detail in Section 3.2.



*A number of county islands lack curb and gutter infrastructure. A financing plan for these and other infrastructure improvements is necessary for incorporation.*

## POLICIES

### Guiding Policies

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- 3.1-a Proactively manage growth.** Proactively manage and plan for growth in an orderly, sequential, and contiguous fashion.
- 3.1-b Minimize negative effects through use of fiscal and infrastructure tools.** Plan and implement growth so as to minimize negative effects on existing homes and businesses within and outside the City. This shall include working with the County to establish fiscal and infrastructure tools to ensure that improvements to County roads and other infrastructure are being made as new development proceeds.
- 3.1-c Promote good design in new growth areas.** Design new growth and development so that it is compact; preserves natural, environmental, and economic resources; and provides the efficient and timely delivery of infrastructure, public facilities, and services to new residents and businesses.
- 3.1-d Maintain fiscal stability.** Ensure that costs associated with new growth do not exceed revenues, and the City's fiscal stability is maintained.
- 3.1-e Continue rezoning.** Continue to promote orderly expansion of the City's boundaries through rezoning territory prior to annexation.
- 3.1-f Provide adequate public services.** Ensure the adequacy and quality of public services and facilities for all residents.
- 3.1-g Master Plan Areas.** Plan for growth in phases and discreet master plan areas, so that neighborhoods are fully planned and at least 70 percent of building permits issued prior to the construction of the next master plan area.
- 3.1-h Provide a range of housing types.** Ensure a balance of housing types affordable to the complete range of income and age groups.

*See also policies in the Housing Element.*

## Implementing Policies

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- 3.1-i Utilize Housing Element.** Integrate Housing Element program components with growth policies.
- 3.1-j Capital improvement program review.** Continue to annually review the City’s Capital Improvement Program in order to increase capacity of needed public services in response to City growth.
- 3.1-k Northern boundary establishment.** Maintain Taylor Road as the northernmost boundary of urban development. The exception to this policy is for the area along State Route 99 at the northwestern corner of the Study Area (south of the Keyes Community Plan boundary).
- 3.1-l Capital Facilities Fee program.** Update the Capital Facilities Fee (CFF) to cover improvements and infrastructure that are used by residents and businesses citywide. The CFF shall include:
- Major new transportation infrastructure such as arterials, expressways, railroad and highway overcrossings, and interchanges
  - New bicycle lanes, traffic signals on existing streets and other operational improvements
  - New transit facilities and amenities
  - Downtown parking lots and structures
  - Regional rail facilities
  - Public landscaping
  - Park and ride facilities
  - Traffic calming strategies
  - Police and fire services
  - General government services
- The CFF shall not cover the costs of new collectors and local streets in new development areas, as these are to be funded through Master Plan fees. The CFF update shall also reflect the lower impacts of walkable neighborhoods within the city.*
- 3.1-m Develop County Islands incorporation strategy.** As development proposals for county island incorporation come forward, develop a financial plan with Stanislaus County to implement infrastructure improvements and any other requirements for annexation. The plan shall include a schedule and a priority list, focusing initial efforts on

the Montana-West area, as a master plan. It is the City's preference that whole county islands incorporate at one time; however, individual project-level proposals shall also be considered if the applicant can prove ability to provide the required infrastructure improvements. Preparation of financial plans may also offer the opportunity to reexamine these parcels' General Plan land use designations, and consider increasing density/intensity if it facilitates the financial feasibility of incorporation.

- 3.1-n Continue rezoning and annexation.** Continue to require that proposals for rezoning and annexation comply with the Residential Annexation Policy, Area-Wide Planning Policy, and the municipal code requirements relating to orderly and contiguous development, and public services and facilities. The policies under the City's Rezoning and Annexation ordinance shall be amended to reflect the new policies for master plans enumerated in Section 3.2.
- 3.1-o Update existing master and specific plans.** For existing master and specific plans that are not yet fully built out, evaluate the current plans for consistency with the new land use designations and other policies outlined in this General Plan, and update as necessary. Where the land use diagram (Figure 2-2) proposes a higher intensity land use within the boundary of an existing master or specific plan, rezoning shall occur only after the specific or master plan is updated and adopted. In these cases, until such time that the specific or master plan is updated, the current zoning for the property shall remain in place. Changes in designation that result in equal or lower intensity may be processed as part of the Citywide rezone action required to implement the new General Plan. The Northwest Triangle Specific Plan and the East Tuolumne Master Plan are high priorities for evaluation and updating.
- 3.1-p Timing.** A new master plan area may not proceed with planning, annexation and development until 70 percent of the building permits associated with the previous area have been issued. Prior to proceeding with the planning, annexation, and development of Master Plan Area Southeast 2, 70 percent of the building permits shall be issued for the Northeast Turlock Master Plan, East Tuolumne Master Plan, and Southeast 1 (Morgan Ranch), calculated on a cumulative basis.



## 3.2 LAND USE AND DESIGN OF NEW GROWTH AREAS

### DESIGNATING NEIGHBORHOODS: A NEW GENERAL PLAN APPROACH

This General Plan introduces a new concept of designating residential neighborhoods. Rather than assigning specific land use designations to individual parcels (like the previous General Plan), this approach identifies future master plan areas for new residential neighborhoods. While the City has engaged in the master planning process for some time, this General Plan is the first to specify the locations, boundaries, and phasing of those master plans in the document. The mix of uses, types of development and average density are defined for each master plan area.

The plan specifies a mix of uses that each master plan area must include, but does not precisely dictate where each land use must go. For instance, a neighborhood type might be required to include certain minimum percentages of housing at different densities, a minimum percentage of park land, schools, and public space, and a percentage of commercial and/or office uses. When a master plan is prepared for the development of the neighborhood, it must conform to these specifications. Precise locations of each land use are to be determined during the master planning process. The General Plan includes illustrative examples of how the required neighborhood specifications could be achieved, in the next section.

Each of the areas is given a general designation of a residential density range. Residential density is not assigned on a parcel-specific basis. Rather, when the area is master planned and developed, the overall density and number of units in the master plan area would have to meet this target (or exceed it by up to 20 percent), and would include a mix of housing types. When the master plan is approved, zoning is also put in place to reflect the specific land uses at the same time.

### COMPACT NEIGHBORHOODS

The character of the residential neighborhoods proposed for development over this planning period is more compact than the type of development that Turlock has seen over the last 10 years. The proposed residential neighborhoods include a mix of traditional single family, small-lot single family, townhouses, and multifamily apartments or condominiums.



*Residential development in new master plan areas will incorporate a variety of housing types and densities.*

### Why Compact Neighborhoods?

Turlock will be trending towards more compact residential development for several reasons:

- *Changing demographics*, relating to an aging population, means that there will be greater demand for smaller housing types. The number of residents over the age of 60 is growing rapidly, more than any other age group. Turlock has built up its single family detached housing stock significantly, and the next planning period needs to provide smaller housing types needed by seniors and other small households such as singles, empty-nesters, and single parents.
- *State mandates for greenhouse gas emission reductions* mean that Turlock will have to explore ways to reduce its carbon footprint. Land use and transportation are the single most important factor in achieving this goal. More compact housing means that residents can travel more easily on foot or by bicycle, and make fewer, shorter car trips.
- *Conservation of agricultural land*. Higher density development results in less farmland converting to nonagricultural use, helping Turlock support its agricultural economic base and farmland that creates a greenbelt.

### Demographic Factors and Housing Types

An important component of designing future neighborhoods is planning for an appropriate proportion of single family (very low, low and low-medium density) and multifamily (medium and high density) units. Estimating the number and percentage of these various unit types is driven by demographic trends and projections, by examining the average household sizes and age of householders in different unit types.

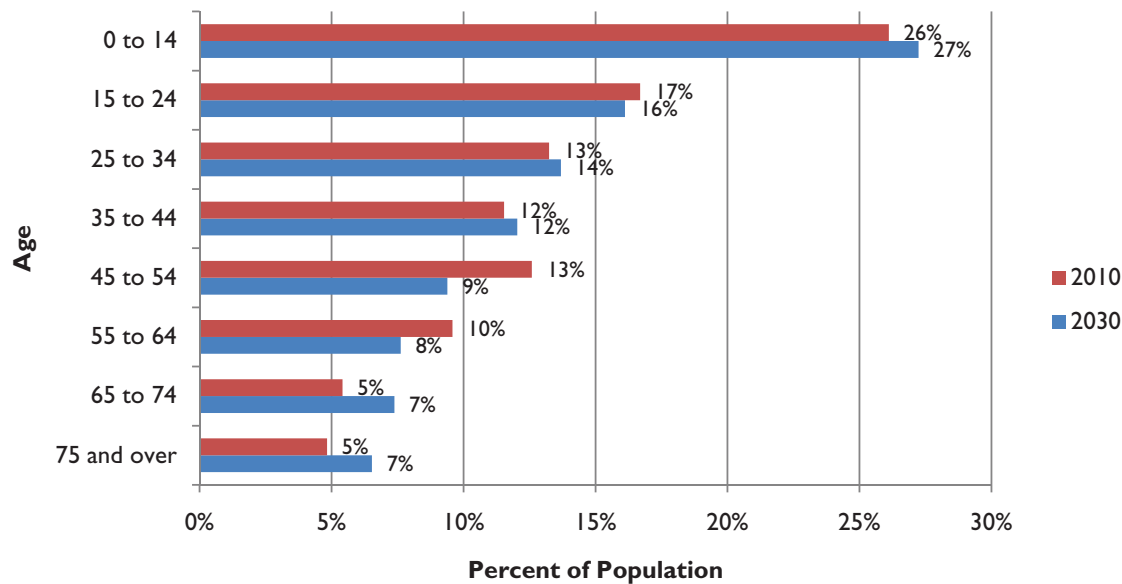
Demographic analysis (using Census and California Department of Finance data) shows that by 2030, Turlock's demographics will have shifted such that a greater percentage of the population is over the age of 65, and the percentage of adults aged 45-64 will have fallen (Figure 3-3). These changes in the city's age profile have implications for the type of housing that should be provided over the course of the General Plan buildout.

The data regarding housing type choices confirms what logic tells us. Young and small households often prefer multifamily units because of their affordability and their appropriateness for their household size and stage in life. Families and middle aged couples often prefer single family

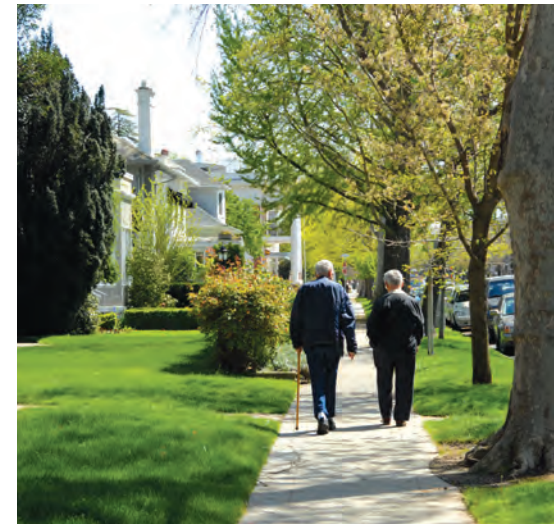
homes, which give them more space to raise children; at this stage in life, single family homes also become more affordable. Some families break up and need a smaller unit for their “new start” household. Finally, empty nesters, retirees, and elderly households often downsize to multifamily units again, due to a need for less space, a desire to reduce home maintenance responsibilities, lower incomes in retirement, and limitations on mobility. However, a significant percentage of seniors also choose to stay in single family homes they have purchased earlier and age in place.

It is important to remember that existing conditions do not necessarily dictate future demand. It may be that some households reside in units that are unsuitable or are not their preference based on what is currently available, and that if given more options, they would choose a different housing arrangement. Therefore, broader trends in housing demand must also be considered when determining the future housing type mix.

**Figure 3-2: Projected Population Age Cohorts, Turlock (2010 and 2030)**



Source: California Department of Finance, 2008



*Over the course of the General Plan buildout, an increasing proportion of Turlock’s population will be over the age of 65.*

In order to match Turlock’s projected age demographics, just over half (54 percent) of the new development over the planning period should be single family detached units, and the remainder should be multifamily units. Adding this proportion of housing types would result in Turlock’s entire housing stock reaching a split of 60 percent single family detached and 40 percent single family attached and multifamily. Currently, it is at 70 percent single family and 30 percent multifamily.

### Average Residential Densities across Master Plan Areas

The Master Plan Areas are each assigned a Residential Neighborhood designation, which sets the overall target residential density that the area must achieve. The housing mix for each master plan area must, while incorporating a range of housing types, achieve a minimum average density overall. Each neighborhood type also specifies a maximum average density. In each case, the maximum average density allowed is 20 percent higher than the minimum. If the developer of a master plan area wishes to build to a higher density than 20 percent above the minimum, then a General Plan amendment and an analysis of environmental impacts would be required.

The target density is specified for each master plan area or sub-section of a master plan area, and will be one of the following (Table 3-3):

- **Low Density Neighborhood:** Minimum average density of 5.0 units per gross acre; maximum average density of 6.0 units per gross acre;
- **Compact Mixed Use Neighborhood:** Minimum average density of 8.0 units per gross acre; maximum average density of 9.6 units per gross acre; and
- **Very Compact Mixed Use Neighborhood:** Minimum average density of 11.0 units per gross acre; maximum average density of 13.2 units per gross acre.

In order to achieve the minimum average density, individual housing developments within the master plan area may be above or below that density. In other words, each master plan will likely include a full range of housing types, from single family detached to townhomes and multifamily condominiums and apartments. The mix of these housing types over the entire master plan area must achieve the target minimum density, on average.

**TABLE 3-3: MINIMUM AND MAXIMUM AVERAGE DENSITIES IN NEW RESIDENTIAL NEIGHBORHOODS**

RESIDENTIAL NEIGHBORHOOD TYPE	MINIMUM AVERAGE DENSITY (GROSS DU/AC)	MAXIMUM AVERAGE DENSITY (GROSS DU/AC)
Low Density	5.0	6.0
Compact	8.0	9.6
Very Compact	11.0	13.2

Mixed Use Residential Neighborhoods also contain non-residential uses, generally consisting of a neighborhood center with neighborhood-serving commercial uses, a park, and a school. The neighborhood center should be walkable from the majority of households. Specific requirements for the mix of residential uses, non-residential uses, and other features of each Residential Neighborhood are found in Section 3.2.

**Neighborhood Center Land Use Classification**

The Neighborhood Center classification designates mixed use areas outside of Downtown—new neighborhood centers designed as part of new master planned residential neighborhoods. Neighborhood Centers are intended to serve as multi-use anchors for neighborhoods, emphasizing pedestrian access and orientation. Sites designated NC are required to have ground-floor retail, restaurants, or service uses facing the street, with offices and/or housing either above or behind. Both vertical and horizontal mixed use developments are permitted. Buildings are required to be oriented towards the street and may be up to four stories tall. Residential uses may be built at densities ranging from 7.0 to 22.0 units per acre (gross), with an average of around 15.0. If the mix of uses on the site includes residential and commercial/office uses, these non-residential uses in this classification shall generally be built to an FAR of 1.0, and up to 1.5 if two stories, in addition to the allowable residential density. Pedestrian linkages through the development to neighboring housing or other uses are encouraged; further design specifications and development standards are described in Chapter 6: City Design.



*Neighborhood centers may include mixed use developments, with ground floor retail or office uses and housing above.*

## **POLICIES COMMON TO ALL MASTER PLAN AREAS**

The General Plan Land Use Diagrams (Figure 2-2 and 2-3) delineate four master plan areas: three in the southeast and one centrally located in the city (the Montana-West county island area). Each master plan area will be planned and developed via an area plan (either a Master Plan or a Specific Plan), in accordance with the phasing schedule described above, that conforms to the requirements set forth in the City’s Prezoning and Annexation ordinance and this section of the General Plan.

A number of planning and design features should be common to all of the new master plan areas, which are described in the policies below. Additional requirements pertain to some master plan areas individually, which are detailed in the subsequent section and depicted in Illustrative Master Plan Diagrams for each area. These are intended to provide guidance for the master planning process and to clearly state the City’s intentions for these areas. Where the size, location, and/or configuration of a certain land use or feature is considered critical to the master plan area’s design and function, it is included. However, in general, details such as park size, wet utility infrastructure sizing, and urban design criteria for new development in the master plan areas is not provided in this section. Rather, it is assumed that all new development will conform to the standards and policies set forth in other relevant sections of this document. Phasing of infrastructure improvements will be established in the master plan documents.

### **Principal Master Plan Area Policies**

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#### ***Size and Boundaries***

**3.2-a Master plan size.** A new master or specific plan should be approximately 200 to 400 acres in size, and occupy a logical area, contiguous to the city limits.

*However, one master plan area shown on Figure 2-3 is larger—Southeast 3—because it incorporates a large area of existing low density housing (rural “ranchettes”) and other existing commercial and industrial development.*

**3.2-b Rights of way within planning boundary.** Rights of way, utilities, and agricultural buffers shall all be included within the master plan boundary.

**3.2-c Urban/rural edge.** Where master plan areas meet the edge of the study area boundary (outside of which land remains in agricultural use), deep landscaped setbacks and agricultural buffers shall be used to screen the edge of urban development. Acceptable buffer types and setback requirements are found in Section 6.1.

***Land Uses, Intensities, and Mix***

**3.2-d Minimum average densities established for master plan areas.** Each master plan, or portion of a master plan, must be built to achieve the minimum average residential density specified on the Land Use Diagram and may go up to an overall average density that is 20 percent higher. (If the developer of a master plan area wishes to build to a higher density than 20 percent above the minimum, then a General Plan amendment and an analysis of environmental impacts would be required.)The minimum density calculation does not apply to land that is to be used for public parks, schools, or other non-residential uses.

**3.2-e Mix of housing types and densities required.** Each area will have a required mix of housing types, including traditional single family, small-lot single family, townhouse, and apartments/condos. The housing mix must achieve the minimum average density specified for each master plan. Regardless of the minimum average density, every master plan must include a minimum of 15 percent multi-family units.

**3.2-f Neighborhood centers required.** A “neighborhood center” location shall be zoned and required, and will include a park, school, local-serving retail and/or office uses, and some upper-level or adjacent multifamily residential development. The zoning ordinance shall also be updated to reflect and allow this type of mixed use designation.

*Appropriate non-residential land uses for neighborhood centers in residential areas include, but are not limited to, those in the following list. Drive-through establishments are strongly discouraged.*

- Grocery and other convenience retail sales
- Personal services
- Banks and financial institutions
- Restaurants, coffee shops, and cafes
- Upper level residential
- Business and professional offices
- Medical and dental offices



*Elementary schools serve as anchors for new neighborhoods. Schools are generally located adjacent to parks to facilitate sharing of facilities.*

- Day care centers
- Community centers
- Cultural institutions (libraries, museums, theaters)
- Parks and schools

### ***Schools, Parks, and Public Facilities***

**3.1-g Parks and trails provided in new neighborhoods.** The master plan areas will include park sites, a pedestrian/bicycle network of trails, and a multi-use agricultural buffer along the edge (serving park, stormwater detention, trail, and buffer purposes). When a school is present, a neighborhood park shall be located adjacent to it whenever feasible. The minimum amount of gross land area in a master plan devoted to parks and public facilities shall be 10 percent, and should generally be higher.

*Parks are to be provided according to the citywide size and distribution standards listed in Section 4.1.*

**3.2-h Schools in new neighborhoods.** Neighborhoods shall include sufficient schools to support the residential population. Schools shall be located along local, collector, or arterial streets, but entrances may not be located on arterials.

*Schools are to be provided according to the citywide size and distribution standards listed in Section 4.3.*

*In most cases, these will be elementary schools; however, given expected population growth, a new middle and high school will also be needed. The master plan areas in which these secondary schools belong are described in the subsequent sections. For some master plan areas, existing schools near new development have sufficient capacity to support the new population, and where that is the case, new schools will not be required.*

**3.2-i Dedication for public uses.** Based on the proportional impacts of development on the demand for public services and facilities, a portion of any new residential neighborhood shall be conveyed or voluntarily committed in fee simple title to the City for public uses, including but not limited to schools, libraries, and police and fire stations. These conveyances must be in a development agreement or other form approved by the City Attorney.

*Land needs for these public uses shall be determined by the citywide standards and policies described in Section 4.2 (Community Facilities) and Section 10.4 (Public Safety).*



### ***Streets, Blocks, and Connectivity***

- 3.2-j Consistency with General Plan circulation diagram.** In order to ensure connectivity to the existing city, through new neighborhoods, and to the freeway, collector and arterial streets in master plan areas must be designed, and sufficient right-of-way reserved, to comply with the citywide circulation plan described in Chapter 5. Minor deviations may be approved provided that they have no negative impact on the overall circulation network.
- 3.2-k Maximum block sizes.** Encourage a fine-grained street pattern, vehicular and pedestrian connectivity, and a human scale of development by requiring maximum block sizes, measured from street centerline to street centerline:
- In low density residential areas, block length shall not exceed 660 feet.
  - In medium and high density residential areas, block length shall not exceed 500 feet, with the ideal block length around 300-400 feet.
- 3.2-l Limit Cul-de-sacs.** Cul-de-sacs, hammerheads, or similar dead-end streets shall not make up more than 10 percent of the total length of all streets in a master plan area. Pedestrian connections through the ends of cul-de-sacs to adjacent through streets are encouraged, especially where such pathways would facilitate connections to parks or schools.
- 3.2-m Local street connections between neighborhoods.** Where a new residential subdivision occurs adjacent to undeveloped land, which is planned to be developed as part of a master plan, stubs must be provided for future connections to the edge of the property line. Where street stubs exist on adjacent properties, new streets within a new subdivision shall connect to these stubs.
- 3.2-n Pedestrian and bicycle connections.** Continuous and convenient pedestrian and bicycle connections shall be provided from every home in a master plan area to the nearest neighborhood center, school, and park. Pedestrian connections may be in the form of sidewalks, linear parks, or Class I multi-use trails. Bicycle connections may be in the form of Class I, Class II, or Class III bicycle facilities (refer to Section 5.3), and local streets.



*Pedestrian and bicycle connections through neighborhoods improve access from homes to parks, schools, and other destinations.*

## MASTER PLAN AREA: SOUTHEAST 1 (SE1 OR MORGAN RANCH)

### Overview

Southeast Area 1 is also known as Morgan Ranch. As of 2012, Morgan Ranch is in the entitlement process. Comprising approximately 170 acres, the roughly triangular area is bounded by Highway 99 to the south, Golf Road to the east, and Glenwood Avenue to the north. Morgan Ranch will be developed as a compact mixed use residential neighborhood, exhibiting somewhat higher overall densities than the city as a whole. Primary access to the neighborhood would be via Golf Road, Glenwood Avenue, and new east-west arterials and collectors.

Southeast Area 1 is designated on the General Plan Land Use Diagram as a Compact Residential Neighborhood, with a minimum average residential density of 8.0 dwelling units per acre and a maximum average density of 9.6 dwelling units per acre (gross).

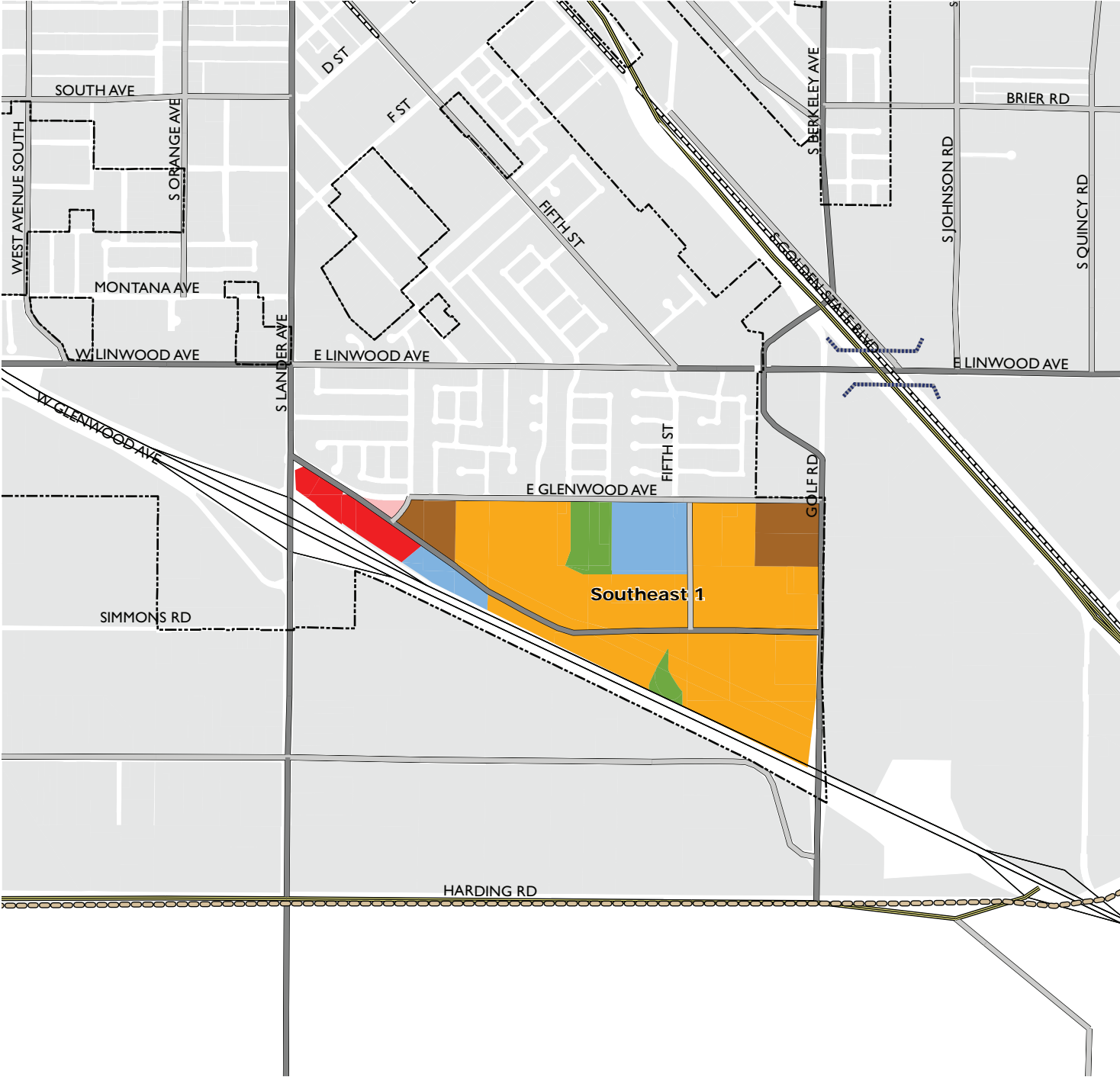
Approximately two-thirds (116 acres) of SE1 is to be developed with residential land uses. The balance will be a neighborhood park, an elementary school, limited office and heavy commercial, and a linear detention basin adjacent to the freeway.

Figure 3-3 shows an illustrative diagram of how the master plan area may be developed in accordance with these standards, including a potential distribution of land uses consistent with the land use designations described in Chapter 2. The following master plan development guidelines apply.

### Master Plan Guidelines

- The linear detention basin/landscaped buffer shall be parallel to Highway 99 on the north side.
- Community commercial uses shall be concentrated in the western corner of the area, adjacent to the freeway where Glenwood Avenue meets Lander Avenue.
- High density residential shall be distributed in two clusters throughout the area, in the northeast corner (at Golf and Glenwood) and the west (where Glenwood meets the Morgan Ranch arterial).
- The neighborhood park and elementary school shall be adjacent to each other, centrally located in the new neighborhood.

**Figure 3-3: Illustrative Master Plan: Southeast 1**



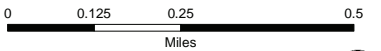
- Medium Density Residential  
*(7-15 du/ac, 11 average)*
- High Density Residential  
*(15-40 du/ac, 22.5 average)*
- Community Commercial
- Office
- Public
- Park

**Circulation (2030)**

- Freeway
- Expressway
- Arterial
- Collector
- Railroads

**Boundaries**

- Study Area Boundary
- City Limits & County Islands



Source: City of Turlock, 2011; Dyett and Bhatia, 2011.





*Small neighborhood-serving commercial centers provide residents with easy access to daily goods and services close to home.*

- Office development shall be located adjacent to the community commercial and high density residential areas in the western corner of the area.
- Medium density residential shall occupy the remainder of the site.
- One of the main design considerations shall be the mitigation of noise and health risks associated with locating residential uses adjacent to Highway 99.

### Circulation Access and Major Improvements

- At minimum, Class II bicycle access is to be provided along the new Morgan Ranch Arterial, Golf Road, and the north/south collector between Glenwood Avenue and the Morgan Ranch Arterial.
- At minimum, marked Class III bicycle access is to be provided along Glenwood Avenue.
- The roadway network necessary to support development in the master plan area is shown in Figure 3-3 and Figure 5-2. Major roadway improvements associated with this master plan area include, but are not limited to, the Lander Avenue interchange improvements and the Morgan Ranch arterial.

### Special Considerations or Unique Circumstances

Morgan Ranch is already located within city limits; therefore, an annexation process is not necessary. Because of this circumstance, this area is included in Phase I of the growth management plan and will be able to develop in advance of other areas requiring annexation.

## MASTER PLAN AREA: SOUTHEAST 2 (SE2)

### Overview

Southeast Area 2 consists primarily of the two quarter sections (320 acres) located north of East Avenue, south of Hawkeye Avenue, and east of Daubenberger Road. For the purposes of efficient infrastructure provision, the master plan area also includes another 24 acres of unincorporated land north of East Avenue, south of Marshall Street, and west of Quincy Road. SE 2 is

to be developed as a new residential neighborhood, showcasing many aspects of neighborhood planning that this General Plan emphasizes:

- Compact residential development;
- A complete linear park system linking several neighborhood parks; and
- A mixed use neighborhood center with a school, park, higher density housing, and offices.

On the General Plan Land Use Diagram, the large contiguous section of SE2 (east of Daubenberg) is designated as a Compact Residential Neighborhood, with a minimum gross density of 8.0 dwelling units per acre and a maximum density of 9.6 dwelling units per acre. The smaller area west of Quincy Road is designated as a Very Compact Residential Neighborhood, with a minimum gross density of 11.0 units per acre and a maximum density of 13.2 dwelling units per acre.

The majority of development in SE2 will be housing, with the balance consisting of parks (linear and neighborhood), a small mixed use neighborhood center emphasizing office uses, and an elementary school. While most neighborhood centers in master plan areas might have a predominance of retail uses, the center in SE 2 shall have more of an office focus so as not to compete with the neighborhood-serving retail located at the nearby Village Corner center.

Figure 3-4 shows an illustrative diagram of how the master plan area may be developed in accordance with these standards, including a potential distribution of land uses consistent with the land use designations described in Chapter 2. The following master plan development guidelines apply.

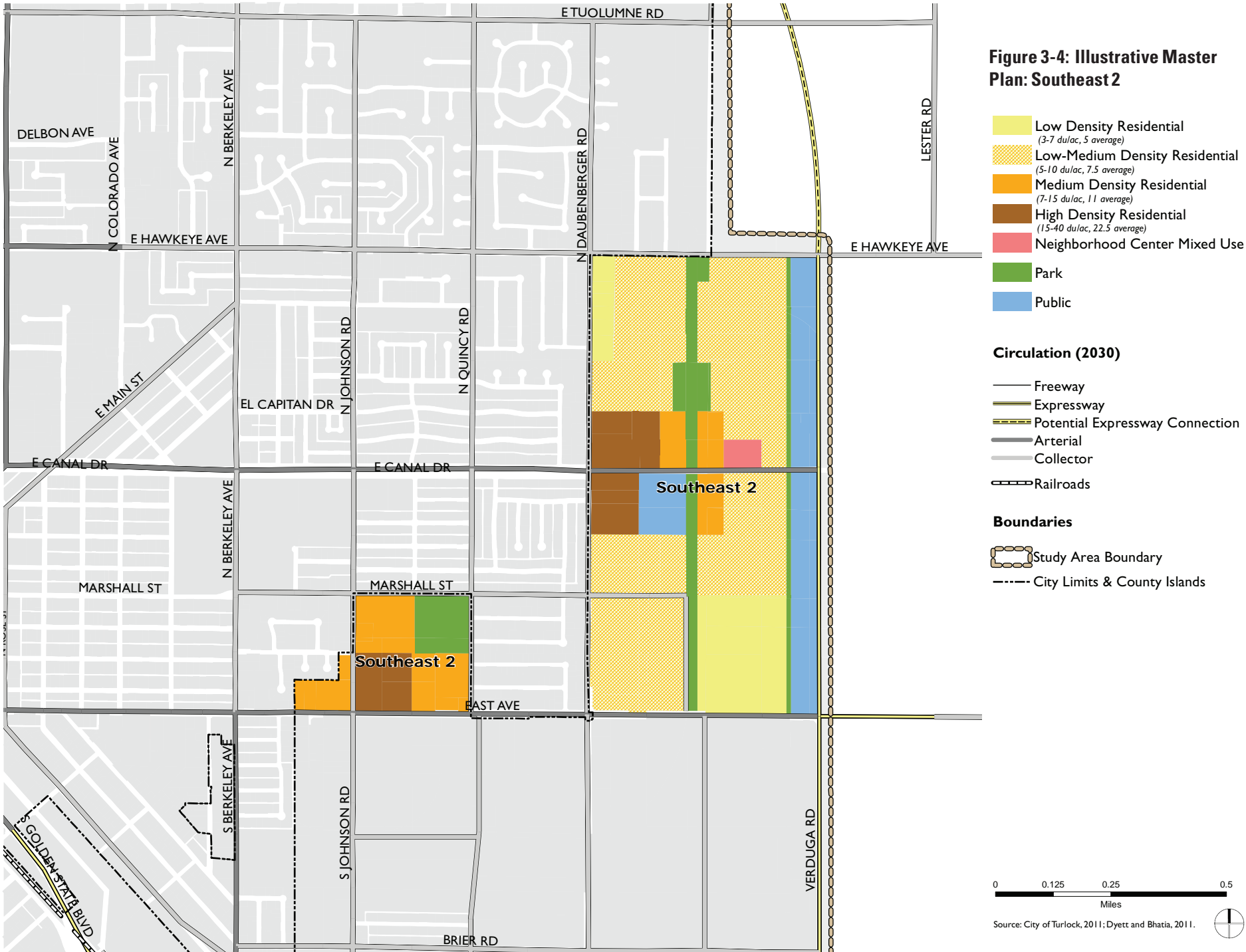
### Master Plan Guidelines

- Concentrations of medium and high density residential development are in the smaller, western portion of the master plan area, west of Quincy Road. Medium and high density housing shall also be located adjacent to the neighborhood center, school, and park, on both sides of Canal Drive. This concentrates the highest density of homes closest to Downtown.



*Residential development will be separated from the new east side arterial by a linear park/greenway and multi-use path.*

**Figure 3-4: Illustrative Master Plan: Southeast 2**



- Connected linear park systems run north-south through the center of the larger master plan area and along the eastern border of the study area. The Class I multi-use trail also continues along the Canal Road extension (however, the canal itself may be put underground). If the canal is not put underground, the north-south linear park shall include a crossing over the canal to ensure connectivity of the park and trail system. Neighborhood parks are distributed throughout the area, walkable from the majority of households; one is adjacent to a new elementary school. The dimensions and sizes of the linear and neighborhood parks shall meet the standards set forth in Chapter 4: Parks, Schools, and Community Facilities.
- The only roadways permitted to cross the linear park system are Canal Drive, Hawkeye Avenue, and East Avenue. Pedestrian and bicycle crossings are permitted at any point, and a pedestrian/ bicycle crossing must be provided over the canal where it intersects the north-south linear park.
- The new neighborhood center is located in the central area of the master plan on Canal Drive, and consists of a park, school, and local-serving office and personal service uses. It is close to other stores and Turlock High School. The shopping center is approximately three to five acres.
- A range of low-medium density housing types, with an average density of around 7.5 units per acre, occupies the majority of the master plan area east of Daubenberger Road. Low density housing (average density around 5 units per acre) may be located in the northeast and southeast corners of the master plan area.
- The small sub-area of Southeast 2, roughly bounded by Marshall Street, North Quincy Road, East Avenue, and North Johnson Road, and including several additional parcels west of Johnson, shall have a mix of medium and high density residential development, with a neighborhood park occupying the southwest corner of Marshall and Quincy. The size of the park shall be developed in accordance with the standards in Chapter 4.

### Circulation Access and Major Improvements

- Class I bicycle access shall be provided through the linear park that runs north/south through the center of the master plan area, through greenbelt buffer along the east side, along Canal Drive, and between the linear park and the greenbelt buffer near the southernmost neighborhood park (see Figure 5-3).



*Creation of a complete, vibrant new neighborhood center is an important anchor for the new master plan area, especially to complement the development of a new community park and high school.*

- At minimum, Class II bicycle access is to be provided along Daubenberger Road, Verduga Road/new East Side Arterial, and East Avenue.
- The roadway network necessary to support development in the master plan area is shown in Figure 3-4 and Figure 5-2. Major roadway improvements associated with this master plan area include, but are not limited to, the extension of Canal Road east to Verduga Road and construction of the Northeast Expressway from East Avenue to Christofferson Parkway. The expressway alignment would be determined by a roadway circulation study (see section 5.2).

### MASTER PLAN AREA: SOUTHEAST 3 (SE3)

#### Overview

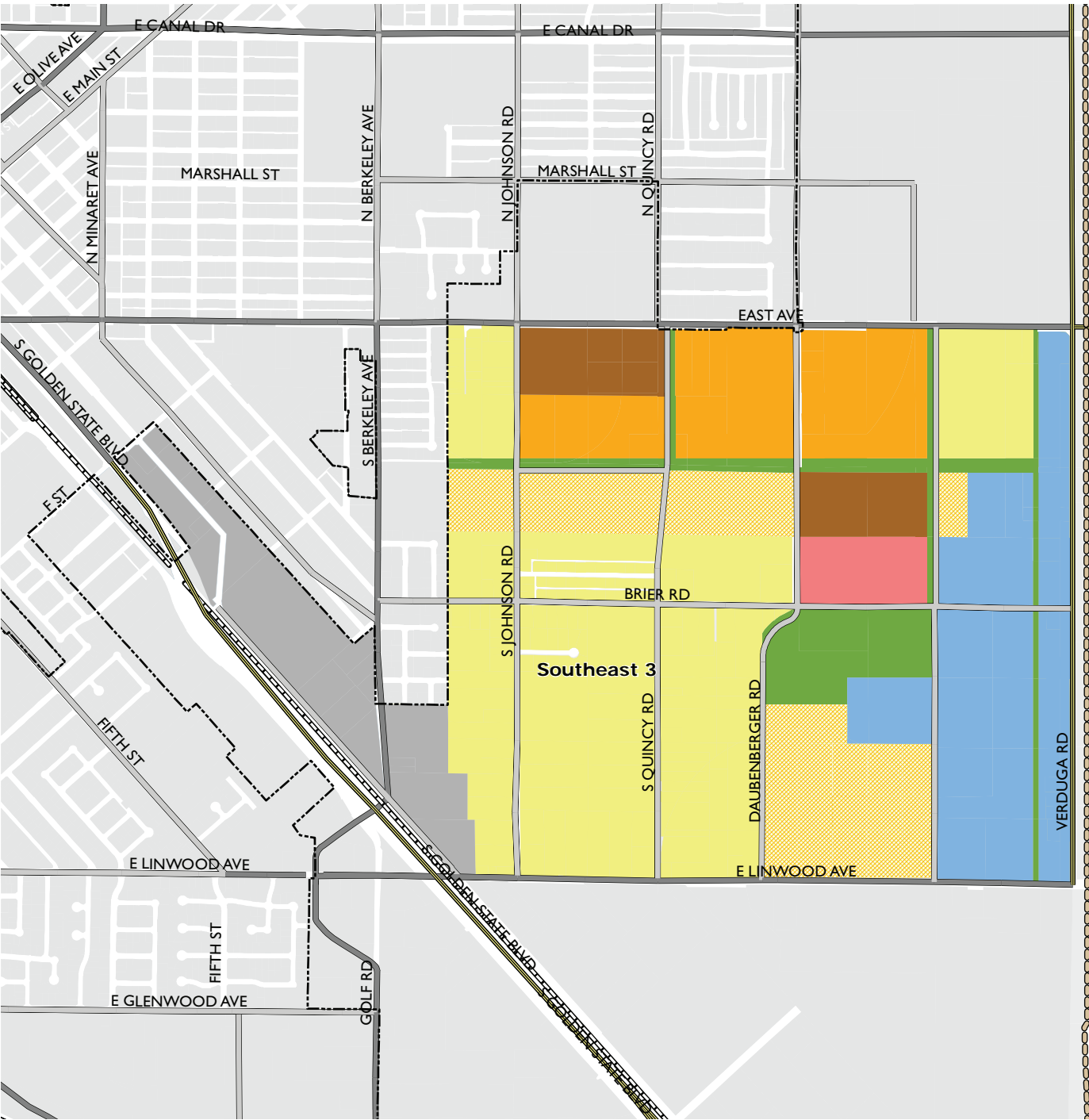
Master plan area Southeast 3 covers the most land and includes the greatest diversity of uses. Comprising almost 700 acres, it includes land for new residential neighborhoods, partially developed industrial areas along South Golden State Boulevard, and an area of rural “ranchettes” typical to the Valley. SE3 shall also be the site of Turlock’s newest community park, providing a wide variety of recreational amenities to the southern and eastern portions of the city. This master plan area also includes a new middle and high school (sharing some facilities). The site, which will include sports fields and other amenities to be shared with the public, will occupy between 70 and 80 acres.

Development of this master plan area will lead to an improved railroad at-grade crossing at the historically problematic Golf Road/Berkeley Avenue intersection as well as a new railroad overcrossing at Linwood Avenue just to the south.

As shown on the General Plan Land Use Diagram, SE3 is given several land use designations. On both sides of South Golden State Boulevard and the railroad, the area is designated for non-residential uses only (industrial). Between Brier Road and Linwood Avenue, and west of Daubenberger Road, the area is designated as a Low Density Residential Neighborhood with a minimum gross residential density of 5.0 units per acre. This is where existing “ranchette” properties are located. The remainder of the master plan, primarily north of Brier Road and south of East Avenue, is designated as Very Compact Residential Neighborhood, with a minimum gross density of 11.0 units per acre overall.



**Figure 3-5: Illustrative Master Plan: Southeast 3**



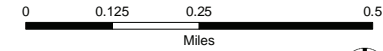
- Low Density Residential  
*(3-7 du/ac, 5 average)*
- Low-Medium Density Residential  
*(5-10 du/ac, 7.5 average)*
- Medium Density Residential  
*(7-15 du/ac, 11 average)*
- High Density Residential  
*(15-40 du/ac, 22.5 average)*
- Neighborhood Center
- Industrial
- Public
- Park

**Circulation (2030)**

- Freeway
- Expressway
- Arterial
- Collector
- Railroads

**Boundaries**

- Study Area Boundary
- City Limits & County Islands



Source: City of Turlock, 2011; Dyett and Bhatia, 2011.





*Medium density housing types, such as townhomes, will help establish a “critical mass” of residents in the new neighborhood.*

Land uses in SE 3 shall include the full range of housing types, from low density ranch-style homes in the ranchette area to high density apartments to support Downtown. A neighborhood center will include neighborhood-serving retail, an elementary and middle school, and a community park.

Figure 3-5 shows an illustrative diagram of how the master plan area may be developed in accordance with these standards, including a potential distribution of land uses consistent with the land use designations described in Chapter 2. It should be noted that SE 3 also includes a small area outside the current city limits, south of the existing Turlock Regional Water Quality Control Facility (RWQCF) (shown on Figure 2-3), to construct public infrastructure improvements that will be needed to accommodate cumulative growth within this master plan area. This area shall be developed only for the purpose of improving the storm drainage/retention system and may not be used for any other public use. The following master plan development guidelines apply.

### Master Plan Guidelines

- Low-medium, medium, and high density housing shall be located along East Avenue and along the northern side of the mixed use neighborhood center.
- Housing density shall gradually decrease as it moves south toward Brier Road.
- Low density residential is located primarily south of Brier Road and west of Daubenberger Road.
- A neighborhood center, consisting of neighborhood-serving retail and housing, is located north of Brier Road, just east of Daubenberger Road. The neighborhood center, including retail, housing, and other uses, shall be approximately 40 acres.
- An elementary and middle school shall be located immediately east or west of the neighborhood center, near the community park.
- A new high school is to be located in the southeast corner of the master plan area, adjacent to and east of the new community park and north of Linwood Avenue. It is to be separated from the new east side expressway by a greenway buffer, which may be used by the school for joint open space use purposes. Automobile access directly from the expressway to the high school shall not be permitted.

- A community park is included, at a minimum size of 30 acres (not including storm drainage area). It is the southern terminus of the north/south linear park system that runs through SE 2 and 3. It may include a lake (that also serves as storm drainage) on up to an additional 12.5 acres.
- A linear park and multiuse trail system runs north from the community park and east-west, connecting the schools and park in the east to higher density housing to the west. The linear park must be continuous and connected both east-west and north-south. Brier Road and East Avenue may cross the linear park. Industrial land uses are located on both sides of South Golden State Boulevard, north of Linwood Avenue.

### Circulation Access and Major Improvements

- Class I bicycle access shall be provided along all linear parks and greenbelt buffers, along the perimeter of the new community park, along the north side of the new middle/high school campus, and south from the community park to Linwood Avenue.
- At minimum, Class II bicycle access shall be provided along Daubenberger Road, Linwood Avenue, Verduga Road/new East Side arterial, Johnson Road, East Avenue, and Berkeley Avenue.
- The roadway network necessary to support development in the master plan area is shown in figures 3-5 and 5-2. Major roadway improvements include, but are not limited to, the Linwood overcrossing and improvements of various county roads to City collector standard.

## MASTER PLAN AREA: MONTANA-WEST (COUNTY ISLAND)

### Overview

“Montana-West” is an area encompassing three of Turlock’s seven unincorporated County Islands, including the largest one, comprising approximately 50 acres. It is roughly bounded by Montana Avenue to the south, State Route 99 and Soderquist Road to the west, South Avenue to the north, and Orange Street to the east. Low density residential development is the predominant land use, with a significant number of vacant and/or underutilized parcels.

The lot sizes, development density, and parcelization pattern create a significant opportunity for introduction of new streets and parcel subdivisions on a lot-by-lot basis. The street plan concept would provide an attractive neighborhood street network, adding value and allowing owners to subdivide. The new streets would allow the area to avoid an overabundance of “flag lots” and overuse of existing, substandard streets, while creating a new neighborhood feel. Subdivision of large lots would create opportunities for a denser, more connected neighborhood while retaining the area’s single family character. Improvements to the street and infrastructure system would be financed by the subdivision process. Overall, over 180 new single family lots could be created.

### Master Planning and Timing of Development

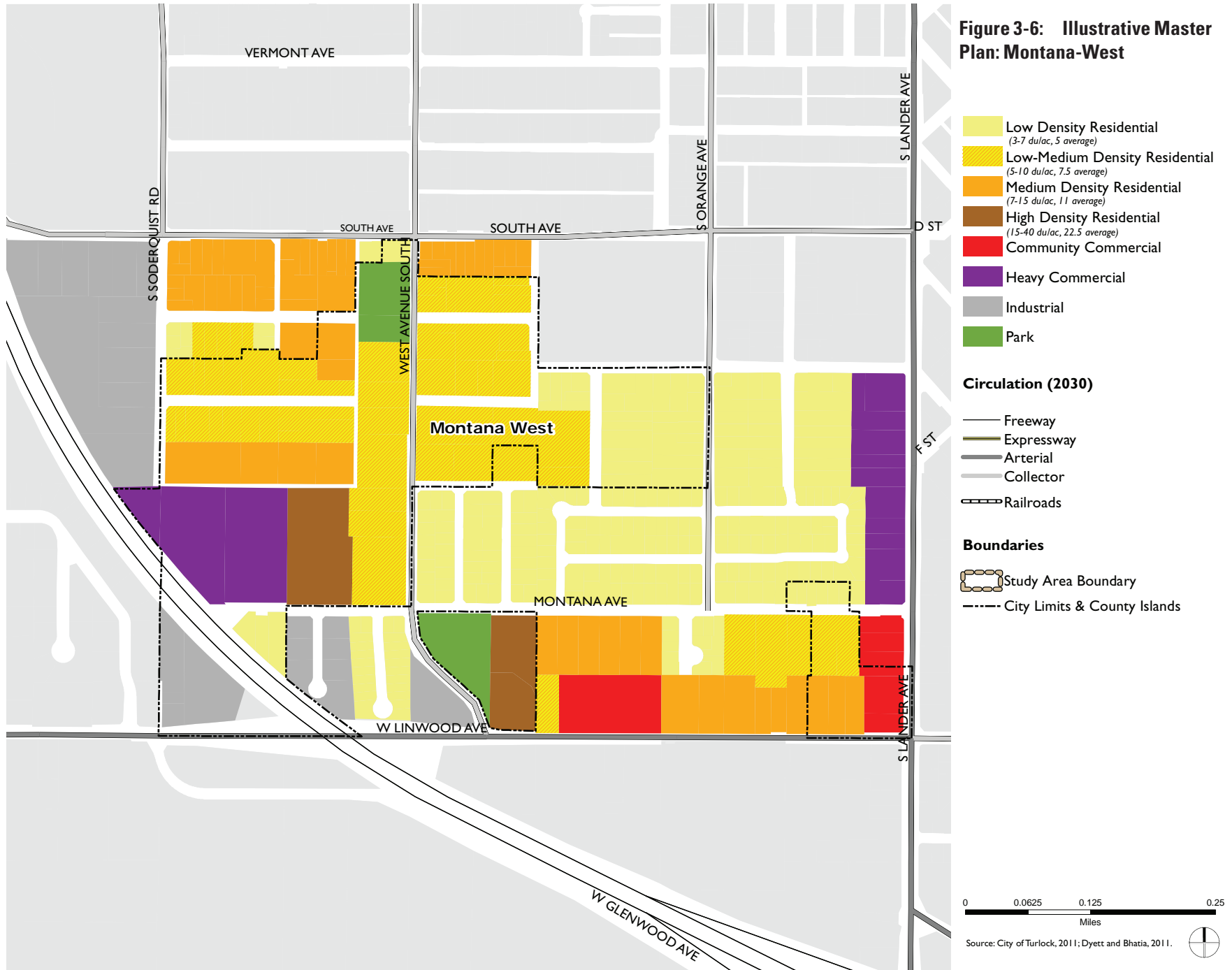
Incorporation and improvement of all County Islands is a high priority for the City of Turlock. From a phasing perspective, these areas are treated as “infill” and therefore may fully develop at any time. Pursuant to Policy 3.1-m, a strategic plan for the annexation and improvements of the County Islands will be prepared, with the Montana-West area as a high priority for development. The plan will include a financial strategy for bringing infrastructure in the area up to City standards. In order to arrive at an appropriate fee per unit, overall density in the master plan area would likely have to be increased from its current state. The strategic plan will evaluate whether this could be accomplished via the illustrative lotting plan presented in the General Plan appendix, which would retain the predominantly single family nature of the area, or whether residential density would be further increased to accommodate medium and or high density development on certain larger parcels.

The master planning, annexation, and further development of this area may proceed at any time during General Plan buildout and is not subject to the master plan phasing policy. Figure 3-6 illustrates land uses for Montana-West, which reflect the existing single family nature of the area and show where higher density development could be accommodated. A conceptual street network and lotting plan for the Montana-West area is included as Appendix A; this is intended to inform the preparation of a more detailed master plan in the future.

### Circulation Access and Major Improvements

- The master plan area is already served by marked Class III bicycle access along Orange Avenue. At minimum, new Class II bicycle access shall be provided along Soderquist Road, West Avenue South, South Avenue, Linwood Avenue, and Orange Avenue between .

**Figure 3-6: Illustrative Master Plan: Montana-West**



- There are no major roadway improvements specifically associated with the Montana West master plan area. However, some improvements beyond those listed in the other master plan area descriptions will be needed to support buildout of infill areas citywide, and overall growth as the master plans develop. These include improvements to the Fulkerth Road interchange and the Main Street interchange.

### 3.3 INFRASTRUCTURE

This section discusses the planning, provision, and maintenance of City infrastructure including: potable water, sanitary sewers, wastewater treatment, storm drainage, and solid waste. As required by State law, this section also addresses water conservation, water recycling, and solid waste recycling. The goal of planning for public infrastructure is to ensure the provision of adequate facilities to serve new development under the General Plan while maintaining service standards for existing development.

Water and wastewater utilities require substantial financial investment for both construction and maintenance; therefore, the provision of such infrastructure is a major factor in the amount, type, and location of growth that the community can anticipate. Consistent with the General Plan land uses, infrastructure must be sized and planned according to reasonable anticipated growth rates.

It is important that the City's water, wastewater, and stormwater systems be viewed and planned as interrelated systems. For example, potable water used in homes and businesses becomes wastewater that must be conveyed by the sanitary sewer system and treated at the Turlock Regional Water Quality Control Facility. Some of the highly treated effluent is used for landscape irrigation and for cooling a power plant, which reduces the water demands placed upon the aquifer. Also, stormwater recharges the groundwater, which is then used for potable water supply.

#### WATER SUPPLIES, DEMANDS, AND DISTRIBUTION

The City's water supplies, demands, and distribution system are discussed below. Turlock's existing potable water infrastructure is shown on Figure 3-7.

## Water Supplies

The City of Turlock has several existing water supplies, including:

- Groundwater for potable water uses;
- Groundwater for nonpotable uses;
- Recycled water for nonpotable uses; and
- Stormwater runoff for landscape irrigation.

Additionally, as a member of the Stanislaus Regional Water Authority (SRWA), the City is actively developing a future surface water supply from the Turlock Irrigation District (TID) for potable water uses.

### *Groundwater Supplies*

The California Department of Water Resources (DWR) delineates groundwater basins throughout California through its publication “California’s Groundwater Bulletin 118.” The City of Turlock is located in the Turlock Subbasin of the San Joaquin Groundwater Basin.

The Turlock Subbasin lies on the eastern side of California’s San Joaquin Valley, and encompasses portions of both Stanislaus and Merced counties. The groundwater system is bounded by the Tuolumne River on the north, the Merced River on the south, and the San Joaquin River on the west. The eastern boundary of the system is the western extent of the outcrop of crystalline basement rock in the foothills of the Sierra Nevada. Land uses in the Turlock Subbasin are diverse and include agriculture, urban, and commercial or industrial uses distributed in a mosaic throughout the region.

The Turlock Subbasin underlies an area of approximately 347,000 acres, with irrigated crops (245,000 acres), native vegetation (69,000 acres), and urban development (20,000 acres) as the predominant land uses. The general trend in land use throughout the Subbasin has been an increase in urbanization from less than 4,000 acres in 1952 to approximately 20,000 acres in 2006. The majority of this urbanization has occurred within the cities and unincorporated urban areas within the Turlock Irrigation District boundary.

There are three interconnected bodies of groundwater in the Turlock Subbasin—the unconfined/semi-confined aquifer, which is fresh water in the alluvium above the E-clay,<sup>1</sup> the confined aquifer contained in the alluvium beneath the E-clay, and saline groundwater in the older marine sediments and rocks beneath the fresh water.

Groundwater levels fluctuate with seasonal rainfall, withdrawal and recharge. Rainfall in the Turlock Subbasin Area averages about 12 inches per year, much less than the annual groundwater extraction and evapotranspiration. Inflows to the Turlock Subbasin result primarily from the deep percolation of agricultural and landscape irrigation water and the infiltration of precipitation. According to the Turlock Groundwater Management Plan (2007), the estimated average total inflow for 1997-2006 was 519,000 acre-feet per year. Approximately 72 percent of this inflow occurs on 245,000 irrigated acres of cropland within the Subbasin. The use of groundwater by the City and for adjacent agricultural purposes has resulted in periods of lowered groundwater levels near Turlock. Since the mid-1990s, the groundwater levels near the City have fallen by about 15 feet.

Most of the groundwater recharge comes from surface application of water in the form of agricultural irrigation. Landscape irrigation, precipitation and septic tank seepage account for a smaller share of the recharge.

Groundwater levels have been declining since the mid-1990s. In 2008, the Turlock Groundwater Basin Association published “Assessment of Future Groundwater Impacts Due to Assumed Water-Use Changes Turlock Groundwater Basin.” The Assessment was essentially a “water budget study” that analyzed past trends in land use and groundwater use and extrapolated those trends into the future to assess the impact of land use changes on groundwater supplies. The groundwater contour maps used in the water budget study indicated that estimated volume of groundwater in storage decreased by approximately 21,500 acre-feet per year between 1997 and 2006. Unfortunately, recent reductions in the California Department of Water Resources (DWR) monitoring network have introduced uncertainty in the measurement of groundwater levels, which translates into uncertainty in storage estimates. Therefore, the magnitude and direction of changes in groundwater storage cannot be fully characterized through an analysis based solely on the groundwater contours.

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<sup>1</sup> The E-clay, also known as the Corcoran clay, is a blue to gray silt/clay layer which occurs in the middle of the older alluvium throughout the Study Area.



The estimated reduction in storage between 2002 and 2006 suggests that the Subbasin may no longer be in the equilibrium state that existed in the 1990s. Most likely, increased urbanization within the western part of the Turlock Subbasin and expanded agricultural irrigation with groundwater within the eastern part have resulted in this slight long-term downward trend in groundwater levels. Although water use within the basin has been increasing, hydrodynamic adjustments within the basin have been nearly keeping up with the changing water use. The principal hydrodynamic adjustment has been an increase in the recharge of the groundwater from the Tuolumne and Merced Rivers. Correspondingly, groundwater levels have not shown any significant temporal trend.

Due to the regional nature of the groundwater aquifer system, actions within the City area alone are not sufficient to curtail the decline in groundwater levels. Since the mid-1990s, groundwater levels near the City have fallen by about 15 feet, due primarily to increased agricultural acreage and increased urbanization.

All of the City's current potable water supply comes from groundwater. In 2010, the City had 23 potable water wells that provide a maximum water supply of about 50 mgd<sup>2</sup>. A new well (Well No. 40) went on line in early 2011. These wells draw water from a deep aquifer, and have casing depths ranging from about 200 to 580 feet. These wells have capacities of 650 to 2,800 gallons per minute (gpm). The City also has two storage tanks, each with a storage capacity of one million gallons.

The City used about 21,800 acre-feet of groundwater in 2010, and the expected use in 2011 is 20,600 acre-feet. In recent years the City's use of potable groundwater has decreased due to a greater use of nonpotable water for landscape irrigation, potable water conservation efforts, installation of water meters, and the initiation of water meter based billing. However, as the City grows in the future, this recent downward trend in water use will be reversed and the City will begin to use more water.

The City also uses shallow groundwater for irrigation of some landscape areas such as the Northeast Greenbelt. The quality of this shallow groundwater is not suitable as a source of potable water, but is adequate for landscape watering. Also, dry weather run-off is collected in



*Turlock's potable water supply comes entirely from groundwater. One of the city's newest wells was constructed in 2007 near the northeast greenbelt.*

<sup>2</sup> Municipal Service Review for the City of Turlock Sphere of Influence, Proposed Amendment for the Westside Industrial Specific Plan, July 2007, Prepared for the Stanislaus County Local Area Formation Commission by The City of Turlock Planning Division.



*Irrigation of landscaping is an excellent use for recycled water, decreasing potable water demand. The City plans to increase its use of recycled water.*

detention basins and reused for landscape irrigation. These landscape irrigation water systems are completely separate from the City's potable water distribution system. This matching of available water supplies to specific uses based on the water quality of the supply is a very innovative and creative approach that is not yet widely used by other cities.

### Groundwater Quality

Protecting water quality is as important to maintaining the local groundwater supply as sustaining groundwater recharge. As water travels through the ground or over the surface of the land, it dissolves naturally occurring minerals and, in some cases radioactive material, and it can pick up contaminants from animals or from human activity. In the Planning Area, contaminants that may be present in groundwater include: salinity, nitrates, iron, manganese, boron, arsenic, radionuclides, bacteria, pesticides, and trichloroethylene.

Nitrate is the most commonly occurring contaminant in the area. It has been introduced into groundwater from fertilizers, septic systems, and possibly livestock. The City routinely monitors the quality of the water supply to ensure that the water meets all Federal and State drinking water standards. The City monitors the concentrations of arsenic, lead, copper, nitrate, and many other potential contaminants. Recent water testing found that the City's water supply met all drinking water standards, except that one of the wells slightly exceeds the arsenic limit and one well exceeds the drinking water standard for nitrate; both wells are no longer online. The City is currently evaluating treatment and funding opportunities to reduce the level of contaminants in the water produced by these two wells.

Without the surface water project as a long term water supply, increased use of the groundwater is likely to ultimately result in deterioration of groundwater quality, and thus the need for well-head treatment and possibly abandonment of wells.

### Recycled Water

In the summer of 2006, the Turlock Regional Water Quality Control Facility (TRWQCF) was upgraded to provide disinfected, tertiary effluent. This highly treated water complies with the State of California water recycling criteria (Title 22) for unrestricted reuse. However, even with this high level of treatment, the effluent cannot be used for human consumption. The average dry weather flow to the TRWQCF is about 12 million gallons per day (mgd). The TRWQCF

also treats 1 mgd of partially treated flow from the City of Ceres. Up to 2 mgd of tertiary effluent is available for cooling water at the Walnut Energy Center Power Plant. The City Council has a goal of increasing the use of recycled water, and the City has constructed the infrastructure to allow for the irrigation of the Pedretti Sports Complex with recycled water.

### Surface Water Project

As a member of the SRWA, the City of Turlock is pursuing the development of a Regional Surface Water Supply Project (RSWSP) that would supply treated Tuolumne River water from the Turlock Irrigation District (TID). The RSWSP has formally created a Joint Powers Authority (JPA), the SRWA, consisting of the cities of Turlock, Modesto, and Ceres. The SRWA will pursue funding for various phases of the project. The SRWA is developing an agreement with TID for the provision of the drinking water. Extensive planning and environmental work has been performed for the RSWSP, and TID completed an EIR on the project in 2006. A supplemental EIR is now being prepared to update some aspects of the environmental assessment that may have changed in the intervening years.

By being a member of the JPA, Turlock continues to be committed to the project. The RSWSP would initially provide up to 16,800 acre-feet per year (15 million gallons per day, mgd) of potable water to the City of Turlock, but could ultimately provide up to 22,400 acre-feet per year (20 mgd). The RSWSP facilities would include a surface water treatment plant and water transmission mains. The total cost of the RSWSP is estimated to be in the range of \$180 million to \$200 million. The City of Turlock's share of this cost is estimated to be about \$65 million. The City would also have to construct a water storage reservoir (an enclosed water tank), a booster pump station and water distribution pipelines at a cost of about \$20 million. This potential surface water supply would provide over half of the City's future water needs.

### Water Conservation

Prompted by the prolonged drought of 1987 to 1992 and previous water shortages, the City passed a Water Conservation and Education Ordinance in March 1991. The ordinance aims to accomplish conservation through restricting the times of outdoor residential water use. This program was quite successful in the latter stages of the drought. However, residential per capita water usage increased dramatically after the end of the drought in the mid-1990s.

Similarly, in 2007-09, the State of California experienced drought conditions. In response to the drought and due to the pending implementation of meter-based water billing, per capita water use declined significantly in the years 2008-10.

In more recent years, the City also conserves potable water from the deep aquifer by using recycled water for landscape irrigation and for power plant cooling. The City also uses shallow groundwater (non-potable water) and stormwater runoff for landscape irrigation, which further conserves potable water.

Senate Bill X7-7 (SB 7) was enacted in November 2009 as part of the Urban Water Management Planning Act. SB 7 requires water suppliers to increase water conservation efforts. The legislation sets an overall goal of reducing urban per capita demand by 20 percent by the year 2020.

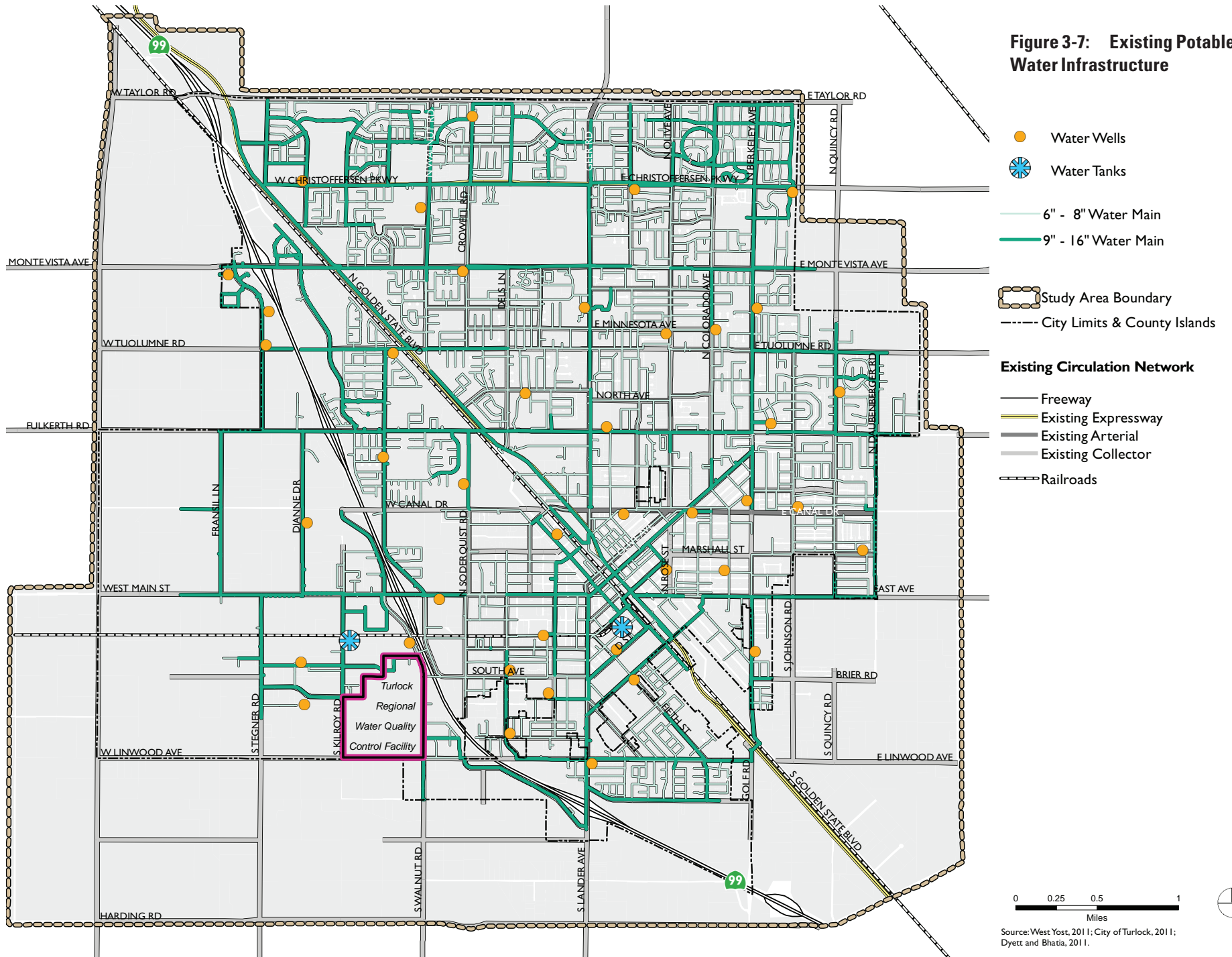
The Water Conservation in Landscaping Act of 2006 (Assembly Bill 1881) requires cities and counties to adopt landscape water conservation ordinances by January 1, 2010. In accordance with this law, the State Department of Water Resources prepared the Model Water Efficient Landscape Ordinance. If a local agency (like the City of Turlock) had not adopted its own ordinance by January 1, 2010, the State's Model Water Efficient Landscape Ordinance became effective within the jurisdiction of the Agency on January 1, 2010. The State's Model Water Efficient Landscape Ordinance is in effect in the City of Turlock.

### Distribution

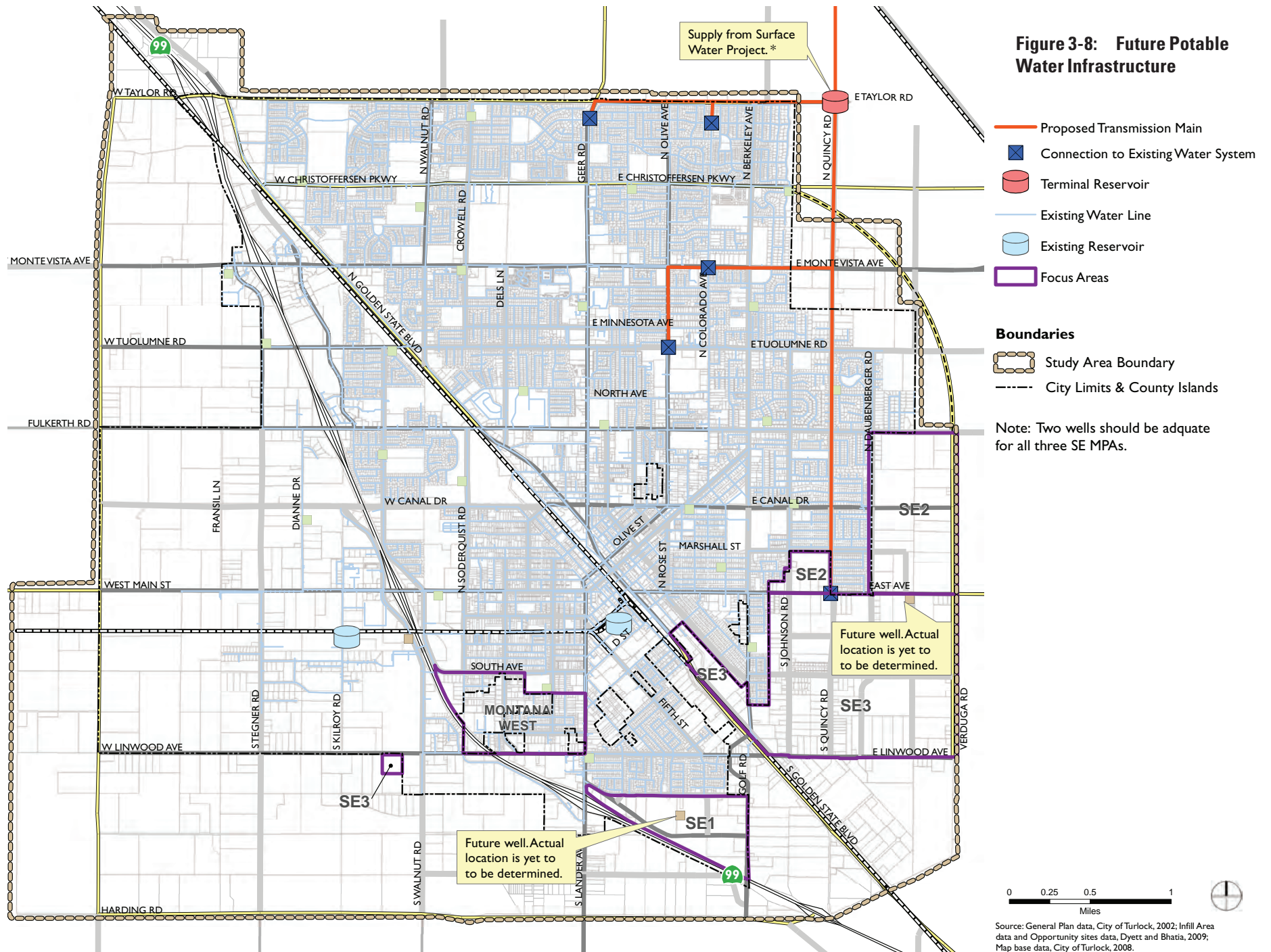
The City's water is distributed through over 250 miles of water pipelines ranging in size from 6 to 16 inches in diameter. The City currently has plans for expansion of the distribution system for the growth of the City both with and without the RSWSP. Figure 3-7 shows the City's existing potable water infrastructure. Figure 3-8 shows the proposed water infrastructure needed to support buildout of the General Plan and the backbone infrastructure needed for the RSWSP.

The major potable water infrastructure needed includes the water supply from the RSWSP, a water storage reservoir, a booster pump station, transmission mains, connections to the existing water distribution system, one new well in the northwest master plan area, and two new wells in the southeast master plan areas.

**Figure 3-7: Existing Potable Water Infrastructure**



**Figure 3-8: Future Potable Water Infrastructure**



### Conclusion – Supply and Demand

In the past, the City has pumped as much groundwater as needed by its residents and businesses; consequently the City’s available supply has matched its demands. As noted above, the groundwater levels have fallen about 15 feet in the last 10 to 15 years. The decline in groundwater levels has raised concerns about the sustainability of the groundwater resource to meet future water demands. **City Staff have estimated that the groundwater basin can sustain an annual water demand of about 24,550 acre-feet per year.** At this usage, in drought years, however, pumping this amount of groundwater will cause groundwater levels under the City to decline.

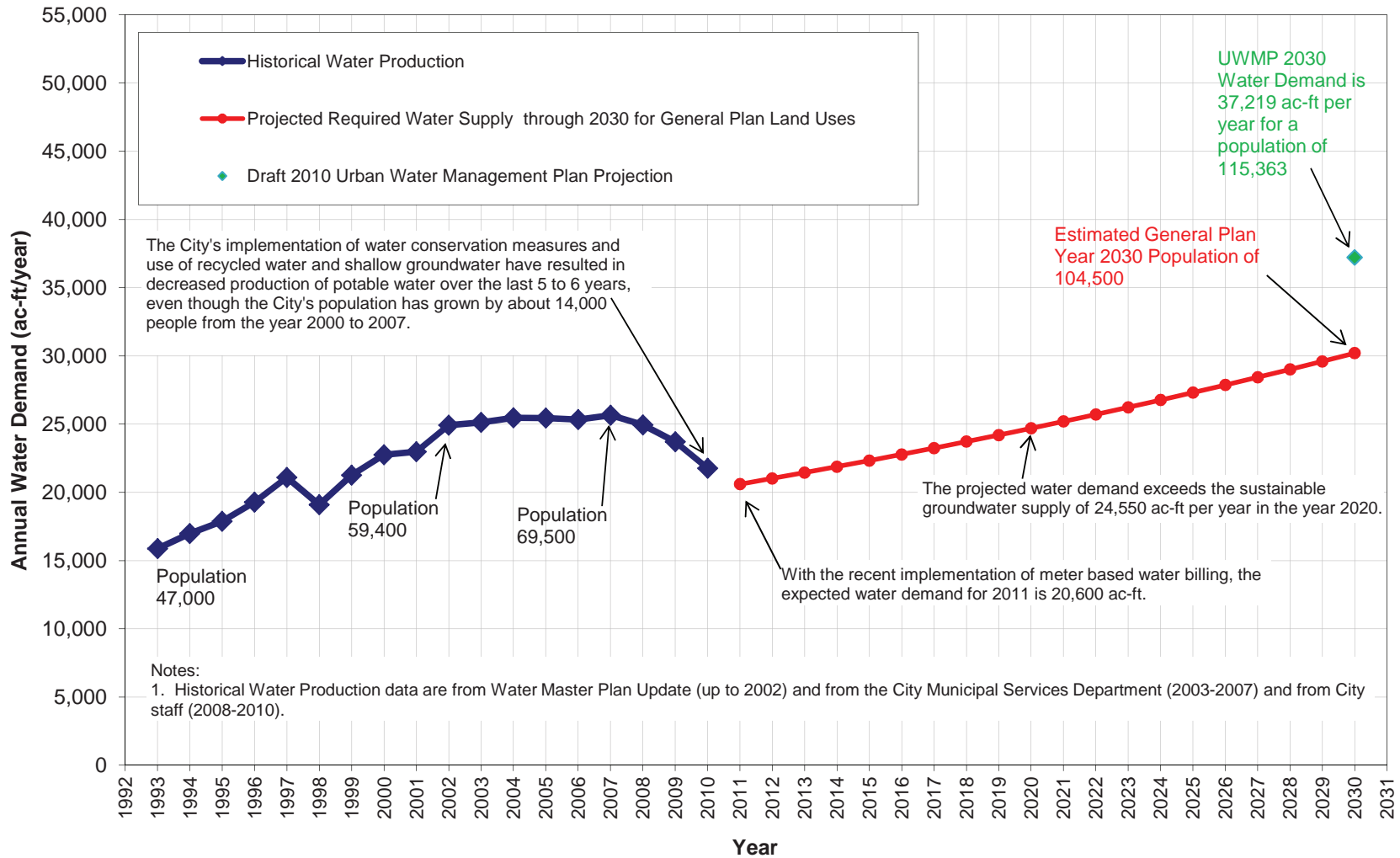
In 2010, the City’s wells produced about 21,770 acre-feet of water. The estimated water demand for 2011 is 20,600 acre-feet per year. As the City grows toward buildout of this General Plan, the water production will have to increase to supply the needs of the new residents and businesses. The expected increase in annual water demands are shown on Figure 3-9, and includes demands from three primary areas:

- New growth in master plan areas: 5,100 acre-feet per year
- Infill of the existing city (including development by 2030 of about 24 percent of the currently undeveloped TRIP): 4,500 acre-feet per year

The City wide water demand in the year 2030 shown on Figure 3-14 is lower than the year 2030 water demand from the City’s Draft 2010 Urban Water Management Plan (UWMP) because the Draft UWMP was prepared using a land use plan that had a larger area of future growth than the land use plan that was adopted in this General Plan. Similarly, the year 2030 population used in the Draft UWMP was 115,363, whereas the 2030 population for this General Plan is 104,500.

**These increases in water demands will lead to a total water demand in the year 2030 of approximately 30,200 acre-feet per year. This demand exceeds the estimated sustainable groundwater supply of 24,550 acre-feet per year. If the water demands increase at about 1.0 percent per year (as shown in Figure 3-9), then the sustainable groundwater supply will be exceeded in the year 2020.**

**Figure 3-9: Historical and Projected Potable Water Demand**





With the RSWSP, the City could still use groundwater, but at a sustainable amount. With the RSWSP providing a long term supply of 17,000 to 22,000 acre-feet per year (15 to 20 mgd), the City would have a total sustainable water supply of 41,550 to 46,500 acre-feet per year. This water supply would meet and exceed the demands estimated for the year 2030 of 30,200 acre-feet per year. When the TRIP is fully developed, the citywide buildout water demand is estimated to be 34,500 acre-feet per year, which could safely be supplied by the combined use of groundwater and surface water.

### WASTEWATER COLLECTION AND TREATMENT SYSTEM

The wastewater collection system generally flows from the northeast to the southwest to the Turlock Regional Water Quality Control Facility (RWQCF), where the wastewater is treated and then discharged to the Harding Drain. The existing sanitary sewer system is shown on Figure 3-10. In the future, it is planned that treated effluent will be pumped farther west and discharged directly to the San Joaquin River. The sanitary sewer system consists of about 220 miles of sewer pipes ranging in diameter from six inches to 48 inches, and 20 pump stations.

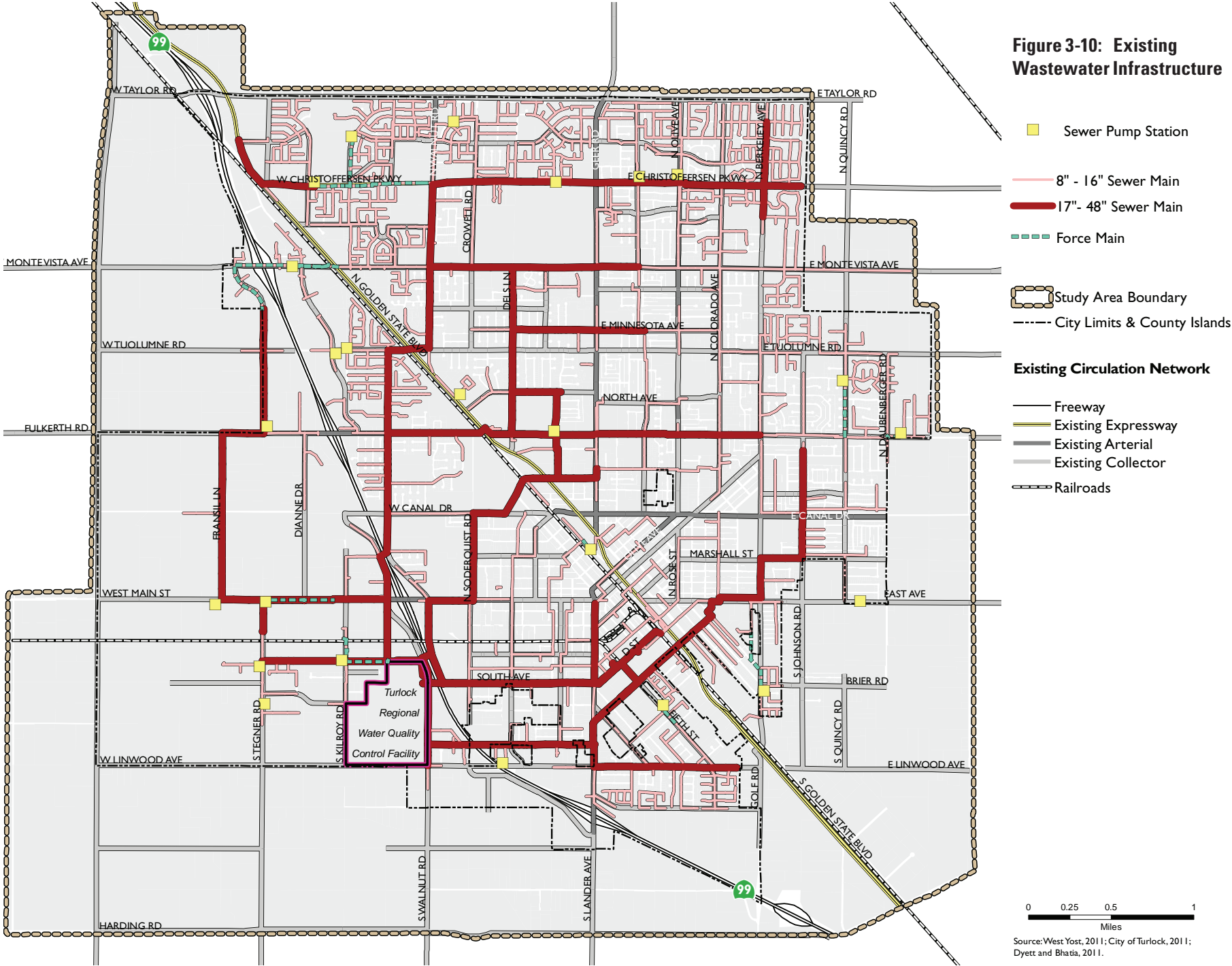
The proposed sewer system to serve the southeast master plan areas is shown on Figure 3-11. The proposed sewer system includes a connection to the Monte Vista Avenue sewer to redirect flow from Denair out of this sewer and into a new trunk sewer. The proposed sewer system collects all of the flow from the southeast master plan areas, and no existing sewers are needed to serve the southeast master plan areas.

The current average dry weather flow to the RWQCF is about 12 mgd. This includes flow from Turlock, Keyes and Denair. The RWQCF also treats 1 mgd of partially treated wastewater from Ceres, and the flow from Ceres is expected to increase to 2 mgd in the future. With the construction of improvements planned in the *Water Quality Control Facilities Improvement, Turlock Capacity Assessment* (March 2007 hereafter called the Capacity Assessment), the RWQCF could treat a flow of about 20 mgd. Thus, the proposed improvements would provide capacity for about a 50 percent increase in the flow to the plant. The past and previously projected future flows to the RWQCF are shown with the green lines on Figure 3-12 (including the flow from Ceres). The previous projection of flow in the Capacity Assessment resulted in an ADWF of 23.0 mgd in the year 2030 (the light green line on Figure 3-12).

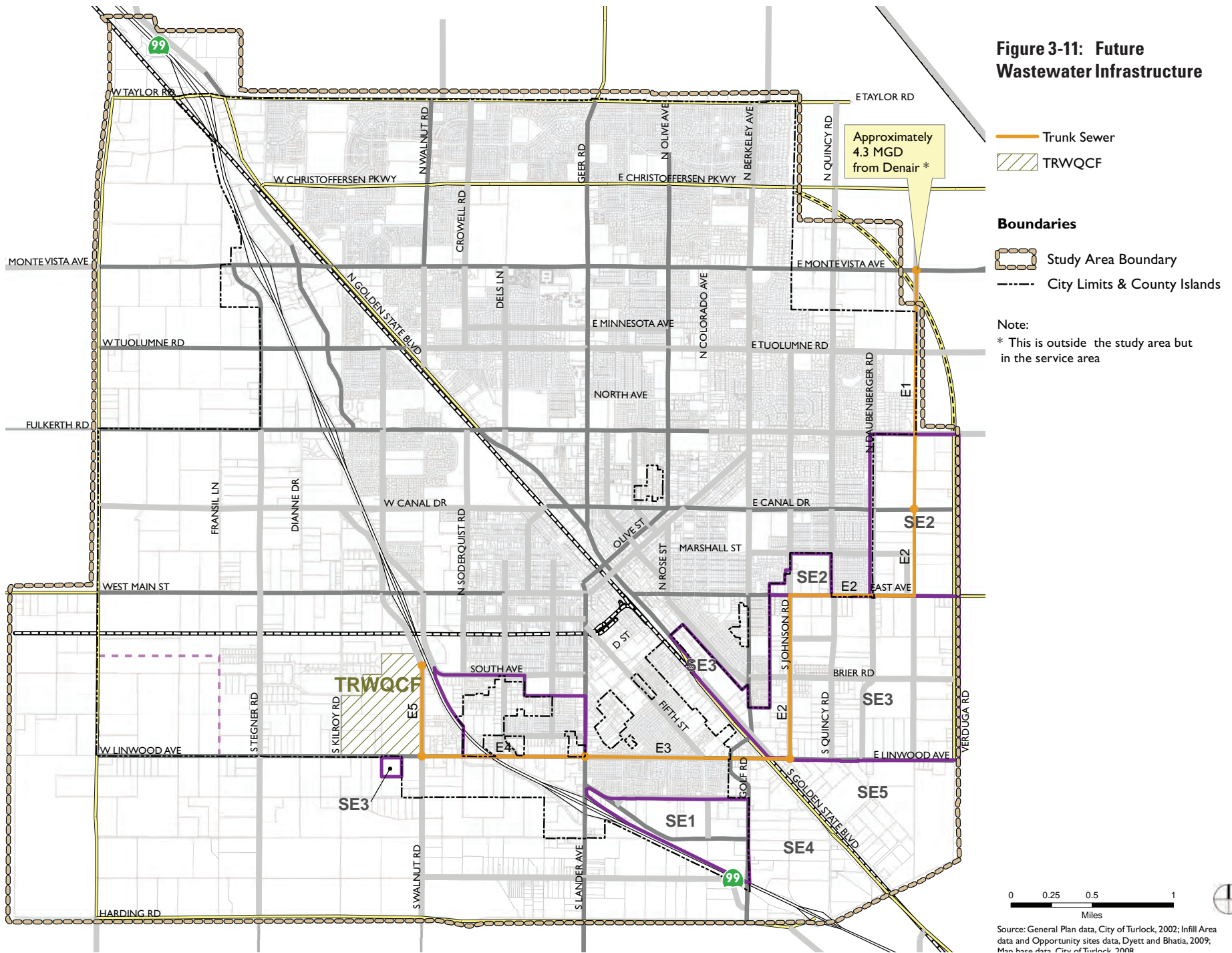


*Tertiary Filters at the RWQCF help treat the water to a very high level, allowing it to be used in the community for landscape irrigation, for agricultural irrigation, for cooling water, or other nonpotable uses.*

**Figure 3-10: Existing Wastewater Infrastructure**



**Figure 3-11: Future Wastewater Infrastructure**



Based on the land uses included in this General Plan update, the expected increase in annual wastewater flows are shown on Figure 3-12, and includes flows from three primary areas:

- New growth areas in the Southeast: 2.30 mgd
- Infill of the existing city (including development by 2030 of about 24 percent of the currently undeveloped TRIP Area): 2.32 mgd

These increases in wastewater flows total 4.62 mgd and lead to a total ADWF wastewater flow in the year 2030 of 21.6 mgd. When the TRIP is fully developed, the citywide buildout ADWF is estimated to be 24.3 mgd.

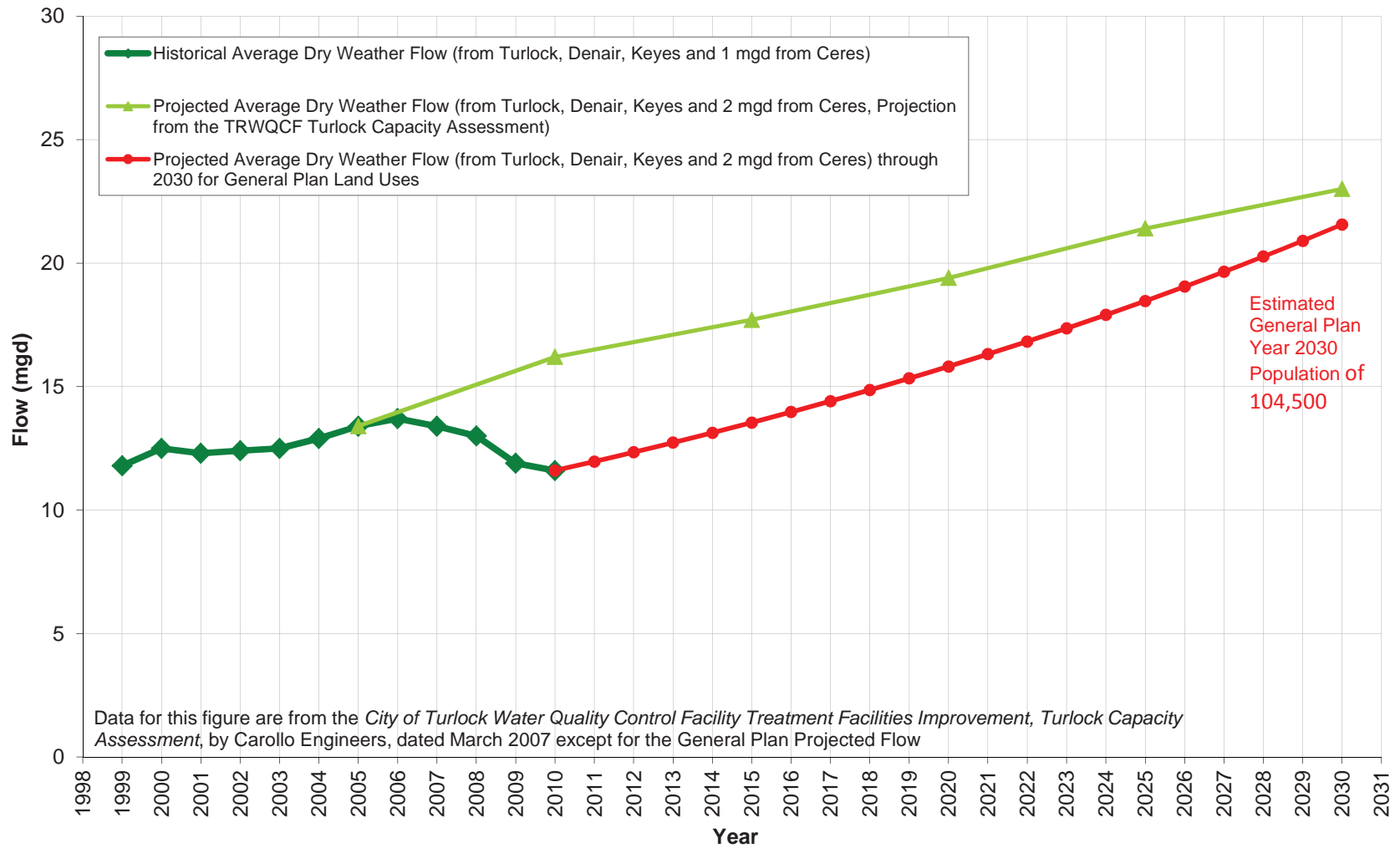
The estimated ADWF for the new General Plan land uses account for the projected increased population of the City and the anticipated increase in the ratio of jobs to population. The previous wastewater flow projection in the Capacity Assessment was based only on increased population, and did not account for the various land use types in this General Plan.

The existing treatment plant with currently planned improvements will provide an ADWF capacity of 20 mgd and will only occupy about 60 acres of the 140 acre wastewater treatment plant site. Consequently, there is adequate room to expand the plant to provide the required year 2030 ADWF flow of 21.6 mgd and the ultimate buildout capacity of 24.3 mgd.

This preliminary projection of wastewater flow should be verified through preparation of master plans for the sanitary sewer system and the wastewater treatment plant.

In early 2006, an upgrade to the RWQCF was completed that included the installation of tertiary filters to produce highly treated wastewater, termed disinfected tertiary effluent. The tertiary effluent from the RWQCF meets the legal requirements for unrestricted reuse. However, even with this high level of treatment, the effluent cannot be used for human consumption. When this highly treated water is put to use, it is called recycled water. Currently, up to two mgd of recycled water is used for cooling water at the Walnut Energy Center Power Plant, a 250 Megawatt power plant owned and operated by the Turlock Irrigation District. The City Council has a goal of increasing the use of recycled water, and the City intends to irrigate the Pedretti Sports Complex with recycled water in the future. Additionally, recycled water pipelines (purple pipe) have been

**Figure 3-12: Historic and Projected Wastewater Flows**





*The RWQCF, last upgraded in 2006, treats wastewater from Turlock and the neighboring communities of Keyes and Denair.*

installed in a number of newer developments and park sites for future use of recycled water for landscape irrigation.

A new NPDES discharge permit for the RWQCF and a related Time Schedule Order (Permit and TSO) were adopted by the Central Valley Regional Water Quality Control Board on January 28, 2010. The Permit and TSO:

- Allow for a future change in the point of discharge from Harding Drain to the San Joaquin River, near Harding Road. Once the river discharge is initiated, brief discharges to Harding Drain would be allowed only in the event of a power failure. Discharge to the river is expected to begin in 2012 or 2013.
- Establish a required schedule for compliance with a new effluent limit for electrical conductivity (EC), a measure of salinity. The schedule includes source control measures in the near-term, and by 2022, full compliance with the new EC limitation in most years.
- Establish a January 1, 2015 deadline for compliance with new effluent limitations for copper, selenium, carbon tetrachloride, chlorodibromomethane, dichlorobromomethane, nitrate, silver, and aluminum.

Additional upgrades at the RWQCF may be required to comply with the new effluent limitations.<sup>3</sup>

## STORMWATER

There are no natural defined streams in the Planning Area. Three open irrigation canals, TID Laterals 3, 4, and 5, pass through the Planning Area from east to west, spaced apart by two and a half miles. There are also several local detention basins distributed throughout the City, which capture runoff during stormwater events and then discharge it to the canals. Part of the eastern area of the City drains directly to Lateral 4. Use of the canals for stormwater disposal, allowed through agreements with TID, is not always reliable because the laterals are also used to convey irrigation water or may be out of service for maintenance.

<sup>3</sup> California Regional Water Quality Control Board, Central Valley Region; Order No. R5-2010-0002, NPDES No. CA0078948; Waste Discharge Requirements for the City of Turlock Water Quality Control Facility; and Time Schedule Order No. R5-2010-0003; January 28, 2010.

The City currently protects surface water quality by requiring the implementation of Best Management Practices (BMPs) during the construction of new development projects and requires projects to comply with post-construction BMPs, as identified in the City’s NPDES Phase 2 Storm Water Management Plan. Surface water quality is also protected by complying with the current State of California Construction General Permit Order 2009-0009-DWQ.

The City’s existing storm drain system is shown on Figure 3-13. The City’s existing storm water system includes about 130 miles of storm drain collection/conveyance piping, with sizes ranging from 6 to 60-inches in diameter; 49 pump stations, several detention basins, and use of the TID open channels.

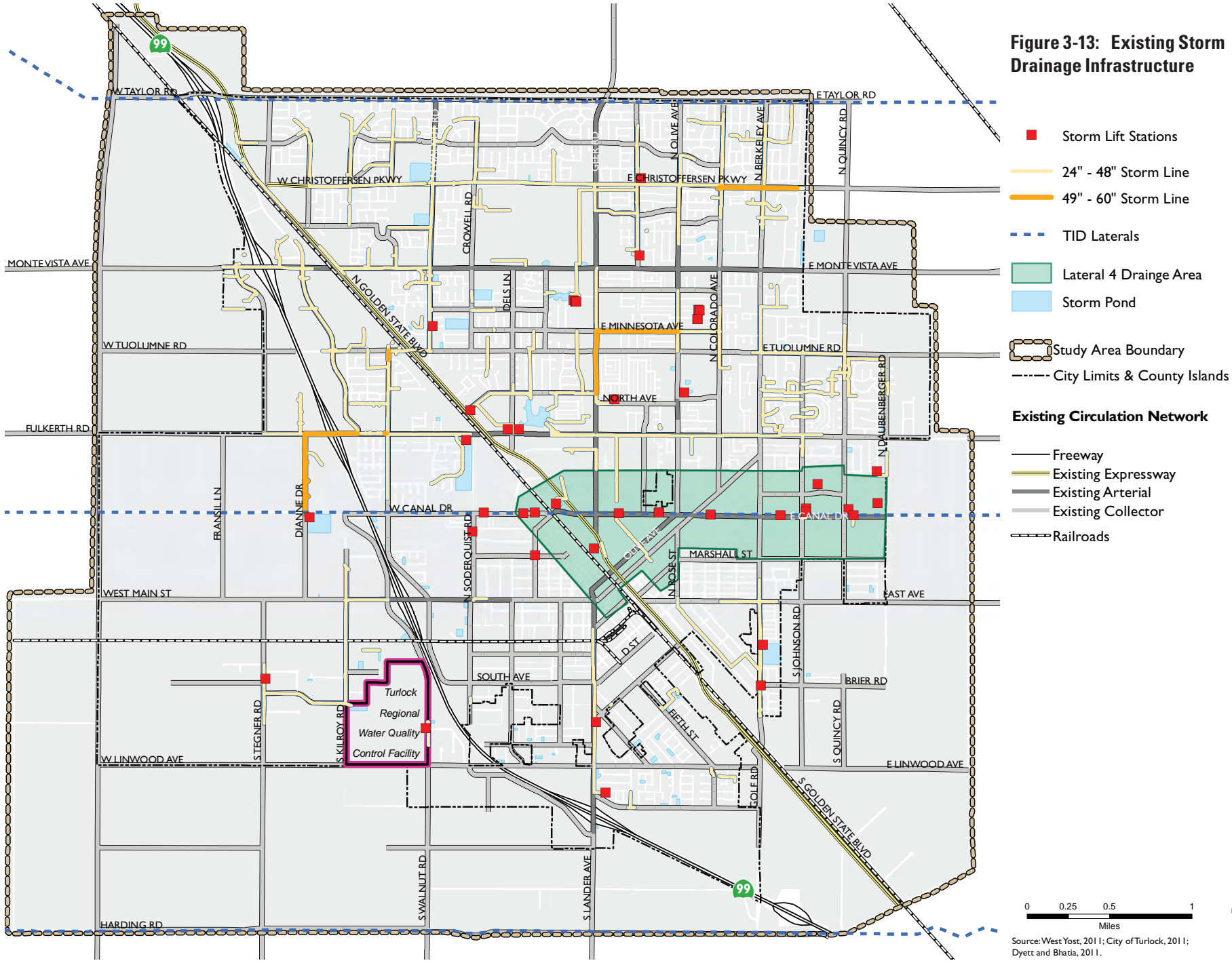
Currently, most of Turlock’s stormwater drains to detention basins located throughout the City. Because groundwater levels are close to the ground surface, these basins are relatively shallow and it is necessary to pump runoff into many of the basins during storm events. After the storm passes, runoff is drained or pumped back into the trunk storm drain system and flows to the southwest corner of the City to a large stormwater basin near the TRWQCF, where it is either pumped into TID Lateral 4 or the Harding Drain. To avoid overloading the trunk storm drains, it is necessary to drain several of the detention basins in the north part of town sequentially, starting with the more downstream basins and progressing to the more upstream basins. This approach of using detention basins with sequential draining of the basins can continue to be used to provide stormwater storage and disposal as the City grows to buildout of the 2030 General Plan. The required future detention basins and trunk lines needed to drain the basins have been preliminarily located and sized and are shown on Figure 3-14.

Part of the eastern area of the City flows directly to Lateral 4 without first being stored in detention basins. Use of the TID laterals for stormwater disposal is allowed through agreements with TID. However, this does not always provide reliable disposal of the stormwater because sometimes the TID laterals are also being used to convey irrigation water or the laterals are out of service for maintenance by TID staff. To eliminate this problem, the runoff from this area should be diverted into a more reliable stormwater disposal system, and the future trunk lines shown on Figure 3-14 are sized to also convey the runoff from some of the area that currently flows to Lateral 4.



*There are no natural defined streams in the Planning Area. Three open irrigation canals, TID Laterals 3, 4, and 5, pass through the Planning Area from east to west, spaced apart by two and a half miles.*

**Figure 3-13: Existing Storm Drainage Infrastructure**









*Detention basins are distributed throughout the City, capturing runoff during stormwater events. Some of these detention basins also serve as City parks.*

Many of the City’s detention basins are used for both stormwater detention and as recreational open space. This joint use of stormwater basins provides numerous sports and recreational facilities for City residents.

The existing stormwater system has generally protected the City from flooding. However, minor street flooding occurs in certain areas of the City approximately once per year or every couple of years. This flooding typically occurs when two large storms occur back to back, and the City’s basins have not fully drained from the first storm when the second storm hits. This type of minor street flooding for short time durations in large storm events does not warrant the construction of a major storm drain project to eliminate the flooding. Indeed, due to Turlock’s flat topography, the streets are designed to store storm water temporarily until capacity becomes available in the storm drain system.

## **SOLID WASTE MANAGEMENT AND RECYCLING**

### **Solid Waste**

The City contracts with a franchise hauler to collect garbage and recyclables at curbside. Garbage is taken to the transfer station on Walnut Road, and from there hauled to the Fink Road landfill near Crows Landing, or to the waste-to-energy facility adjacent to the landfill. The waste-to-energy facility reduces the volume of waste going into the landfill by about 90 percent. According to the Stanislaus County Department of Public Works, the landfill — the only one operating in Stanislaus County — has capacity until 2017 for garbage and 2023 for the waste-to-energy ash. The total landfill capacity is 6.8 million tons. The County has plans for further expansion.

In accordance with Public Resources Code Section 41000 *et seq.*, a goal of 50 percent waste stream diversion through reduction and recycling has been established. In May 1992, the City’s franchise waste hauler implemented a dramatic new program to reduce Turlock’s waste stream. Instead of voluntary separation by the resident, the program provides three separate bins to each home throughout the City. The largest of these is a 90-gallon container reserved exclusively for compostable green waste. Next is a 65-gallon container for all recyclable materials, which are separated by the refuse company after pick-up. Finally, each household is limited to one 32-gallon container for non-recyclable household wastes.

## Source Reduction and Recycling

Public Resources Code Sections 41000 and 41300 *et seq.* require each city and county in the State to prepare a Source Reduction and Recycling Element (SRRE) to meet waste diversion reduction goals of 25 percent by 1995 and 50 percent by 2000.

Turlock's SRRE was adopted by the City Council in 1994. The SRRE was later reviewed and approved by the California Integrated Waste Management Board (CIWMB) in 1995. The SRRE includes source reduction, including recycling and composting activities for solid waste generated within the City.

The study also details means of reducing commercial and industrial sources of solid waste. Funding and public information components are also included.

Waste diversion in Turlock has been steadily improving. The amount of waste diverted in the City of Turlock was 40 percent in 1997 and 47 percent in 2000. In 2001, the Regional Solid Waste Planning Agency (RSWPA) was formed including Stanislaus County and the eight cities within the county. The RSWPA's current target is 6.3 pounds of non-diverted waste per person per day (50 percent diversion equivalent). In 2009, the Agency's jurisdiction achieved 3.3 pounds of non-diverted waste per person per day, or a 72 percent diversion equivalent.

## POLICIES

### Guiding Policies

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- 3.3-a Protect Water Quality and Supply.** Continue efforts to safeguard the quality and availability of Turlock's water supply.
- 3.3-b Use Groundwater at a Sustainable Rate.** Undertake steps to ensure the use of groundwater does not exceed the sustainable supply by verifying the estimated sustainable supply of 24,550 acre-feet per year and limiting groundwater use to the sustainable supply.

*Aquifer depletion is a valley-wide problem. Use of groundwater for potable water and agricultural irrigation is the prime reason for the declining groundwater levels. The City has little control over the use of groundwater for agricultural irrigation. Recent drought years have also been a contributing factor.*

- 3.3-c Sustainable water supply.** Ensure that a new system for potable water provision, either through implementation of the Regional Surface Water Supply Project or other means, is in place by the time that Turlock’s projected annual potable water demand exceeds the sustainable annual groundwater supply level of 24,550 acre-feet, estimated to occur in 2020.
- 3.3-d Meet projected needs.** Promote the orderly and efficient expansion of public utilities and the storm drainage system to adequately meet projected needs, comply with current and future regulations, and maintain public health, safety, and welfare.
- 3.3-e Coordinate infrastructure provision with growth.** Coordinate capital improvements planning, design, and construction for all municipal service infrastructure with the direction, extent, and timing of growth.
- 3.3-f Utility Rates.** Continue to establish water and wastewater rates that are sufficient to operate, maintain, and upgrade (for current and future regulatory requirements) the City’s water, wastewater, and stormwater infrastructure.
- 3.3-g Development Impact Fees.** Continue to equitably distribute costs associated with serving new development through the Development Impact Fee program.
- 3.3-h Meet State waste reduction goals.** Reduce the generation of solid and hazardous waste and promote recycling in order to achieve the State’s solid waste management goals

## Implementing Policies

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### *Potable Water*

- 3.3-i Water System Master Plan.** As needed, update the City’s water master plan to estimate future water demands, identify an adequate supply of water to meet future demands, and identify how best to treat the water supply.
- 3.3-j Pursue Surface Water and Other Alternative Water Supply Sources.** Continue to pursue the use of treated surface water as a long term supply for municipal use, and evaluate other future water supply alternatives, including verifying the future water demands and evaluating the water supply strategies and funding strategies discussed above. (See conclusions in the section: Conclusions - Supply and Demand, under Water Demands, Supplies, and Distribution.) The SWP or some other methods should supply about 17,000 to 22,000 acre-feet per year of the City’s estimated 2030 water

demand of 30,200 acre-feet per year, and the ultimate General Plan buildout demand of 34,500 acre-feet per year. Surface water supplies (or other sources) will probably be needed by about the year 2020. Develop a new water supply project prior to construction of new development that generates a City-wide water demand above 24,550 acre feet per year from City wells, estimated to be the sustainable yield from the aquifer.

- 3.3-k Rate and Fee Studies.** Supplement the water system master plan with rate and fee studies to ensure adequate funds are collected through the City’s water rates and development impact fees. Implement rate and fee increases as needed.
- 3.3-l Infrastructure Construction.** Design and construct water system infrastructure as needed to meet current and future water demands and system requirements.
- 3.3-m Conservation.** Continue to implement the comprehensive water conservation program for both new development and existing residences and businesses. Revise and improve the program as needed. Continue water conservation efforts, including the watering schedule, monitoring by Municipal Services staff, and advisory notices to households and businesses in violation of water conservation standards. Continue to reduce per capita consumption through ongoing education and outreach efforts.
- 3.3-n Recycled Water.** Continue and expand the use of recycled water from the Turlock Regional Water Quality Control Facility for non-potable purposes, including power plant cooling, landscape irrigation, agricultural irrigation, and other uses. Plan, design, and construct infrastructure needed to increase the use of recycled water.
- 3.3-o Optimize Groundwater Recharge.** Establish requirements for appropriate BMPs in site planning of new development, so that natural drainage systems or groundwater recharge features are incorporated into developments. Participate in regional efforts to protect groundwater supplies and optimize groundwater recharge on a basin-wide basis.
- 3.3-p Groundwater Related Coordination.** Support and cooperate with Regional (Turlock Groundwater Basin Management Association), County and State programs to protect valuable groundwater resources and facilitate groundwater recharge.
- 3.3-q Reuse of Stormwater.** Continue to expand the use of storm water collected in detention basins for irrigation of public parks, street trees, and landscaping.

### ***Wastewater Systems***

- 3.3-r Sanitary Sewer Master Plan.** Prepare and update as needed a sanitary sewer master plan to identify future wastewater flows and plan for an adequate wastewater collection system.
- 3.3-s Wastewater Treatment Plant Master Plan.** Update as needed the wastewater treatment plant master plan to identify future wastewater flows and plan for adequate wastewater treatment and disposal to comply with current and future regulations.
- 3.3-t Recycled Water Master Plan.** Prepare and update as needed a recycled water master plan to facilitate the increased use of recycled water. Uses of recycled water to be evaluated should include uses within the City, agriculture irrigation, and other uses.
- 3.3-u Rate and Fee Studies.** Supplement the wastewater system master plans with rate and fee studies to ensure adequate funds are collected through the City's wastewater rates and development impact fees. Implement rate and fee increases as needed.
- 3.3-v Infrastructure Construction.** Design and construct wastewater system infrastructure as needed to safely convey, treat and recycle, and dispose of current and future wastewater flows and achieve future regulatory and system requirements.

### ***Stormwater***

- 3.3-w Stormwater Master Plan.** Update as needed the stormwater master plan to identify future stormwater flows and plan for an adequate stormwater conveyance, storage, and disposal system. The stormwater master plan should include measures to eliminate and prevent flooding and to protect stormwater quality.
- 3.3-x Rate and Fee Studies.** Supplement the stormwater master plan with rate and fee studies to ensure adequate funds are collected through the City's stormwater rates and development impact fees. Implement rate and fee increases as needed.
- 3.3-y Infrastructure Construction.** Design and construct stormwater system infrastructure as needed to safely convey, detain, and dispose of current and future stormwater flows, protect water quality, and meet regulatory requirements.
- 3.3-z Detention Basin Locations.** Develop new detention basins to be compatible with adopted land use plans, such as within agricultural buffer strips, parks, or in dedicated detention basin sites. Only a fraction (not over 25 to 30 percent) of any park should be used for detention basins.

- 3.3-aa Detention Basin to Serve New Growth.** The land designated for the West Linwood Detention Basin, located south of the RWQCF and mapped as part of SE 3, shall be annexed and developed as a basin in conjunction with the annexation and master planning of the SE 3 area. This area is to be annexed and developed as a detention basin only and not for other public use.
- 3.3-ab Detention Basin Joint Uses.** Where feasible, allow joint uses within the detention basins such as recreational open space, parks, and athletic fields.
- 3.3-ac TID Canals.** Work toward the goal of eliminating discharge of stormwater into the TID canals.
- 3.3-ad Fencing around and near basins.** Fencing is not to be used around basins in dual-use areas. Fencing may be used around equipment needed for basin operation, such as pumps. In these cases, it should be of a decorative material that also discourages graffiti (such as wrought iron), screened, and landscaped. In cases where fencing around basins is necessary (for basins where there is no dual use functionality, such as adjacent to the RWQCF), the fencing should be designed to ensure safety and enhance the overall aesthetic value of the detention basin site.
- 3.3-ae Low Impact Development (LID) and Water Quality Best Management Practices (WQBMPs).** Require implementation of LID techniques and WQBMPs in new development projects and public works projects. Examples of these are use of porous pavement and pervious concrete, water quality swales, and rain gardens.
- Policies in Section 6.4, Sustainable Site Planning, provide more detail on the use of porous materials and other Low Impact Development Best Management Practices.*
- 3.3-af Encourage Use of Less Toxic Agricultural Chemicals.** In cooperation with the Stanislaus County Agricultural Center, provide education and incentives to encourage the use of less toxic forms of pesticides, insecticides, herbicides, or other chemical substances by households and farmers.
- 3.3-ag Minimize Industrial Contamination.** Work with the Regional Water Quality Control Board to ensure that all point source pollutants are adequately mitigated and monitored to ensure compliance with stormwater regulations.

***Waste Management and Recycling***

- 3.3-ah Reduce Solid Waste.** Maintain the City’s long-standing commitment to innovative solutions that reduce solid waste and increase diversion rates. Continue to expand diversion opportunities to ensure that the City, through participation in the Stanislaus County Regional Solid Waste Planning Agency, continues to surpass State targets for solid waste reduction.
- 3.3-ai Construction and Demolition Waste.** Adopt a construction and demolition waste recycling ordinance which will require that, except in unusual circumstances, all construction, demolition and renovation projects meeting a certain size or dollar value, to divert from the waste stream 100% of all Portland cement concrete and asphalt concrete and an average of at least fifty percent of all remaining debris from construction, demolition and renovation projects.
- 3.3-aj Implement Measures.** Implement measures specified in the Source Reduction and Recycling Element.
- 3.3-ak Landfill capacity.** Work with Stanislaus County to ensure the availability of adequate landfill capacity for Turlock’s solid waste.
- 3.3-al Green waste program.** Continue to encourage the use of the City’s green waste program to reduce waste sent to landfills. Consider adding additional types of green waste products to the program, such as food waste, as it becomes feasible.



# 4 Parks, Schools, and Community Facilities

This section of the Plan integrates text and policies about the provision of public facilities and services in Turlock. The close relationship between schools, parks, and recreation is highlighted. While State law does not require this Element, the Parks and Recreational Open Space section fulfills requirements for addressing recreational open space, as described in the Open Space section of *Chapter 7, Conservation*.

## 4.1 PARKS AND RECREATIONAL OPEN SPACE

Some of the most visible physical features of a community are its public outdoor parks and community recreation programs. These provide an important opportunity for residents to enjoy recreational opportunities that enhance their physical health and well-being. In fact, public parks and recreation programs contribute greatly towards establishing the community's quality of life. At the first community workshop for the General Plan update, many tables mentioned Turlock's neighborhood and community parks and sports complexes as important assets. At the second workshop, a variety of approaches to expanding the park system inspired good discussions at the tables, as well as a sense that all these concepts could be supported by the community.

This section describes Turlock's existing parks, and contains policies to guide the development of future parks and recreational links and corridors. The policies and goals contained herein shall be implemented through the Turlock Parks Master Plan, anticipated to be adopted shortly following adoption of the General Plan.

The General Plan Diagram indicates the approximate size and location of park and recreation facilities. The Parks and Recreation Facilities Diagram (Figure 4-1) distinguishes these as existing or planned for future development as of 2010. Locations of proposed facilities are generalized. Appropriate sites in the vicinity of the depicted locations may be approved without amending the General Plan. Additional parks beyond those shown on in Figure 4-1 may be permitted in residential districts upon approval of a Minor Discretionary Permit (MDP). Small, privately maintained pocket parks may not be depicted on the Parks Diagram.



*Parks are anchors for neighborhoods and valuable community gathering spaces.*



*Community parks may feature a range of open space environments and activities, including recreational facilities. Recreation facilities that are not generally open for public use are best located adjacent to but not within future community parks (top). Neighborhood-serving city parks provide a place for play and passive enjoyment for area residents. Many of Turlock's neighborhood parks also serve as storm drainage basins (bottom).*

In Turlock, parks and recreation facilities are administered by the Parks, Recreation and Public Facilities Department. The Recreation Division administers all recreation programs sponsored by the City, the renting of public buildings and the reservation of City parks.

## PARK TYPES AND EXISTING INVENTORY

Turlock's park system comprises community parks, neighborhood-serving city parks, neighborhood school parks, and recreation corridors. Table 4-1 provides an inventory of existing parkland as of 2010. The inventory, as well as the City's population in 2010 according to the Census, is used to establish a standard for parkland dedication in accordance to the Quimby Act.

Turlock has developed its storm drainage system to coincide with its parks system, providing opportunities for dual use. With this General Plan, dual-use storm drainage basins are not counted toward parks acreage.

### Community Parks

Community parks serve all ages and may include facilities for low-intensity/passive recreation use, lighted fields, courts, swimming pools, and areas and buildings for community festivals and civic events, as well as for organized sport and athletic competitions. Generally restrooms and some off-street parking are provided. While community parks serve larger areas of the City than do neighborhood-serving city parks, they may also meet the recreation/open space needs of the adjacent neighborhood. Turlock has three community parks, ranging in size from approximately 25 to 32 acres (not including ponds or storm drainage basins). Turlock's 85 acres of community park land represent one third of all park land in the City. See Table 4-1, Existing Parks and Recreational Open Spaces.

Donnelly Park is primarily devoted to passive activities such as picnicking and walking paths, while Pedretti Park and the Regional Sports Complex are almost entirely devoted to playing fields used for organized recreational activities requiring reservations for access. Going forward, facilities that are not generally available for public use are not considered appropriate for community parks.

## Neighborhood Parks

### *Neighborhood-Serving City Parks*

This classification consists of parks devoted primarily to serving a small portion of the City. Park facilities are usually oriented toward the recreational needs of children, but may also include volleyball courts, half-size basketball courts, and picnic and play areas that serve all age groups. No restrooms or off-street parking need be provided. Turlock’s 21 existing neighborhood-serving city parks are as small as half an acre to as large as 7 acres in size (again, not including dual-use storm drainage basins). (See Table 4-I.)

Five of Turlock’s neighborhood-serving parks are less than an acre in size, and may be considered “pocket parks.” These are not classified separately, but have a somewhat different character: they are generally oriented to passive enjoyment or open play areas, and serve the immediate neighborhood. They are appropriately located in higher-density areas of the City, or in areas not well-served by neighborhood parks. New pocket parks may developed on the sites of small storm drainage basins in existing neighborhoods, or as opportunities arise in and near downtown.

### *Neighborhood School Parks*

This classification consists of recreational parks or playgrounds built adjacent to educational buildings and facilities. A school park provides for neighborhood recreation as well as the needs of the adjacent schools. The City’s Public Facilities Division has a shared facility use agreement with the Turlock Unified School District; therefore, the recreational grounds of Turlock’s public schools are also included in the parks and open space inventory and are available for general community use. Parks associated with elementary schools are between 4 and 6 acres in size, while parks associated with middle and high schools are as large as 20 acres. There are currently 14 parks in this category.

### *Recreation Corridors (Greenway System)*

The Parks Master Plan (1995) introduced the concept of a public greenway system for Turlock, to be based on existing corridors along the Turlock Irrigation District (TID) canals and the Union Pacific Railroad (UPRR), and a new perimeter greenbelt. The master-planned neighborhoods developed in recent years in north and northeast Turlock feature recreation paths and greenbelts at the City’s edge and verdant “paseos” in the neighborhood interior. As this park type is further



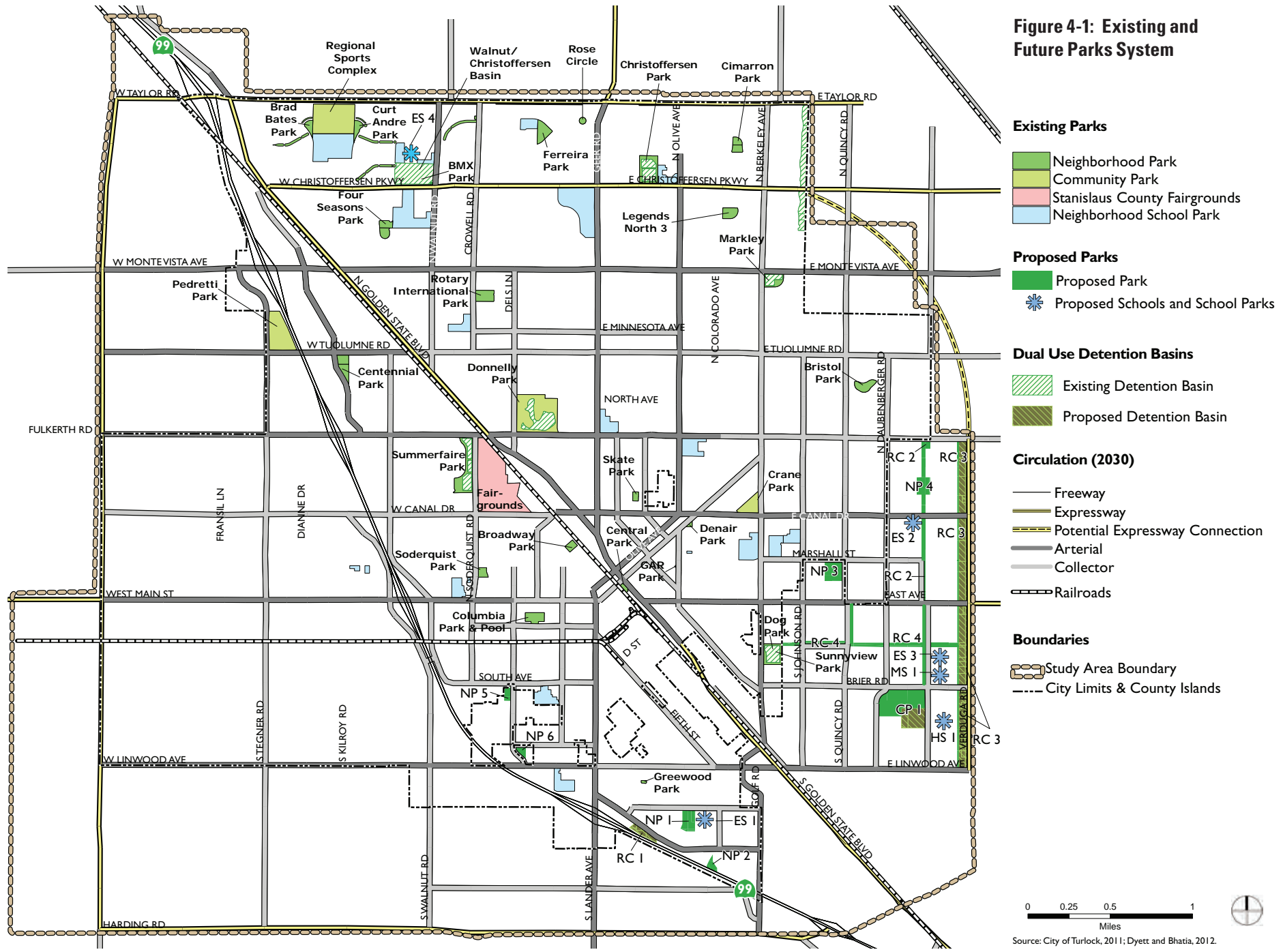
*Recreation corridors provide a network for walking and biking, add visual character to neighborhoods, and in some places, as above, provide a clear edge to the City.*

TABLE 4-1: EXISTING PARKS AND RECREATIONAL OPEN SPACES		
PARK	ACRES	
	PARK ONLY	PARK/STORM BASIN <sup>1</sup>
<i>Community Parks</i>		
Donnelly Park	27.6	10.0
Pedretti Park	25.4	–
Regional Sports Complex	31.8	–
Subtotal Community Parks	84.8	
<i>Neighborhood Parks</i>		
<i>Neighborhood-Serving City Parks</i>		
Curt Andre Park	2.4	–
Brad Bates Park	2.0	–
Bristol Park	4.0	–
Broadway Park	1.8	–
Centennial Park	3.5	–
Central Park <sup>2</sup>	0.5	–
Christoffersen Park	0.7	13.3
Dale Pinkney Park	3.3	–
Columbia Park	4.6	–
Crane Park	7.0	–
Crowell Park <sup>2,3</sup>	0.3	–
Denair Park <sup>2</sup>	0.8	–
Ferreira Ranch Park / Rose Circle	5.2	–
Four Seasons Park	4.3	–
GAR Park <sup>2</sup>	0.2	–
Greenwood Park <sup>2</sup>	0.3	–
Markley Park	1.0	5.4
Rotary International Park	1.8	3.2
Skate Park	1.3	–
Soderquist Park	2.4	–
Summerfaire Park	2.9	13.9
Sunnyview Park	2.2	7.5
Walnut/Christoffersen Basin	0.9	18.9

**TABLE 4-1: EXISTING PARKS AND RECREATIONAL OPEN SPACES**

PARK	ACRES	
	PARK ONLY	PARK/STORM BASIN <sup>1</sup>
Future NE Master Plan Park	4.0	–
<i>Neighborhood School Parks</i>		
Brown Elementary	5.0	–
Crowell Elementary	6.0	–
CSUS	5.0	–
Cunningham Elementary	4.0	–
Dennis Earl Elementary	4.0	–
Dutcher Middle	6.0	–
Julien Elementary	5.0	–
Osborn Elementary	5.0	–
Turlock High	10.0	–
Turlock Jr High	8.0	–
Wakefield Elementary	4.0	–
Pitman HS	20.0	–
Sandra Tovar Medeiros Elem.	4.0	–
Walnut Education Ctr	4.0	–
Future Walnut School	4.0	–
<i>Recreation Corridors (Greenway System)</i>		
Northeast Turlock Greenbelt	–	17.9
Taylor Road Corridor	4.6	–
Paseo Belleza	2.2	–
Paseo Entrada	1.9	–
Paseo de Leon	2.1	–
Paseo del Sol	1.9	–
<b>Total Acreage</b>	<b>248.6</b>	
<b>Acres/1000 Residents<sup>4</sup></b>	<b>3.5</b>	
<p>1 Storm drainage basin with dual use as park land. Not counted toward park acreage.</p> <p>2 Pocket park</p> <p>3 Unnamed park at north end of Crowell Rd.</p> <p>4 Based on 2010 population of 71,100.</p>		

**Figure 4-1: Existing and Future Parks System**



0 0.25 0.5 1  
Miles  
Source: City of Turlock, 2011; Dyett and Bhatia, 2012.

developed, it will help to give structure to the City and provide a protected and scenic network of trails for biking and walking, serving both recreational and circulation needs. Linear parks may also function as storm drainage swales.

For the purposes of acreage requirements discussed in the Standards section, Neighborhood-Serving City Parks, Neighborhood School Parks, and Recreation Corridors are all included in the Neighborhood Parks category. Altogether, Turlock has 164 acres of existing Neighborhood Parks, representing two thirds of the City's parkland.

## STANDARDS

Park standards ensure that adequate open space for recreational use will be available as the City grows. The General Plan establishes distribution standards for neighborhood and community parks, and size and service area standards for community parks and each sub-class of neighborhood parks.

With this new General Plan, dual-use storm drainage basins are not counted toward park acreage. Dual-use storm drainage basins are considered open space, and policies requiring dual use are included in the Open Space section of the Conservation Element (Chapter 7) of the General Plan. New special recreation facilities will also not be counted toward park acreage, and are treated separately in this chapter.

### Park Distribution

#### *Community Parks and Neighborhood Parks*

The 1992-2012 General Plan established a citywide standard of 4.2 acres of public parks per 1,000 residents, to be split evenly between community parks and neighborhood and parks. For the purpose of setting acreage requirements, neighborhood-serving city parks and neighborhood school parks are both included in the neighborhood parks category. When the Plan was updated in 2002, the ratio of neighborhood park acres and community park acres was adjusted to 2-to-1, to reflect the ratio as calculated at that time.

At the time of this General Plan, the City's actual park land ratio is 3.5 acres of park land per 1,000 residents, with 66 percent of this acreage in neighborhood parks and 34 percent in community parks. This General Plan emphasizes development of linear parks, which are counted toward

neighborhood park land. The General Plan establishes a citywide standard of 3.5 acres of park land per 1,000 residents, matching what is currently provided, and sets an upper level goal for a 3-to-1 (or 75%/25%) ratio of neighborhood to community parks. Because this will vary over time as the park system develops, the General Plan provides acreage standards by park type in a range, to be achieved on a citywide basis, as follows:

- Community Parks: 0.9 to 1.2 acres per 1,000 residents
- Neighborhood Parks: 2.3 to 2.6 acres per 1,000 residents
- Total: 3.5 acres per 1000 residents

The standards by park type are goals for citywide park land distribution. Individual development or master plan areas may provide varying ratios of neighborhood and community park land, following the Parks System diagram and more detailed master plans.

### Park Size

The General Plan introduces size standards for new parks by type or sub-type, as follows:

- Community Parks: 25 acres or larger
- Neighborhood-Serving City Parks: 3-8 acres, varying based on service population
- Neighborhood School Parks: 4 to 5 acres park; 4 to 5 acres school activity fields (elementary or middle); up to 20 acres school activity fields (high school)
- Pocket Parks: ¼ to 1 acre
- Recreation Corridors (Greenway System): N/A

### Park Service Area

Service area is the territory within which recreational needs are served by a park. The General Plan establishes a goal for all City residents to be within the service area for either a neighborhood-serving city park or a neighborhood school park, or within ½ mile of a community park, and within the service area of a community park.



- Community Parks: Up to a 2 mile radius
- Neighborhood-Serving City Parks: Up to 3/8 mile radius (approximately 2,000 feet)
- Neighborhood School Parks: Up to 1/2 mile radius
- Pocket Parks: Up to 1/4 mile radius
- Recreation Corridors (Greenway System): N/A

### Park Access and Location

Each type of park has a different function within the City, and should relate differently to its surroundings. The access and location characteristics of each park type are summarized in Table 4-2, and reflected in the General Plan's Land Use and Parks and Recreational Open Space Diagrams. More detailed discussion of park configuration and character may be found in the Parks Master Plan.

### Improvement Standards for New Parks

The periodically-updated Park Improvement Nexus Fee Study bases its cost assumptions on a set of buildout characteristics expected for new parks. While actual parks may or may not have the specific elements assumed by the fee, they are expected to be improved to a comparable level. The General Plan recognizes park improvements comparable to the buildout characteristics used in the Fee Study as minimum standards for new parks. The General Plan provides the following minimum improvement standards as a baseline:

- **Community parks.** A 25-acre park with frontage improvements on all sides; a fully improved parking lot; play equipment; lighted tennis courts; a four-diamond ballfield complex; full basketball courts; a bocce court; horseshoe pits with lights and arbor; a maintenance/concession building; rose garden; dog park; and restroom facilities.
- **Neighborhood parks.** A four-acre park with frontage improvements on all four sides; a swing set; play equipment; and either a basketball half court, sand volleyball, horseshoe pits, bocce ball, or shuffleboard.

TABLE 4-2: ACCESS AND LOCATION CHARACTERISTICS BY PARK TYPE	
PARK TYPE	ACCESS/LOCATION
Community Parks	<ul style="list-style-type: none"> <li>• Locate on an expressway, arterial, or collector street, with access on collector only</li> <li>• Provide at least 2 major street<sup>1</sup> frontages</li> <li>• Provide connection to pedestrian and bicycle routes</li> <li>• Provide parking</li> <li>• Locate activity areas to minimize conflicts with residential areas</li> </ul>
Neighborhood-Serving City Parks	<ul style="list-style-type: none"> <li>• Locate on collector or arterial street; access on collector</li> <li>• Provide 1 major street frontage and at least 1 local street frontage</li> <li>• Provide connection to pedestrian and bicycle routes</li> <li>• Locate in central location to serve adjacent neighborhoods</li> </ul>
Neighborhood School Parks	<ul style="list-style-type: none"> <li>• Locate on collector or arterial street; access on collector</li> <li>• Provide 2 major street frontages if possible</li> <li>• Locate adjacent to educational facilities</li> <li>• Provide connection to pedestrian and bicycle routes</li> <li>• Locate in central location to serve adjacent neighborhoods</li> </ul>
Recreation Corridors (Greenway System)	<ul style="list-style-type: none"> <li>• Linear corridors along canal, railroad, or street right-of-way, and through parks and greenbelts</li> <li>• Locate to provide pedestrian and bicycle linkages throughout the community and connections between major open space and recreational facilities</li> </ul>

<sup>1</sup> Major streets include arterials and collectors.

- **Recreation Corridors.** A 60-foot-wide greenway with a gravel walking path and a separate bicycle trail, extending the length of the development or as shown on the Parks System diagram.
- All parks except for Neighborhood School Parks are expected to include paved walkways; security lighting; benches; picnic tables; drinking fountains; signs; and landscaping including turf, ornamental plantings, and trees that provide ample shaded areas. Areas not planted with turf or used for active play should be landscaped with drought-tolerant plants.
- Storm drainage basins designed for dual use as open space may be incorporated into or adjacent to new parks. Basins are not counted as park acreage.

### Standards for Special Use Facilities in Parks

Special facilities such as a public recreation center, general use sports fields, an amphitheater, or botanical gardens can meet established desires expressed in community meetings and serve as magnets for community parks. These facilities may be operated by non-profit organizations through agreements with the City, and should be generally open to the public for a small user fee. Special use facilities should not occupy more than 50 percent of a community park unless additional space is needed for the special facility to function.

The General Plan distinguishes between appropriate uses for parks, such as those above, and facilities that are not generally available for public use. The basic rule will be this: if a special use facility will be generally open for public use for free or for a small fee, it may be developed within parks. If a facility will not generally be open for public use for free or a small fee, it should not take place within park land that counts toward the City’s park acreage requirement. A list of special use facilities expected to be generally available for public use and those that are expected to be self-supporting and not generally open for public use follows. However, the actual operating characteristics of a given facility (e.g., whether it will be generally open to the public) will be the determining factor. More detailed guidance about the types of facilities appropriate for community parks and their operating characteristics is provided in section 4.2, Community Facilities.

#### *Facilities Expected to Be Generally Open for Public Use and Appropriate for Parks*

Baseball Fields (Public and Non-League)	Volleyball Courts
Softball Fields (Public and Non-League)	Gymnasiums
Soccer Fields (Public and Non-League)	Public Recreation Centers
Basketball Courts	Swimming Pools
Tennis Courts	Open Play Areas
Volleyball Courts	

#### *Facilities Expected to Provide Limited Access and Not Appropriate for Parks*

Future Sports Fields or Courts (Private or League Play)
Private Aquatic or Recreation Centers
Golf Courses

### Additional Park Standards

The Parks Master Plan shall be updated following the General Plan Update, and will detail additional standards for each park type. Standards include:

- Site characteristics such as configuration, location, and its visual and experiential character;
- Basic requirements for outdoor sports facilities, passive recreation amenities, play areas, picnic areas, and service amenities like parking and restrooms;
- Optional elements.

### FUTURE NEED

The need for future neighborhood parks and community parks is determined by applying distribution standards to the projected buildout capacity of approximately 104,500. Deduction of existing facilities from the overall future need provides the additional net acreage needed. The build-out population accommodated by the General Plan would need an estimated 362 to 370 acres of park land in order to provide 3.5 acres of park land per 1,000 residents, not including dual-use drainage basins. Subtracting existing parkland, there is a need for approximately 122 new acres of park land as part of development over the next 20 years. The General Plan's parks diagram proposes one approximately 25-acre new community park land and 97 acres of new neighborhood park land, resulting in a 30/70 split between community and neighborhood park land.

As part of new development areas, new parks should be designed and located so that they meet the General Plan's size, service area, and access and location standards, as well as the more detailed guidance provided in the Parks Master Plan. Certain parts of existing neighborhoods are not adequately served by parks, based on service area standards. Due to their small size requirements, pocket parks are the best solution for areas currently lacking in nearby park space.

**TABLE 4-3: PARK ACREAGE AND FUTURE NEED**

	POPULATION	PARK ACRES			PARK ACRES/1,000 RESIDENTS		
		COMMUNITY PARK	NEIGHBORHOOD PARK	TOTAL	COMMUNITY PARK	NEIGHBORHOOD PARK	TOTAL <sup>2</sup>
Existing <sup>1</sup>	71,100	85	164	249	1.2	2.3	3.5
General Plan Buildout	33,400	25	97	122	0.7	2.9	3.7
<b>Total</b>	<b>104,500</b>	<b>110</b>	<b>261</b>	<b>371</b>	<b>1.0</b>	<b>2.5</b>	<b>3.5</b>

<sup>1</sup> Current population is as of 2010, according to the California Department of Finance.

<sup>2</sup> Total citywide park acreage should be developed at a ratio of 3.5 acres per 1,000 population. The City should pursue a neighborhood-to-community park ratio of 3-to-1, or 2.6 acres per 1000 to 0.9 acres per 1000 but this will fluctuate over time.

Source: City of Turlock, 2010; Dyett & Bhatia, 2011.

## PLANNED IMPROVEMENTS

The General Plan seeks to guide the development of a park system that meets the recreation needs of a growing population. The envisioned system of parks and recreation corridors would also connect neighborhoods and destinations to one another in a way that facilitates walking and biking and structures the City’s form. Park system improvements are summarized here, and represented in Figure 4-1. The diagram is conceptual; future park locations are not meant to be specific. Illustrative diagrams for each Master Plan Area, including the relationship between parks and other land uses, are in Chapter 3. Table 4-4 below identifies parks shown in Figure 4-1 by acreage.

### Community Parks

The General Plan identifies one new community park of approximately 25 acres, plus a 12.5-acre dual-use detention basin, to be developed as part of the Southeast 3 Master Plan Area. The park should include a mix of recreational or special facilities (see section 4.2) and areas for passive recreation and enjoyment. Specific elements have been proposed as priorities for a new community park: horseshoes, skating, a dog park, sand volleyball, tennis courts (minimum six), two playgrounds, parking, open space, and a large (200-person capacity) covered picnic area. These elements may be reconsidered as planning for the park advances.

TABLE 4-4: PLANNED PARKS			
PARK	ACRES		
	MASTER PLAN AREA	PARK	ADJACENT STORM BASIN <sup>1</sup>
<i>Community Parks</i>			
Community Park 1	Southeast 3	25.0	12.5
<b>Subtotal Community Parks</b>		<b>25.0</b>	
<i>Neighborhood Parks</i>			
<i>Neighborhood-Serving City Parks</i>			
Neighborhood Park 1	Southeast 1	5.0	–
Neighborhood Park 2	Southeast 1	2.0	–
Neighborhood Park 3	Southeast 2	5.0	–
Neighborhood Park 4	Southeast 2	5.0	–
Neighborhood Park 5	Montana–West	3.0	–
Neighborhood Park 6	Montana–West	2.0	–
<i>Neighborhood School Parks</i>			
Elementary School Park 1	Southeast 1	4.0	–
Elementary School Park 2	Southeast 2	4.0	–
Elementary School Park 3	Southeast 3	3.0	–
Elementary School Park 4	Within City	3.0	–
Middle School Park 1	Southeast 3	4.0	
High School Park 1	Southeast 3	15.0	–
<i>Recreation Corridors (Greenway System)</i>			
Recreation Corridor 1	Southeast 1	–	5.0
Recreation Corridor 2	Southeast 2, 3	12.0	–
Recreation Corridor 3	Southeast 2, 3	12.0	70.0
Recreation Corridor 4	Southeast 3	18.0	1.0
<b>Subtotal Neighborhood Parks</b>		<b>97.0</b>	
<b>Total Acreage</b>		<b>122.0</b>	

1. Dual use storm drainage basins associated with parks are shown here, but not counted toward park acreage.

Source: Dyett & Bhatia, 2011.

## Neighborhood Parks

### *Neighborhood-Serving City Parks*

Six new neighborhood-serving city parks would be created with development following the General Plan. These parks are typically 4 to 5 acres in size, with three 2- or 3-acre parks in the Montana-West and Southeast 1 areas, for a total of approximately 22 acres, in addition to 2 acres of dual-use drainage basins. Two neighborhood parks would be included in the Southeast 1 Master Plan Area; two in Southeast 2; and two in the Montana-West area. General locations for these parks are shown in Figure 4-1. In addition, the City would be a partner in facilitating new pocket parks in existing neighborhoods with poor access to parks.

### *Neighborhood School Parks*

Neighborhood school parks associated with six new schools (four elementary, one middle and one high school) would be developed with General Plan buildout. These school park lands would total about 33 acres, and would be available for public use after school hours, as part of the City's joint-use agreement with Turlock Unified School District. New elementary schools would be located in the Southeast 1, 2, and 3 master plan areas, and one new elementary school is planned for a site within City limits. A new high school and one middle school and their associated recreational areas will be created with the Southeast 3 master plan area.

### *Recreation Corridors (Greenway System)*

The new General Plan initiates a system of neighborhood greenways in the Southeast master plan areas. Recreation corridors will provide local greenspace and pedestrian and bike routes in the interior of new neighborhoods. The General Plan includes approximately 42 acres of recreation corridors and greenway trails, with another 76 acres of dual-use storm drainage basins alongside recreation corridors at the urban edge. New greenbelt parks a minimum of 60 feet wide will define nearly the length of the eastern edge of the City, with linear storm basins broadening the green corridor by up to 300 feet more.



*Neighborhood parks will be integrated into each of Turlock's future master plan areas.*

## FINANCING

### Park Improvement Fee

To assist in the acquisition and development of City parks, the City requires dedication of parkland or payment of in-lieu fees on all new residential, commercial, office, and industrial development. According to Turlock's Park Development and Acquisition Policy, adopted by City Council in June 1999, Park Improvement Fees are deposited into accounts for each planned neighborhood and community park. Funds may be loaned from one neighborhood park account to another, but must stay within the same quadrant of the city. All new development pays funds toward new community parks, which serve the entire City. Parkland may be acquired by dedication and/or purchased with park fees, at the City's discretion.

The Park Improvement Fee is reviewed periodically and revised as necessary, in accordance with the procedural guidelines established by AB 1600, codified in California Government Section 66000 et seq. These procedures require that "a reasonable relationship or nexus must exist between a governmental exaction and the purpose of the condition." Turlock's Park Improvement Fee must be reviewed and updated following adoption of the General Plan.

### Park Improvements Serving Existing Neighborhoods

Revenues collected through Park Improvement Fees may not be used to pay for park improvements serving already-developed areas, and may not be used for park maintenance or operations. For improvements to existing parks and the development of new pocket parks in existing neighborhoods, the City must rely on other funding sources.



## POLICIES

### Guiding Policies

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- 4.1-a High-Quality Park System.** Develop a high quality, diversified public park system that provides a variety of recreational opportunities for all City residents.
- 4.1-b Park Standards and Priorities.** Review park standards and park improvement priorities periodically to ensure that needs are being met.
- 4.1-c Cooperation With School District.** Continue cooperative efforts with the Turlock school district through joint use agreements for park and recreational facilities.  
*Although school parks are not available for public use at all times and do not contain complete park facilities, substantial cost savings justify shared use.*
- 4.1-d Park Fees and Land Dedication.** Follow the City’s Park Improvement Fee Nexus Study in determining the collection and use of park fees and park land dedication, and periodically update to ensure equitable distribution of cost between existing and new residents, businesses, and property owners.
- 4.1-e Special User Groups.** Identify the needs of special user groups, such as the disabled and elderly, and address these in the design and development of park and recreation facilities.

### Implementing Policies

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#### **Master Planning**

- 4.1-f Parks, Recreation, and Open Space Master Plan.** Update the City’s Parks, Recreation, and Open Space Master Plan following the adoption of the General Plan, and implement its objectives.  
*Development of a new Parks Master Plan should specify in greater detail park improvement standards and costs estimates, a facility prioritization plan, and a financing and acquisition schedule.*

#### **Planned Improvements by Park Type**

- 4.1-g Community Parks.** Acquire and develop one new 25-acre community park in the southeast (Southeast 3 Master Plan Area), concurrently with development. The new



*The City and neighborhoods should pursue opportunities to create pocket parks at the sites of small detention basins and small public spaces in the downtown area.*

community park should include recreational and other facilities, provided that these facilities are generally available for public use. Such facilities should not occupy more than 50 percent of park area. An additional community park must be part of any future development to the Northeast.

- 4.1-h Neighborhood-Serving City Parks.** Acquire and develop six new neighborhood-serving city parks, including two each in the Southeast 1 and Southeast 2 Master Plan Areas, and two in the Montana-West Master Plan Area. Place neighborhood parks at the core of new neighborhoods and co-locate neighborhood-serving city parks and neighborhood schoolparks wherever possible, as depicted on the Parks diagram.
- 4.1-i Neighborhood School Parks.** Maintain joint-use relationship with Turlock Unified School District allowing public access to and use of school playfields during non-school hours. Coordinate with the School District in the location and design of school properties to facilitate flexible use of play fields.

*Generalized park locations have been selected to accommodate almost all new residences within 3/8-mile of a neighborhood-serving city park or one half mile of a neighborhood school park or community park. Neighborhood parks should generally not be smaller than the standards set forth in this section. Small parks are expensive to maintain and are unable to adequately support the full range of desired facilities.*

- 4.1-j Pocket Parks.** Work with neighborhood groups that wish to establish new pocket parks, in areas with a shortage of park space based on service area standards. The General Plan anticipates a structure whereby park land is purchased by local benefit assessment districts, while the City may agree to maintain new pocket parks. In the downtown core, pursue opportunities to acquire and develop small public spaces.
- 4.1-k Recreation Corridors and Greenways.** Develop a system of linear corridors designed to provide pedestrian and bicycle linkages through and between neighborhoods, connections between major open spaces and recreational facilities and greenbelts at the City's edge. In new development areas (see Chapter 3), these must be continuous, as shown on Figure 4-1.

*Neighborhood-serving city parks, neighborhood school parks, pocket parks, and recreation corridors are all counted as Neighborhood Parks for the purpose of acreage distribution standards.*

**Distribution Standards**

- 4.1-l Community and Neighborhood Parks.** Provide 3.5 acres of park land per 1,000 residents, aiming for a citywide ratio of between 2-to-1 and 3-to-1 for neighborhood and community park land. Neighborhood parks include public neighborhood-serving city parks, neighborhood school parks, and recreation corridors.
- 4.1-m Increase Level of Service and Update Standards.** Following the decennial census, update park standards and dedication requirements to reflect the increased level of service if this has been achieved.

*The Quimby Act requires that dedication of parkland or collection of park fees shall be benchmarked on the latest federal census.*

**Location and Design Characteristics**

- 4.1-n Park Location Criteria.** Locate public parks in visible and accessible locations, in accordance with location criteria specified in this Element. Park locations may be adjusted within each master plan sub-area, but must remain within the boundaries of the sub-area.
- 4.1-o Minimum Park Buildout.** All new parks must be developed to the minimum standards established in the Park Improvement Nexus Fee Study. These standards may be periodically updated.
- 4.1-p Design for Park Safety.** Ensure safety of users and security of facilities through lighting, signage, fencing, and landscaping, as appropriate and feasible, following guidelines established in the *Parks, Recreation and Open Space Master Plan*.

**Park Development and Acquisition**

- 4.1-q Park Improvement Fees.** Following the specifications of the Park Improvement Nexus Fee Study, calculate park fees to enable purchase of acreage and provision of off-site park improvements for 3.5 acres of parkland per 1,000 residents added and require payment of these fees and/or land deduction as a condition of all new residential development. This park land may not be used for dual-use storm drainage basins.

*California Government Code Section 66477 (Quimby Act) allows the City to require dedication or payment of in-lieu fees sufficient to buy and provide off-site improvements for a maximum of 3 acres per 1,000 new residents; if the amount of existing parks exceed this limit, then the existing amount, up to a maximum of 5 acres per 1,000 residents, may be adopted as the standard.*



*The General Plan calls for the development a system of linear corridors designed to provide pedestrian and bicycle linkages, connections between major open spaces and recreational facilities, and greenbelts at the City's edge.*

**4.1-r Fees for Non-Residential Development.** Levy a parks and recreation fee on both residential and nonresidential development commensurate with expected use of such facilities by residents and employees of non-residential developments.

**4.1-s Land Acquisition Costs.** Use available techniques to minimize acquisition costs. Techniques may include purchase of land at below appraised market value; dedication of land in lieu of fees; and acquisition of park sites promptly after collection of fees.

*The sale of land at prices below appraised market value (“bargain sale”) to a non-profit land trust that re-sells to the City can provide tax savings to the seller.*

*Delay in acquisition diminishes the purchasing power of available funds and is not allowed. Non-availability of maintenance funds may not be a reason to delay park acquisitions.*

**4.1-t Funding for Maintenance of New Parks.** Continue to examine the cost of ongoing maintenance of new neighborhood parks and identify funding mechanisms to support their maintenance, as part of the master planning process for new neighborhoods.

**4.1-u Maintenance of Parks System.** Ensure that adequate funds are available for maintenance of facilities.

*If necessary, consider the establishment of a citywide maintenance district.*

#### **Dual Use and Joint Use Agreements**

**4.1-v Coordinated Planning for Greenways and Non-Motorized Transportation.** Coordinate park planning and improvements with facilities for pedestrian and bicycle travel, particularly in the development of a public greenway system.

*See Chapter 5, Circulation Element.*

**4.1-w Shared Rights-of-Way.** In cooperation with the Turlock Irrigation District, complete a linear recreation corridor in or adjacent to the irrigation canal rights-of-way along East Canal Drive, and with the west extension of Canal Drive in the Westside Industrial Specific Plan area.

**4.1-x Joint School Park Use Agreement.** Continue joint school park usage agreement with the Turlock Unified School District.

**4.1-y Joint-Use Recreation Facilities.** Support the efforts of the Parks, Recreation, and Community Programs Commission and other organizations to fund and develop new

joint-use recreation facilities. Special facilities that are generally open for public use are appropriately located within neighborhood and community parks. Special facilities where public access is limited are encouraged to locate adjacent to city parks, where activities may be synergistic. See Section 4.2, Community Facilities.

*Through coordinated efforts with other recreation groups, such as Turlock Little League, the City can expand opportunities for new recreational facilities.*

### **Planting**

**4.1-z Native Plants.** Landscaping should use native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, conserve water, and provide habitat.

**4.1-aa Mature Trees.** Mature trees should be retained to the greatest extent possible.

## **4.2 COMMUNITY FACILITIES**

Community facilities are the public and private institutions that support the civic, social, and recreational needs of the population. They offer a variety of athletic, artistic, and educational programs and special events. The General Plan identifies needs and priorities for new facilities, but typically does not identify specific locations. The following types of community facilities are considered in this section: sports and recreational facilities; cultural facilities; community centers; civic buildings; regional exhibition facilities; and social and community services. These facilities are shown on Figure 4-2.

### **SPORTS AND RECREATIONAL FACILITIES**

The City strives to provide adequate athletic and recreational facilities for residents. These include Little League baseball fields, softball fields for adults, bicycle paths and walking trails, gymnasiums, and other facilities. Facilities serving citywide needs are most appropriately located in or adjacent to community parks. Smaller facilities that can more easily be distributed throughout the City, such as multi-use play fields and basketball courts, are typical features of neighborhood parks. The City relies on its multi-use agreement with the School District for shared use of swimming pools and gymnasiums at Turlock and Pitman High Schools, and for most of the City's youth baseball fields and tennis courts.



*Turlock gained ten soccer fields and two softball fields with the opening of the Regional Sports Complex in 2002. The City will need to continue to develop new recreational facilities as it grows, including Little League baseball fields, tennis courts, and an indoor recreation center. Some will be developed privately or with cooperation between the City and other organizations.*

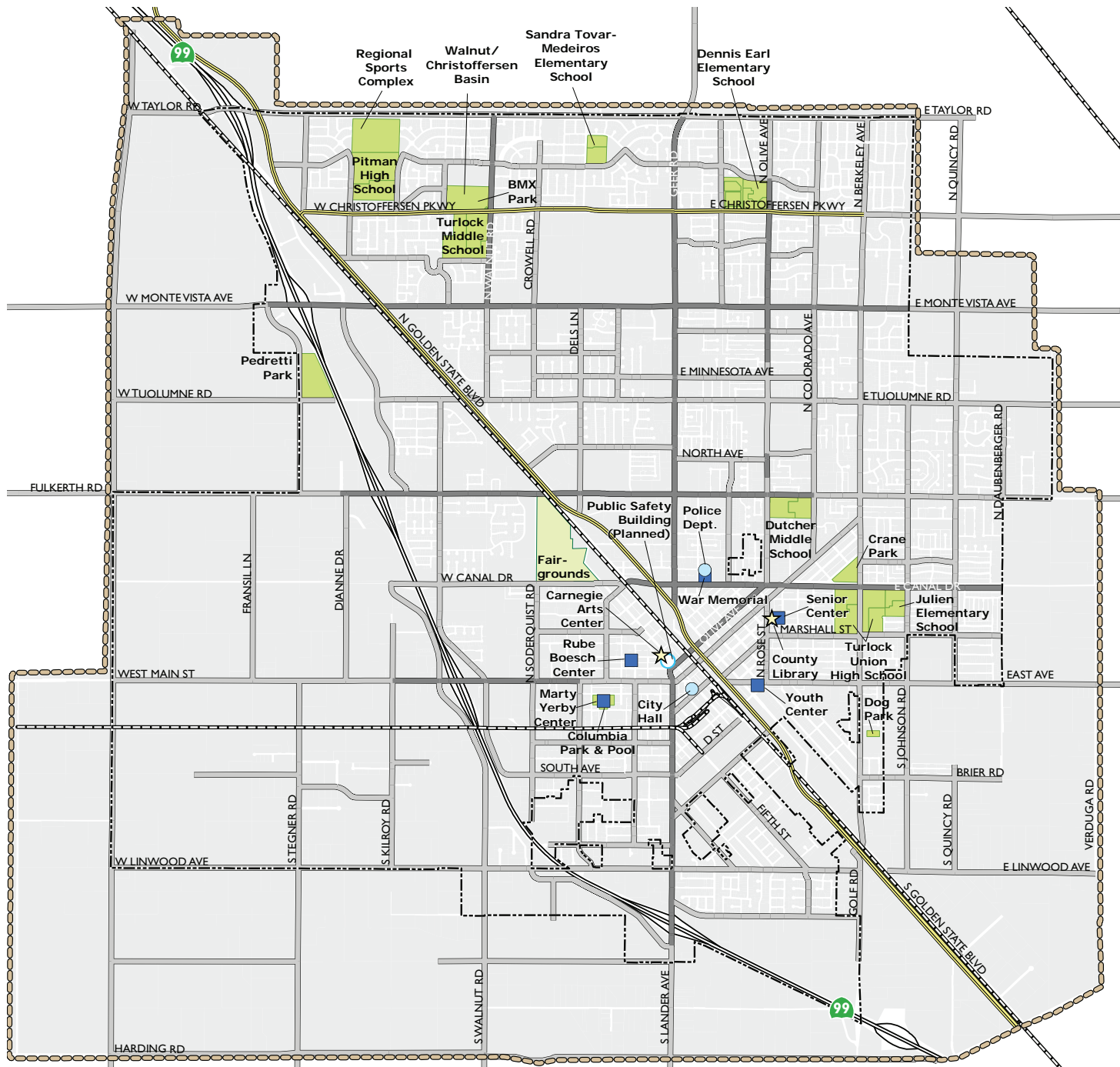
## Future Needs

The Parks Master Plan, last updated in 2003, identified Turlock's need for various special use facilities to the year 2013. The opening of the Regional Sports Complex, with its 10 soccer fields and two baseball fields, and Pitman High School's gymnasium and pool, which are available at certain hours for community use, have met some of these needs. Turlock's current inventory of selected recreation facilities is shown in Table 4-5, along with estimated demand for new facilities in 2030 based on National Recreation and Park Association (NRPA) standards. These facility levels are not the determining standards; they are only useful as a national benchmark to inform more detailed planning. The facilities are distinguished according to whether they are expected to be open for general public use, and thus appropriate for parks and counted toward park acreage, as described in section 4.1.

The demand for specific facilities over the 20-year planning period should be recognized as approximate. Turlock's sports and recreational facility priorities as of 2010 follow. Again, they are distinguished according to whether they are expected to be open for general public use.

### *Priority Facilities Expected to Be Generally Available for Public Use*

- Community park (minimum 25 acres) that includes horseshoes, skating, a dog park, sand volleyball, tennis courts (minimum six), two playgrounds, parking, open space, and a large (200-person capacity) covered picnic area. Community parks may have other facilities. See Section 4.1.
- Aquatic center
- Teen center
- Public indoor recreational venue to support volleyball, indoor soccer, basketball, fitness and wellness programs, and enrichment classes
- Indoor facilities in existing parks for recreation programs
- Increased walking and biking trails accessible to a wide range of people, including seniors, the disabled, families, and active adults.

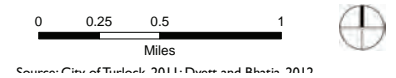


**Figure 4-2: Existing Community Facilities**

- Existing Civic Buildings
  - Planned Public Safety Building <sup>1</sup>
  - Community Centers
  - ☆ Cultural Facilities
  - Sports and Recreational Facilities <sup>2</sup>
  - Regional Exhibition Facilities
- Existing Circulation Network**
- Freeway
  - Existing Expressway
  - Existing Arterial
  - Existing Collector
  - Railroads
- Boundaries**
- Study Area Boundary
  - - - City Limits & County Islands

(1) Additional future community facilities will also be developed; specific locations not yet determined.

(2) Only those parks and schools providing extra space and significant recreational amenities are shown.



Source: City of Turlock 2011; Durr and Bhois 2012

TABLE 4-5: TURLOCK SPORTS FACILITIES INVENTORY AND NEED				
FACILITY TYPE	NUMBER, 2010	NRPA STANDARDS	DEMAND, 2030	FACILITY NEED
<i>Facilities Generally Open for Public Use</i>				
Baseball Fields (Adult or Non-League) <sup>1</sup>	14	1 per 5,000	21	7
Softball Fields <sup>1</sup>	18	1 per 3,000	35	17
Soccer Fields	16	1 per 10,000	10	0
Basketball Courts (full court)	61	1 per 5,000	21	0
Basketball Courts (half court)	30	NA		
Open Play Areas	30	1 per 4,000	26	0
Gymnasium <sup>2</sup>	6	NA		
Tennis Courts	17	1 per 2,000	52	35
Recreation Centers	0	1 per 30,000	3	3
Swimming Pools	3	1 per 20,000	5	2
Volleyball Courts	18	1 per 5,000	21	3
<i>Facilities Not Generally Open for Public Use</i>				
Baseball Fields (Little League)	4	1 per 5,000	21	17
Golf Courses (18-Hole and Driving Range)	0	1 per 50,000	2	2
Golf Courses (9-Hole) <sup>3</sup>	0	1 per 25,000	4	4
1 Eight (8) fields are counted as both baseball and softball fields.				
2 The City currently relies on school sites for all gymnasiums.				
3 Two 18-hole courses and three 9-hole courses are recommended.				

Sources: City of Turlock Parks Master Plan, 2003; City of Turlock, 2009; Dyett & Bhatia, 2011.

*Priority Facilities Not Generally Available for Public Use*

- Little League baseball complex (minimum four fields in one location)
- Golf course (not necessarily public).



### Appropriate Locations

As discussed in section 4.1, the General Plan introduces a new approach to siting sports and recreational facilities. Two of the City's existing community parks, Pedretti Park and the Regional Sports Complex, are occupied primarily by sports facilities operated for League play and not generally available for public use. During the phase of urban growth directed by this Plan, these types of facilities will no longer be included in public parks. A golf course would not be an appropriate use for community park space, and would be ideally located where it could be maintained with reused water from the Regional Water Quality Control Facility. Such potential developments as a private Little League complex or a privately-operated aquatic center would be highly-suited to sites adjacent to a community park, as both draw recreational users from the entire City. The critical location criterion is public access: only facilities that are generally available to the public for free use or use at a small fee belong in City parks.

## CULTURAL FACILITIES

### Arts Center

The Carnegie Arts Center, which was destroyed in an arson fire, has been rebuilt and expanded. Completed in 2011, the 18,000-square foot facility serves as Turlock's community art center as well as a venue for special events, arts and cultural classes, private rentals, and small theatrical productions.

### Library

Turlock has one public library, which is part of the Stanislaus County library system. Member libraries are integrated into a patron database that provides a common computer system platform and technical support, and facilitates the sharing of resources within the system. Currently, the Library's primary funding source is a public facility fee program managed by the County, to which development in the City contributes. The Stanislaus County Library provides 0.26 square feet of library space per resident of the County. The Library's *Strategic Plan 2011-2015* identifies the need for an additional 205,000 to 249,000 square feet of library space systemwide by 2030 to provide 0.4 to 0.45 square feet per capita, within the range of current library industry best practice.



*The Turlock Senior Center is one of five community centers in the City that provide multi-purpose rooms for recreational programs, meetings, and special events (top). The Turlock branch of the Stanislaus County Library, built in 1968, is not adequate to meet the needs of the City's growing population (bottom).*

The Turlock branch library is located at 550 North Minaret Avenue, next to the Senior Center (see Figure 4-2.) The library comprises 10,000 square feet, which translates to 0.12 square feet per person in 2011, short of both the current system-wide ratio and the Library's planning standard. Turlock's library is inadequate to serve the current population, a condition that will worsen as the population grows. To meet the proportion of space per capita that the Library uses in its *Strategic Plan 2011-2015*, and counting only residents of Turlock, the City would need between 31,800 and 37,000 square feet of new library space at General Plan buildout, in addition to the existing library. The new library space would need to provide adequate shelf space for an expanded collection, adequate seating space for quiet reading and individual study; group study and tutoring rooms; community meeting space for 50 to 150 persons; and children's space.

The Library intends to conduct a Facilities Master Plan to identify needs systemwide. It is likely to pursue development of a smaller library in the range of 25,000 - 30,000 square feet in Turlock, as soon as is feasible. Library expansion should take place in a way that meets the Library goal for all residents to have convenient access to inviting, safe, and well-maintained library, while also contributing to the vitality of Turlock's downtown area.

#### *California State University, Stanislaus (CSUS) Library*

The CSUS Library comprises approximately 52,800 square feet of public use floor area on the CSUS campus, and houses nearly 500,000 volumes. The library's core purpose is to serve students, faculty and staff at the University. However, it is open to the public, and community members may have borrowing privileges for a small fee.

#### **Cultural Facilities in Parks**

The Parks Master Plan has identified the potential for an outdoor amphitheater in Turlock. Botanical or demonstration gardens have also been considered. These or other facilities could add diversity and interest to the City as it grows, and could work well as elements of a community park.

### **PLANNING AND OPERATING CULTURAL AND RECREATIONAL FACILITIES**

Many special-use facility needs have been identified over the years. With the opening of the Regional Sports Complex and the new high school in the last decade, some of these needs have

been achieved. Currently, the City is committed to supporting the rehabilitation and development of the Carnegie Arts Center. Looking forward, the City on its own will likely not be able to support development and operation of major facilities. It is helpful to summarize here a path toward identifying, completing, and operating projects in the years to come.

The first step toward realizing a cultural or recreational project will often be to conduct a feasibility study. The study should evaluate community demand, potential partners in development and operations, locations, and funding strategies. Next, if the study results in a finding that the City can justify supporting development, and the project has community support, it should be added to the City's Capital Facilities Fee program. It is anticipated that public funds will only partially cover the costs of new facilities, particularly facilities that have revenue-generating potential.

Third, most new facilities are likely to be operated by a non-profit or other organization, through an agreement with the City. For example, the Carnegie Arts Center is being operated and maintained by the Carnegie Foundation. While the Recreation Department is able to manage a basic program of arts and recreational classes, maintenance and operation of a golf course or a full-scale aquatics center should be handled by a private-sector partner. A demonstration garden and a Little League complex may be appropriately operated by local business and community organizations.

## COMMUNITY CENTERS

These facilities are designed to meet the needs of the population for classes, civic meetings, social gatherings, and cultural events. Some community centers are programmed for specific populations. The Recreation Division operates four community centers: the War Memorial, the Senior Center, the Youth Center, and the Rube Boesch Center, as shown on Figure 4-2. In addition, there is a community building in Columbia Park, known as the Marty Yerby Center, with meeting rooms and a gymnasium.

The Recreation Division conducts numerous classes and activities, including art classes, sports leagues for youth and adults, dance and exercise programs, aquatics classes, and after school activities, and youth and teen programs. Most activities are hosted at the community centers, and the buildings are also available to be rented for special events.



*Community needs for health care, employment assistance, and emergency food assistance are met by Stanislaus County and non-profit providers.*

### Future Needs and Locations

The Parks Master Plan, revised in 2003, cites the National Recreation and Park Association standard for one meeting room per 7,500 persons. The City will need eight new meeting rooms to meet this standard for the General Plan build-out population. The City of Turlock may meet this need by providing facilities in the future community park; by adding a second Senior Center to serve the northern part of the City; by opening a teen center; and by adapting and developing facilities elsewhere. A teen center has been identified as a City priority.

Community centers are well-located in or adjacent to parks. General-use community centers should be distributed throughout the City, to provide recreational and meeting space for neighborhoods. Community centers that serve a specific population and are the only one of their kind should be centrally located.

### CIVIC BUILDINGS

This category includes City and County administrative and public buildings. Turlock's City Hall, located at 156 South Broadway, is the home of most of the City's administrative functions and the site of public meetings. The 58,000-square foot building was completed in 2003. The City's Police Department is currently based at 900 North Palm Avenue, but is planned to be relocated to the North Broadway site of the new Public Safety Building. Fire Department administration will also move to the Public Safety Building. Other than the planned Public Safety Building, the 2008 Needs Assessment concluded that existing civic buildings are adequate for the foreseeable future. The Public Safety Building will also have a community meeting room that will be available for City-sponsored functions and training.

School buildings and grounds must also be made available for community use according to the terms of the California Civic Center Act. School facilities are discussed in Section 4.3.

### REGIONAL EXHIBITION FACILITIES

#### Stanislaus County Fairgrounds

The Stanislaus County Fairgrounds are located on 72 acres bordered by North Broadway, Canal Drive, North Soderquist Road on the west, and Hawkeye Avenue on the north. The County Fair typically takes place for ten days during July; in 2010, the Fair drew an estimated 209,000

visitors. The Fairgrounds is also used during the year for events such as horse shows and craft shows. Facilities and grounds are available for rent for picnics and meetings, and space is available for RV camping. The Fairgrounds is on the former site of the Turlock Assembly Center, and is listed on the National and State Register of Historic Places (see Chapter 7.) There may be opportunities for greater use of Fairgrounds facilities for outdoor concerts or other events. The Fairgrounds may be seeking expansion or relocation in the future, and should be encouraged to find a site in Turlock west of Highway 99.

## HEALTH AND COMMUNITY SERVICES

Social and community services are provided by the private and nonprofit sectors and by Stanislaus County. Stanislaus County’s Health Services Agency (HSA) operates a medical clinic at 800 Delbon Avenue adjacent to Emanuel Medical Center. The clinic provides family medical services, pregnancy care, and other health programs. The County’s Community Services Agency (CSA) operates the welfare-to-work employment assistance program and provides aid to children and families from two locations in Turlock: 101 Lander Avenue and 275 Third Street. Adjacent to the Third Street facility, United Samaritans operates a lunch program serving some 28,000 meals annually, while another emergency food bank, the Tything Place, is located at 800 Wayside Drive.

## POLICIES

### Guiding Policies

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- 4.2-a Facilities to Serve Community Needs.** Support the development of community facilities to enhance the City’s identity and meet the civic and social needs of the community.
- 4.2-b Special User Groups.** Identify the needs of special user groups, such as the disabled and elderly, and address these in the design and development of community facilities.

## Implementing Policies

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### **Sports Facilities**

**4.2-c Prioritize Projects and Study Feasibility.** Within two years of adopting the General Plan, identify and order priorities for new sports and recreation facilities, and undertake feasibility studies to determine whether and how to proceed with development. These projects may include but are not limited to:

- **Little League Complex** with a minimum of four fields. A complex devoted to League play would not be appropriate for a City park. However, sites adjacent to community parks or recreation corridors should be prioritized.

*The 2003 Parks Master Plan update identified a need for 13 additional fields, and proposed a five-field complex to address this need. NRPA standards for one Little League field for every 5,000 residents would translate to a projected demand for 17 new fields by 2030.*

- **Indoor Recreation Center** including a gymnasium, volleyball, indoor soccer, basketball, fitness/wellness programs and enrichment classes. The City should especially consider redevelopment or reuse of City-owned properties in central locations and adjacent to other community facilities or parks.

*A recreation center could serve as the anchor for a citywide recreational and social hub which could also include a teen center, offices for the Recreation Division, the Police Activities League, and new and existing outdoor spaces.*

- **Indoor Recreation Facilities at Existing Parks**
- **Aquatic Center**, potentially combined with an indoor recreation center; operated as a joint venture; or developed as a private recreation facility.
- **Golf Course** at an appropriate location in order to meet this community need, but not necessarily with public funds.

*Given National Recreation and Park Association standards that call for a nine-hole golf course for every 25,000 residents and an 18-hole golf course and driving range for every 50,000 residents, demand for at least one golf course is assured. Though there has been interest in developing a golf course for many years, the lack of start-up financing has prevented site acquisition.*

**4.2-d Establish Partnerships and Funding Strategy.** Following a feasibility study that identifies potential means of sustaining new facilities, confirm community support, negotiate partnerships as appropriate, and amend Capital Facilities Fee program to include the project.

**4.2-e Plan, Develop and Operate New Facilities.** Following an effective strategy identified during the planning phase, develop new facilities and support their successful operations.

**Cultural Facilities**

**4.2-f Carnegie Arts Center.** Continue to support the operation of the Carnegie Arts Center, including multi-purpose rooms, classrooms, galleries, and office space. The Arts Center also includes an outdoor plaza.

**4.2-g Library Expansion and Enhancement.** Coordinate with the Stanislaus County Library to expand library facilities and enhance library services in Turlock, with the goal of having 0.4 to 0.45 square feet of library space per capita. New library space should accommodate an expanded collection and include adequate seating space for quiet reading and individual study; group study and tutoring rooms; community meeting room space for 50 to 150 persons; and children’s space. Expansion options may include, but are not limited to:

- Expansion of the existing Library;
- Addition of a new branch or branches;
- A new Library for Turlock, located downtown;
- Development of a joint-use community/school library at a new school site.

*Continue to work with the County to prioritize public facilities funding to construct Library expansion. There should be a minimum of a 25,000 square foot library during this planning period. See also policies in Section 4.3, Public Education Facilities.*

**4.2-h Joint Use School/Community Library.** Work with Stanislaus County Library and Turlock Unified School District to explore including a joint use library as part of the new middle school or high school. A joint-use library should be designed for flexible community and school use that complements school operations. State grants may be available for this project.

**4.2-i Cultural Activities.** Pursue other opportunities to enhance cultural activity in Turlock, following the strategies outlined for Sports and Recreational Facilities. Successful development of new cultural facilities will likely involve working in partnership with non-profit organizations, the school districts, the University, and/or the private sector.

### ***Community Centers***

**4.2-j New Community Centers.** Ensure that community centers provide sufficient space to conduct civic meetings, recreational programs, and social activities to meet the needs of residents. The City should aim to meet the standard of one meeting room per 7,500 residents. Community centers should be distributed throughout the City, and should serve the needs of seniors; families with children; and teens. Locate new Community Centers within or adjacent to parks; in neighborhood centers; or Downtown.

### ***Regional Exhibition Facilities***

**4.2-k County Fairgrounds.** Support Stanislaus County’s efforts to expand the Fairgrounds or relocate to an appropriate, accessible site. Explore the potential for broader community and recreational use of the Fairgrounds.

### ***Health and Community Services***

**4.2-l Health and Community Services.** Support public, private, and non-profit service providers to create and expand opportunities for affordable and high-quality child care, elder care, and other needed services.

## **4.3 PUBLIC EDUCATION FACILITIES**

Turlock’s population has grown at an average of almost 3 percent annually in the last two decades, adding 28,000 residents between 1990 and 2008. Almost half of the City’s population (42 percent) is between the ages of 25 and 55, while the young adult cohort (ages 18-24) had the highest annual growth rate between 2000 and 2007. Turlock’s growth places added importance on sound planning for educational facilities. The Turlock Unified School District (TUSD) has built several new schools in the last decade to keep pace with growth; Turlock residents have demonstrated their support by passing a bond measure to build Pitman High School, completed in 2002. Turlock is also home to California State University, Stanislaus (CSUS). At the first community workshop for this General Plan update, residents identified high-quality schools, as well as the presence of CSUS, as among the best things about Turlock. TUSD is also the largest employer in Turlock and plays a critical role in developing the city’s labor force.



## PRIMARY AND SECONDARY EDUCATION

School districts operate independently of local governmental control and regulatory mechanisms. Proposed school sites have to be referred to local agencies for comment, and all non-classroom facilities are subject to zoning and other land use control measures.

Pre-kindergarten through 12th grade public education for most of the Study Area is provided by TUSD. A small portion of the Study Area, in the northeast, is served by the Denair Unified School District. Children in portions of the Study Area in the southwest and northwest attend elementary and middle school in the Chatom and Keyes Union School Districts, but go on to Turlock and Pitman High Schools, respectively. Currently, the portions of the Study Area in the Chatom and Keyes districts are mainly rural, and have few school-aged children. Figure 4-3 shows the schools and school districts in the Study Area. No additional residential growth is proposed within the jurisdictions of the Chatom or Keyes school districts.

In addition to the public schools, there are six private schools in Turlock, including one serving elementary students, three serving elementary and middle school students, one serving middle and high school students, and one serving grades 4 through 12.

### Facilities and Enrollment

The Study Area is served by 13 elementary schools (ten in the Turlock USD, one each in Denair, Chatom, and Keyes), five junior high schools, and three comprehensive high schools. There are also four small alternative programs and a K-12 charter school. Some of these schools serve students from within the Study Area as well as students from surrounding rural areas. . Table 4-6 lists 2008-2009 enrollment for all schools in the Turlock, Denair, and Chatom School Districts. Chatom and Keyes schools serve fewer students in rural portions of the Study Area, and no additional residential growth is proposed within their jurisdictions as part of the General Plan update.

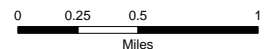
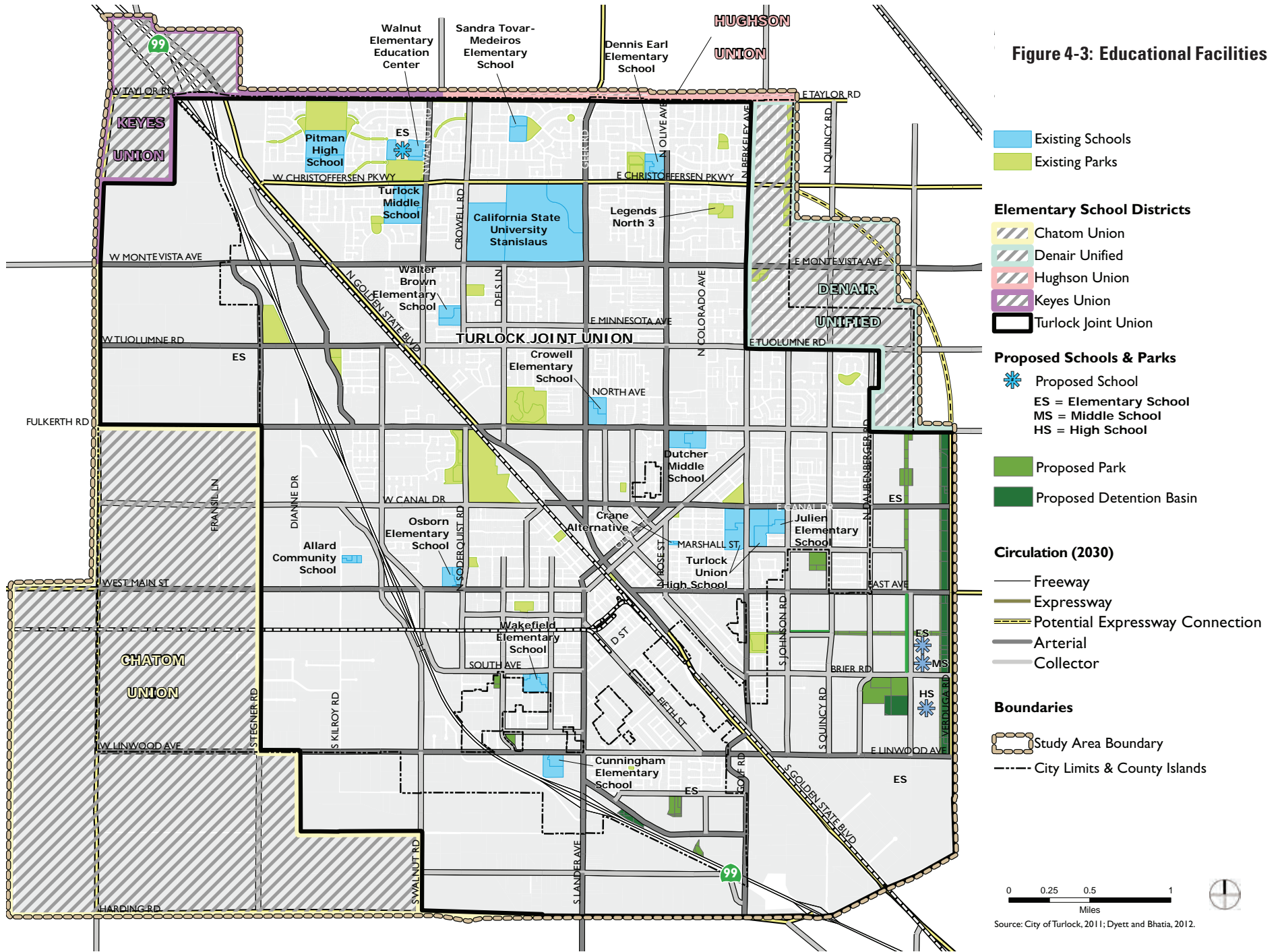
In the 2008-09 academic year, TUSD counted 13,828 enrolled students. The Denair school district had a total enrollment of 1,599, and grew by 4.2 percent between 2004 and 2007, largely owing to residential development in the Northeast Turlock Specific Plan area.

TUSD has added significant capacity in recent years, with the opening of its second high school, John Pitman, in 2001, followed by Medeiros Elementary and Walnut Education Center in 2006



*Turlock Unified School District (TUSD) has added significant capacity in recent years, with the opening of John Pitman High School (pictured, bottom) in 2001, followed by Medeiros Elementary and Walnut Education Center in 2006 and 2007.*

Figure 4-3: Educational Facilities



Source: City of Turlock, 2011; Dyett and Bhatia, 2012.

**TABLE 4-6: SCHOOLS SERVING THE STUDY AREA**

SCHOOL	2008-09 ENROLLMENT	CAPACITY <sup>1</sup>
<i>Turlock Unified School District</i>		
Crane Early Learning Center (PK-K)	100	100
Brown (K-6)	648	650
Crowell (K-6)	767	970
Cunningham (K-6)	715	810
Dennis Earl (K-6)	808	750
Julien (K-6)	818	810
Medeiros (K-6)	766	910
Osborn (K-6)	906	950
Wakefield (K-6)	689	810
Walnut Education Center (K-6)	759	760
<b>K-6 Subtotal</b>	<b>6,976</b>	<b>7,520</b>
Dutcher (7-8)	681	1,020
Turlock Junior High (7-8)	1,364	1,590
<b>7-8 Subtotal</b>	<b>2,045</b>	<b>2,610</b>
Pitman (9-12)	2,178	2,340
Turlock (9-12)	2,258	2,490
Freedom Alternative High (9-12)	123	NA
Roselawn Continuation High (10-12)	248	200
<b>9-12 Subtotal</b>	<b>4,807</b>	<b>5,030</b>
<b>Turlock USD Subtotal</b>	<b>13,828</b>	<b>15,160</b>
<i>Denair Unified School District</i>		
<i>Denair Elementary (K-5)</i>	640	4.7
Denair Middle (6-8)	341	8.0
Denair Community Day (7-8)	6	5.5
Denair High (9-12)	373	6.9
Oasis Community Day (9-12)	4	4.6
Denair Charter Academy (K-12)	235	7.5
<b>Denair USD Subtotal</b>	<b>1,599</b>	<b>4.0</b>

TABLE 4-6: SCHOOLS SERVING THE STUDY AREA		
SCHOOL	2008-09 ENROLLMENT	CAPACITY <sup>1</sup>
<i>Chatom Union School District</i>		
Chatom Preschool (Pre-K)	40	
Chatom (K-5)	451	
Mountain View (6-8)	224	
Chatom USD Subtotal	715	
<b>Total</b>	<b>16,142</b>	<b>4.0</b>
1 Capacity for traditional students as reported by TUSD, 2009. Capacity for Special Education classrooms calculated separately. Capacity not reported by Denair USD or Chatom USD.		

Sources: Turlock USD, 2009, Chatom USD, 2009.

and 2007. All are in the northern part of the city. As of 2009, TUSD reports that its schools have capacity for approximately 1,300 more traditional students, as well as space in special-needs classrooms. The District’s 2008 School Facilities Needs Analysis determined that when State guidelines for counting classrooms were considered, its facilities in 2007 had the capacity to serve 12,313 students, a shortfall compared to current enrollment. Like TUSD, Denair Unified School District’s most recent study using State standards found the district was over-enrolled.

### Projections and Future Plans

School districts study the relationship between new housing and new students, in order to justify the fees they charge to developers to help pay for new schools. This “student generation rate” is calculated for categories of housing (single-family detached, single-family attached, and multi-family.) When the most recent student generation rates for TUSD is applied to new housing facilitated by this General Plan, a total of approximately 5,870 additional students are expected to attend schools in the Turlock Planning Area. A majority (55 percent) would be in elementary school.

As shown in Table 4-7, TUSD plans for elementary schools with 880 students, middle schools with 1,100 students, and high schools with 2,100 students. The proposed new middle school would be developed at half of the typical size during the planning period to match growth.

**TABLE 4-7: PROJECTED ENROLLMENT AND SCHOOL DEMAND**

SCHOOL	INFILL	SE EXPANSION AREAS	TOTAL
Projected New Single-Family Units	1,600	3,170	4,770
Projected New Attached and Multi-Family Units <sup>2</sup>	2,800	4,110	6,910
Projected New K-6 Students	1,190	2,050	3,240
Existing Available K-6 Capacity			544
New Elementary School Capacity	880	2,640	3,520
<b>New Elementary Schools Needed</b>	<b>1</b>	<b>3</b>	<b>4</b>
Projected New Middle School Students	290	510	800
Existing Available 7-8 Capacity			565
New Middle School Capacity		550	550
<b>Middle Schools Needed</b>	<b>0</b>	<b>1</b>	<b>1</b>
Projected New High School Students	660	1,160	1,820
Existing Available 9-12 Capacity			223
New High School Capacity		2,100	2,100
<b>High Schools Needed</b>	<b>0</b>	<b>1</b>	<b>1</b>

1 Student generation rates for attached and multi-family housing are averaged.

Sources: TUSD School Facilities Fee Review, 2008; TUSD, 2009; Dyett & Bhatia, 2012.

Four new elementary schools, one new junior high school, and one new high school are expected to be developed to accommodate the projected buildout population. Three elementary schools and new middle and high school would be developed in the Southeast master plan areas. Infill development within the existing City limits would require one new elementary school. Current projections indicate that there may be demand for only a small middle school during the planning period. The approximate locations of future schools are shown on Figure 4-3.

### School Funding

School facilities in Turlock are funded with a combination of General Obligation Bonds, fees from the Mello-Roos and Redevelopment districts, the State Facility Fund, and development fees.

State law allows school districts to levy development fees directly on new residential, commercial, and industrial development (Government Code Section 65995). In 1998, the Governor signed Senate Bill 50 (SB 50), which imposed the most significant school facility finance and developer fee reform since the adoption of the 1986 School Facilities Act. The basic structure of the new law is as follows: a 50/50 state and local school facilities funding match, hardship funds for school districts that cannot achieve 50 percent locally, the ability for the school district to collect up to 50 percent from developers if the district can meet the 50 percent match threshold, and the ability of school districts to collect up to 100 percent from the developers if the state fails to provide their 50 percent bond funding match. TUSD's 2008 School Facilities Needs Analysis concludes that Turlock meets the requirements for assessing both Level 1 development fees, subject to statewide caps; and Level 2 or 3 development fees, as authorized by SB50. Currently, residential development fees are \$4.56 per square foot in TUSD and \$2.97 in the Denair Unified School District. Development fees for commercial and industrial development are set at the statewide cap of \$0.47 per square foot.

In addition to the use of developer fees that are applicable citywide, school districts may acquire funds to provide school services in specific areas through the creation of a Community Facilities or a Mello-Roos District. Such a district can be created with a two-thirds vote by area landowners, and may include a special tax and the sale of bonds to meet service costs. Cities may also seek public support to issue bonds to finance school construction. A General Obligation bond approved by Turlock residents in 1997 was used to fund the construction of Pitman High School.

### **CALIFORNIA STATE UNIVERSITY, STANISLAUS (CSUS)**

California State University, Stanislaus (CSUS) provides local opportunities for undergraduate, graduate and professional education. It is a major employer, and plays an important role in developing the City's labor force and providing technical support to business. The University also offers cultural and recreational opportunities for the entire community. Like the City and the region, the University is expected to continue to grow throughout the planning period.

#### **Facilities**

CSUS was opened in temporary quarters in Turlock in 1960 with a continuing mandate to serve six counties: Stanislaus, San Joaquin, Merced, Calaveras, Tuolumne, and Mariposa. The university has occupied its 228-acre campus on the north side of Turlock since 1965. CSUS counted

6,713 full-time equivalent (FTE) students in 2008. Enrollment is projected to grow 3 percent annually in the coming years, and to reach its designated capacity of 12,000 FTE students within 20 years. Enrollment is currently frozen due to state budget constraints.

Incremental growth has taken place in the context of the 1968 master plan, which established a core academic area, a perimeter ring road, and gracious landscaping. These characteristics and others are reaffirmed in the University’s 2009 Master Plan Update. The new master plan determines that the current campus has enough space to accommodate projected growth. It emphasizes that four- and five-story buildings should become the norm for new development of academic space and student housing, and proposes that additional parking be provided in garages rather than surface lots, in order to preserve the campus’s park-like setting. Future development is to include a new academic quad in the southeast; four multi-level parking structures; housing for approximately 2,300 additional students; and an enhanced outdoor physical education area in the campus’ northeast.

## POLICIES

### Guiding Policies

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**4.3-a School Facility Planning.** Plan educational facilities with sufficient permanent capacity to meet the needs of current and projected future enrollment.

*John H. Pitman High School opened in 2001, followed by Sandra Tovar Medeiros Elementary (2006) and Walnut Education Center (2007). Turlock is justified in assessing Level 1, 2, and 3 developer fees to provide adequate educational facilities to keep pace with growth.*

**4.3-b Coordination With School Districts.** Consult with the school districts on policies and projects that affect the provision of educational facilities and services.

**4.3-c Coordination With CSUS.** Work cooperatively with CSUS to ensure compatibility of CSUS’ growth objectives with policies and programs of the City and availability of adequate infrastructure, and undertake efforts to promote a closer integration of the CSUS campus with the community.



*The 2009 Master Plan Update for California State University, Stanislaus (CSUS) illustrates how the university can grow to 12,000 students while maintaining the campus’ park-like setting.*



*The City should continue to have a joint-use agreement with Turlock Unified School District to allow community use of such facilities as the pool at Pitman High School (top). The General Plan seeks to establish land uses such as multi-family housing and local-serving retail in a walkable environment on land adjacent to CSUS (bottom).*

## Implementing Policies

### Elementary and Secondary Schools

**4.3-d School Facilities Plans.** Continue to support the Turlock and Denair Unified School Districts to develop comprehensive master plans as a means of providing detail on specific school sites, educational facilities, and funding mechanisms.

*The City's commitment to and consistency with General Plan direction is needed to allow the School Districts to plan for future growth.*

**4.3-e Coordination of Urban Growth and School District Service.** Do not approve residential development in areas beyond the jurisdiction of Turlock school districts without consulting with the surrounding districts.

**4.3-f New School Sites.** Require that school sites are designated and reserved for school use as part of future master plans. The General Plan anticipates one future elementary school in each of the three new Master Plan areas (Southeast 1, 2, and 3), and one within the existing City. A new high school and middle school in the Southeast 3 Master Plan Area are also anticipated. The middle and high school sites should be acquired by the end of the 2012-13 fiscal year, as stated in the 2008 Capital Facility Financing Plan; future capital plans should detail a schedule for additional site acquisition. Provide needed facilities concurrent with phased development.

**4.3-g Joint Use Agreements for Neighborhood School Parks.** Continue present agreements with Turlock school districts for joint usage of school parks for neighborhood recreation and joint usage of multipurpose rooms for community meetings and classes. Coordinate with the school districts on the siting of schools in relation to parks and the greenway system.

*See also policies in Sections 4.1 and 4.2.*

**4.3-h School Impacts.** Support necessary and reasonable efforts by the school districts to obtain funding for capital improvements required to meet school facility needs, including adoption and implementation of local financing mechanisms such as community facility districts, and the assessment of school impact fees. Only residential development requests which have recognized and fully mitigated any significant impacts on school facilities shall be approved.



**California State University—Stanislaus**

*See Section 2.II Economic Development for policies on strengthening the role of CSUS in the City's economy.*

- 4.3-i Facilitation of Compatible Development.** Establish land uses in the area surrounding CSUS compatible with the need and character of an academic campus.

*The General Plan Diagram depicts a variety of land uses, including High Density Residential and Community Commercial, in areas adjoining CSUS to encourage activity and campus support of commercial activities such as bookstores and cafes.*

- 4.3-j Campus-City Edge.** Work with CSUS to realize stronger connections between the community and the university by enhancing pedestrian access, visual appeal, and active uses at the campus edge.

*The University's physical character is defined by internal clusters of activity linked by a campus ring road. This supports a campus environment but hinders a strong connection with the City. The City and CSUS have a mutual interest in providing successful relationships between the campus and surrounding areas.*

- 4.3-k Ongoing Communication.** Confer with CSUS staff periodically to ensure the concurrence of City and CSUS plans and actions.

- 4.3-l Joint Use of CSUS Facilities.** Continue agreements with CSUS to maintain joint use of recreational facilities and make provisions to locate other mutually suitable recreational sites if existing facilities are no longer available due to CSUS growth. Explore additional partnership opportunities with CSUS to enhance community use of the university library.

- 4.3-m Traffic Circulation and Campus Access.** To reduce the traffic impacts of campus activities, encourage CSUS to provide an additional campus access point from Christ-offerson Boulevard as identified in the 2009 Campus Master Plan.

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# 5 Circulation

The Circulation Element provides a framework to guide the growth of Turlock’s transportation-related infrastructure over the next 20 years. A safe and efficient transportation network is an important contributor to a community’s quality of life and economic vitality. The circulation system provides access to employment and educational opportunities, public services, commercial and recreational centers, and regional destinations. It provides for travel by automobile, transit, walking, and cycling; and it integrates the needs of railway and truck transport as well as aviation.

State law recognizes the close relationship between transportation and land use and requires that policies for the two topics are related and mutually beneficial. By integrating transportation policies with land use, the General Plan ensures that there will be sufficient roadway capacity to accommodate traffic generated by future planned development. Additionally, by integrating transportation and land use planning so that a greater percentage of short trips can be accomplished by walking, cycling, or transit, the city can also reduce the air quality impacts and greenhouse gas emissions associated with automobile use.

Turlock’s Circulation Element also responds directly to the new State requirement of planning for “Complete Streets.” In response to Assembly Bill 1358, the California Complete Streets Act, all cities and counties are required to plan for the development of multimodal transportation networks in their general plans beginning in January 2011. According to the guidelines, jurisdictions must “plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context of the general plan.”<sup>1</sup> The “users of streets, roads, and highways” refers to bicyclists, pedestrians, children, motorists, persons with disabilities, the elderly, users of public transportation, and commercial goods movers. This plan focuses on strengthening Turlock’s multimodal roadway network in new growth areas as well as improving mobility opportunities within existing areas of the city as well.



*The Circulation Element guides the development of ‘Complete Streets,’ which meet the travel needs of all users.*

<sup>1</sup> California Government Code Section 65302(b)(2).

The transportation planning and policy set forth in the Circulation Element is a critical component of Turlock's responsibility toward meeting the requirements of SB 375, the Sustainable Communities and Climate Protection Act of 2008. SB 375 requires that MPOs in California prepare a Sustainable Communities Strategy (SCS) for meeting their greenhouse gas reduction targets, through coordinating planning for land use, transportation, and housing. While the SCS is a regional plan, thoughtful land use and transportation planning in Turlock is essential to the larger effort.

Similarly, fourteen cities and eight counties across the San Joaquin Valley have formed the Smart Valley Places Partnership to address sustainable growth and development in the area. Each participating jurisdiction is engaged in individual supporting planning projects to complement the overall regional effort; in Turlock, that is the General Plan Update, Downtown Design Guidelines and Zoning Ordinance Update. The Circulation Element supports the HUD-EPA-DOT Livability Principles, adopted by the Partnership. These principles are:

- Provide more transportation choices;
- Promote equitable, affordable housing;
- Enhance economic competitiveness;
- Support existing communities;
- Coordinate and leverage policies and investment; and
- Value communities and neighborhoods.

This Element sets forth a circulation plan that strengthens Turlock's transportation network, provides more choice of travel modes, identifies needed improvements in both new and existing parts of the city, and works in tandem with land use changes.

## 5.1 TRAVEL TRENDS

The U.S. Census provides data on Journey to Work that indicates the travel mode to and from work for Turlock residents and nonresident employees. These data, reported in the 1990 Census, 2000 Census, and 2006-2008 American Community Survey, show some shifts in commuting behavior and travel choices.

Table 5-1 shows that currently around 80 percent of Turlock workers (aged 16 and over) drive alone to work. This percentage has remained relatively constant since 1990. Just over 10 percent carpool, over four percent work at home, fewer than three percent walk, 1.2 percent bicycle, and less than one percent each take public transportation, taxicab or motorcycle. The most notable change over time has been the percentage of workers who work from home. While these workers make up only 4.2 percent of the working population in Turlock, their numbers have seen the greatest growth over time: a 77 percent increase from 1990 to 2000, and a 109 percent increase from 2000 to 2008.



The majority (80 percent) of workers in Turlock drive alone to their jobs. Nearly 11 percent carpool.

TABLE 5-1: MEANS OF TRANSPORTATION TO WORK						
MEANS OF TRANSPORTATION AND CARPOOLING	2008 <sup>1</sup>		2000 <sup>2</sup>		1990 <sup>3</sup>	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
Workers 16 and over:	29,791	100.0%	21,764	100.0%	17,456	100.0%
Car, truck, or van	27,153	91.1%	19,989	91.8%	16,116	92.3%
Drove alone	23,923	80.3%	17,275	79.4%	13,876	79.5%
Carpooled	3,230	10.8%	2,714	12.5%	2,240	12.8%
In 2-person carpool	2,530	8.5%	1,903	8.7%		
In 3-person carpool	461	1.5%	487	2.2%		
In 4-or-more person carpool	239	0.8%	324	1.5%		
Public transportation	110	0.3%	110	0.5%	80	0.5%
Taxicab, motorcycle, or other means	204	0.6%	175	0.8%	122	0.7%
Bicycle	350	1.2%	232	1.1%	221	1.3%
Walked	726	2.4%	660	3.0%	580	3.3%
Worked at home	1,248	4.2%	598	2.7%	337	1.9%

Sources:

1. U.S. Census Bureau, 2006-2008 American Community Survey
2. U.S. Census Bureau, Census 2000 Summary File 3, Matrices P30, P31, P33, P34, and P35.
3. U.S. Bureau of the Census, 1990 Census of Population and Housing

Table 5-2 shows commute travel time survey results for 2008, 2000, and 1990. About 41 percent of commuters currently travel less than 15 minutes to work, and about 72 percent of workers commute under 30 minutes. Mean travel time to work increased by about three minutes from 1990 to 2000, but only increased by half a minute from 2000 to 2008. As discussed in the Economic Development section, much of Turlock’s employment is in local services; relatively short commute times are indicative of the dominance of local job centers. Commutes over 30 minutes likely indicate travel to regional employment hubs in Merced, Modesto, or Stockton.

Table 5-3 presents City of Turlock commuter choices and statistics against averages for the State of California. City commuters chose to carpool slightly less, on average, than the State mean. Public transportation use, however, is significantly lower than the State mean. Turlock’s traditionally low density land use pattern is largely responsible for limited transit use; however, policies in this General Plan aim to move the city towards a more compact, transit-supportive urban form. Travel times for commuters are also shorter on average than the State mean, despite there being more workers commuting out of County for jobs than on a statewide basis.

TABLE 5-2: TRAVEL TIME TO WORK						
TRAVEL TIME TO WORK	2008 <sup>1</sup>		2000 <sup>2</sup>		1990 <sup>3</sup>	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
Workers who did not work at home:	28,543	100.0%	21,166	100.0%	17,119	100.0%
Less than 10 minutes	7,174	25.1%	5,176	24.5%	5,065	29.6%
10 to 14 minutes	4,555	16.0%	4,040	19.1%	3,317	19.4%
15 to 19 minutes	3,960	13.9%	2,682	12.7%	2,102	12.3%
20 to 24 minutes	3,102	10.9%	2,975	14.1%	2,184	12.8%
25 to 29 minutes	1,778	6.2%	1,333	6.3%	806	4.7%
30 to 34 minutes	3,490	12.2%	2,040	9.6%	1,717	10.0%
35 to 44 minutes	1,208	4.2%	671	3.2%	478	2.8%
45 to 59 minutes	1,359	4.8%	862	4.1%	701	4.1%
60 or more minutes	1,917	6.7%	1,387	6.6%	749	4.4%
Walked	726	2.4%	660	3.0%	580	3.3%
<b>Mean travel time to work (minutes)</b>	<b>22.7</b>		<b>22.2</b>		<b>19.0</b>	

Sources:

1. U.S. Census Bureau, 2006-2008 American Community Survey
2. U.S. Census Bureau, Census 2000 Summary File 3, Matrices P30, P31, P33, P34, and P35.
3. U.S. Bureau of the Census, 1990 Census of Population and Housing

TABLE 5-3: CITY AND STATE COMMUTER STATISTICS				
GEOGRAPHIC AREA	WORKERS 16 YEARS AND OLDER			
	PERCENT IN CARPOOLS	PERCENT USING PUBLIC TRANSPORTATION	WHO DID NOT WORK AT HOME – MEAN TRAVEL TIME TO WORK (MINUTES)	PERCENT WORKED OUTSIDE COUNTY OF RESIDENCE
California	12.0	5.2	27.0	17.2
Turlock	10.8	0.3	22.7	18.3

Source: U.S. Census Bureau, 2006-2008 American Community Survey

## 5.2 ROADWAY NETWORK, STANDARDS, AND IMPROVEMENTS

Generally, Turlock’s roadway network follows a cardinal grid system, with several notable exceptions. The oldest parts of town—Downtown and its immediate surroundings—have a tighter grid pattern that is parallel and perpendicular to the railroad, which runs from the northwest to the southeast. The railroad, Golden State Boulevard, and State Route 99 all run diagonally through the city, disrupting or altering the gridded network at various points. Access to and/or across these rights of way are limited, creating some barriers to cross-town connectivity. The traditional grid has also been modified in recent years in newer neighborhoods to the north and east, where some suburban curvilinear and cul-de-sac streets predominate.

### FUNCTIONAL STREET CLASSIFICATIONS

Turlock’s roadway system is based on a hierarchy of street types, known as functional classifications. These classifications are designed to provide access to current and future development, and to maintain acceptable levels of service throughout the city. A route’s design, including the number of lanes needed, is determined both by its classification as well as the projected traffic level on the street generated by existing and new land uses. The classifications and their required development and access standards are described below.

**Freeways** provide for intra- and inter-regional mobility, generally having four to six lanes in the vicinity of the Study Area. Access is restricted primarily to arterials and expressways via interchanges. Crossings are grade-separated, and continuous medians separate lanes traveling in opposite directions. Typical speeds exceed 55 miles per hour. State Route (SR) 99 is the only freeway in the Study Area. No access is provided to adjacent land uses.



*Top: Christofferson Parkway, an expressway, has the capacity to serve new development to the east.*

*Bottom: Geer Road, an arterial, is Turlock's primary north-south commercial spine.*

**Expressways** provide for movement of through traffic both within the city and to other nearby regional locations. Parking is not permitted, and direct access is generally not provided to adjacent land uses. In those rare circumstances where access to an adjacent land use is required, access shall be by right turns only at prescribed intervals. In the Study Area, expressways generally range from two to four lanes, with some six-lane segments near freeway interchanges where necessary for operational purposes.

**Arterials** collect and distribute traffic from freeways and expressways to collector streets, and vice versa. They also are designed to move traffic between adjacent jurisdictions. Major arterials in Turlock are four lane facilities and minor arterials are two lane facilities. Limited direct access may be provided to adjacent land uses, with a minimum driveway spacing of 300 feet.

**Collectors** provide a link between residential neighborhoods and arterials. Collectors typically provide two travel lanes, on-street parking, and bike lanes. Collectors also provide access to adjacent properties, so driveway access is not restricted but should be discouraged. Direct access to adjacent land use is permitted, but, as these roadway classes are intended to funnel traffic from local streets to arterials and expressways, or carry larger amounts of traffic between major destinations within the City, driveways should be spaced at roughly 300 foot intervals in commercial and industrial areas. In residential areas, driveways may be provided to each parcel facing onto the collector.

**Local Streets** constitute the largest part of Turlock's circulation system. They provide direct access to adjacent properties and have no access restrictions. Local streets provide two travel lanes, landscaped parkway strips, and sidewalks. While bike lanes are generally not required on local streets because of their low traffic volume, it is assumed that every local street is designed to be bike-friendly and may be informally treated as a Class III bike route.

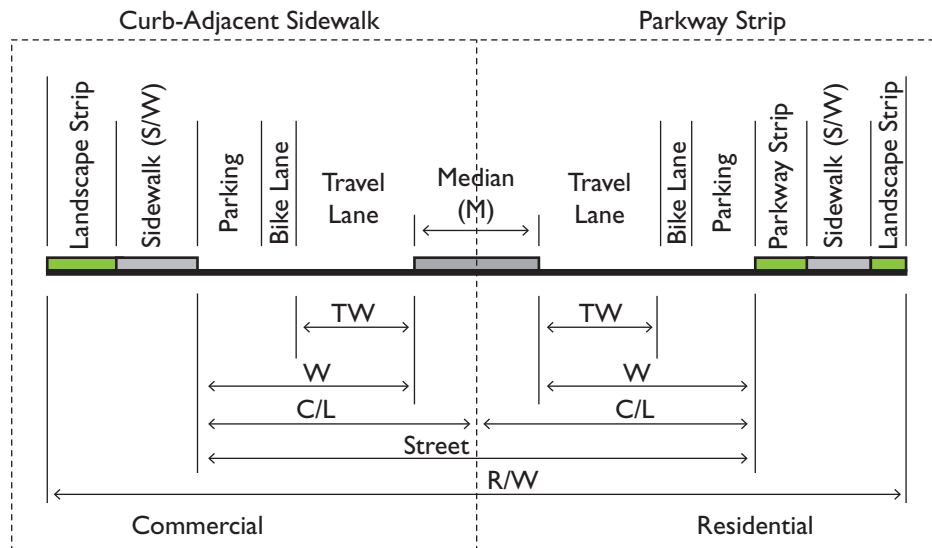
**Industrial Streets** are roadways designed to accommodate trucks serving industrial areas, and are generally provide two travel lanes. They are primarily found in the TRIP and in some older industrial areas south of Downtown. Their wide lanes are intended to accommodate multiple large trucks' turning movements. Access onto adjacent industrial properties is permitted, including multiple access points per parcel.



## Roadway Elements and Dimensions

The typical street elements and widths of the functional classifications are shown in tables 5-4 and 5-5. Figure 5-1 illustrates the different components of the street right-of-way, which are referenced in the two following tables. Table 5-4 shows residential streets, and Table 5-5 shows commercial or industrial streets. However, the total rights of way for each classification are designed to remain constant regardless of surrounding land uses. For example, a collector may traverse a residential area as well as commercial or industrial area, and as long as its classification is defined as a collector for that entire length, the overall right of way will not change. Even as the total right of way remains the same, some elements of the roadway may change depending on the adjacent land uses, namely to address the pedestrian experience. For instance, larger roads through residential areas have both parkway and landscape strips (in other words, landscaping on both sides of the sidewalk) to provide a greater buffer for residential uses from the roadway and to create a more protected pedestrian environment. In commercial areas, sidewalks are wider to accommodate higher volume pedestrian travel.

**Figure 5-1: Diagrammatic Street Section**



**TABLE 5-4: TYPICAL STREET ELEMENTS AND WIDTHS (FEET): RESIDENTIAL FACILITIES**

DESIGNATION	TOTAL RIGHT OF WAY (ROW)	LANDSCAPE STRIP	SIDEWALK (S/W)	PARKWAY STRIP (P/WAY)	PARKING	BIKE LANE	STREET	CENTERLINE (C/L)	WIDTH TO CURB FROM MEDIAN (W)	TRAVEL WIDTH (TW)	MEDIAN (M)
Local - Parkway	56	N\A	5	6	7	N\A	34	17	N\A	10	N\A
Collector	62	N\A	5	6	8	N\A	40	20	N\A	12	N\A
Collector (Bike)	72	N\A	5	6	8	5	50	25	N\A	12	N\A
Minor Arterial (2 Lane)	90	4	5	6	N\A	6	60	30	22	16	16
Arterial (4 Lanes)	124	4	5	6	8	6	94	47	39	25	16
Expressway (4 Lanes)	108	4	5	6	N\A	6	78	39	31	25	16
Expressway (6 Lanes)	132	4	5	6	N\A	6	102	51	43	37	16

**TABLE 5-5: TYPICAL STREET ELEMENTS AND WIDTHS (FEET): COMMERCIAL OR INDUSTRIAL FACILITIES**

DESIGNATION	TOTAL RIGHT OF WAY (ROW)	LANDSCAPE STRIP	SIDEWALK (S/W)	PARKWAY STRIP (P/WAY)	PARKING	BIKE LANE	STREET	CENTERLINE (C/L)	WIDTH TO CURB FROM MEDIAN (W)	TRAVEL WIDTH (TW)	MEDIAN (M)
Local - Curb Adjacent	56	N\A	8	N\A	8	N\A	40	20	N\A	12	N\A
Collector	62	3	8	N\A	8	N\A	40	20	N\A	12	N\A
Collector (Bike)	72	3	8	N\A	8	5	50	25	N\A	12	N\A
Industrial	76	N\A	8	N\A	8	N\A	60	30	N\A	22	N\A
Minor Arterial (2 Lane)	90	7	8	N\A	N\A	6	60	30	22	16	16
Arterial (4Lanes)	124	7	8	N\A	8	6	94	47	39	25	16
Expressway (4 Lanes)	108	7	8	N\A	N\A	6	78	39	31	25	16
Expressway (6 Lanes)	132	7	8	N\A	N\A	6	102	51	43	37	16

### Roadway Spacing and Access Standards

Another important way in which the functional classifications' hierarchy is established is through spacing and access standards. The purpose of prescribing roadway spacing and access standards is to create a regular grid system, which will improve overall traffic flow in the city. Table 5-6 describes the optimum spacing between roadway types and any limitations on access to each type.

TABLE 5-6: INTERSECTION SPACING AND ACCESS RESTRICTIONS				
DESIGNATION	INTERSECTION SPACING STANDARDS	TYPICAL SPACING BETWEEN PARALLEL LIKE FACILITIES	ACCESS RESTRICTIONS	NOTES
Local	Maximum block length for local streets is 660 feet.	660 feet	No access restrictions; one driveway may be provided per parcel.	See more detail in Chapter 6.4: City Design for local street spacing and design.
Collector	¼ mile between intersections with other collector or larger streets preferred. Intersections with local streets permitted at greater frequency, at minimum intervals of 300 feet.	¼ mile	Driveways on collector streets should be no closer than 300 feet, except, for residential uses, one driveway may be permitted per parcel.	
Arterial	½ mile between intersections preferred; ¼ mile acceptable.	1 mile	Driveways to major traffic generators may be permitted within the ¼ mile spacing but no closer than 300 feet; other intersections closer than ¼ mile are restricted to right turn access only.	
Expressway	Intersections to be at 1 mile intervals. Collectors may intersect at ¼ mile spacing, but with right-in/right-out access only.	No typical spacing between expressways; these facilities occur in a loop around the city and as regional connectors	Limited access to abutting properties.	See Policy 5.2-u for further detail.

Further standards for intersection design, which differs depending on the types of roadways intersecting, are shown in Table 5-7.

TABLE 5-7: INTERSECTION DESIGN BY CLASSIFICATION TYPE								
INTERSECTIONS	NORTHBOUND & SOUTHBOUND APPROACH (1)				EASTBOUND & WESTBOUND APPROACH (CROSS STREET) (2)			
N/A - NO CONNECTION	LEFT	THRU	RIGHT	BICYCLE	LEFT	THRU	RIGHT	BICYCLE
<i>(1) Local - Parkway</i>								
(2) Local - Parkway	-	1	-	-	-	1	-	
(2) Collector	-	1	-	-	-	1	-	
(2) Collector (Bike)	-	1	-	-	-	1	-	B
(2) Industrial	-	1	-	-	-	1	-	
(2) Minor Arterial\ (2 Lane)	-	-	1	-	-	1	1	B
(2) Arterial/ (4-Lanes)	-	-	1	-	-	2	1	B
(2) Expressway/4-Lanes	N/A	N/A	N/A	-	N/A	N/A	N/A	-
(2) Expressway/6-Lanes	N/A	N/A	N/A	-	N/A	N/A	N/A	-
<i>(1) Collector</i>								
(2) Collector	-	1	-	-	-	1	-	-
(2) Collector (Bike)	-	1	-	-	-	1	-	B
(2) Industrial	-	1	-	-	-	1	-	-
(2) Minor Arterial\ (2 Lane)	1	1	1	-	1	1	1	B
(2) Arterial/ (4-Lanes)	1	1	1	-	1	2	1	B
(2) Expressway/4-Lanes	-	-	1	-	-	2	1	B
(2) Expressway/6-Lanes	-	-	1	-	-	3	1	B
<i>(1) Collector (Bike)</i>								
(2) Collector	-	1	-	B	-	1	-	-
(2) Collector (Bike)	-	1	-	B	-	1	-	B
(2) Industrial	-	1	-	B	-	1	-	-
(2) Minor Arterial\ (2 Lane)	1	1	1	B	1	1	1	B
(2) Arterial/ (4-Lanes)	1	1	1	B	1	2	1	B
(2) Expressway/4-Lanes	-	-	1	B	-	2	1	B
(2) Expressway/6-Lanes	-	-	1	B	-	3	1	B

**TABLE 5-7: INTERSECTION DESIGN BY CLASSIFICATION TYPE**

INTERSECTIONS	NORTHBOUND & SOUTHBOUND APPROACH (1)				EASTBOUND & WESTBOUND APPROACH (CROSS STREET) (2)			
	LEFT	THRU	RIGHT	BICYCLE	LEFT	THRU	RIGHT	BICYCLE
<i>(1) Industrial</i>								
(2) Industrial	-	1	-	-	-	1	-	-
(2) Minor Arterial\ (2 Lane)	-	-	1	-	-	1	1	B
(2) Arterial/ (4-Lanes)	-	-	1	-	-	2	1	B
(2) Expressway/4-Lanes	N\A	N\A	N\A	-	N\A	N\A	N\A	-
(2) Expressway/6-Lanes	N\A	N\A	N\A	-	N\A	N\A	N\A	-
<i>(1) Minor Arterial/ (2 Lane)</i>								
(2) Minor Arterial\ (2 Lane)	1	1	1	B	1	1	1	B
(2) Arterial/ (4-Lanes)	1	1	1	B	1	2	1	B
(2) Expressway/4-Lanes	1	1	1	B	1	2	1	B
(2) Expressway/6-Lanes	1	1	1	B	1	3	1	B
<i>(1) Arterial/ (4-Lanes)</i>								
(2) Arterial/ (4-Lanes)	2	2	1	B	2	2	1	B
(2) Expressway/4-Lanes	2	2	1	B	2	2	1	B
(2) Expressway/6-Lanes	2	2	1	B	2	3	1	B
<i>(1) Expressway/4-Lanes</i>								
(2) Expressway/4-Lanes	2	2	1	B	2	2	1	B
(2) Expressway/6-Lanes	2	2	1	B	2	3	1	B
<i>(1) Expressway/6-Lanes</i>								
(2) Expressway/6-Lanes	2	3	1	B	2	3	1	B



*Most of Turlock’s roadways and intersections operate at acceptable levels of service, even during the peak hour of travel.*

## EXISTING TRAFFIC CONDITIONS

The City of Turlock roadway facilities were evaluated on a daily basis by use of 2007 and 2008 average daily traffic (ADT) counts. Intersection facilities were evaluated on an AM and PM peak-hour basis by use of 2007 and 2008 peak-hour turning movement counts. Conditions were identified by generating a level-of-service (LOS) determination.

Intersection LOS was calculated for all control types using the methods documented in the Transportation Research Board publications Highway Capacity Manual, Fourth Edition, 2000. Traffic operations have been quantified through the determination of LOS. LOS determinations are presented on a letter grade scale from “A” to “F”, whereby LOS “A” represents free-flow operating conditions and LOS “F” represents over-capacity conditions. For a signalized or all-way stop-controlled (AWSC) intersection, an LOS determination is based on the calculated average delay for all approaches and movements. For a two-way stop-controlled (TWSC) intersection, an LOS determination is based upon the calculated average delay for all movements of the worst-performing approach.

At the time that the traffic counts were conducted, in 2007 and 2008, citywide intersections were determined to mostly operate at LOS C or better. The following intersections were determined to operate at above LOS C, under existing conditions. However, these are likely to change with the implementation of improvements outlined in the General Plan. Where improvements cannot be made due to right of way constraints or other limitations, the exception is noted in a policy. However, it is important to note that LOS, especially peak-hour LOS, was not the ultimate determining factor in designing the General Plan buildout circulation network.

Taylor Road / SR 99 NB Ramps	AM & PM peak-hours (LOS F)
Taylor Road / SR 99 SB Ramps	PM peak-hour (LOS F)
Taylor Road / Walnut Road	AM peak-hour (LOS E)
Monte Vista Avenue / Crowell Road	PM peak-hour (LOS D)
Monte Vista Avenue / Geer Road	PM peak-hour (LOS E)
Fulkerth Road / Golden State Boulevard	PM peak-hour (LOS F)
Main Street / Kilroy Road	AM & PM peak-hours (LOS D)
Westbound Golden State Boulevard / Berkeley Avenue	PM peak-hour (LOS D)
West Glenwood Avenue / Lander Avenue	PM peak-hour (LOS D)
Greenway Avenue / Lander Avenue	AM & PM peak-hours (LOS F)
Clausen Road / Lander Avenue	AM & PM peak-hours (LOS D)

Existing roadway LOS was also determined on a daily basis with 24-hour volume counts taken between 2007 and 2008. LOS was determined relative to average daily volume and facility capacity. Citywide roadways were determined to operate at LOS C or better for the large majority of roadways. However, the following roadway segments were determined to be operating unacceptably according to the 1992 General Plan standard, based on being over or nearing full capacity as currently designed. However, these are likely to change with the implementation of improvements outlined in the General Plan.

State Route 165, Clausen Road to Bradbury Road	LOS F
State Route 165, State Route 99 to Simmons Road	LOS F
Monte Vista Avenue, State Route 99 to Countryside Drive	LOS F
Monte Vista Avenue, Countryside Drive to Golden State Boulevard	LOS F
Taylor Road, Tegner Road to Walnut Road	LOS D

### CIRCULATION NETWORK DESIGN AND PERFORMANCE

Prior to this General Plan, the City of Turlock used LOS as a standard for determining roadway performance and planning improvements. However, in support of the new Complete Streets legislation and SB 375, this General Plan moves away from the LOS standard as this measure has a tendency to promote urban sprawl. Rather, roads will be constructed in accordance with the designs specified in the Circulation Diagram in this section (Figure 5-2) and with the improvements detailed in Table B-1, found in Appendix B (consistent with the access, spacing, and intersection configurations described earlier). LOS will still be used as a trigger for preparing a traffic analysis to determine when new improvements are to be made, but it will not be used as the standard to which roads are to be built or improved. However, other mitigation measures such as traffic calming, alternative modes, trip reduction strategies, and others will be used to mitigate congested conditions if it is determined that other improvements are not feasible due to right of way constraints or other factors.

The circulation network was determined by a number of factors, of which current LOS was one. As described in the previous section, the existing conditions of the roadway network were evaluated according to average daily LOS to determine the baseline conditions of the system. Roadway segments and intersections that are known to already operate below LOS D are made priorities for improvement. Where feasible mitigation is possible, improvements are described

and included in the CFF (Appendix Table B-1) However, current LOS was only one factor in determining the desired General Plan circulation network at buildout. That measure was balanced with what is feasible and prudent given other factors, such as current and future land uses and physical constraints. In other words, in some cases, roadway segments may not be able to be improved to ameliorate congestion. The overall network “right-sizes” roads to support the current and planned land uses, and prescribes spacing and design that will facilitate efficient, multimodal use of the street system.

LOS will still be evaluated and used as a basis for triggering improvements of the General Plan roadways at the project level. However, the ultimate buildout of the circulation network shall match the design specified in this plan; in other words, roads shall not be continually widened to achieve a certain LOS. In these cases, traffic calming and other strategies to encourage the use of alternatives to the automobile, will be deployed where insufficient right of way exists and it is determined that the disruption of adjacent land uses would undermine business or residential uses required to meet other General Plan goals.

## PLANNED IMPROVEMENTS

The circulation network shown in Figure 5-2 identifies the functional classifications of key routes at buildout. To achieve the spacing standards and capacity assumptions made in the circulation diagram, as well as a balance between existing and future land use and roadway service, improvements to the roadway network will be needed. New arterial and collector roads will provide access to the residential, commercial, and industrial areas, connecting those areas with the existing local and regional transportation system. New local roads in neighborhoods will serve those residents. The new roadways will continue the grid network that currently characterizes Turlock’s circulation network, following the spacing and access standards listed in this chapter, and creating connections between new development areas and established neighborhoods, job and shopping centers, and other destinations.

Major street improvements planned for Turlock are listed in Appendix B. Additionally, intersection improvements will be required at major intersections along new roadways and improved roadways, including but not limited to turn channelization, signalization, and/or construction of roundabouts. The proposed street improvements include both the construction of new streets in master plan areas as well as improvements to existing roadway segments within the current urbanized area.



The future circulation network is illustrated in Figure 5-2. No General Plan amendment is required if the general location, anticipated level of service, and connections to the street network are maintained.

Street designs for the proposed roads shall conform to the typical street widths and design elements defined in tables 5-4 and 5-5. All street designs are subject to review and approval by the Engineering Division of the Development Services Department and the City Engineer. Exceptions may be granted for special cases, but no street may be removed.

### Future Traffic Conditions

The City traffic model predicts that by making the planned improvements and building out the proposed circulation network and proposed land uses, development the Turlock Study Area will generate approximately 2,955,000 vehicle miles traveled (VMT) or 23 miles per person per day. The traffic model also indicates the level of service at which the planned road segments would be operating at plan buildout. Table C-1 in Appendix C lists the projected daily roadway segment operations at 2030 buildout.

Even when all possible planned improvements are made, some roadway segments are projected to operate below daily LOS D. These segments are in the existing urbanized area, where improvements would not be possible without impacting adjacent uses. Similarly, in keeping with the Complete Streets concept, the bikeway system will not be compromised to accommodate more vehicular traffic. It is understood that the buildout of the General Plan circulation network will not lead to free-flowing traffic on all streets.

## POLICIES

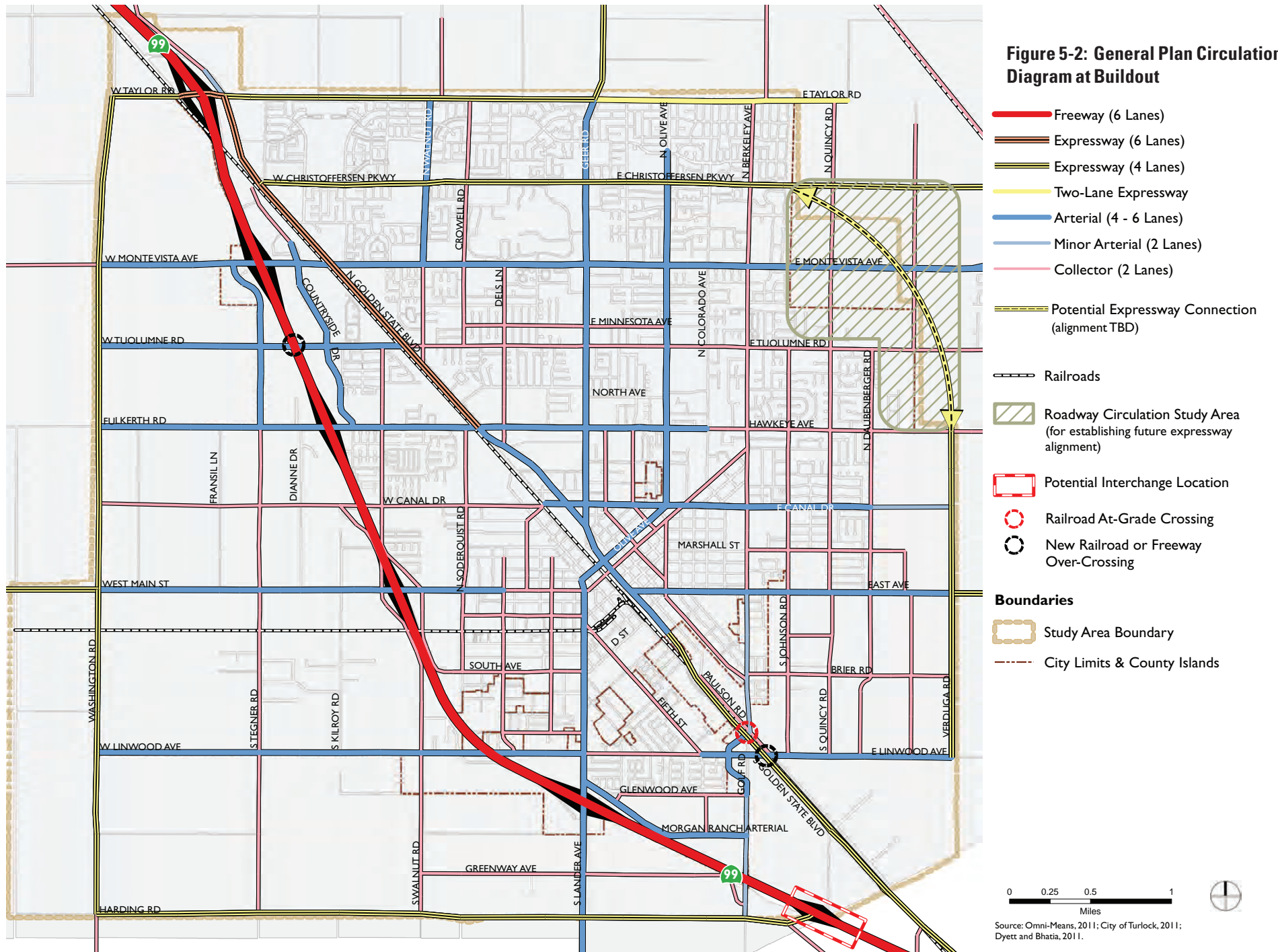
### Guiding Policies

- 5.2-a A safe and efficient roadway system.** Promote a safe and efficient roadway system for the movement of both people and goods.
- 5.2-b Implement planned roadway improvements.** Use Figure 5-2: Circulation System, and Table B-1 in Appendix B, Major Circulation Improvements, to identify, schedule, and implement roadway improvements as development occurs in the future; evaluate



*Implementation of the General Plan roadway network will help create active, safe streets for pedestrians, cars, and cyclists alike.*

**Figure 5-2: General Plan Circulation Diagram at Buildout**



Source: Omni-Means, 2011; City of Turlock, 2011; Dyett and Bhatia, 2011.

future development and roadway improvement plans against standards for the classifications as set forth in Tables 5-4, 5-5, and 5-6.

- 5.2-c Complete Streets.** Maintain and update street standards that provide for the design, construction, and maintenance of “Complete Streets.” Turlock’s Complete Streets shall enable safe, comfortable, and attractive access for all users: pedestrians, motorists, bicyclists, and transit riders of all ages and abilities, in a form that is compatible with and complementary to adjacent land uses, and promotes connectivity between uses and areas.
- 5.2-d Design for street improvements.** The roadway facility classifications indicated on the General Plan circulation diagram (Figure 5-2) shall be the standard to which roads needing improvements are built. The circulation diagram depicts the facility types that are necessary to match the traffic generated by General Plan 2030 land use buildout, and therefore represent the maximum standards to which a road segment or intersection shall be improved. LOS is *not* used as a standard for determining the ultimate design of roadway facilities.
- 5.2-e Use of existing facilities.** Make efficient use of existing transportation facilities, and improve these facilities as necessary in accordance with the circulation diagram.
- 5.2-f Coordination of local and regional actions.** Coordinate local actions with State and County agencies to ensure consistency between local and regional actions including but not limited to the Regional Transportation Plan, Regional Expressway Study, Regional Transit Plan, and Regional Bicycle Action Plan.
- 5.2-g Reduce Vehicle Miles Traveled.** Through layout of land uses, improved alternate modes, and provision of more direct routes, strive to reduce the total vehicle miles traveled.
- 5.2-h Circulation system enhancements.** Maintain projected levels of service where possible, and ensure that future development and the circulation system are in balance. Improve the circulation system as necessary, in accordance with the circulation diagram and spacing/access standards, to support multimodal travel of all users and goods.
- 5.2-i Funding for improvements.** Ensure that new development pays its fair share of the costs of transportation facilities. Require development in adjacent unincorporated areas to pay its fair share of impacts on city transportation infrastructure.

## Implementing Policies

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### **Regional Cooperation**

- 5.2-j Work with Caltrans on freeway improvements.** Continue to work with the California Department of Transportation (Caltrans) to achieve timely construction of programmed freeway and interchange improvements.

*Caltrans does not currently fund local interchange improvements to accommodate increased traffic growth.*

- 5.2-k Coordinate standards.** Continue to coordinate the City's design standards for regional roadways with the standards of other agencies.

- 5.2-l New southeast interchange.** Continue to work with Caltrans, Stanislaus County, Merced County, and other partner entities to implement a new interchange on State Route 99 at Youngstown Road for the potential realignment of Highway 165 as approved in the Project Study Report (PSR).

- 5.2-m Amend Regional Expressway Study.** Seek to amend Stanislaus County's Regional Expressway Study (most recently updated in 2010) to add the Waring/Verduga expressway. The precise alignment shall be determined by the Roadway Circulation Study (see Policy 5.2-au).

*The General Plan process allowed a detailed examination and refinement of the Expressway Plan. Though the designation of some streets is different in the two plans, overall objectives are similar. These changes will result in consistency on major policies.*

- 5.2-n Use of Congestion Management Process.** Utilize the StanCOG Congestion Management Process (CMP) to determine the timing and degree of regional roadway facility improvements in accordance with regionwide plans.

- 5.2-o Off-Site roadway mitigation.** If an annexed area will utilize County roads, developers shall be required to fund improvements of affected County roads that connect to the citywide system to meet County standards.

- 5.2-p Area of Influence fee.** In order to ensure that all development affecting Turlock's transportation infrastructure contributes to its expansion and maintenance, the City will work with County to expand the current SOI fee into adjacent unincorporated areas

where nexus can be established. The SOI fee is to be maintained until the new Area of Influence (AOI) fee is in place.

- 5.2-q Regional fair-share fee program.** Work with Caltrans, Stanislaus County, and other jurisdictions to establish a fair-share fee program for improvements to regional routes and state highways. This fee should reflect traffic generated by individual municipalities/unincorporated communities as well as pass-through traffic.

### **Street Network**

*In general, policies pertaining to the street network in this section and others (see also policies in Section 6.3: Street Design and Connectivity) promote the maintenance and development of a well-connected circulation system that is integrated with adjacent land uses and facilitates reductions in vehicle miles traveled.*

- 5.2-r Follow circulation plan diagram.** Locate freeways, expressways, and arterials according to the general alignment shown in the Circulation Plan Diagram. Slight variation from the depicted alignments for collectors will not require a General Plan amendment.
- 5.2-s Trigger for improvements.** Require improvements to be constructed where adequate ROW is available and impacts to adjacent land uses can be avoided or adequately mitigated to General Plan standards when LOS is projected to drop below LOS D (on an average daily trips basis).
- 5.2-t Follow adopted City standards.** Build freeways, expressways, arterials, and collector streets in accordance with adopted city standards. Where these standards deviate from those set forth in the General Plan, amend the city standards to be consistent with the General Plan.
- 5.2-u Roundabouts.** Roundabouts may be used in place of signalized intersections on any roadway facility or intersection type. Roundabouts are particularly encouraged at the intersection of two collector streets.
- 5.2-v Maintain standards through ongoing improvements.** Ensure improvements to the circulation system required to maintain standards as set forth in Section 5.2. Improvements shall take place in accord with the City's Capital Improvement Program.
- 5.2-w Expressway access from private property.** In general, access from individual private properties onto expressways is not permitted. An exception may be granted by the



*Traffic calming tools, such as curb extensions or intersection 'bulb-outs,' may be used to slow car traffic through neighborhoods.*

City Engineer if it is determined that the conditions listed below are met. In these cases, one access point may be provided onto future expressways to a parcel in existence at the date of adoption of the General Plan. The City may allow access from a private parcel onto an expressway if:

- The applicant has satisfactorily demonstrated to the city that there are either no or only highly restrictive alternative access solutions available to that particular parcel;
- The applicant agrees to take full financial responsibility for constructing the access point, including any reconstruction of the expressway that may be necessary; and
- A properly designed access solution is approved by the City Engineer.

**5.2-x CFF and Capital Improvement Program.** As part of the 20-year Capital Facilities Fee Program (CFF), annually update a five-year Capital Improvement Program (CIP) of projects required to construct and/or update circulation facilities. The analysis should identify the type of facility, length of the project, right-of-way requirements, physical improvements required and estimated cost.

*While some of the projects identified in the Circulation Element are in the City's current CFF, the remaining will need to be incorporated. These are listed in Appendix B. The CFF should also be coordinated with planning for the provision of public utilities. (See Section 3.3)*

**5.2-y Streets in County Islands.** Coordinate with Stanislaus County to evaluate the condition of existing streets in unincorporated areas and explore cooperative funding mechanisms to improve existing substandard streets and install sidewalks, curbs, gutters, and street lighting as a condition of incorporation.

**5.2-z Alley maintenance.** Continue to work with residents of neighborhoods with alleys to establish an ongoing alley maintenance program.

*Storage and trash dumping has reduced the effective travel-ways in many alleys, especially where alleys are not intensively used because access to off-street parking is also provided from the streets.*

**5.2-aa Exceptions to Standards.** In infill areas, where existing rights of way may not conform to the roadway standards set forth in the General Plan, but where improvements are necessary, reasonable deviations from roadway standards may be allowed by the City Engineer.

**5.2-ab Downtown exempted from LOS trigger.** Exempt Downtown from LOS trigger for improvements in order to encourage infill development, the creation of a pedestrian friendly urban design character, and the densities and intensities of development necessary to support transit and local business development. Development decisions Downtown should be based on community design and livability goals, rather than traffic LOS. Downtown is defined by the Downtown designation on the Land Use Diagram (Figure 2-2).

### ***Roadway Operations and Monitoring***

**5.2-ac Impacts of new development.** No new development will be approved unless it can show that required service standards (accessibility, spacing and capacity in the circulation diagram and in Section 5.2) are provided on the affected roadways.

**5.2-ad Traffic Calming.** Traffic calming techniques may be employed to mitigate the traffic effects of new development.

*See policies in Section 6.3, Street Design and Connectivity, for design characteristics of traffic calming measures.*

**5.2-ae Traffic impact studies.** Traffic impact studies are only required where there is a demonstrated change in background traffic or where proposed land uses generate traffic levels that vary substantially from assumed trip generation levels that were used to formulate the General Plan circulation network.

**5.2-af Traffic and accident monitoring and reduction.** Establish and implement programs to help maintain satisfactory roadway performance at intersections and along roadway segments. This may include the following:

- Collect and analyze traffic volume data on a regular basis, and monitor current intersection and roadway segment LOS on a regular basis. This information may be used to update and refine the City's travel forecasting model to continually improve estimates of future conditions.
- Consider ways to shift travel demand away from the peak period using Transportation Demand Management (TDM) strategies, especially in situations where peak traffic problems result from a few major generators (e.g. large retail developments in highway corridors). Strategies to consider include:
  - Encouraging employer-sponsored incentives for transit, bike, or carpool use
  - Providing shuttle service to major events and destinations



*Street trees and landscaping along medians and parkway strips provide shade, beauty, and environmental benefits.*

- Promoting shopping or entertainment events that are at off-peak hours
- Coordinating centralized TDM programs that serve multiple tenants at large shopping or office centers
- Perform periodic evaluations of the City’s traffic control system, with emphasis on traffic signal timing, phasing, and coordination to optimize flow along arterial and expressway corridors.

***Funding for Improvements***

**5.2-ag New development pays fair share.** Continue to require that new development pay a fair share of the costs of street and other local transportation improvements based on traffic generated and impacts on service levels. New development in unincorporated areas that benefit from Turlock’s transportation infrastructure shall also pay to support the system, through the Area of Influence fee (see Policy 5.2-p).

**5.2-ah Citywide fees for transportation improvements.** Use citywide traffic impact fees (part of Capital Facilities Fees) and Area of Influence fees (see Policy 5.2-p) to provide additional funding for transportation improvements based on roadway design specified on the Roadway Network Diagram (Figure 5-2).

**5.2-ai Utilize outside funding sources.** Link improvement projects to the most current estimates of available funding from County, State, and federal sources. Continue to participate in the effort to develop and coordinate a financing mechanism for major regional transportation improvements.

**5.2-aj Capital Improvement Program.** Maintain and update a Capital Improvement Program so that improvements are appropriately identified, funded, and constructed in a timely manner.

***Street Design and Character***

*Policies pertaining to street design and character are found in Section 6.3, Street Design and Connectivity.*

***Landscaping and Street Trees***

**5.2-ak Landscaping requirements.** Where roadway facilities are designed with landscaping adjacent to the property line, the property owner shall be able to credit the landscaping in public right of way towards their landscaping requirement on their property. In



return, the property owner is held responsible for the maintenance and upkeep of the landscape frontage.

**5.2-al Street Trees.** Street trees in landscape strips and parkways strips must be placed near enough to the sidewalk to provide canopy. In commercial and industrial areas, street trees shall be located within public right-of-way behind the sidewalk. In residential areas, street trees shall be located within the parkway strip.

*See policies in Section 6.7, Urban Design, for location and placement of street trees.*

**5.2-am Medians.** Medians shall be planted with street trees.

*Promote the use of drought-tolerant landscaping in medians.*

**5.2-an Raised medians.** Medians shall be installed along newly constructed arterials and expressways that front new development. Raised medians shall also be installed along existing roadways (where medians exist or are added) as the City completes roadway rehabilitation projects, as deemed necessary by the City Engineer.

**5.2-ao Landscaping and median maintenance.** Work with property owners to develop and implement a funding strategy for maintenance of landscaping in medians and in other areas within the public right of way adjacent to existing developed properties. The City will also pursue the development of a manual for workers that explains how to maintain xeriscape/drought-tolerant landscaping.

### ***Right-of-Way Acquisition and Preservation***

**5.2-ap Establish roadway alignments.** Take appropriate action to establish precise alignments based on the General Plan diagram and on standards delineated in Table 5-6, and on Caltrans local route requirements, for all existing and proposed freeways, expressways, arterial and collector streets in order to identify future right-of-way needs. Plan lines must be adopted by the City Council.

**5.2-aq Plan Line Studies included in CFF.** Plan Line Studies shall be included in CFF costs. Once plan lines are established, new cost estimates shall be prepared and the CFF updated to reflect the revised and finalized costs.

*Plan Line Studies to be included in the CFF are listed in Appendix B.*



*Multi-use paths for walking and cycling provide opportunities for exercise, commuting, and travel throughout neighborhoods.*

**5.2-ar Right of Way consistency.** To the extent possible, new roadways shall be designed so that they maintain a consistent right of way along the length of the facility, regardless of adjacent land use changes. In other words, for example, a two-lane collector that passes through a residential area and then a commercial area shall not change width as the land uses change.

**5.2-as Right of Way acquisition.** Rights of way for new roadways shall be acquired such that they can accommodate the width of the facility as designed for full land use buildout, even if the facility to be constructed in the near term is smaller.

**5.2-at Rights of Way fully within master plan boundaries.** Planning areas shall not use roadway centerlines as boundaries. Roadways shall be built to their full width within the annexed city limits. Part-width roads shall not be permitted where master plan areas abut unincorporated properties that are not expected to be annexed to the city within the time frame of this General Plan. Road rights of way that demarcate the edge of a planning area shall be fully contained within the development area boundary, and expanded only within that boundary.

**5.2-au Roadway Circulation Study.** In order to determine the alignment for the proposed expressway on the east side of Turlock that will connect Christofferson Parkway to new development in the southeast, a plan line study that will include a study of possible connections to Golden State Boulevard will be undertaken for the Roadway Circulation Study Area shown on Figure 5-2. The Study Area must extend from NE Turlock Master Plan Area to the proposed new Master Plan Area SE 2. The plan line study shall be initiated within one year of the adoption of the General Plan. Funding for the study shall be provided by the Capital Facilities Fee.

*If development in the area south of Linwood Avenue and east of Golf Road (currently designated as Urban Reserve) were to eventually occur, a similar roadway circulation study should be undertaken in order to ultimately connect the east side expressway to the new interchange. Note that this connection is not proposed in this General Plan.*

### **Relationship between Modes**

*See also policies in Chapter 6— City Design Element.*

**5.2-av General transit and pedestrian access.** In reviewing designs of proposed developments, ensure that provision is made for access to current and future public transit

services. In particular, pedestrian access to arterial and collector streets from subdivisions should not be impeded by continuous segments of sound walls.

**5.2-aw Bus access on arterials.** Design considerations for arterial streets in newly developing areas should provide for bus loading and unloading without disruption of through-traffic.

**5.2-ax Standards for transit stops and headways.** Establish citywide standards for bus stop locations and bus frequencies/headways. In industrial areas, standards may need to be adjusted to provide direct access to employee entrances.

### **Parking**

**5.2-ay** Improve Downtown parking opportunities, as demand grows in the future, using the following strategies:

- Examine rear or vacant lots and other under-utilized areas for off-street parking;
- Consider utilization of the existing parking district mechanism to finance Downtown parking and related street landscaping improvements suggested in the Downtown Master Plan; and
- Develop a projection of future parking need in Downtown and identify potential locations.

*Downtown parking facilities shall be included in the CFF update.*

## **5.3 PEDESTRIAN AND BICYCLE CIRCULATION**

Turlock's flat topography and its mild rainfall are ideal for commuting and recreational bicycle riding, and walking. However, the intense summer sun and minimally shaded streets in some parts of town can be deterrents to both bicyclists and pedestrians.

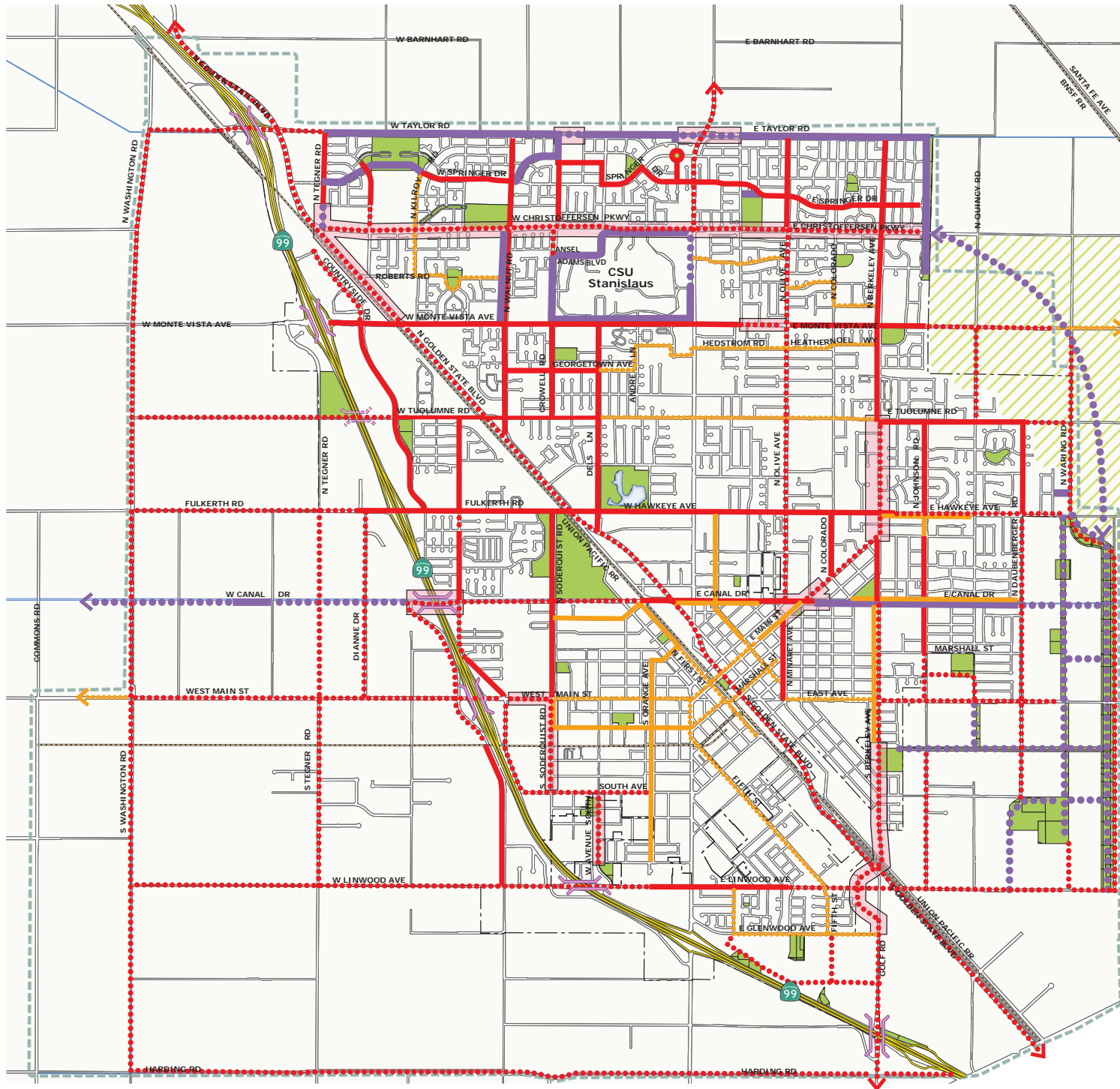
The Census data on means of transportation to work (see Table 5-1) does not reveal a significantly high incidence of bicycle use or pedestrian travel to work (1.2 percent of the employed residents biked to work, and 2.4 percent walked to work). The data, however, does not take into account CSUS students who ride bicycles to the campus. There are opportunities to increase bicycling if it is made easier.



*Top: The Class I path along Canal Drive will be continued through the new master plan area to the east.*

*Bottom: Discontinuous portions of the Class I path along Taylor Road are designated as Priority Improvement Areas.*

**Figure 5-3: Existing and Proposed Bikeways**



- Existing Class I
- Existing Class II
- Existing Class III
- Proposed Class I
- Proposed Class II
- Proposed Class III
- Priority Improvement Areas
- Roadway Circulation Study Area\*
- Parks/Detention Basins
- Overpass
- Proposed Overpass
- Study Area

\*Future bicycle facility to match expressway alignment

The Plan encourages the use of walking and bicycling and recognizes three classes of bikeways:

- **Bike Path** (Class I Bikeway, including paseos and public greenways). Provides a completely separated right-of-way designated for the exclusive use of bicycles and pedestrians with cross flows by motorists minimized.
- **Bike Lane** (Class II Bikeway). Provides a restricted right-of-way designated for the exclusive or semi-exclusive use of bicycles with through-travel by motor vehicles or pedestrians prohibited, but with vehicle parking and crossflows by pedestrians and motorists permitted.
- **Bike Route** (Class III Bikeway). Provides right-of-way designated by signs or permanent markings and shared with pedestrians and motorists.

Figure 5-3 depicts existing and future bikeways of all three classes. In addition, it is expected that all local streets operate as Class III bike routes, connecting residents to the larger circulation network, and do not need to be demarcated as such. Designs for all new collector and arterial streets also include Class II bike lanes on almost all roadway facilities and sidewalks on every facility (see Tables 5-4 and 5-5).




Not only does the bicycle plan show bikeways on future roads, it also fills in some of the key “missing links” of the city’s existing bicycle network, improving bicycle access and connectivity in infill areas. Important missing links and troublesome segments or intersections to be improved include:

- Taylor Road at Geer Road (gap in Class I)
- Taylor Road near Crowell Road Right of Way/Lutheran Church (gap in Class I)
- Berkeley Avenue, especially at the Golden State Boulevard intersection (gap in circulation network; difficult crossing)
- Canal Drive and East Main Street (difficult transition from Class I to Class II and III)
- Tegner Road from Taylor Road to Christofferson Parkway; Golden State Boulevard from Christofferson Parkway to Monte Vista Avenue (indirect, heavy traffic, poor route-finding)

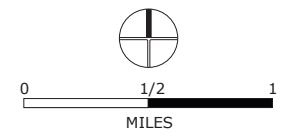
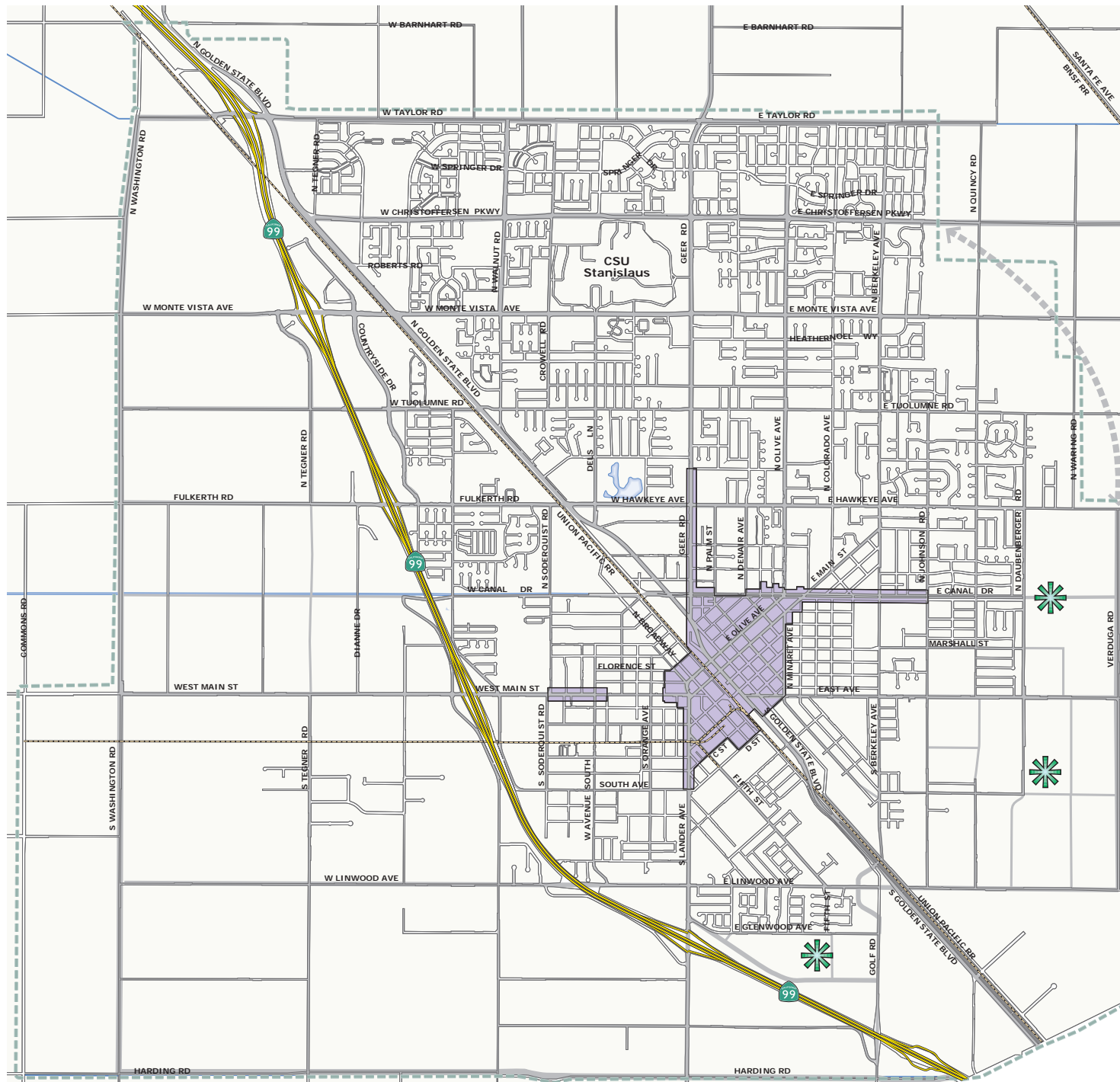


*Good neighborhood planning and roadway network design enables safe access to schools for local children.*

**Figure 5-4: Pedestrian Priority Areas**

-  Pedestrian Priority Areas in Existing Urbanized Areas
-  Pedestrian Priority Areas in New Growth Areas\*
-  Planning Area

\* Locations in new growth areas are approximate. To be determined during master planning process, corresponding with new neighborhood centers.



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These are priority improvement areas to the existing bikeway system, and are indicated as such on Figure 5-4. Implementation of bikeway improvements on existing streets often presents challenges, as right of way width is limited, traffic patterns are established, and there may not be adjacent new development projects from which funding can be collected.

This General Plan also introduces a new park type to Turlock’s park and recreation network, as a subset of the Neighborhood Park category: greenways or recreation corridors (See Section 4.1). These greenways are specifically intended to provide landscaped corridors, separate from streets, with Class I paths that link neighborhoods to schools, parks, and other local destinations. The incorporation of recreation corridors into new development areas will provide significant new spaces for pedestrian and bicycle travel that is efficient and safe for all user groups.

## **POLICIES**

### **Guiding Policies**

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- 5.3-a Promote walking and bicycling.** Promote walking and bike riding for transportation, recreation, and improvement of public and environmental health.
- 5.3-b Meet the needs of all users.** Recognize and meet the mobility needs of persons using wheelchairs and those with other mobility limitations.
- 5.3-c Develop a safe and efficient non-motorized circulation system.** Provide safe and direct pedestrian routes and bikeways between places.

### **Implementing Policies**

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#### ***Complete Streets***

- 5.3-d Integration of land use planning.** Implement land use policies designed to create a pattern of activity that makes it easy to shop, play, visit friends, and conduct personal business without driving.

*The neighborhoods described in the Land Use and City Design elements are designed to promote non-motorized transportation and to make it easy for those people who cannot or choose not to drive to be independent.*

- 5.3-e Provision of bicycle facilities.** Facilities for bicycle travel (Class I bike/multiuse paths; Class II bike lanes, and Class III bike routes) shall be provided as shown on Figure 5-3.



*'Sharrows' clearly demarcate that cyclists share the road with automobiles along Class III routes, and raise drivers' awareness of their presence.*

Bike lane width shall follow the standards in tables 5-4 and 5-5. In cases where existing right of way constraints limit development of Class II facilities, Class III signage and demarcation may be permitted at the discretion of the City Engineer. Deviations from these standards and from the routing shown on the diagram shall only be permitted at the discretion of the City Engineer.

- 5.3-f Street trees for shade and comfort.** Ensure that planting plans for street trees take into consideration shade and comfort for pedestrians and bicyclists.

*Particular attention should be paid to places frequented by pedestrians, such as Main Street and other areas in Downtown, such as City Hall. Detailed measures relating to street trees are prescribed in policies in Section 6-7, Urban Design.*

- 5.3-g Children's access to schools.** Work with the Turlock Unified School District to promote drawing of school attendance areas so as to minimize crossings of major arterial streets.

- 5.3-h Universal design.** Provide pedestrian facilities that are accessible to persons with disabilities and ensure that roadway improvement projects address accessibility and use universal design concepts.

#### ***Funding for Improvements***

- 5.3-i Air quality funding for bikeways plan.** Establish a citywide program, similar to the use of the Air Quality Trust Fund in the Northwest Triangle Specific Plan, to assist in the funding of implementation of the Bikeways plan depicted in Figure 5-3. The fee will be developed and updated concurrently with the update of the CFF.

- 5.3-j Funding for bikeways through street construction funds.** Continue to designate a portion of the City's annual street construction and improvement fund for financing bikeway design and construction.

- 5.3-k Bicycle Master Plan.** Prepare a Bicycle Master Plan consistent with the requirements in the Streets and Highways Code in order to be eligible for further funding for improvements from the State, such as the Bicycle Lane Account funds.

- 5.3-l Reduced fees for Downtown and Pedestrian Priority Areas.** In recognition of its reduced impact on demand for new infrastructure due to its central/infill location, development projects located in Downtown Turlock and in designated Pedestrian Priority Areas will be granted a reduction in capital facilities fees owed. Reduced fees aim to encourage infill development, the creation of a pedestrian friendly urban design



character, and the densities and intensities of development necessary to support transit and local business development. Downtown and other Pedestrian Priority Areas are defined on Figure 5-4.

*The fee reduction for Downtown and other infill areas will be factored into the CFF. For Pedestrian Priority Areas in master plan areas, the reduced impact shall be incorporated into the Master Plan fees.*

**5.3-m Street trees in Capital Improvement Program.** Include street trees as part of Capital Improvement Program programming and implementation.

#### ***Increasing Bicycle Use and Safety***

**5.3-n Bicycle use by City employees.** Establish a program to encourage bicycle use among City employees.

*Bike storage facilities and shower and locker rooms should be provided where feasible. Funding shall be provided through these facilities' incorporation into the CFF.*

**5.3-o Bicycling access to parks.** Provide safe bicycle access to and parking facilities at all community parks.

**5.3-p Bicycle safety.** Increase the safety of those traveling by bicycle by:

- Sweeping and repairing bicycle paths and lanes on a regular basis;
- Ensuring that bikeways are delineated and signed according to Caltrans or City standards, and that lighting is provided where needed;
- Providing bicycle paths and lanes on bridges and overpasses;
- Ensuring that all new and improved streets have bicycle-safe drainage grates and are free of hazards such as uneven pavement or gravel;
- Providing adequate signage and markings warning vehicular traffic of the existence of merging or crossing bicycle traffic where bike routes and paths make transitions into or across roadways; and
- Work with the Turlock Unified School District to promote classes on bicycle safety in the schools.

**5.3-q Demarcation of Class III Bikeways.** In order to increase awareness of bicyclists sharing the roadway with motorized vehicles, demarcate Class III bicycle facilities by painting “sharrows” on streets. Because of high maintenance costs associated with sharrows, their use should be prioritized on areas with higher frequency of bicycle conflicts or



*The BLAST bus provides local transit service in Turlock, with stops within walking distance of many neighborhoods.*

where the bikeway may be obscured by traffic or geometrics. This shall apply only to Class III facilities shown on Figure 5-4, and not on local streets.

- 5.3-r Improved bikeway visibility.** Use visual cues, such as brightly-colored paint on bike lanes or a one-foot painted buffer strip, along bicycle routes to provide a visual signal to drivers to watch out for bicyclists and nurture a “share the lane” ethic. Start with areas of town where automobile-bicycle collisions have occurred in the past, based on data from the Statewide Integrated Traffic Records System maintained by the California Highway Patrol.

#### ***Pedestrian Access and Comfort***

- 5.3-s Pedestrian access to shopping centers.** Install clearly marked crosswalks at intersections near all neighborhood commercial centers, as well as clearly marked pedestrian paths within parking areas. Crosswalks and signage indicating pedestrian activity should also be installed at mid-block entrances where existing shopping centers are adjacent to other high-intensity uses, such as parks and schools where necessary for safety; however, mid-block crossings are discouraged in new development.
- 5.3-t Pedestrian connections at employment centers.** Encourage the development of a network of continuous walkways within new office parks, commercial areas, or industrial areas to improve workers’ ability to walk safely around and from their workplaces.

#### ***Improvement Strategy***

- 5.3-u Bikeway improvements in infill areas.** To address the Priority Infill Bikeway Improvement Areas indicated on Figure 5-3, complete a feasibility study within two years of the General Plan’s adoption that identifies planned improvements and analyzes the cost and process associated with implementing those improvements. The feasibility study shall evaluate the identified areas for safety concerns and identify the minimum improvements necessary to address safety and usability issues. Funding for the feasibility study shall be provided through inclusion in the CFF.

*The feasibility study may identify a range of possible improvements to the targeted areas that can be implemented incrementally as funding becomes available. Low-cost enhancements that render some immediate safety improvements may be implemented first. The appropriateness of each type of improvement will be related to the constraints of each individual site. Possible improvements include, but are not limited to:*

- Signage improvements
- Painting or re-painting of lanes and/or sharrows
- Installation of “soft-hit” posts or other removable barriers that separate bike lanes from motorized traffic
- Changes to intersection signalization or timing

*The feasibility study shall also identify and list possible funding sources.*

## 5.4 PUBLIC TRANSPORTATION

Turlock’s relatively small size and rural surroundings has traditionally resulted in a small role for public transportation. Less than one percent of Turlock’s workforce uses public transportation to travel to work (see Table 5-1) Prior to the late 1990s, the City maintained only a demand-responsive bus system due to the low demand. However, the City has since transitioned from its exclusively demand-responsive operation to a fixed route system. This was the result of the Turlock service area approaching the limits of what a demand responsive transit service could most efficiently serve. The transit industry generally considers 50,000 to be the population threshold where the transition from demand responsive to fixed route should occur, and the 1999 population was approximately 57,000. The overall service area is approximately 21 square miles.

Turlock is also included in the planning for a new regional rail system currently being studied by the San Joaquin Regional Rail Commission. This new service would be an extension of the Altamont Commuter Express (ACE), linking Turlock to employment destinations to the north and west to the Bay Area. Additionally, Turlock is located along one of the potential routes for the future California High Speed Rail (HSR) system. The regional rail system and HSR would share the same right of way. Turlock is identified as a regional rail stop, but not a High Speed Rail stop.

Over the next 20 years, Turlock’s population is projected to reach between 115,000 and 127,000 people. Much of the new housing is planned to be more compact than that which was developed in the last decade, which will help make Turlock’s public transportation increasingly viable. Continuing to strengthen public transportation options in Turlock is a priority of this General Plan—but is one that is only possible through supportive land use planning and accompanying funding and implementation plans.

## CURRENT LOCAL TRANSIT SERVICES

### Fixed Route—BLAST

Since 1998, the Bus Line Service of Turlock (BLAST) has provided a local fixed route bus system for Turlock and Denair residents and visitors. BLAST operates 4 separate routes, mostly on the east side of SR 99, from Olive Avenue to Countryside Drive and from Christofferson Parkway to Linwood Avenue. BLAST operates on Saturdays from 9:20 AM to 4:20 PM and Mondays through Fridays 6:10 AM to 6:50 PM, holidays excluded. Buses run about every 35 minutes Monday through Friday and every 70 minutes on Saturdays. Figure 5-5 shows the areas of coverage and access by the current BLAST system.

### Demand Responsive—Dial-a-Ride Turlock

Since 1975, the City has operated Dial A Ride Turlock (DART). DART was the only local public transportation until BLAST was started in 1998 to meet increasing demand. DART still operates full-service for residents 65 or older and/or with disabilities but is restricted to trips outside the BLAST system for other passengers. DART operates in Turlock on Saturdays from 9:20 AM to 4:15 PM and Mondays through Fridays 5:35 AM to 6:15 PM. In Denair, DART operates Mondays through Saturdays 9:20 AM to 4:15 PM.

The biggest challenge facing Turlock's provision of local transit is continuing shortfalls in funds for operation. The funding that the city received for transit through the American Recovery and Reinvestment Act (ARRA) were dedicated to capital improvements; meanwhile, the City continues to struggle with operating costs.

## CURRENT REGIONAL SYSTEMS

Both the counties of Stanislaus and Merced operate public transportation systems that provide service to and from the Turlock area.

### Stanislaus Regional Transit

Stanislaus Regional Transit (StaRT) provides a fixed route system, shuttle services, runabout services, and dial-a-ride services. The Turlock/Modesto Shuttle service provides demand-responsive transit between the Cities of Modesto, Ceres, Keyes, and Turlock. The Turlock area is also

**Figure 5-5: Existing Local and Regional Transit Access**

**Local Bus Transit**

- Bus Stops
- Route A
- Route B
- Route C
- Route D

**Stanislaus Regional Bus Transit**

- Route 10
- Route 15
- Route 45
- Route 70

**Merced County Transit**

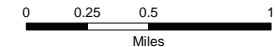
- Route 6
- Route 7

**Circulation (2030)**

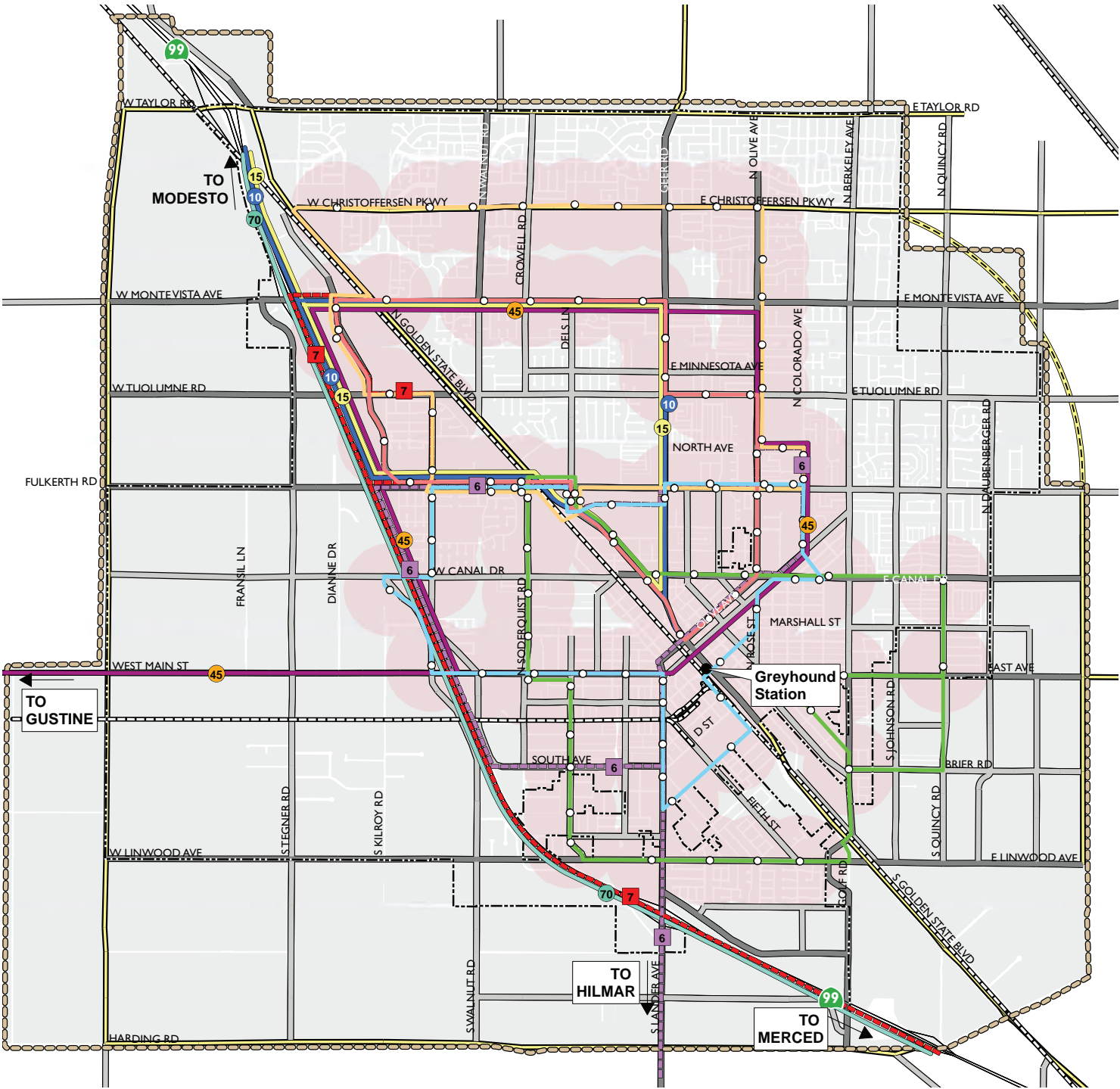
- Freeway
- Expressway
- Potential Expressway Connection
- Arterial
- Collector
- Railroads

**Boundaries**

- Study Area Boundary
- City Limits & County Islands
- Transit Accessibility  
(1/4 mile radius around local bus stop)



Source: Omni-Means, 2011; City of Turlock, 2011; Dyett and Bhatia, 2011.



served by the StaRT fixed route system via Route 10 Express, Route 15, Route 45, and Route 70. These fixed routes connect the City of Turlock to regional destinations such as Gustine, Newman, Crows Landing, Patterson, Merced, Keyes Ceres, and Modesto. StarRT Route 10 Express has two early buses with 20 minute headways starting at 6:10 from Modesto and 6:42 from Turlock. Between 7:30 AM and 5:00 PM, buses run roughly one hour headways. Another two routes are run after 5:00 PM from both Turlock and Modesto about 20 minutes apart. Route 15 runs about every 2:00 hours Monday through Friday 5:05 AM to 8:01 PM from Modesto and 5:48 AM to 8:56 PM from Turlock. On Saturdays, the service starts later and ends earlier but still runs about every 2 hours. Route 45 runs about every 2 to 3 hours with closer spacing in the morning and evening commute periods. Route 70 runs only twice a day, leaving Modesto at 6:10 AM and 4:10 PM.

### Merced County Transit

THE BUS is a service provided by the Transit Joint Powers Authority for Merced County and provides, as with StaRT, both fixed route and dial-a-ride services. THE BUS dial-a-ride service is not available to and from the Turlock area, but the fixed routes provide service to Turlock via Route 6 and Route 7. Route 6 links Turlock with the Hilmar community and travels along SR 165. Route 7 provides service to and from Merced and travels along SR 99. THE BUS Route 6 runs about every hour from 7:00 AM to 9:05 AM and from 1:00 PM to 4:45 PM. Route 7 runs on irregular headways with buses leaving the station anywhere from 1 hour to 2 hours apart. The Saturday Red Route 7 is more limited, with only one bus running the Turlock to Merced and back route. The bus arrives at the Merced terminus at 10:30 AM, 2:00 PM, and 6:45 PM. Figure 5-5 maps the current regional transit routes and shows areas of convenient walkability to transit.

### Greyhound

Inter-regional, statewide and nationwide bus transportation is provided to the Turlock area via Greyhound. The Greyhound station is open Mondays through Fridays 8:00 AM to 5:30 PM and Saturdays 9:00 AM to 11:59 AM, excluding holidays. The Greyhound depot is located centrally in the Downtown Turlock area, at 243 Golden State Boulevard between Main Street and Marshall Street. The station is identified in Figure 5-5.

## Amtrak

Residents of the Turlock community are also served by Amtrak, which runs on the Santa Fe Railroad tracks through Denair. The San Joaquin run offers short passenger trains that make four stops daily, providing direct rail access to other communities in the San Joaquin Valley, with connections to all other Amtrak routes and stations including national routes. There is a small passenger kiosk in Denair.

## POTENTIAL FUTURE REGIONAL TRANSIT

Turlock may benefit from the development of one or more future regional rail systems. However, these are still in planning stages and may or may not be in place during this General Plan planning period.

## High Speed Rail

Since voter approval of Proposition 1A on the November 4th, 2008 statewide ballot providing \$9 billion in bond funding, the California High-Speed Rail project is moving forward. Plans for High Speed Rail entail electrically-powered trains running on over 800 miles of track, linking San Francisco and Sacramento to Los Angeles and San Diego via the Central Valley. While the system is not planned to stop in Turlock, there are stops planned in Modesto and Merced. This section of the system (San Jose-Merced) is currently in the Alternatives Analysis stage, which will help identify the alignment, precise station locations, and maintenance facilities. Turlock will be able to benefit from the ultimate implementation of High Speed Rail by providing ancillary transit services to nearby stations.

The alignment of the High Speed Rail through the Central Valley has yet to be determined, and it will likely follow one of two existing railroad rights of way: the Union-Pacific Railroad (UPRR) or the Burlington-Northern and Santa Fe (BNSF). The UPRR roughly parallels State Route 99 and Golden State Boulevard, while the BNSF runs northeast of Turlock, through Denair. Two alignments through Turlock are under consideration for the UPRR option: the first through Downtown, and the second on the west side. The ultimate alignment will have important implications for subsequent planning and rail service in Turlock. If the UPRR alignment through Downtown is chosen, the City will have to undertake a new Downtown planning effort to consider and plan for the impacts of the high speed train through central Turlock, as well as



Photo Credit: California High-Speed Rail Authority

*Implementation of the proposed High Speed Rail project would have a large positive impact on improving connectivity between Central Valley and the rest of California.*

for the land uses and urban design surrounding a potential station. If the BNSF alignment is chosen, the impacts on Turlock will be minimal; however, the City may wish to implement new transit connections between Turlock and the nearest station(s).

### Commuter Rail

In early 2010, the City of Turlock approved a Memorandum of Understanding to work with other regional entities from Sacramento to Merced County to explore the creation of a commuter rail service for Central Valley cities. The working group is led by the San Joaquin Regional Rail Commission, which owns and operates the Altamont Commuter Express (ACE) train which links communities in San Joaquin County to the Bay Area. The proposed Valley commuter rail would link to the current ACE train. The group is working closely with the California High Speed Rail Authority, and hopes to build commuter rail tracks along the same alignment as the proposed high speed train in the near term so that regional service could commence earlier.

## POLICIES

### Guiding Policies

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- 5.4-a Promote safe, efficient, and convenient public transportation.** Promote the use of public transportation for daily trips, including to schools and workplaces, as well as other purposes.
- 5.4-b Work with multiple agencies and jurisdictions.** Continue to cooperate with other agencies and jurisdictions to promote local and regional public transit serving Turlock.

### Implementing Policies

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#### *Local Transit*

- 5.4-c Improve local transit operations.** Continue the present course of expanding its fixed route service and improving operations.
- 5.4-d Improvements to Demand-Responsive transit.** Improve the City's dial-a-ride system. Aggressively pursue transit grant funds in order to continue funding operations.



**5.4-e Consistency with Stanislaus Congestion Management System.** Monitor the frequency, routing and coordination of local transit services for consistency with the requirements of the Stanislaus County Congestion Management Plan (CMP).

*The County Congestion Management Plan includes minimum standards regarding these factors in an effort to enhance the coordination within the regional transportation system.*

**5.4-f Transit stop spacing.** Transit stops should be spaced no further than 1,000 feet apart, if spaced for continuous service on city streets. Spacing may deviate from the general standard in the Westside Industrial Specific Plan area where individual businesses occupy large parcels (greater than 20 acres) and where stops should serve employee entrances directly.

**5.4-g New transit center location.** Continue to pursue the development of the city's new interim Transit Center (at Dels Lane and Golden State Boulevard) and future permanent center Downtown. Two options for the final transit center location are at Dels Lane and in Downtown. The final location of the transit center shall coincide with the location of the regional commuter rail station, be addressed in the update of the Downtown Master Plan, and be reflected in the General Plan upon its completion.

**5.4-h Funding for transit services.** Continue to pursue federal and State funds to cover capital and operating costs associated with Turlock's transit operation. (Currently, funding is sufficient to cover these costs.) If federal funds are reduced and capital needs are not being met, transit may be added to the Capital Facilities Fee (CFF) through a Nexus Study.

**5.4-i Transit usability.** Situate transit stops at locations that are convenient for transit users, and promote increased transit ridership through the provision of shelters, benches, bike racks on buses, and other amenities.

**5.4-j Transit services marketing.** Encourage ridership on public transit systems through marketing and promotional efforts. Provide information to residents and employees on transit services available for local and regional trips.

**5.4-k Transit for seniors.** Require new community care facilities and senior housing projects with over 25 beds to provide accessible transportation services for the convenience of residents.

**5.4-l Development that supports transit.** Ensure that new development is designed to make transit a viable transportation choice for residents. Design options include:

- Have neighborhood centers or focal points with sheltered bus stops;
- Locate medium and high density development on or near streets served by transit wherever feasible; and
- Link neighborhoods to bus stops by continuous sidewalks or pedestrian paths.

***Regional Transit and Coordination***

**5.4-m Regional transit to support SB 375 compliance.** Coordinate with other relevant agencies to implement regional transit solutions as part of the SB 375 Sustainable Communities Strategy.

**5.4-n Correspondence between local and regional transit.** As Turlock’s local transit system continues to be developed, services should be oriented to link with potential future commuter and/or high-speed rail.

**5.4-o Regional rail.** Support regional efforts to provide regional passenger train services, via commuter rail and/or High Speed Rail. As necessary, engage in Station Area planning efforts to examine and coordinate land uses surrounding a future train station in Turlock.

**5.4-p Support existing regional transit services.** Continue to support the MT Stage service provided by Stanislaus County and THE BUS service provided by Merced County.

**5.4-q Denair Amtrak Station.** Continue to support the operation of the Amtrak station in Denair. Expand bus service to serve the train station.

**5.4-r Regional Transit Agency.** Support efforts to improve the coordination and efficiency of bus service on a regional level and, if appropriate, the regionalization of transit service delivery.

## 5.5 AVIATION, RAIL, AND GOODS MOVEMENT

### AVIATION

#### Turlock Municipal Airport

The City of Turlock owns a municipal airfield that is located approximately 8 miles east of the City off of East Avenue and Newport Avenue. The airport is not only outside the incorporated City limits but is also situated in the adjoining Merced County, outside of the Planning Area. The airfield facility was originally constructed by the federal government as an overrun field for Castle Air Force Base, located approximately twenty miles to the south in the community of Atwater. The City acquired the 640-acre site in the late 1940s through a transfer from the federal government under the Surplus War Property Act of 1944. Since that time the City has managed and operated the Airport as a small general aviation facility.

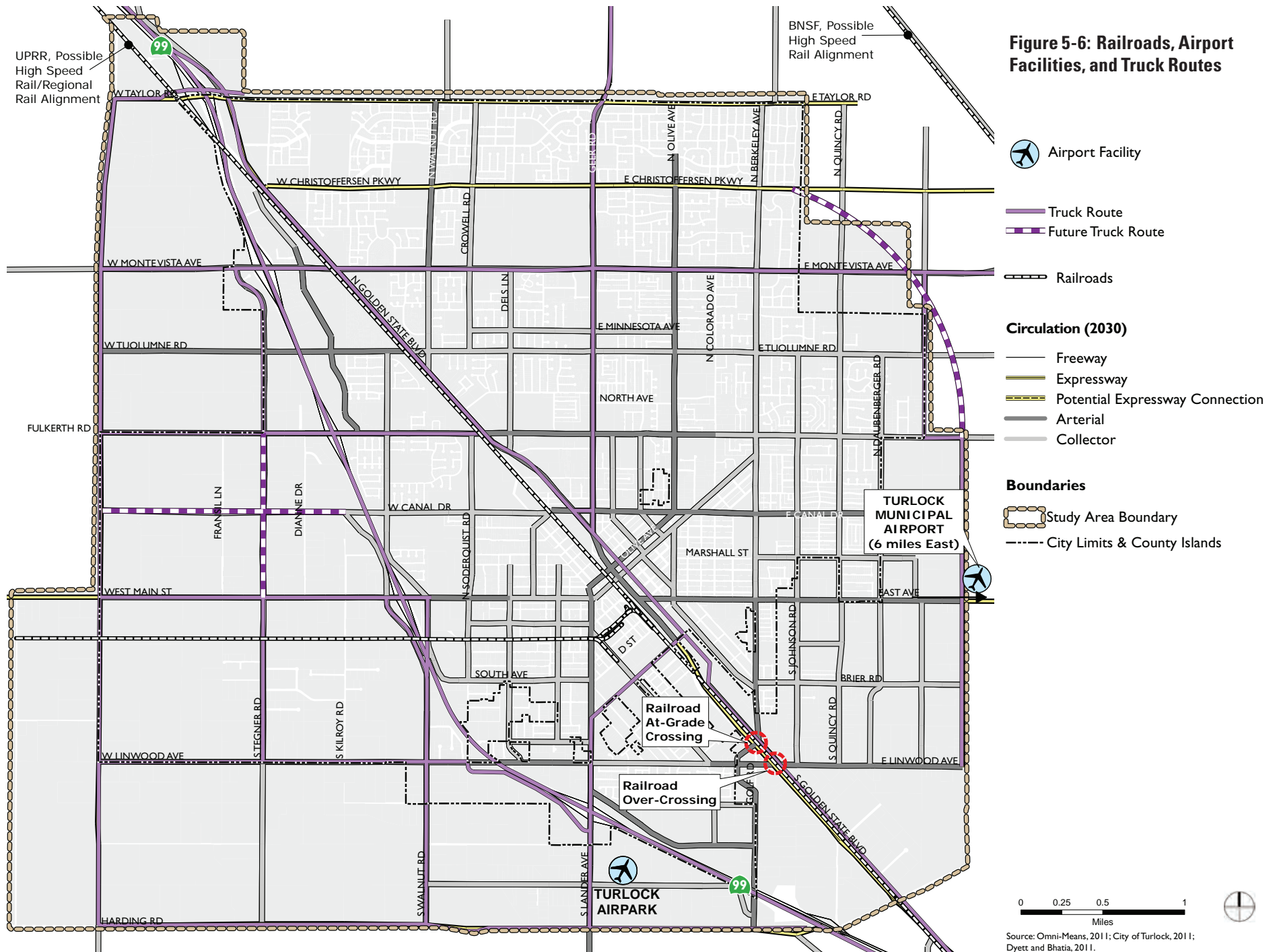
In 1951 the City sold 307 acres that were not being utilized for airport operations to a private landowner for an agricultural operation. The proceeds from the sale were reinvested into airport operations and improvements. Approximately 250 acres of the remaining airport property are now leased to a private operator for an agricultural operation.

Historically, the Turlock Municipal Airport has been operated under an airport lease or contract management agreement. Currently, the City has a management contract with a fixed-base operator that serves as an on-site manager for purposes of aircraft maintenance and fuel sales. The City provides administrative support in the form of rental of tie-downs and hangar spaces and the collection of monthly rental/lease fees. The City has also established an Airport Advisory Committee that advises the Council on operational aspects of the airport facility.

The airport is open to the public and has repair facilities. The runway asphalt is listed as being in good condition and the markings in fair condition. Use is limited to single wheel craft under 12,000 lbs. As of 2008, 57 aircraft are based at the airfield, including 52 single-engine planes, three multi-engine planes, and two helicopters. Seventy-nine percent of traffic is local and 21 percent is itinerant.

In 1991 the City first completed and adopted an Airport Master Plan Study. The study was coordinated with the City of Turlock, the Turlock Airport Advisory Committee, County of Merced,

**Figure 5-6: Railroads, Airport Facilities, and Truck Routes**



Merced County Airport Land Use Commission, Merced and Stanislaus Associations of Governments (COGS), Castle Air Force Base, the Federal Aviation Administration, CalTrans and other federal, State and local agencies. The Master Plan identifies future airport levels of service, future estimated general aviation demands, potential airport facility improvements, and possible management and organizational options to keep the facility active.

Historically, the City has maintained a general policy that the Turlock Municipal Airport will be a self-supporting facility. In other words, funds derived from the agricultural lease, the tie-down/hanger rentals, and a modest fuel flowage fee would be used to maintain and improve the facility. As of 2001, the Turlock Airport was running as a self-supporting facility.

The State of California utilizes a model to assist local governments in determining the indirect economic benefits that generally result from a local airport facility. This model is based upon three general variables: the revenue derived from fixed base operation(s); the personal property taxes assessed on the private aircraft based at the facility; and the “visitor dollars” that the community received from transient aircraft frequenting the facility. In Turlock’s case, there is little to suggest a positive impact in any of these areas. First, historically very little income in excess of operational costs has been received from the fixed base operators. Second, since the facility and its fixed base aircraft are located in Merced County, the City received virtually no share of the personal property taxes paid by the aircraft owners. Third, since transient tie-down activity is virtually non-existent, there would appear to be little “secondary spin-off” revenue that could be expected from out-of-town visitors.

### Turlock Airpark

Turlock Airpark is a private airstrip located just south of SR 99 within the City limits, owned by Turlock Airpark Inc. Air traffic in and out of Turlock Airpark is light, the runway asphalt and markings are listed as being in poor condition, and use is limited to single wheel craft under 4,000 lbs. 32 aircraft are based at the airfield, including 12 single-engine planes and 20 ultralight craft. Sixty percent of traffic is local and 40 percent is itinerant.

The Airpark has generated complaints from neighboring residents. As the General Plan recognizes the goal of discouraging the continuation of existing incompatible land uses throughout the planning area, the City encourages the cessation of flight operations at the facility, and its possible relocation to a more suitable site.



*The Union Pacific Railroad follows Golden State Boulevard through central Turlock and sees some 18 freight trains per day.*

## RAILROAD

### Union-Pacific

The railroads within the City limits are owned by the Union Pacific Railroad (UPRR). These railroads provide freight service in and out of the City, serving the industrial area west of SR 99 and the downtown area parallel to Golden State Boulevard. The main Union-Pacific line runs parallel to Golden State Boulevard and connects the City to a vast statewide and interstate rail network via the City of Modesto to the north and the City of Fresno to the south. The secondary Union-Pacific line that serves primarily rural areas west of Turlock and the west side industrial area runs a mile south of and parallel to Main Street from Golden State Boulevard out west where it meets a north-south line headed to Modesto via Ceres. Figure 5-6 shows the railroads and Amtrak station in the Turlock area.

Railroad activity includes approximately 18 freight train operations per day along the UPRR track running parallel to Golden State Boulevard passing through some residential areas. A maximum of two local freight trains operate per day on the local UPRR tracks, which run parallel to Castor Street, formerly Tidewater Southern purchased by UPRR. This is an important short line service to the TRIP.

### BNSF

BNSF owns and operates a railroad line east of the City limits running through the unincorporated community of Denair. The BNSF line runs roughly parallel to the Union-Pacific line, connecting to the Cities of Stockton and Modesto to the north and the City of Fresno to the south. This railroad is about 4 miles northeast of the Union-Pacific railroad.

## TRUCK MOVEMENT

Manufacturing is one of the largest single employment sectors for Turlock residents; together with other industrial activities such as food processing and wholesale trade, it represents a significant part of Turlock's expanding economic base. Efficient regional connections are prerequisite to the expansion and continued operation of these industrial activities, as well as for the provision of goods and supplies to the other sectors.

In recognition of the special design consideration for truck routes, and to minimize neighborhood disruption, the City in 1984 adopted a resolution delineating special truck routes. Truck routes are developed to minimize neighborhood disturbance in the City and consist primarily of freeways, select expressways, and a few arterial and collector streets. SR 99 is a major statewide truck route. Golden State Boulevard provides truck access through the core of Turlock. The only truck routes that cross the Union-Pacific railroad tracks adjacent to Golden State Boulevard are Monte Vista Avenue and Fulkerth Road. Other peripheral truck routes include paths to and from the industrial development west of SR 99 and to regional destinations north and east of the planning area via Geer Road and Monte Vista Avenue respectively. Harding Road and Washington Road provide routes around the southern and western edges of Turlock. Walnut Road, Tegner Road, Linwood Avenue, Main Street, Fulkerth Road and Monte Vista Avenue provide routes into and out of the industrial zones west of SR 99. Figure 5-6 shows existing and proposed truck routes.

## **POLICIES**

### **Guiding Policies**

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- 5.5-a Maintain the Turlock Municipal Airport.** Maintain existing facilities and operations at the Turlock Airport and seek to improve facilities as funding appropriations permit.
- 5.5-b Ensure compatible land uses with the Turlock Municipal Airport.** Maintain compatibility of Turlock Municipal Airport operations with development in the surrounding area.  
*Coordination with Merced County Planning Department and the Airport Land Use Commission (ALUC) is required.*
- 5.5-c Promote safe and efficient goods movement.** Promote the safe and efficient movement of goods via truck and rail with minimum disruptions to residential areas.
- 5.5-d Promote railroad safety.** Minimize the safety problems associated with the Union Pacific Railroad and the divisive effect of the track alignment on the City.

## Implementing Policies

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### **Aviation**

- 5.5-e Turlock Airport Master Plan.** Continue to monitor and update as needed the Turlock Municipal Airport Master Plan including its implementation programs.

*The Master Plan addresses issues such as maintenance and upgrading of facilities and outlines the long-term objectives for the airport.*

- 5.5-f Financing for airport improvements.** Finance improvements to the Airport through user fees and state or federal funds earmarked for general aviation facilities.

- 5.5-g Airport management and operation.** Continue to operate the Turlock Municipal Airport through a fixed base operator and airport management agreement with the goal of continually decreasing subsidy from the City's General Fund.

- 5.5-h Closure and/or relocation of Turlock Airpark.** Encourage cessation of flight operations at the private Turlock Airpark and assist the owners in its relocation.

*A small privately owned airpark is located in the southern part of the City and is subject to various use and size restrictions due to its proximity to Highway 99. This airpark is used only infrequently, primarily by ultra-light aircraft and radio-controlled model airplanes, and has generated complaints from neighboring residents. The Plan recognizes the goal of discouraging the continuation of existing incompatible land uses throughout the planning area.*

- 5.5-i Airpark removed from County Plan.** Support the Stanislaus County Airport Land Use Commission in removing the Turlock Airpark from its Airport Land Use Commission Plan.

### **Truck Movement**

- 5.5-j Truck route identification.** Continue to sign truck routes. Ensure that clear signage is provided from freeways to truck routes in Turlock.

- 5.5-k New truck route designation.** All expressways, arterials, and industrial streets shall be designated truck routes.

- 5.5-l Truck route design.** Incorporate provisions for trucks in the design of routes depicted for truck movement in Figure 5-6. Ensure that truck routes are designed according to



Surface Transportation Assistance Act (STAA) standards for intersections and turning movements.

- 5.5-m Location of industrial development.** Continue industrial expansion in the TRIP so as to minimize the neighborhood impacts of truck movements.

*Areas designated for industrial expansion in the Plan are to the west of Highway 99, which will continue to serve as a buffer between residential and industrial areas.*

- 5.5-n Secure truck parking.** Encourage high-security off-street parking for tractor-trailer rigs in industrial designated areas.

*Locate parking in areas with demonstrated need and where police patrol can be provided. High visibility, including good lighting, should be provided.*

- 5.5-o Financing for truck facilities.** Explore possible funding sources, including user fees, to help finance truck routes, at least in part.

### ***Railroad***

- 5.5-p Railroad crossing safety.** Continue the ongoing comprehensive program to improve the condition and safety of existing railroad crossings by upgrading surface conditions and installing signs and signals where warranted.

*Special consideration must be given to improving access to Downtown.*

- 5.5-q New railroad crossings.** Provide new grade-separated crossings across the Union Pacific Railroad (UPRR), as shown on Figure 5-6, in conjunction with the planned roadway improvements shown on Figure 5-2. New grade-separated crossings will be at Linwood Avenue and the new east side expressway.

- 5.5-r Financing for railroad crossing improvements.** Establish a financing program for railroad crossing improvements through such mechanisms as a special assessment district (municipal revenue bonds) or tax-increment financing (redevelopment district).

## 5.6 ELECTRICITY, OIL, GAS, AND TELECOMMUNICATIONS TRANSMISSION AND DISTRIBUTION

The Circulation Element addresses not only the movement of people and goods throughout the Study Area, but also the transmission and distribution of electricity, oil, gas, and telecommunication services. Each of these services is regulated by the State, and services are provided by various utilities. The City of Turlock is not responsible for the siting, design, construction, or operation of these transmission facilities; rather, the role of the General Plan is largely to facilitate the continued safe and efficient operation of these utility providers and to prevent adverse impacts associated with transmission facilities.

Electricity service in Turlock is provided by the Turlock Irrigation District (TID). Natural gas is provided by Pacific Gas & Electric (PG&E). As of January 2009, TID operated 25,000 electric meters, 20 miles of transmission lines, 25 miles of fiber optic backbone, 160 miles of underground distribution lines, and 130 miles of overhead distribution lines in the Study Area. Several major PG&E gas transmission pipelines extend through the Turlock Study Area: roughly following Walnut Road from Bradbury Road to Golden State Boulevard; along Washington Road from Bradbury Road to West Main Street; along Golden State Boulevard from Hawkeye Avenue north; and along Geer Road from Canal Drive north. One refined oil product pipeline underlies the Study Area, roughly following the path of Highway 99.

TID maintains a five-year plan for its electric facilities, which is reviewed annually; it is in the process of adding power resources as part of its normal resource planning process, and expects to be able to maintain a sufficient level of service for the Study Area throughout the planning period. Chapter 8 provides additional information about electricity and gas usage in the Study Area.

Rising demand associated with population and employment growth will necessitate additional transmission facilities both for serving local needs for electricity, gas, oil, and telecommunications and for transporting these services through the Study Area to reach other locations. Therefore, it is important that these new facilities and services be provided in a manner that minimizes impacts on the built and natural environments and on the health and safety of Turlock residents and businesses.

## POLICIES

### Guiding Policies

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- 5.6-a Provide safe, reliable, and efficient service.** Ensure the provision of safe, reliable, efficient and economical electricity, gas, telecommunication, and similar services while minimizing potential land use conflicts, and health, safety, environmental, and aesthetic impacts of transmission facilities.
- 5.6-b Minimize impacts and hazards.** Plan and design electricity, gas, oil, and telecommunication transmission facilities to minimize visual impacts, preserve existing land uses, avoid natural and cultural resources, and minimize safety risks.

### Implementing Policies

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- 5.6-c Coordination with providers and regulatory agencies.** Continue to coordinate with electric utilities and utility regulatory agencies on transmission line routing and electromagnetic field buffers.
- 5.6-d Consolidation of transmission facilities.** Encourage consolidation of multiple transmission lines into common transmission corridors wherever possible. Secondary preferred locations are adjacent to freeway and railroad corridors, when feasible. In reviewing proposals for new transmission lines and/or capacity, the City should express a preference for upgrade of existing lines and use of existing corridors where feasible.
- 5.6-e Identify corridors in master plans.** New transmission corridors should be identified to the extent feasible in all master plans created for new growth areas.
- 5.6-f Visual impact of substations.** To minimize visual impacts, new bulk substations should be located in industrial and non-retail commercial areas when possible.
- 5.6-g Substations for residential areas.** To the maximum extent possible, locate new distribution substations serving residential areas in adjacent commercial properties. When not feasible, these facilities should be designed in a manner to harmonize visually with the surrounding development.
- 5.6-h Minimize effects on resources.** Locate and design public utility transmission, distribution, and maintenance facilities to minimize adverse effects on natural and scenic resources. Siting of new above-ground transmission lines in visually sensitive areas,

or in areas that would disturb wildlife habitat, vegetation, or significant cultural or historic resources is discouraged.

- 5.6-i Transmission lines and farmland.** The crossing of prime or statewide importance farmland with transmission lines should be avoided whenever possible. In those cases when crossing farmland in these categories is unavoidable routing of the lines along the periphery of the site is the preferred alternative.
- 5.6-j Bisecting parcels.** Transmission rights-of-way should avoid bisecting parcels wherever possible.
- 5.6-k Coordinate gas main routing with other easements.** Route new high pressure gas mains within railway and electric transmission corridors, along collector roads, and wherever possible, within existing easements. If not feasible these gas mains shall be placed as close to the easement as possible.
- 5.6-l Protection of oil and gas pipelines.** Ensure that pipeline owners protect and maintain underground oil pipelines and high-pressure gas pipelines to ensure maximum safety.
- 5.6-m Bird populations and transmission towers.** Protect native and non-native bird populations by incorporating electrocution prevention measures into the design of new transmission towers.
- 5.6-n New telecommunications towers.** Permit new freestanding telecommunications towers only when there are no feasible alternatives.

# 6 City Design

One of the main reasons a community commits an exceptional amount of time, energy and dollars to planning is to create a more beautiful and desirable place to live. Turlock residents hold their city to high standards of design aesthetics in both existing and new development.

While a City can establish specific building standards to enhance its attractiveness, the “visual quality” and the physical well-being of a community is made up of much more than the specific design of individual buildings. It requires the City to examine its geographical setting, recognizing those things that contribute to its visual interest, and develop strategies to encourage their preservation and enhancement. It also includes a serious commitment by the City for public and private improvements that will enhance the image of Turlock in the eyes of both residents and visitors.

The City Design Element addresses the design, use and management of the physical elements that shape Turlock. It seeks to promote visual quality and a fit between residents’ needs and city form. While the focus is on issues of citywide concern, critical issues at a more local or area-specific scale are also examined.

## 6.1 OVERALL CITY FORM AND EDGE CONDITIONS

### OVERALL FORM

Turlock’s form is compact. The City has steadily grown outward since its inception, but the edges of growth have not reached neighboring communities, and will not do so under General Plan policies. Growth has taken place in all parts of the City, though the thrust of recent expansion in recent decades has been to the north and northeast. The Plan seeks to maintain Turlock, Keyes, and Denair as free-standing communities, surrounded by farms and orchards, over the next 20 years.

Historically, the establishment of affluent neighborhoods on the town’s northeast side and demarcation of a major portion of the southwest for industrial use was influenced by the southward flow of prevailing winds. Though differences between the north and the south parts of the City



*Turlock’s compact urban form has maintained a firm northern boundary at Taylor Road and preserved agricultural land between the city and other nearby communities.*

have persisted, conscious efforts have been made to avoid a division. For example, sustained community efforts in the early 1960s led to the present alignment of Highway 99 where it skirts the City to the south, unlike in some other parts of the Valley where the Highway traverses through many communities. Nonetheless, the Union Pacific Railroad, with its infrequent street crossings, and the adjacent Golden State Boulevard continue to represent a barrier to closer integration of the north and southwest parts of the City.

### **CHARACTER AND MIX OF USES**

Turlock's historic areas are characterized by a diverse mix of uses within short distances. Smaller shops, restaurants, offices, single-family residences, apartments, automobile dealers, repair shops and civic offices can all be found within a one-quarter mile walking distance of the City's center. Small blocks limit development to a fine-grain, and a continuous street network with frequent intersections keeps visual interest at a high level.

In contrast to this, a diversity of uses and housing types is the exception in most newer parts of the City. Growth has led to increased distances between Downtown and new residential areas, creating a need for convenience shopping and services closer to new residences. Strip-retail along arterials emanating from Downtown (principally Golden State Boulevard and Geer Road and Lander Avenue, but also West Main Street Street and East Avenue) and new freeway-oriented regional commercial centers (Countryside Plaza at Freeway 99 and Fulkerth Road, and Monte Vista Crossing at Freeway 99 and Monte Vista Avenue) somewhat fulfill this role. However, the large distances between these retail areas and some recent residential developments points to the need for alternative growth patterns. Particularly in the north, commercial development is concentrated along Geer Road. The predominance of "strip"-oriented retail and commercial uses means that some residents must drive as far as two miles for everyday necessities.

### **URBAN-AGRICULTURAL EDGE**

Turlock's existing well-defined urban edge reinforces its image as a town close to the country, a value cherished by many residents. But the proximity of agricultural operations to urban uses also creates conflicts affecting both farmers and urban residents.

The impacts of urban encroachment on farm production include increased farmland theft and vandalism, farmers' liability for personal injury, spread of crop pests, restrictions on use of

pesticides, and noise, odor and burning restrictions. Although Stanislaus County has had a right-to-farm ordinance since 1981, which was replaced by a new right-to-farm ordinance in 1992, State and local restrictions and complaints by urban residents often compel modification of farming practices. Increased costs and conflicts at the urban edge can make conversion of agricultural land to urban uses not just an attractive proposition, but a necessity.

As with many cities surrounded by agriculture, some of these conflicts already exist in Turlock. With growth, some of the established edges between agriculture and urban areas are likely to change, increasing the number of new households in close proximity to farming activities, though the Plan calls for maintaining a defined urban-agricultural edge.

Conflicts relating to farming at the urban-agriculture interface can be minimized by using organic farming practices, or switching to crops that produce fewer conflicts, maintaining on-farm buffer zones or by designing suitable edge conditions that transition well from urban to rural development patterns. Also, a city form that minimizes the perimeter is likely to result in fewer conflicts, while an enlarged perimeter would likely bring more residents into direct contact with agricultural operations.

In 1992, Stanislaus County adopted an Agricultural Element for the General Plan that calls for buffers between agricultural and non-agricultural uses, with a standard minimum width of 150 feet. The width may extend to 300 feet or more when the adjacent use requires significant drainage or involves “people-intensive outdoor activities,” such as playing fields. According to the County, buffers must incorporate a solid wall as well as a vegetative screen. Permitted uses within the buffer area include public roadways, utilities, drainage areas, landscaping, parking lots, and walking and biking trails without rest areas (to discourage higher intensity use of the space).

## POLICIES

### Guiding Policies

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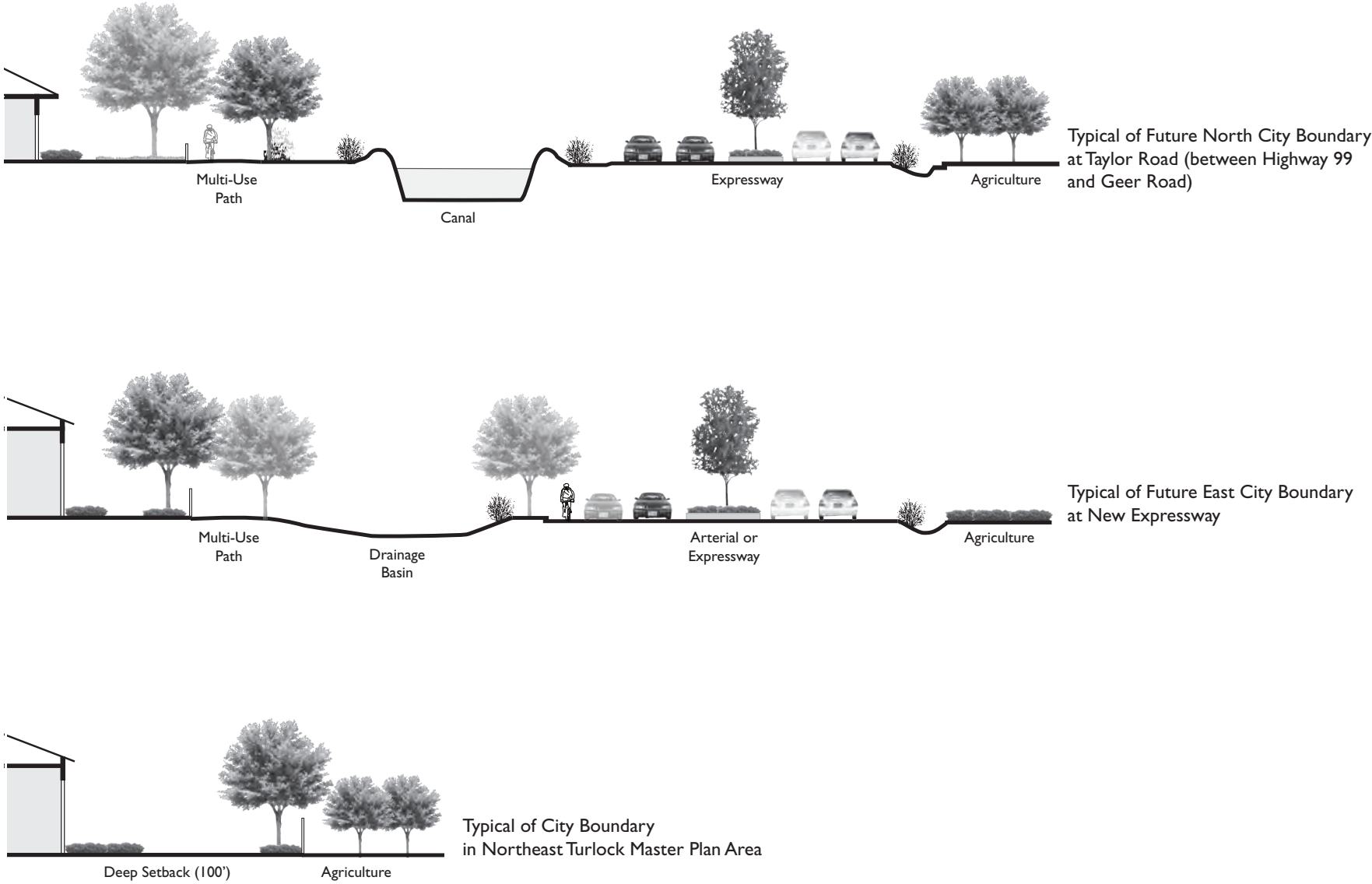
- 6.1-a Maintain free-standing communities.** Continue to maintain Turlock, Keyes and Denair as free-standing communities by establishing definitive urban edges around Turlock.
- 6.1-b Limit annexation.** Allow annexation to the City of Turlock only for land that has an urban land use designation. The City of Turlock shall not annex land designated Urban Reserve (until such time as the General Plan is updated).

*See also policies in Chapter 3, New Growth Areas and Infrastructure.*



*Greenbelt buffers between urban and agricultural uses can include walking/biking paths, landscaping, and drainage areas.*

Figure 6-1: Urban/Agricultural Edge Conditions



Note: Drawings not to scale.



- 6.1-c Promote compact growth.** Maintain a compact growth pattern to avoid sprawl and preserve agricultural land and open space.
- 6.1-d Minimize conflict.** Minimize conflict between urban and agricultural uses.
- 6.1-e Enable mixed use development.** Provide a mix of uses and activities in various parts of the City.

*See also policies in Section 6.3: Neighborhood Design.*

*A mix of uses is likely to result in more even development of the different parts of the City and provide facilities and services closer to where people live.*

## Implementing Policies

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### **Compact Form and Phased Growth**

- 6.1-f Contiguous growth.** Continue present policies of requiring growth to be contiguous to existing urban development.  
  
*These policies have worked well to ensure a compact and contiguous pattern of growth and efficient provision of services to new developments.*
- 6.1-g Sphere of Influence.** Work with LAFCO to modify the sphere of influence to conform to the growth pattern depicted on the Plan Diagram and restrict development outside the depicted sphere.  
  
*See Figure 2-2.*
- 6.1-h Promote infill.** Encourage infill development on vacant parcels through incentives and streamlined approval process for projects.
- 6.1-i Phased growth.** Ensure that growth in the areas and directions depicted on the Plan Diagram is achieved through the phased master planning process, described in Chapter 3.

### ***Urban-Agricultural Buffer***

**6.1-j Minimize urban-agricultural conflicts.** Continue urban expansion in a form that minimizes the potential for urban-agricultural conflicts.

*A square or a circular city form, with minimal jags, creates a shorter edge of potential conflict than other forms. Also, it prevents creation of finger-like protrusions of urban development into agricultural territory which tend to exacerbate conflicts.*

**6.1-k Agricultural Buffer Design.** Implement an “agricultural – urban buffer design” to minimize the impact of urban development near active agricultural operations. Typically, roadways and irrigation canals are used to demarcate boundaries between urban and agricultural uses. Some general characteristics for the “agricultural – urban buffer design” are outlined below. These design characteristics of the urban edge are guidelines. The establishment of an urban edge that creates permanent buffers between residential and long-term agricultural uses shall be established in the master plan.

- Require significantly deeper lots and enhanced rear-yard setbacks to help ensure adequate separation between habitable structures and active farm land.
- Utilize linear parks with multiuse paths and drainage basins to separate urban development from agricultural uses while simultaneously providing a recreation corridor and storm drain capacity.
- On the eastern and southern sides of the study area boundary, ultimately establish an arterial or expressway that creates a new bypass loop around the city with agricultural buffers on the outside. Set aside the land for the right of way as part of the master planning process.
- Do not allow housing to front onto agricultural properties.

## 6.2 NEIGHBORHOOD FORM

Turlock has a rich variety of neighborhoods and housing types, ranging from older, established ones with traditional layouts and mature landscapes, to emerging ones at the edge of the City.

### EARLY NEIGHBORHOODS

Turlock’s older areas are close to Downtown. Most are within one-half mile or about 10 minutes on foot. These areas are marked by a continuous fine-grained orthogonal street pattern, with houses fronting on east-west streets.

Early residential development in the City is typified by the area between Berkeley Avenue, Canal Drive, Minaret Avenue and East Avenue. Streets are lined with tall large-canopy trees providing shade and a sense of enclosure. A typical block is about 400 feet x 320 feet, and the average lot is narrow and long — 50-foot wide and 150-foot deep (about 7,500 square foot lots). Residential densities in the area generally range from 4 to 5.5 units per gross acre, with streets and public rights-of-way accounting for about 12 percent of the total area. Parking access is provided from the rear via alleys that run through the block, which effectively provide a pedestrian/bicycle connection every 175 feet or so.

The overall block pattern in the older residential areas of the southwest part of the City is very similar, but densities are somewhat higher. Variation in lot size and housing type is also greater.

### CONTEMPORARY NEIGHBORHOODS

The historic pattern of continuous and shaded streets, mid-block alleys and rear-accessed garages was gradually replaced, initially by “front-accessed” garages in the late 1950s and 1960s, and later by developments in the 1970s that did without the alleys altogether. Townhomes and apartments were first introduced around 1970; the two largest developments were built in the early 1990s.

In the 1980s and early 1990s, subdivisions and residential projects in Turlock were generally unsuccessful in addressing the relationships between adjoining residences and of dwellings to public spaces. Many have perimeters defined by sound walls or parking drives and introverted streets terminating in cul-de-sacs. Streets, both internal and public, are often lined with garages or parking, both in single-family and apartment developments. This pattern of development is most evident in the areas north and east of the Emanuel Hospital, but can also be found in many



*Turlock’s early neighborhoods are characterized by mature trees, architectural variety, short blocks, and rear-accessed parking.*



*Characteristics of many newer neighborhoods in Turlock include front-accessed garages, cul-de-sacs, and curvilinear street systems.*

other parts of the City. Many new neighborhoods also lack proximity to convenience shopping, neighborhood services and parks.

As a result of the introverted nature of some of the newer residential neighborhoods, use of public spaces is often virtually limited to adjoining residences; an example is Bristol Park on Castlevue Drive. Streets lined with garages lack the visual engagement and security provided when living areas directly face yards, sidewalks and streets. Wide and unshaded streets with few interconnections are likely to discourage pedestrians and bicyclists.

### Density of Recent Subdivisions and Apartment Complexes

The average density for subdivisions approved in the 1990s ranges from 3.8 to 4.7 lots per gross acre. Variation in density and the resultant diversity in housing type and size among recent subdivisions has been relatively small. However, a number of more compact housing types (townhomes, duplexes, and small-lot single family homes) have been developed in recent years under the Low-Medium Density Residential and Medium Density designations and with densities around 7 to 10 units per acre. Average gross density for recent apartment developments is about 22 units per acre.

### HISTORIC AND CONTEMPORARY PATTERNS COMPARED

The resurgent interest in the traditional development pattern of deep and narrow lots with rear garages, and the current demand for small-lot residences (for details see Housing Element) call for an examination of their relative benefits. This historic pattern offers distinct advantages over typical contemporary subdivisions:

- A more public orientation. Streets are fronted by living spaces instead of garages, providing greater visual interest, better sense of community, safer sidewalks, and larger viewing distances from living spaces.
- The absence of curb-cuts allows uninterrupted tree-planting and more space for on-street parking.
- The lack of driveways results in larger front yards.
- Deep lots allow location of quieter indoor spaces at a greater distance from through traffic than is achievable in shallower lots.
- Narrow lots can be serviced more efficiently resulting in lower improvement costs.

Gross residential densities achieved in the historic and contemporary subdivisions tend to be quite comparable. However, the advantages of narrow lots, especially small ones, are quickly lost if they are fronted by two- or three-car garages that occupy almost the entire street-frontage.

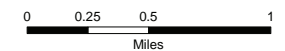
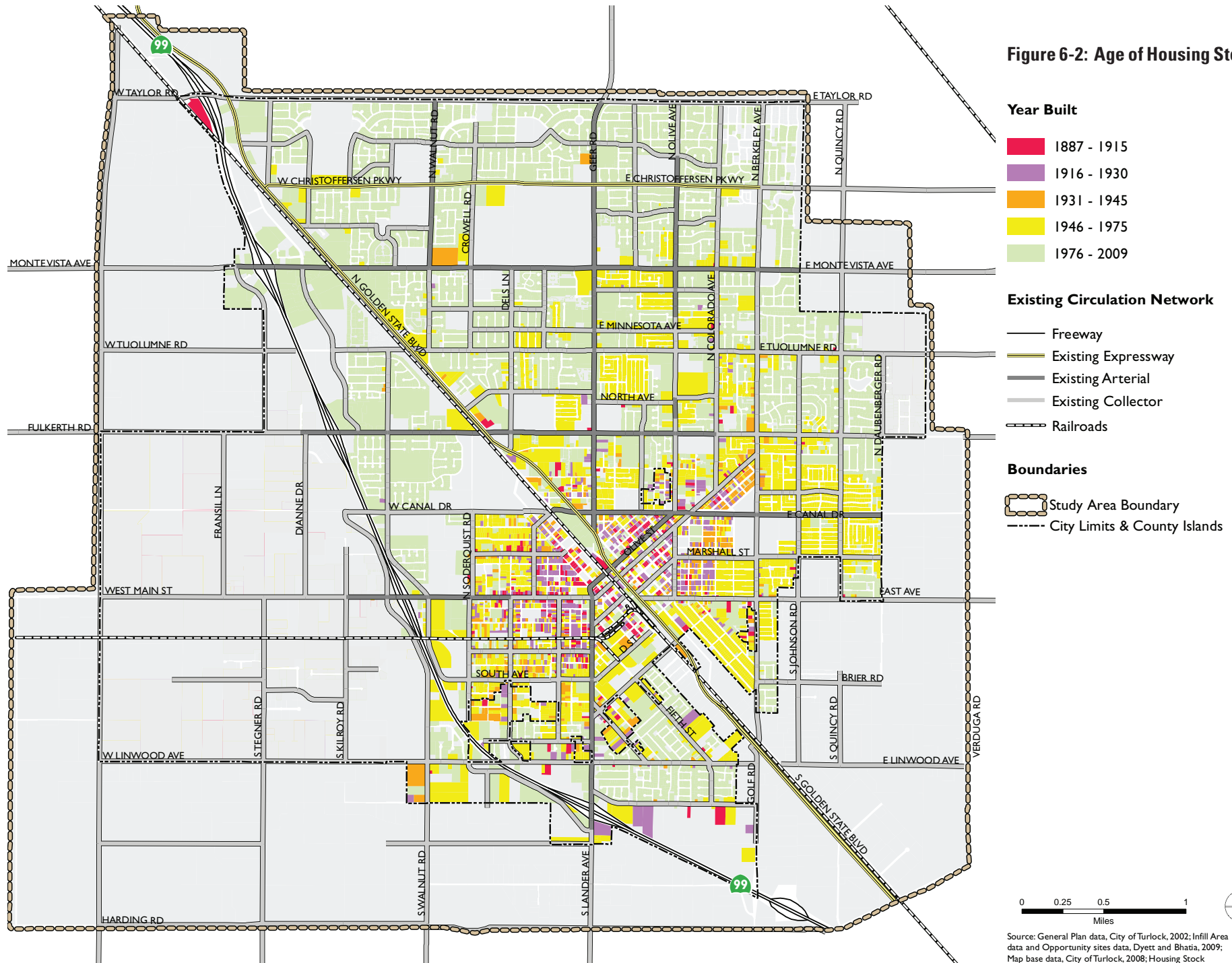
Figure 6-2 shows the age of Turlock’s housing stock. Homes built before 1960 are concentrated in Downtown, and to the east, south, and west of Downtown. It is the City’s intention to preserve the unique visual character and identity of its older neighborhoods, which are often compromised when property owners, in making changes to their homes or redeveloping, must comply with contemporary zoning requirements. In particular, parking and setback requirements written for more contemporary subdivision patterns may result in lower aesthetic quality on smaller lots, or may be physically impossible to comply with.

Two new policies in the Land Use element (2.5-l and 2.5-m) address these issues by calling for changes in the zoning ordinance, establishing graduated density requirements and traditional neighborhood overlay zones. The graduated density requirement acknowledges that in some older parts of the city, narrow lots are designated for medium and high density development; however, if these lots were to be individually developed at those densities—and according to today’s development standards—the quality of design suffers and developments are less able to meet the needs of residents and businesses. Therefore, the new standard would tie allowable residential density to lot dimensions, ensuring that the maximum residential density is only permitted on single lots over a certain minimum size, or on adjacent lots being developed as a single site. The Traditional Neighborhood overlay zones are to be established, using Figure 6-2 as a guide, to provide exceptions to the modern standards for older neighborhoods where compliance would negatively impact the historic quality and cohesiveness of the neighborhood.

## NEIGHBORHOOD DEVELOPMENT

The General Plan depicts residential growth in the form of neighborhoods, designed and developed through the master planning process in new growth areas (see Chapter 3). The neighborhoods are planned to contain a mix of uses and housing types and to provide convenient access to commercial and service functions used on a frequent basis. They will be integrated with the existing urban development and provide a continuity of street network, bicycle lanes, and multi-use bike and pedestrian paths. Rather than establishing a “rubber stamp” for neighborhood development, general parameters for land use mix, street design and connectivity, open/public space, and other urban design principles are defined. By adhering to this policy direction,

**Figure 6-2: Age of Housing Stock**



Source: General Plan data, City of Turlock, 2002; Infill Area data and Opportunity sites data, Dyett and Bhatia, 2009; Map base data, City of Turlock, 2008; Housing Stock

new neighborhoods will achieve a high basic standard of design while still developing an individual character and identity.

### Neighborhood Centers

Neighborhoods should have an identifiable center, characterized by a school, park, or similar public use; and/or local-serving shops and services. Commercial development in neighborhood centers may have a retail or an office focus. The centers will contain a mix of uses and intensities that will provide focus and a sense of community to the neighborhoods. They are designed to encourage walking but are located to be easily accessible from arterial or major collector streets. Development will be required to have a public orientation and facilitate pedestrian access, with storefronts facing the street and parking visually minimized. A horizontal mix of uses is permitted and a vertical mix is encouraged.

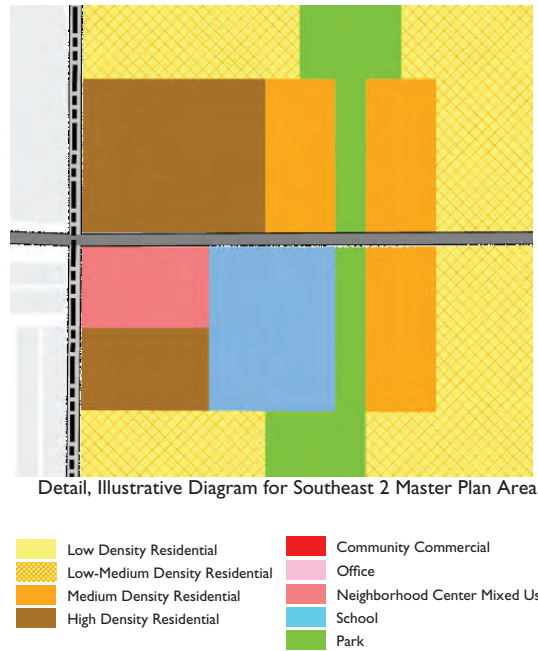
For larger neighborhoods (with at least 4,000 households), the neighborhood center may be a true community commercial area, characterized by an average 10-acre (approximately 110,000 square feet of building area at 0.25 F.A.R.) size retail center will be anchored by a supermarket and/or a drugstore and will contain a variety of other smaller tenants. Neighborhood service functions may include medical, dental and real estate offices, and the like.

Smaller neighborhoods, or those that are developed in close proximity to an existing community commercial area (with a grocery store), would not have a large retail development at their core. Instead, these neighborhood centers would be anchored by a school and park, possibly with small convenience shops as part of a horizontal mixed use development. Figure 6-3 shows a typical neighborhood center design and land use distribution.



*Easily accessible shops, parks, and other amenities are important components of new neighborhood design.*

**Figure 6-3: Typical Neighborhood Center Land Uses**



### Housing Type and Mix

Housing types and densities are arranged to locate the greatest number of residents close to the center. In a typical neighborhood, about 40 percent of the residences, including almost all of the high density residences, will be within a 1/4-mile distance of the neighborhood center or existing retail core. The 1/4-mile distance represents an average five-minute walking trip. The remaining medium and high density residences will be located around neighborhood and community parks. In comparison, if the different housing types were to be evenly distributed throughout the neighborhood, only about 18 percent of the residences would be within the 1/4 mile walking radius. Figure 6-4 illustrates examples of housing types that meet the density stipulations of the different General Plan residential designations.

### Parks

Each neighborhood will have an appropriate number of neighborhood parks, or a combination of neighborhood and linear parks, to serve the local population and meet the city’s overall park standards (see size and distribution standards in Section 4.I, Parks and Recreational Open Space). To the extent possible, neighborhood parks and schools shall be co-located. Large community parks will be shared between the different neighborhoods and will be linked to surrounding neighborhoods by a system of bike lanes (on city streets) and multi-use trails in linear parks.

### Reduction of Automobile Dependence

The proximity of residences to shops and services reduces the number of shopping-related automobile trips as well as decreases the average trip length. Buildings with a street orientation enrich the pedestrian experience, and limited drive-through commercial developments encourage pedestrian access to stores. Though some residents of one neighborhood will choose to shop and use services in another, higher intensity development closer to the centers will provide residents with the choice of walking to shops and services. This should especially be helpful to those who do not own or drive automobiles, such as the youth and many of the elderly. Also, policies in Section 6.4: Street Design and Connectivity will help reduce the length of intra-neighborhood trips. Design principles to guide development in the neighborhood centers are elucidated in Section 6.7.



**Figure 6-4: Housing Types Matrix**

		Low-Medium Density	Medium Density
	Low Density	(3 - 7)	(5 - 10)
Housing Type	Large Detached	Detached	Detached Zero Lot Line
Density (as illustrated)	4 hu/acre	7 hu/acre	10 hu/acre
Typical Lot Size	8,000 to 10,000 sf	5,000 to 7,000 sf	3,000 to 5,000 sf
Number of Floors	2	2	2
Typical Density Range	3-5	5-7	7-10
	   	   	   

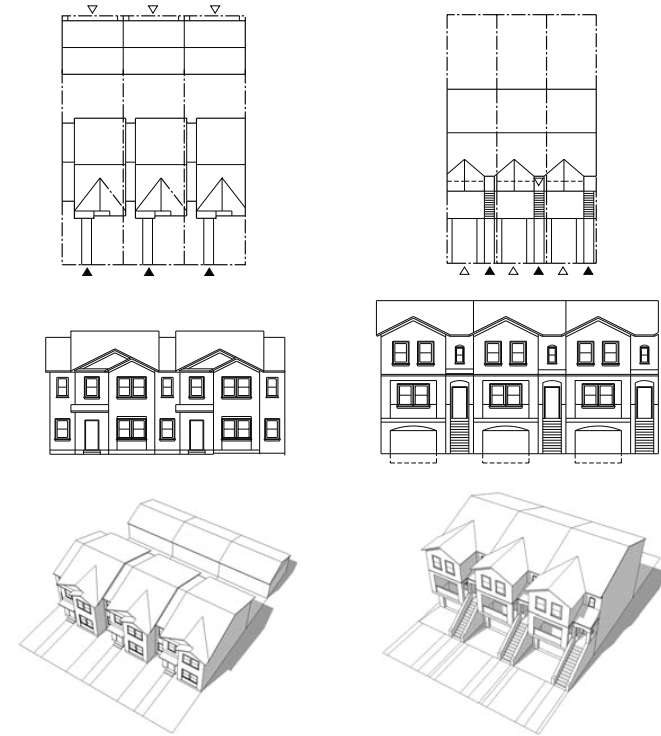
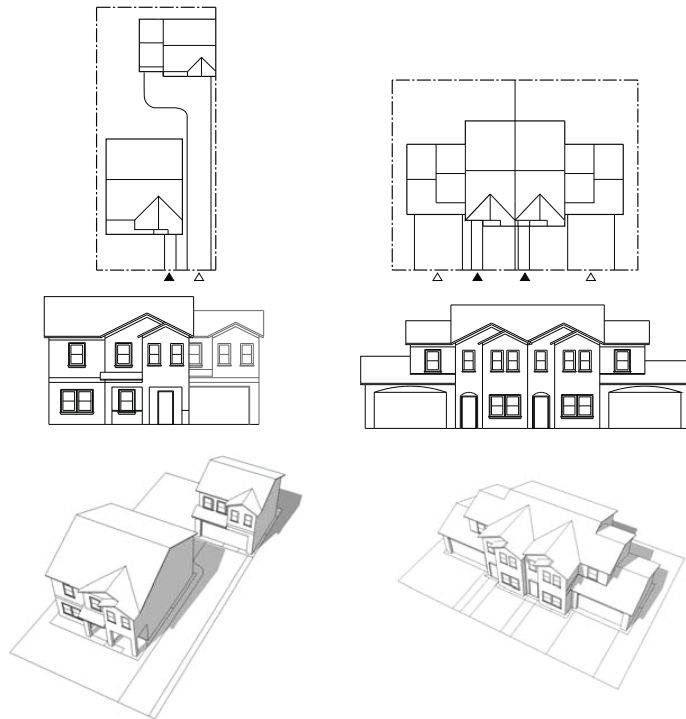
Medium Density

High Density

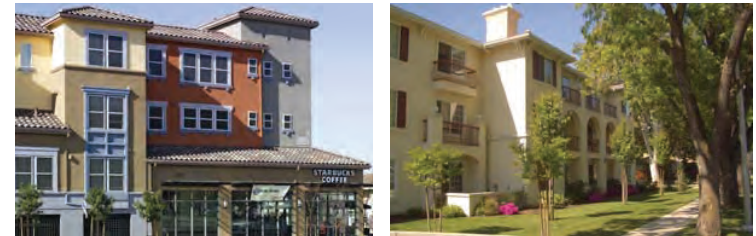
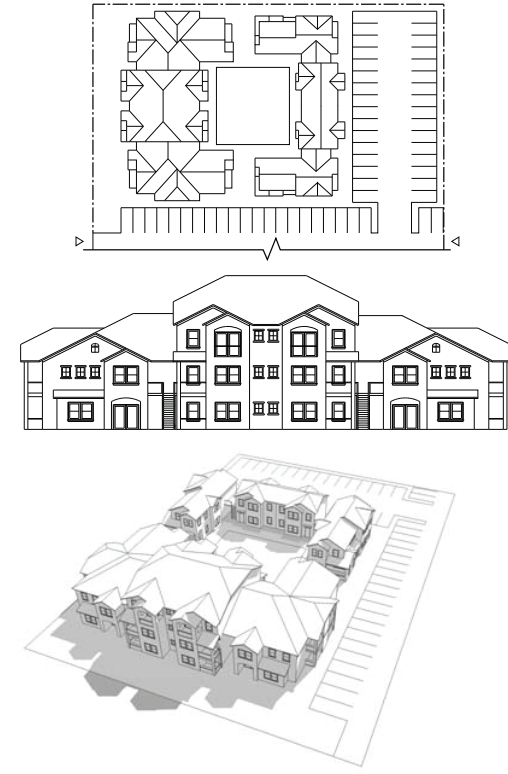
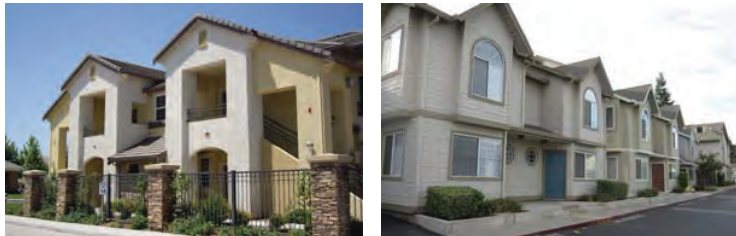
(7 - 15)

Housing Type	Duplex	Townhouse
Density (as illustrated)	13 hu/acre	14 and 16 hu/acre
Typical Lot Size	4,500 to 7,000 sf	2,000 to 2,900 sf
Number of Floors	2	2
Typical Density Range	10-15	12-17

▲ Front Door Entrance  
△ Garage Entrance



Housing Type	Multifamily Dwelling (2-Story)	Multifamily Dwelling (3-Story)
Density (as illustrated)	20 hu/acre	28 hu/acre
Typical Lot Size	1,500 to 2,000 sf per unit	1,200 to 1,500 sf per unit
Number of Floors	2	2-3
Typical Density Range	18-24	24-30



## POLICIES

### Guiding Policies

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- 6.2-a Develop complete neighborhoods.** Encourage new residential growth in the form of neighborhoods, characterized by a mix of housing types and a well-defined neighborhood center.

*The Plan proposes a major portion of residential growth in neighborhoods — areas that share a common identity — designed and developed through the master planning process, with a well-defined core or center.*

- 6.2-b Promote housing type diversity and land use mix.** Require diversity of housing types in each neighborhood and a mix of uses in the neighborhood centers.

*Figure 6-4, Illustrative Housing Types, illustrates the range of possible housing types for the different residential designations in the Plan. While the location, land uses, and size of centers is motivated by considerations of proximity and walking distances, the principal purpose is to provide focus and a sense of community to the neighborhoods.*

- 6.2-c Preserve existing neighborhoods.** Preserve the scale and character of established neighborhoods.

*With ample room for expansion, there is a need to preserve established neighborhoods that have historic value or contribute to the character of the City.*

- 6.2-d Encourage community orientation.** Improve the community orientation of new residential developments.

*A community orientation calls for greater attention to the relationship between residences and shared spaces and does not require sacrifice of privacy or amenities.*

## Implementing Policies

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**6.2-e Master plans for mixed use neighborhoods.** Through the process of master planning and project approval, ensure that a mix of uses, as described and illustrated in the Section 3.2: Land Use and Design of New Growth Areas, is maintained in the neighborhood centers. Development of a neighborhood center, or part thereof, consistent with the uses, mix and intensities described in the Plan, will be required as a condition of subdivision approval.

*The intent is to ensure both the provision of non-residential uses as well as phasing of uses.*

*The illustrative diagrams represent a schematic arrangement of land uses in the neighborhood centers.*

**6.2-f Mixed use in neighborhood centers.** Within neighborhood centers, permit a mix of uses on individual properties in the form of horizontal or vertical multi-use developments as depicted on the Plan and described in Section 2.2 (Land Use Classifications).

**6.2-g Use of specific plans/master plans.** Require individuals or groups of property owners to develop detailed specific plans and master plans for the neighborhood centers to meet the objectives of the Plan.

*Detailed policies on the requirements and process of master planning are found in Chapter 3.*

**6.2-h Design Principles.** Ensure that development in the new neighborhoods is in accordance with the design principles established in Section 6.8, the policies specific to each master plan area established in Section 3.3, and any subsequent guidelines that may be established.

**6.2-i Development standards for housing types.** Review the Zoning Ordinance to ensure that development standards in residential zones allow for all housing types of the appropriate densities to be constructed. For instance, standards in the R-M zone (medium density residential) should enable the design of both single family and multi-family housing types.

**6.2-j Areas for Traditional Neighborhood overlay zones.** Using Figure 6-2 as a guide to the age of housing stock, establish Traditional Neighborhood Overlay Zones in the zoning code, focusing on those built before 1950. These zones would demarcate and regulate



*Well-designed streets contribute to an active environment, accessibility, and beauty in the public realm.*

areas where compliance with contemporary zoning restrictions would threaten the visual integrity and cohesion of older neighborhoods, and define alternative standards that are sensitive to the neighborhoods’ traditional design and lot sizes. See also Policy 2.5-m.

### 6.3 STREET DESIGN AND CONNECTIVITY

The grid pattern of streets and short blocks in the older parts of Turlock permit freedom of movement, ease of access and a sharing of through-traffic between many routes. In contrast, while the superblock and cul-de-sac nature of development in many newer parts of the city creates quiet enclaves and smoother traffic flow along the arterials, it also creates inward-looking neighborhoods, limits movement choice and results in increased traffic volumes on a limited number of streets, requiring mitigation measures such as sound walls. Development is needed that balances the efficiency and traffic flow capabilities found in the newer parts of the town with the sense of proximity and ease of access that result from the older pattern.

Well-designed and landscaped streets are not only an aesthetic delight, but in a Valley town like Turlock, they are essential to shade streets, sidewalks and yards during the hot summer periods. Trees and shrubs can also help break winds, filter pollutants, buffer sidewalks and bikeways from traffic, screen noise walls and parking, storage, and service areas, and reduce the perceived intensity of development. Thoughtfully designed city entrances and gateway zones can help evoke a sense of arrival for both residents and visitors.

#### POLICIES

##### Guiding Policies

**6.3-a Continue gridded street network.** Continue expansion of the present street network in an orthogonal grid for all arterial and collector streets.

*The grid pattern allows for ease of future expansion, flexibility in street layout and adequate variation in lot-size and is well-suited for Turlock’s flat topography.*

**6.3-b Encourage public and pedestrian orientation.** Through circulation network and street design, reduce the perceived separation and introverted nature of projects.

**6.3-c Beautify “gateway” roads.** Through streetscape improvements, make the entryways to Turlock, as defined in the Beautification Master Plan, shaded, tree-lined spines of the community.

**6.3-d Provide attractive, landscaped streetscapes.** Enhance the visual attractiveness of the community by providing attractive streetscapes, particularly along major expressways, arterials and collector streets. Utilize landscaping that is native and drought-tolerant, and that minimizes upkeep and maintenance.

### Implementing Policies

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#### **Street Connectivity**

*See also Section 5.2, Roadway Network, Standards, and Improvements.*

**6.3-e Block size and maximum street spacing.** Streets in neighborhoods should be designed to maximize connectivity for automobiles, cyclists, and pedestrians. Maximum spacing between local streets, or intersections of local streets with larger roads, shall be 660 feet. The preferable, typical block size in a residential neighborhood is in the range of 200 by 600 feet. As a condition of project approval, require circulation patterns of all residential and neighborhood centers to conform to maximum spacing between through-streets (exclusive of alleys), as depicted in Figure 6-5 and Section 5.2, unless access conditions and standards prevent their attainment. Cul-de-sacs are generally discouraged.

*The intent of these standards is to prevent development of introverted neighborhoods, provide flexibility in circulation, and promote access for bicyclists and pedestrians.*

*Figure 6–5 illustrates typical and maximum block sizes, and preferred and discouraged street connectivity configurations.*

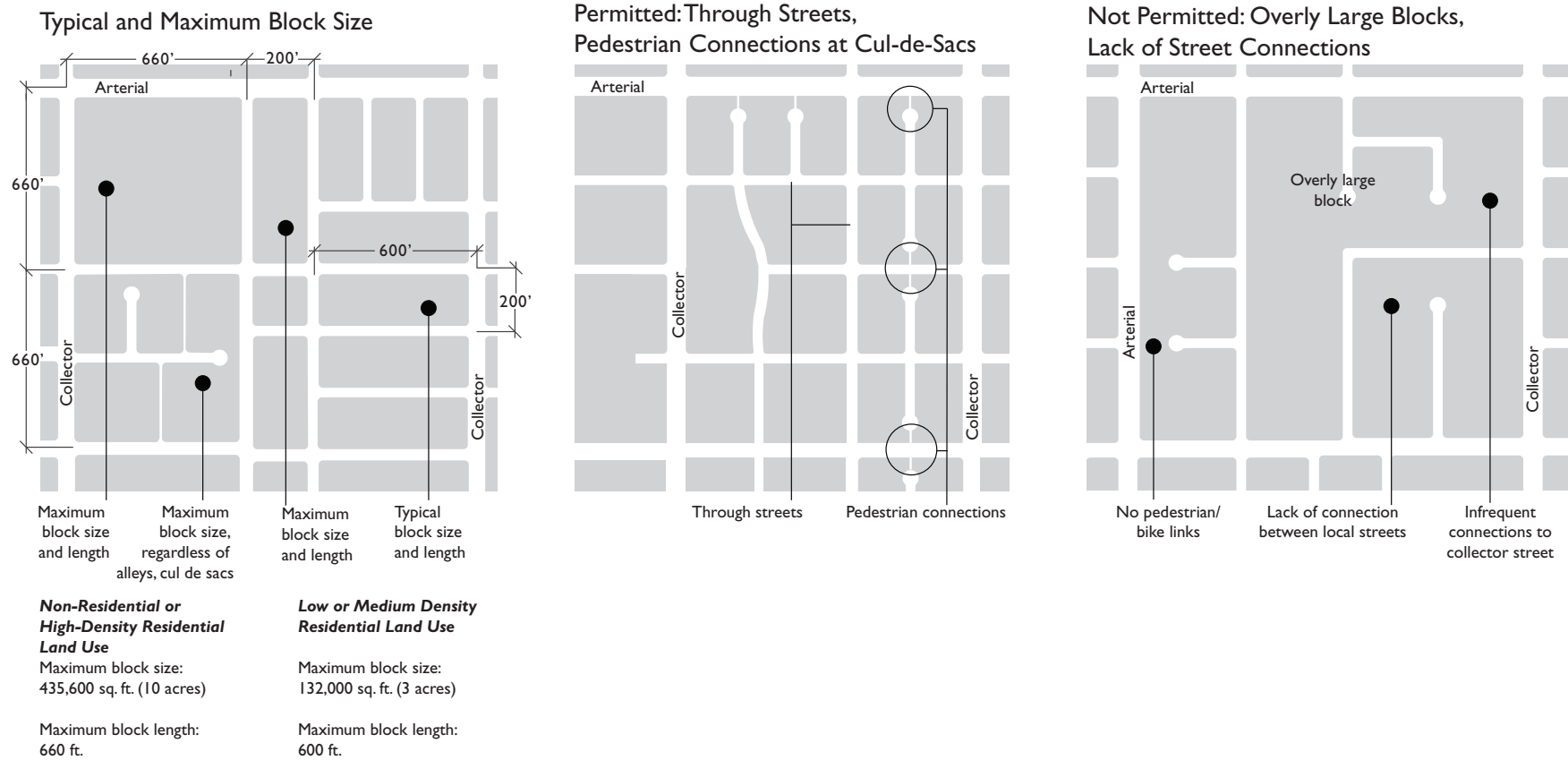
#### **Gateway Zones**

**6.3-f Implement the Turlock Beautification Master Plan as it pertains to the “Gateway Zones.”** These entrances, including West Monte Vista Avenue, Golden State Boulevard, West Main Street, Fulkerth Road, and Lander Avenue, can provide important “gateway” functions as distinct visual entryways. The road segments should receive special landscape treatments to create impressionable and coordinated entries.



*North Golden State Boulevard is one of the main entryways into Turlock. Its ample right of way provides opportunity for beautification.*

**Figure 6-5: Block Size and Street Connectivity for Residential Areas and Neighborhood Centers**



See also street spacing standards in Chapter 5.



**6.3-g Overlay zoning for streetscape and landscaping.** Use overlay zoning to implement specific entranceway design and landscaping goals along designated Gateway Routes.

***Streetscape Design and Pedestrian Orientation***

**6.3-h Street Tree Master Plan.** As part of the comprehensive tree-planting and maintenance program:

- Periodically update the Street Tree Master Plan. (Resolution 88-130 of the City Council).

*See also energy conservation policies in Section 8.2.*

*The Master Plan should be reviewed and updated to include the new streets and improvements proposed by the General Plan. It should also consider planting along the median for all streets where medians are required. Planting plans should ensure adequate shade for bicyclists and pedestrians, especially during the summer months.*

- Prepare planting plans conforming to the Master Plan for all new streets and major improvements before undertaking construction.
- Adopt a program to plant and maintain trees along streets that lack them.
- Continue to implement the tree-preservation ordinance to allow removal of mature trees within public rights-of-way only when they become a safety hazard.
- Establish maintenance districts for the upkeep of trees and landscape buffer areas required along public rights-of-way.
- Prepare planting plans and implementation programs for designated “Gateway Zones.”
- Use changes in tree species, scale, color and spacing to define neighborhoods and articulate the designated hierarchy of expressway, arterial, collector, and local streets.

**6.3-i Improvements to Major Corridors.** Prepare and implement a landscape and signage plan for major corridors through Turlock, including Golden State Boulevard and others recommended in the Beautification Master Plan, balancing design considerations with the need for these roads to remain functional as major circulation routes.

*The design challenge will be to give the strip shade, character, and a sense of enclosure without sacrificing the ease of access.*

- 6.3-j Undergrounding of utility wires.** Continue to require undergrounding of utility lines in new developments.
- 6.3-k Street landscaping.** Encourage the use of water-conserving landscaping, emphasizing plants that are native to Turlock’s environment and are largely drought-tolerant. Landscaping that requires low maintenance and upkeep is also preferred, to keep costs low.
- 6.3-l Create “Pedestrian Priority Areas.”** Improve the experience of major commercial streets for pedestrians by designating Pedestrian Priority Areas. Areas to be included correspond to where vehicle trips may be reduced because of the orientation and relationship of land uses and street design, such as in Downtown, along existing pedestrian corridors, and in the mixed use centers of forthcoming master plan areas. They are shown on Figure 5-4: Properties located within Pedestrian Priority Areas will have lower Capital Facilities Fees in recognition of their lower contribution to vehicle trips and impacts on roadway infrastructure.

*The Pedestrian Priority Area shall extend approximately one-eighth of a mile (660 feet – one long block or two short blocks) on either side of the corridor, creating a quarter-mile-wide zone. These areas should have enhanced facilities to improve the pedestrian experience, such as:*

- Adequately wide sidewalks
- Benches and shade structures and/or trees located at bus stops
- Intersection “bump-outs” to reduce walking distances across streets that are four lanes or wider
- Striped and lit crosswalks, signage, and walk signals at all signalized intersections and non-signalized intersections with high pedestrian activity
- Pedestrian-scale street lighting along sidewalks (maximum height of streetlamps: 12 feet)
- Clearly demarcated pedestrian walkways through surface parking lots when these are located in between the sidewalk and store entrances
- ADA-compliant curb ramps for universal access

**6.3-m Traffic calming devices.** Traffic calming devices may be used to control speeding and improve traffic management in areas where increased traffic is negatively affecting level of service and/or quality of life, but where street widening is impossible or undesirable. Acceptable traffic calming strategies include, but are not limited to:

- Striped, lighted, and/or raised pedestrian crossings
- Curb extensions or intersection “bulb-outs”
- Pedestrian “refuges” or islands
- Changes of paving material or texture

## 6.4 SUSTAINABLE SITE PLANNING

An environmentally sustainable approach to site planning and building construction can have positive impacts on both the natural and the built environment, from resource conservation and reduced greenhouse gas emissions to savings on energy bills. Many components of sustainable site planning are touched on in other areas of the General Plan, but this section aims to bring these concepts together and define a comprehensive approach to minimizing impact on the environment during new construction. Policies related to energy and water conservation that can be achieved through green building are found in sections 3.3 (Infrastructure) and 8.2 (Energy and Climate Change).

### POLICIES

#### Guiding Policies

- 6.4-a Protect existing resources.** To the extent possible, minimize disruption to or loss of natural resources in construction of new development.
- 6.4-b Retain natural processes.** Enable natural processes to occur on developed sites, and utilize these processes to enhance the built environment and users’ experiences of it.
- 6.4-c Conserve energy and water.** Reduce demand for and consumption of energy and water through site planning techniques.



*Techniques such as proper solar orientation and use of drought-resistant landscaping minimize the impacts of new development on the natural environment.*



*Permeable paving materials help manage stormwater runoff by allowing water to filter into the ground on site.*



*Native and drought-tolerant plantings reduce water consumption and City maintenance costs.*

## Implementing Policies

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**6.4-d Minimize site disturbance.** In design and construction, preserve existing natural resources such as soil, noninvasive trees, native plants, and permeable surfaces.

- Priority should be placed on development on previously impacted sites (i.e. infill).
- For non-infill sites, the portion of the site without buildings shall not unnecessarily remove healthy trees, native plants, or cover permeable surfaces.
- Identify construction impact zones that minimize site disturbance.

**6.4-e Impervious surfaces.** Enable natural drainage by reducing the amount of impervious surfaces on a development site. Techniques include:

- Designing medium and high density residential projects that can share driveways and parking access;
- Placing parking lots under buildings when financially feasible; and
- Using permeable paving materials on walkways and driveways whenever possible.

*The Zoning Ordinance should be updated as necessary to ensure that these techniques may be implemented. For instance, the ordinance does not currently allow shared driveways for all residential types.*

**6.4-f On-site stormwater management.** Facilitate groundwater recharge and natural hydrological processes by allowing stormwater to infiltrate the ground on-site and/or be collected for reuse in landscaping. Any on-site stormwater drainage facilities must be designed to drain fully within 72 hours. Update the standards, specifications, and drawings, as well as the development review process as needed to reduce peak-hour stormwater flow and increase groundwater recharge. These may include provisions for best practices including:

- “Rain gardens” or bioretention areas in yards, parks, and parking lots
- Landscaped drainage swales along roadways
- Green roofs
- Permeable pavers for walkways and parking areas; and using porous materials such as porous asphalt, modular paving, gravel, and lattice concrete blocks with soil and grass in the interstices in place of impervious surfaces. (see also Policy 6.4-e above)
- Rain barrels for harvesting runoff from rooftops

- Tree box filters for on-street filtration
- Constructing parking areas and parking islands to allow stormwater flow into vegetated areas
- Grading that lengthens flow paths and increases runoff travel time to reduce the peak flow rate
- Installing cisterns or sub-surface retention facilities to capture rainwater for use in irrigation and non-potable uses

**6.4-g Heat island reduction.** Require new commercial development of more than 25,000 square feet, industrial development of more than 100,000 square feet, and commercial or industrial additions or modifications of more than 25 percent of existing floor area and more than 25,000 square feet to minimize the “urban heat island effect,” in which developed areas contribute to higher surface temperatures and warmer microclimates than their undeveloped counterparts and necessitate greater energy consumption for cooling. Heat island reduction techniques include:

- Providing tree canopy and vegetation to shade a minimum of 50 percent of paved surface areas within 5 years
- Utilizing high reflectance materials (materials with a Solar Reflective Index of at least 29) in roofs and hardscaped areas

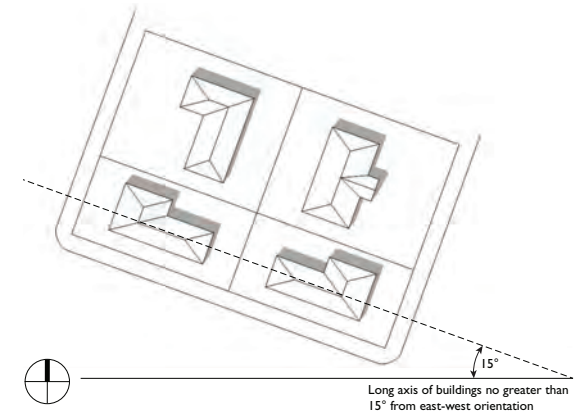
**6.4-h Solar orientation.** When possible, buildings should be oriented such that the use of passive and active solar strategies is maximized, in order to promote energy efficiency. To achieve ideal solar orientation conditions, the long axis of the building should be oriented east-west, within 15 degrees (see Figure 6-6).

**6.4-i Reduce water demand for landscaping in public and private areas.** In order to reduce water demand, drought-tolerant, drought-resistant, and native plants, as well as artificial turf, should be used for landscaping. Use of natural turf in public areas should be restricted to playfields and other high-activity locations.

**6.4-j Bicycle and pedestrian network.** Design sites to facilitate access to parks and other community facilities via non-automobile transportation (walking and biking).

*See also policies in Section 6.3 (Street Design and Connectivity) and 5.3 (Pedestrian and Bicycle Circulation).*

**Figure 6-6: Diagramming Solar Orientation**





*Public art contributes to a city's character, enlivens public spaces, and contributes to a unique sense of place.*

## 6.5 ART IN PUBLIC PLACES

Art has outlined the progress, vision and values of cultures and communities through time. It is a tangible record of people's interaction with their surroundings.

Historically, Public Art gives identity and dimension, revitalizes communities both psychologically and economically, and makes cities more human. Providing for art in public places assures that the city recognizes its commitment to the physical image of the community and the dignity of life.

The realm of Public Art is broad and can cover the gamut from objects such as sculptures, paintings and murals, to exterior treatment of walls or amendments to landscape design such as fountains, benches or lights. Provision will be made for attention to already constructed sites in need of qualitative improvements, and of support for the performing and musical arts.

The City establishes policies ensuring the provision and incorporation for art in all public building plans. These programs are intended to enhance the environment, provide aesthetic and creative solutions to spaces accessible to the public, and enrich the lives of Turlock citizens through the stimulating ideas of contemporary artists.

## POLICIES

### Guiding Policies

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- 6.5-a Promote arts awareness.** Increase public access to works of art to promote understanding and awareness of the visual arts in the public environment.
- 6.5-b Provide guidance on public art projects.** Provide guidance to municipal agencies, developers, and community members and organizations regarding the incorporation of art within the City.
- 6.5-c Generate arts appreciation.** Generate appreciation for the arts and promote involvement of community members through public art programs.

### Implementing Policies

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- 6.5-d Role of Arts Commission and City Council.** Continue the role of the Turlock City Arts Commission of outlining and overseeing arts selection committees, procedures, guidelines, and evaluation, with approval of the City Council.
- 6.5-e City support for the arts.** Support and encourage art-related events and productions within the community.
- 6.5-f Involvement of professional artists.** Ensure the highest quality art and support the concept of fine art by selecting qualified professional artists to participate in our community arts programs.
- 6.5-g Citywide fine arts program.** Support a diverse fine arts program that involves community members in a broad range of art-related programs and activities. Such programs could include: interaction between artists and community members; effective use of the media; artist-in-residence programs; and special events including but not limited to exhibitions, public art tours, school programs, and publications.



*Turlock's historic resources include the Turlock High School Auditorium and Gymnasium, which is on the National Register of Historic Places.*

## 6.6 HISTORIC PRESERVATION

With its roots as a small town that grew up with the Southern Pacific Railroad, Turlock is home to a collection of historic structures. Most structures with historic significance are located in Downtown, and many of these are residential. Three properties are listed on the National Register of Historic Places and the California Register of Historic Places, while many more contribute to Downtown's unique architectural palette and general ambiance. Turlock's historic resources are documented, promoted, and celebrated by the Turlock Historical Society, a nonprofit organization founded in the mid-1990s. In 1999, with the help of a property donation and a State grant, the Turlock Museum was founded. While Turlock does not have a specially designated "historic district" per se, the general location of the city's historic structures is within the bounds of the Downtown Master Plan area. Therefore, from a planning perspective, historic preservation is best and most efficiently addressed through this document. The Downtown Master Plan directly informs the Downtown Design Guidelines and Zoning Overlay, which may treat architecturally notable historic structures as design inspiration for the surrounding area. It is also possible that as part of the next phase of the Downtown Master Plan, establishment of a historic district within the Master Plan boundaries will be considered. The older, historic buildings in the "historic district" would be certified for tax breaks if owners will take responsibility for rehabilitating the buildings.

### POLICIES

#### Guiding Policy

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**6.6-a Recognize the value of historic preservation.** Integrate historic preservation into planning for Downtown and other areas with historic significance.

#### Implementing Policies

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**6.6-b Formalize historic preservation planning.** Continue to implement programs to preserve, highlight, and renovate (as necessary) historic structures as part of the next phase of the Downtown Master Plan, and evaluate the necessity and benefits of establishing a formal Historic District.

*See also policies in Section 7.5, Cultural Resources.*

**6.6-c Continue to engage the Turlock Historical Society.** Continue to support the Turlock Historical Society in their informal role as Turlock's historic preservationists.



## 6.7 URBAN DESIGN

Thoughtful design, community orientation, and consideration of issues broader than the immediate are essential to creating pleasant and successful communities. Shared objectives and agreed-upon design principles can help direct individual efforts towards a larger whole — public spaces and sidewalks that are delightful to be in, buildings that respect neighbors, streets that are shaded and safe to use, and development integrated with the surroundings rather than cut-off from them. Urban design principles and policies are interspersed throughout this and several other elements; this section supplements them and provides an overall reference point for project design and review. Policies outlined below also form the framework for the city’s Design Guidelines.

### POLICIES

#### Guiding Policies

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- 6.7-a Use of Design and Site Plan review.** Continue to subject all projects, except single units on existing parcels, to a design and site plan review that may be conducted by City staff in accordance with the Design Guidelines updated in 2003.
- 6.7-b Community orientation.** Provide a community and public orientation for all development to improve public safety.
- 6.7-c Universal access.** Accommodate the needs of all pedestrians, bicyclists and mobility-challenged persons.
- 6.7-d Neighborhood centers.** Establish new neighborhood centers as high-quality mixed-use pedestrian-friendly environments, without excluding the automobile. These will be required in new growth areas.  
*Design emphasis should be on providing a fine-grained environment accommodating transit and pedestrian comfort and convenience.*
- 6.7-e Pedestrian scale and neighborhood character.** Require buildings and signs to be scaled to a neighborhood character and designed to encourage pedestrian activity and comfort.



*Attention to urban design considerations helps create pleasant, inviting, environments for residents and visitors alike.*



*Development should be designed so that entrances face outward, toward the street, to improve access, visibility, and pedestrian orientation.*

- 6.7-f Support transit.** Ensure that neighborhoods are designed to support transit stops in proximity to neighborhood centers and/or clusters of higher density residences.
- 6.7-g Safety through design.** Ensure that new development is designed in such a way that public safety is preserved and enhanced.
- 6.7-h High quality business park.** Require all development in the designated Business Park to be of a standard associated with a high-quality office complex. Development in this area shall comply with the Westside Industrial Specific Plan (WISP) Design Guidelines.

### Implementing Policies

#### *Neighborhood Design: All Uses*

- 6.7-i Public orientation of development.** Ensure that new development facilitates access, is oriented to streets and public spaces and is integrated with the surroundings.
  - Where connections to other roads are feasible, use of dead-end streets is discouraged.
  - Gated projects restricting public access should not be permitted, unless designed in accordance with adopted standards for private residential communities.

*Design standards for gated communities are found at the end of this section, beginning on page 6-40.*

  - Project edges should be designed to facilitate integration with the surroundings.
  - Sound walls should be used only along designated freeways, expressways and arterials if needed, and should be completely screened from the outside by shrubs and trees located within the project property. Alternatives to sound walls, such as landscaped frontage roads, are encouraged where feasible.
  - “Dead” uses, such as storage, parking lots, garages, and service areas should be located away from public streets and off-site view. In commercial areas, alleys should be used to access parking and service uses where feasible.
  - Corner lots should locate access driveways on the street with the least traffic volume.
  - Buildings should be oriented to streets and public spaces; inward looking developments are discouraged.

**6.7-j Multi-modal access and movement.** Require new projects to facilitate pedestrian and bicycle movement and aid transit.

- Planning should anticipate and provide for future local and regional transit service even if the service is not feasible at the time of project plan preparation.
- Development may not be at intensities below the density ranges stipulated in the General Plan.
- Bikeways should be provided as designated in Figure 5-3.
- Pedestrian and bicycle connections to through-streets should be provided at the end of cul-de-sacs. (See Figure 6-7.)
- Trees and shrubs along streets should buffer sidewalks and bicycle lanes from automobiles and be selected and spaced to provide uninterrupted shade to pedestrians and bicyclists.
- Large-size projects in neighborhoods should be broken down by providing through-streets and designing smaller units to provide individuality and distinction.

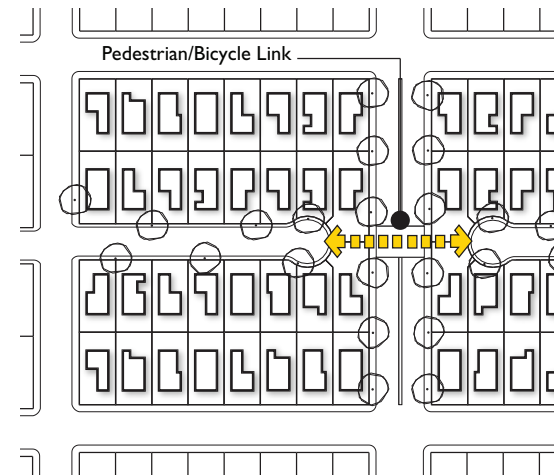
**6.7-k Design for public safety.** Promote public safety and welfare through urban design. New development should be designed in such a way that emphasizes access and connectivity, minimizes dead-end streets, provides ample visibility and lighting in public spaces, and encourages social interactions.

**Neighborhood Centers: Streets and Access**

**6.7-l Fine grain of development.** Provide a fine-grained urban environment with streets and sidewalks sized and designed to promote outdoor use and walking.

- Provide a network of closely spaced streets in neighborhood centers. Maximum spacing between local streets is 660 feet apart; in neighborhood centers, spacing closer to 400 feet is preferable. Intersections should be consistent with the access standards established in Table 5-6 of the Plan.
- Provide sidewalks along all streets, public and private, except along alleys. Sidewalk width, including a curbside planting area for street trees, should be at least 15 feet along retail/professional office areas and 10 feet elsewhere in the neighborhood centers. Street trees should be planted at a maximum interval of 30 feet.
- Keep the number of private driveways and curbcuts along principal streets to a minimum.
- Cul-de-sacs, where connection to other streets is feasible, are not permitted.
- No sound walls shall be used in the neighborhood centers.

**Figure 6-7: Cul-De-Sac Connections**



### ***Neighborhood Centers: Parking***

**6.7-m Design and placement of parking areas.** Ensure that parking areas do not impede pedestrian access and are adequately shaded and screened.

- Parking or service areas, screened or otherwise, should not be located between sidewalks and buildings. Pedestrians should not have to walk through or along a parking lot to access any building in a neighborhood center, but should be provided with independent sidewalk access.
- Screen all off-street parking, surface or structured, from pedestrian view by trees and shrubs. Walls should not be used as screening devices.
- Provide at least one large-canopy tree per five parking spaces and/or other paved area to shade cars, reduce glare and screen barren lots.
- Provide bicycle parking in neighborhood center parking lots, at an approximate ratio of one bicycle parking space per 10 automobile parking spaces.

### ***Neighborhood Centers: Retail Location***

**6.7-n Retail center location and design.** Ensure that all retail in a neighborhood center is contiguous and along streets pedestrians can cross safely and without unduly impeding traffic.

- Neighborhood retail, shown as Community Commercial (or Neighborhood Center in master plan areas) on the General Plan Diagram at the intersection of two principal streets, should be oriented to front along the street expected to carry the lesser amount of traffic.
- When neighborhood retail abuts lands designated as Low Density Residential, special consideration should be given to techniques that properly buffer each use from the other.

### ***Neighborhood Centers: Design of Structures***

**6.7-o Building to street relationship.** Require buildings to define street and sidewalk edges, provide scale to streets, engage pedestrians and promote active use of sidewalks and outdoor space.

- All structures with non-residential uses at the ground level should be built to provide a continuous frontage along public rights-of-way.
- Buildings should be set back from sidewalks only if a pedestrian plaza or patio, not separated from a sidewalk by a wall, fence, shrubs, etc., is provided.

- Frequent entrances to buildings are desirable. Entrances to the rear of buildings from parking courts should not substitute for entrance(s) from a street.
- Blank walls, reflective glass and other opaque surfaces at the ground level along street frontages should be avoided. Store interiors should be visible from the outside.
- Overhangs, awnings or other devices to shade the sidewalks of building frontage are to be provided. Colonnaded walkways, where provided, should be at least 8-foot wide clear, and run the entire length of a block, or store front.
- Buildings should be fine-grained and not appear to be large and monolithic. Individual buildings should generally be no larger than 50,000 square feet in size, both to provide a small-scale appearance and to prevent location of activities that would more appropriately belong in Downtown or elsewhere.
- Diversity in scale, material, color and use is encouraged.

#### ***Neighborhood Centers: Uses and Intensities***

**6.7-p Neighborhood center uses.** Ensure that uses in neighborhood centers provide for residents' daily needs for goods and services, and are compatible with surrounding neighborhood uses, design, and scale. Examples of uses appropriate in neighborhood centers are found in Policy 3.2-h. Additionally:

- Mixed-use (horizontal and vertical) developments are encouraged in neighborhood centers.
- Automobile-oriented commercial facilities, such as drive-through restaurants and gas stations should not be located in neighborhood centers. However, limited drive-through facilities may be permitted for financial institutions, pharmacies, dry cleaners, and other similar personal service facilities. The appropriate location for automobile-oriented facilities is in areas designated Heavy Commercial on the General Plan Diagram, not in neighborhood centers.

*Figure 6-8 illustrates the development pattern of a neighborhood center that could result from application of design principles established in this section.*

#### ***Housing Outside Neighborhood Centers: Design Principles***

**6.7-q Visual interest and compatibility in residential design.** Residential projects, single family or multifamily, should include visual interest and variety. The size, scale, proportion, color, placement, and detailing of architectural features should be carefully considered to complement the overall massing and scale of the single-family or



*Top: Clear and safe walkways should be provided for pedestrian travel through parking areas.*

*Bottom: Buildings with commercial uses in neighborhood centers should have consistent setbacks, frequent doors and windows, and create an engaging pedestrian environment.*



Appropriate uses in neighborhood centers include establishments that serve nearby residents' daily needs, such as small offices, cafes, shops, and other services. Horizontal and vertical mixed use developments are allowed and encouraged.

multi-family building. Multifamily projects should be designed and detailed to be compatible with neighboring single family homes and commercial centers. Single family projects should include architecture and landscaping that is complimentary and creates a neighborhood identity with visual interest and variety.

**Housing Outside Neighborhood Centers: Streets and Access**

**6.7-r Housing fronting collector streets.** To maximize public orientation of streets and neighborhoods, housing is encouraged to front onto collector streets. The following provisions shall apply:

- Driveway designs that allow for turn-around space (to minimize cars backing out onto collector streets) are encouraged.
- Driveways shared by more than one residence are encouraged, to limit the number of driveway entrances to the street.

**6.7-s Street standard adherence.** Ensure that streets are provided consistent with the provisions of the Plan.

*Arterial and collector streets are depicted on the General Plan Diagram. Local streets should meet spacing requirements for through-streets stipulated in Section 6.3 and Section 5.2. (See Table 5-6) Intersections design should be in accordance with access standards established in Table 5.6. Requirements for dedicated through-streets apply to all multifamily and single-family projects.*

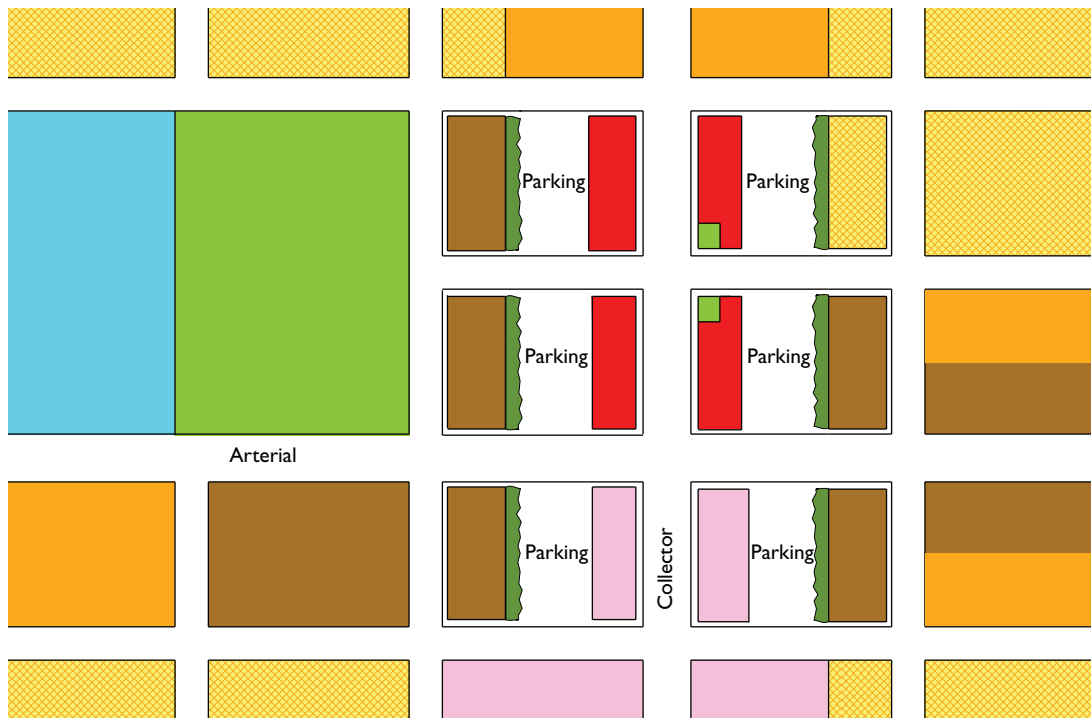
**6.7-t Pedestrian linkages.** Develop clear pedestrian linkages between and within neighborhoods.









*Each project application should demonstrate connections from the project to the bikeways system depicted in Figure 5-2 and the linear park network depicted in Figure 4-1.*

**6.7-u Sidewalks and the pedestrian environment.** Provide sidewalks consistent with intended use, and trees to shade streets and pedestrians.

- Sidewalks should be provided on both sides of all streets, public and private. Sidewalk width shall be a minimum of 5 feet in residential areas and 8 feet in

**Figure 6-8: Illustrative Development Plan for Neighborhood Center**



-  Low-Medium Density Residential
-  Medium Density Residential
-  High Density Residential
-  Community Commercial
-  Office
-  School
-  Park or Plaza/Open Space
-  Landscaped Buffer (between commercial/parking and residential uses)



*Residential development should be designed to maximize visual interest and compatibility with surroundings.*

commercial and industrial areas (see Tables 5-4 and 5-5). In residential areas, parkway strips in between the street and sidewalk shall be provided to provide greater distance between pedestrians and the roadway.

- In areas designated Very Low Density Residential, consider establishment of a more rural residential style of street-side public improvements.
- Street trees should be planted curb-adjacent and be consistent with the species stipulated in the Street Tree Master Plan and be no greater than 30 feet apart. Trees along local streets should be appropriately selected and planted no greater than 30 feet apart.

#### ***Housing Outside Neighborhood Centers: Open Space***

**6.7-v Relationship of parks and surrounding uses.** Provide parks and open spaces consistent with the Plan.

- Parks should be sized and designed in accordance with criteria established in Chapter 4: Parks, Schools, and Community Facilities.
- Provide urban-agricultural buffers in areas when required by Policy 6.1-k and policies found in Section 3.2.

#### ***Housing Outside Neighborhood Centers: Parking and Garages***

**6.7-w Residential parking design.** Reduce the visual dominance of garages and parking.

- Garage width openings facing public streets will normally be limited to no more than 20 feet or one-third the lot width, whichever is less; recessed garages can be wider so long as the visible width from the front does not exceed the maximum. Alternatives to front garages, such as access from alleys, side drives with parking in the rear, and tandem parking are also permitted.
- Consolidated parking in higher density residential projects should be located away from the streets and should share one or two entrances/exits from the property in order to minimize curb cuts.

#### ***Additional Design Principles for Medium and High Density Residential: Public Orientation***

**6.7-x Public orientation of medium and high density development.** Development should be oriented to streets, sidewalks and public spaces; introverted projects are discouraged.

- Site planning and architectural design should ensure that developments provide street frontages with interest for both pedestrians and neighboring residents.



- Sites should not be fenced or walled off with a solid barrier; at least 50 percent shall have an open fencing design.
- Buildings should be oriented to public streets and each dwelling must have direct visual access to either a public sidewalk, landscaped courtyard or a garden space.
- Some dwellings on each site must front and face the adjoining public street and sidewalk.
- If entrance to individual buildings or dwellings is through a courtyard, the courtyard should open directly to a public street or sidewalk.

***Additional Design Principles for Medium and High Density Residential: Fine-grained Development***

**6.7-y Visual variety.** Promote fine-grained development that provides individuality and distinction. Projects should be integrated with surroundings, not closed off from them.

- Developments should generally be broken down into small clusters, independently accessible and integrated with the surroundings with direct circulation and visual connection between buildings, streets, sidewalks and open space. Superblock-style developments with large-scale internal circulation systems are discouraged.
- The number of units sharing a directly accessible building entrance or stairway should be limited to eight, except for high density housing and assisted living facilities.

***Business Park Design Principles***

**6.7-z High quality business park design.** Ensure that the Business Park is developed to high architectural and landscape standards and limited to non-polluting uses consistent with a Business Park setting, as enumerated in the Westside Industrial Specific Plan (WISP).

- The primary intended use in Business Park is offices consistent with a light industrial nature (i.e., research and development). Light manufacturing, wholesaling, retailing and other uses should be permitted as ancillary uses only and should generally be limited to no more than 40 percent of the total building area of a development.
- Sidewalks with street-trees should be provided along all public and private streets. Sidewalk width, including a curbside planting area for street trees should be at least 10 feet. Street trees should be provided at a maximum 30-foot interval and



*Top: Wide sidewalks, especially in commercial areas, accommodate pedestrian travel, street trees, and outdoor seating areas.*

*Bottom: Housing may be designed with garages at the rear of homes.*



*A portion of the TRIP is intended to develop as a Business Park, with high quality design.*

- placed to provide shade to pedestrians and bicyclists. Trees along median strips should also be provided for all streets 50 feet or wider.
- Planted building setbacks of 10 to 20 feet should be provided along public streets. No setback is required of structures that provide uses of pedestrian interest, such as a shop or a restaurant.
- Storage yards, parking areas, service areas, and other paved areas should be screened from off-site view by perimeter and tree-canopy planting.
- Large, flat-roofed areas and rooftop equipment should be screened from off-site views.
- Bicycle connections to designated routes should be provided from each development.
- Bicycle parking should be provided in Business Park parking lots at a ratio of one bicycle parking space per 10 automobile parking spaces.

**6.7-aa Mix of supporting uses in business park.** Require large employment-generating developments to provide services such as restaurants, child care and business support that reduce the need for trips out of the Business Park.

#### ***Site Design Standards for Single Family Gated Communities***

**6.7-ab Single family gated communities discouraged.** In general, gated communities of single family detached homes are discouraged, as they do not further the City's goals of improving access and connectivity amongst residents and neighborhoods. Single family gated communities may be permitted upon approval of a planned development in areas of Turlock where access is already limited and/or where sound walls are already required, resulting in built-in constraints to connectivity.

**6.7-ac Public orientation of homes.** Housing units backing onto local or collector streets, separated from the right-of-way with a fence or wall, are strongly discouraged.

**6.7-ad Use of sound walls.** Sound walls shall only be permitted when a noise study, prepared by a certified noise consultant under contract to the City of Turlock, specifically requires such a barrier as a mitigation measure.

**6.7-ae Gated community size.** A single-family detached residential gated community, if approved, should not be larger than 20 acres. At the average density permitted in the LDR designation, this corresponds to 100 homes or fewer.

***Site Design Standards for Multifamily Attached Gated Communities***

- 6.7-af Multifamily gated community location.** Multifamily attached gated communities are discouraged along local and collector streets; arterial streets are more appropriate locations for these developments.
- 6.7-ag Pedestrian and bicycle access.** Access for pedestrians and cyclists, separate from automobile access, shall be provided.
- 6.7-ah Use of walls.** Solid perimeter walls are prohibited unless specifically required for noise mitigation by a noise study, prepared by a certified noise consultant under contract to the City of Turlock.
- 6.7-ai Edge conditions.** In all multifamily developments, perimeter units shall front the adjoining local or collector street. Such units may only be separated from the public street by a wrought iron fence or similar open security barrier.
- 6.7-aj Barrier style.** Perimeter housing may front onto a private frontage street which is separated from the public street by a wrought iron fence or similar open barrier (at least 50 percent open).
- 6.7-ak Gated community size.** A multifamily attached residential gated community shall not be larger than one standard city block. Block size shall be determined by the classification of the adjoining through streets, in accordance with General Plan policy 6.4-e.

***General Development Standard – Applicable to All Gated Communities***

- 6.7-al Gated community location.** Gated communities shall not be located where they would impede a current or future development of a collector, arterial, or expressway. Similarly, gated communities shall not be located where they disrupt an existing or future planned public pedestrian pathway, multiuse path or trail, or park.
- 6.7-am Parks and community facilities.** No credit shall be given for provision of park space that is not accessible to the general public. The developer of the gated community shall pay an in-lieu fee for park provision, or provide park space that is accessible to the public.
- 6.7-an Private streets and street maintenance.** All gated communities shall have private streets, maintained by an approved Homeowners Association and/or Assessment District.



*In general, gated communities are discouraged in Turlock. When they are permitted, good design is critical to ensure their integration into the rest of the built environment.*

- 6.7-ao Access gates.** Controlled access gates shall be equipped with a “Knox Box” or similar system, approved by the Police and Fire chiefs, or their designees.
- 6.7-ap Entrance design.** Curbs shall be painted red in vehicle stacking areas and shall be posted as no parking areas.
- 6.7-aq Emergency access.** There shall be at least two entrances accessible to emergency vehicles.
- 6.7-ar City services’ access.** Access shall be provided to the City’s designated waste hauler for on-site refuse collection.
- 6.7-as Vehicle stacking at entrance.** Where access to the development is provided from a local street, at least 40 feet of vehicle stacking room shall be provided between the gate and the public right of way.
- 6.7-at Vehicle stacking from collector or arterial.** Where access to the gated community is provided from a collector or arterial street, at least 60 feet of vehicle stacking room shall be provided between the gate and the public right of way.
- 6.7-au Deceleration pockets.** When access to the gated community is provided from a four-lane collector, arterial, or expressway, a deceleration pocket shall be designed and constructed to the satisfaction of City Traffic Engineer.
- 6.7-av Guest access.** A separate “guest” turn-out lane, with room for at least one vehicle (20 feet) shall be provided for guests to await admission. This guest turn-out lane shall be located immediately adjacent to the main vehicle stacking area.
- 6.7-aw Entry device.** An entry telephone, or similar communications device, shall be provided in the guest turn-out area for visitors to contact their host for admission to the gated community.

*The entrance and exit lanes shall be clearly marked and separated by a landscaped median with a minimum width of 6 feet. This median shall contain the entry control device. Drivers should not be forced out of their vehicles to use the entry control device.*
- 6.7-ax Driveway design.** The driveway approach shall be constructed of stamped concrete or a similarly textured material.
- 6.7-ay Gate operation.** No gate shall swing outward into the vehicle stacking area.

**6.7-az Vehicle turn-around area.** A vehicle turn-around shall be provided in front of the gate. Under no circumstances should a vehicle be forced to back out of a vehicle stacking area.

**6.7-ba Fence height.** No fence shall exceed seven feet in height, unless a documented noise study dictates otherwise.

**6.7-bb Vision hazards.** No wall, fence, gate, or other related appurtenance shall constitute a vision hazard as determined by the City Engineer or designee.

***Standards for Walls in Gated Communities***

**6.7-bc Planting strips.** A 15 foot minimum planter strip should be provided in front of any wall. The wall shall be sufficiently landscaped to minimize graffiti.

**6.7-bd Fence type and design.** All walls that face public streets shall incorporate a combination of solid walls with pillars and decorative view ports, or short masonry wall segments with wrought iron grill work. Chain-link or cyclone fences, barbed wire, razor wire, and the like are prohibited. At least 50 percent of a fence/wall should be designed to be open/visually permeable.

**6.7-be Visual variety.** Walls shall incorporate offsets in plane and variety in design. Landscape pockets should be provided.

**6.7-bf Use of solid walls.** Where specific concerns of land use intensity, traffic circulation, or other compatibility issues arise, the use of solid perimeter walls facing onto local public streets may be considered. Solid walls are only allowed when deemed necessary by the noise study (see policy 6.7-ah).



*Opaque walls shall include segments of more open design, as well as landscaping.*

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# 7 Conservation

The Conservation Element establishes policies for the conservation of natural resources in Turlock. The Element addresses open space resources; agriculture and soil resources; hydrology and water quality; biological resources; cultural and historic resources; and mineral resources. Air quality and greenhouse gases are also highly important environmental issues for Turlock and are addressed in Chapter 8.

## 7.1 OPEN SPACE

State planning law (Government Code Section 65560) provides a structure for the preservation of open space by identifying open space categories. An additional category is proposed for this Plan to help define the urban edge. These are:

- **Open space for public health and safety**, including, but not limited to, areas that require special management or regulation due to hazardous or special conditions. These might include flood-prone areas, areas of unstable soil, watersheds, earthquake fault zones, areas of high wildland fire risk, and areas required for the protection of water quality.
- **Open space for the preservation of natural resources**, including, but not limited to, natural vegetation, fish and wildlife, and water resources.
- **Open space for resource management and production**, including, but not limited to, agricultural and mineral resources, forests, rangeland, and areas required for the recharge of groundwater basins.
- **Open space for outdoor recreation**, including, but not limited to, parks and recreational facilities, areas that serve as links between major recreation and open space reservations (such as trails, easements, and scenic roadways), and areas of outstanding scenic and cultural value.
- **Open space for the protection of Native American sites**, including, but not limited to, places, features, and objects of historical, cultural, or sacred significance such as Native American sanctified cemeteries, places of worship, religious or ceremonial sites, or sacred shrines located on public property (further defined in California Public Resources Code Sections 5097.9 and 5097.993).



*As a city surrounded by productive, high-value farmland, Turlock must balance resource conservation with development considerations.*

- **Open space to shape and limit urban form**, including, but not limited to, greenbelts, storm drainage swales, and open space corridors specifically established to implement community design goals and objectives.

## OPEN SPACE INVENTORY

### Open Space for Public Health and Safety

According to the State Office of Planning and Research's General Plan Guidelines, issues relating to this category of open space include geology and seismicity, slope stability, cliff erosion, flood-prone areas, and wild land fire risk. No open space lands in this category are designated on the General Plan Diagram. The Study Area does not include any known geologic faults or areas of significant known geologic instability. The extremely level topography of the area means that risks associated with slopes are negligible. In addition, no parts of the Study Area have been mapped by the Federal Emergency Management Agency (FEMA) as within the 100-year flood zone. A small portion of the Study Area is within the dam inundation area of the New Exchequer Dam (see section 10.3). However, it is not necessary to set aside any open space lands exclusively to protect public health and safety.

### Open Space for the Preservation of Natural Resources

The Land Use Diagram does not designate any lands specifically for the purpose of preserving natural resources because no plant or animal species or areas of special concern have been located in the Study Area (see discussion in Section 7.4). Pastures, vineyards, row crops, and orchards that are classified as Open Space for Resource Management, however, may serve as habitats or foraging areas for a variety of species.

### Open Space for Resource Management

Resource management categories identified in the General Plan Guidelines include forest lands, agricultural resources, soil resources, groundwater recharge areas, water bodies important for commercial fisheries, and mineral resources. In the Study Area, lands in agricultural production and with potential for agricultural production are by far the most important of these categories of open space. Virtually all non-urbanized portions of the Study Area are in agricultural production, with almonds; grain, hay and field crops; and truck and berry crops most prevalent. Most



of these lands have been designated as Prime Farmland by the U.S. Department of Agriculture. Agricultural lands that are not planned for urban development within the planning period are designated as “Urban Reserve” on the General Plan Diagram.

The Study Area is dependent on groundwater for water used for all non-irrigation purposes. Groundwater recharge areas have not been definitively mapped, though the recharge areas mapped by various sources are in general in the northern and eastern part of the Study Area, overlapping to a considerable extent with lands designated for Agriculture by the General Plan Land Use Diagram.

Agricultural open space and related policies are covered in section 7.2 below.

### Open Space for Outdoor Recreation

The Land Use Diagram’s park and recreation classification includes existing and planned public recreation sites (see Table 4-1 for existing parks as of 2010.) Section 4.1 describes the General Plan program for public parks and recreation, including policies for linear recreation corridors. Facilities for pedestrian and bicycle circulation, which often receive recreational use, are discussed in Section 5.3. One category of recreational open space is discussed in this chapter: storm drainage basins that serve a dual use for public recreation.

#### *Dual-Use Storm Drainage Basins*

Turlock’s parks system and storm drainage system are related, with dual-use playfields in several of the City’s drainage basins. This arrangement adds to the City’s recreational open space, and minimizes the extent to which storm drainage requirements disrupt neighborhoods with unsightly basins. At the same time, the design requirements for storm drainage basins limit their functionality for recreational uses.

Previous plans have not distinguished between park land that serves a dual use as storm drainage basin and park land available for recreational use year-round. This General Plan establishes a new approach, calculating dual-use drainage basins separately from other park land, and providing standards for each. Standards for parks are in Chapter 4, while standards for dual-use drainage basins are here. It remains the City’s policy to plan the storm drainage system to maximize utility of drainage basins for recreational use, and to require that drainage basins be designed and improved as such to the greatest extent feasible.



*Top: Agricultural land not planned for development during the planning period is designated as “Urban Reserve” on the General Plan Land Use Diagram.*

*Bottom: Parks and drainage basins located along the edge of the City serves a specific open space function of shaping and limiting urban form.*

### Open Space for the Protection of Native American Sites

The Land Use Diagram does not designate any open space specifically for the purpose of protecting Native American sites. A records search conducted by the Central California Information Center of the California Historic Resources Information System at CSUS identified 38 properties in the Study Area included in the State’s Historic Property Data File. None of these were associated with Native American sites or activities (see Section 7.5.)

### Open Space to Shape and Limit Urban Form

While not defined by the State, the concept of open space to shape and limit urban form has become increasingly important in Turlock. It has long been City policy to maintain Turlock as a free-standing community, whose urban edges do not meet those of neighboring communities. Numerous land uses serve the role of open space shaping and limiting urban form—parks, drainage basins, and in some cases the large rear setbacks associated with Rural or Very Low Density Residential uses.

Open space to shape the urban edge is covered in the Parks, Schools, and Community Facilities Element (Chapter 4) and the City Design Element (Chapter 6.)

## OPEN SPACE PLAN AND ACTION PROGRAM

Every city and county in the State is required to prepare, adopt, and submit to the Secretary of the Resources Agency a “local open-space plan for the comprehensive and long-range preservation and conservation of open-space land within its jurisdiction” (Government Code Section 65563). As shown in Table 7-1, components of the Open Space Plan are found in several General Plan elements.

The open space plan must contain an “action program” consisting of specific programs which the City intends to pursue (Government Code Section 65564). The action program policies are the implementing policies found in each of the General Plan sections cited in Table 7-1 below.

A conservation element is required to address issues relating to the management of natural resources to prevent waste, destruction, and neglect, often resulting in an overlap with the requirements of an open space element. The Open Space and Conservation Element integrates requirements of the two State-mandated elements. Topics related to agriculture, soils,

TABLE 7-1: COMPONENTS OF OPEN SPACE PLAN	
GENERAL PLAN SECTION	TOPIC(S) ADDRESSED
2.2	Land Use Classifications, including Parks, Agriculture, and Urban Reserve
4.1	Parks, Trails, and Recreational Open Space
5.4	Pedestrian and Bicycle Circulation and Facilities
7.1	Dual-Use Storm Drainage Basins
7.2	Agriculture and Soil Resources
7.3	Hydrology and Water Quality
7.4	Biological Resources
7.5	Cultural and Historic Resources
7.6	Mineral Resources

water, biological, archaeological, and mineral resources are described in this chapter’s following sections. Open space for outdoor recreation is addressed in Chapter 4, except that policies for dual-use storm drainage basins are in this section. Open space for public health and safety is addressed in Chapter 10.

**POLICIES**

*See also Chapter 4 for policies relating to recreational open space.*

**Guiding Policies**

**7.1-a Dual-Use Storm Drainage Basins.** Continue to coordinate the storm drainage system and the park system in new master plan areas, and optimize the use of drainage basins as recreational open space.

**Implementing Policies**

**7.1-b Requirements for Water Detention.** Basins must function effectively for the detention (not the retention) of water, and include underground piping for quick removal of water following storm events.

**7.1-c Open Space Character and Functionality.** Design all dual-use drainage basins to suit a recreational purpose, such as a playing field, or an environmental amenity, such as

a water feature. Basins should be varied in shape, and well-landscaped around the edges. Basins must not have slopes steeper than 1:6. Adequate parking along the adjacent street or on site shall be provided to accommodate recreational use of the drainage basin and to avoid impacts to adjacent uses.

- 7.1-d Landscaping.** Drainage basins that serve a dual use for public recreation must be entirely landscaped with irrigated turf, with trees along the top of the basin following City spacing requirements.
- 7.1-e Screening of Buildings and Structures.** Any pump stations or other utility structures associated with dual-use drainage basins shall be located and screened to minimize the visual impact to adjacent uses and from the public right-of-way and shall meet all other applicable development standards and design guidelines. Any fencing provided for utility structures shall be fully landscaped in accordance with the standards of the applicable zoning district, with a minimum three-foot wide landscaped area provided to support vines on all sides.
- 7.1-f Exception for Drainage Basin at Water Quality Control Facility.** The storm drainage basin planned to be developed south of the Turlock Regional Water Quality Control Facility will have a location that is not suitable for public use or recreation. This basin may be excepted from the requirement for dual use standards.

*When development occurs in the Southwest, this basin would be converted to dual-use standards.*

## 7.2 AGRICULTURE AND SOIL RESOURCES

Commercial agriculture was established in the region by ranchers as early as the mid-1800s, with cattle and then sheep. The next phase of the area's agricultural evolution was experimentation with grain, which heralded an extensive switch to cultivation. Farming was successively aided by introduction of the railroad, formation of the Turlock Irrigation District, development of refrigerated shipping, and construction of the La Grange Dam on the Tuolumne River. Extensive farming gave way to intensive methods, and the cultivation of vineyards, orchards, truck crops, dairy products and poultry were introduced. These activities continue to be an integral part of the region's economic and social life.

While Turlock’s economic base has expanded substantially beyond farming, the city remains a community physically and socially characterized by its agricultural past and current farming activity. Many of Turlock’s major industries are food processors, thus directly tied to agriculture. General Plan policies preserve the belt of agricultural land around city limits, maintaining Turlock as a stand-alone community within an agricultural region. At the same time, necessary urban expansion will result in conversion of agricultural land to urban uses. The General Plan Land Use Diagram and Plan policies define the long-term edge between urban and agricultural activities and support continuing agricultural production in the Study Area.

## AGRICULTURE IN THE STUDY AREA

### Agricultural Products

Figure 7-1 shows the crops produced on the farmland in and around the Study Area. Most of this farmland produces almonds; truck and berry crops; and grain, hay, and field crops.<sup>1</sup> Other nuts and fruits, a category that includes apples, peaches, walnuts, and other orchard products, are also grown in and around the Study Area. Dairies constitute the remaining predominant agricultural use around Turlock.

### Farmland Classification

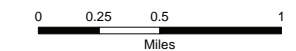
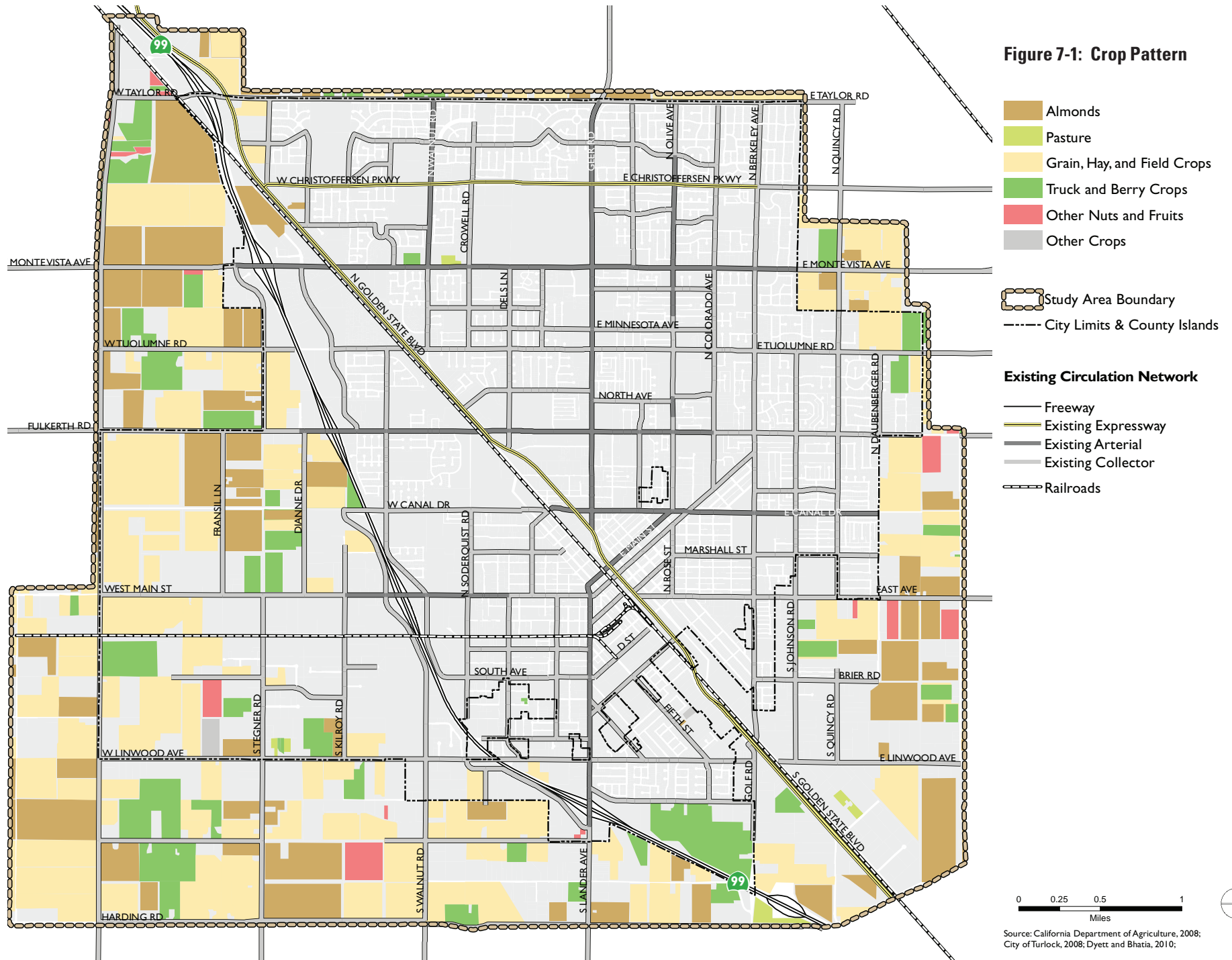
The California Department of Conservation uses the Important Farmlands Inventory to classify farmland into several categories based on soil type and current land use: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Grazing Land, Urban and Built-up Land, and Other Land.

- *Prime Farmland* is land that has the best combination of physical and chemical characteristics for crop production. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when managed (including water management) according to current farming methods. Prime Farmland must have been used for the production of crops within the last three years.

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<sup>1</sup> Truck and berry crops include bush berries, tomatoes, melons, onions, peas, potatoes, spinach, flowers, asparagus, and other fruits and vegetables that are relatively perishable. Grain, hay, and field crops include barley, wheat, oats, dry beans, flax, corn, and safflower, among others. (State of California Department of Water Resources, 2009.)

**Figure 7-1: Crop Pattern**



Source: California Department of Agriculture, 2008; City of Turlock, 2008; Dyett and Bhatia, 2010;

- *Farmland of Statewide Importance* is land other than Prime Farmland that has a good combination of physical and chemical characteristics for crop production. It must have been used for crop production within the last three years.
- *Unique Farmland* is that which does not meet the criteria for Prime Farmland or Farmland of Statewide Importance, but which is currently used for the production of specific high economic value crops (as listed in the last three years of California Agriculture, produced by the California Department of Food and Agriculture). It has the special combination of location, soil quality, growing season, and moisture supply to produce sustained high quality or high yields of a specific crop when treated and managed according to current farming practices. Examples may include oranges, olives, avocados, rice, grapes, and cut flowers.
- *Farmland of Local Importance* is either currently producing crops or has the capability to do so. It is land other than Prime Farmland, Farmland of Statewide Importance, or Unique Farmland, but it may be important to the local economy due to its productivity.
- *Grazing Land* is that on which the existing vegetation, whether grown naturally or through management, is suitable for livestock grazing.
- *Urban and Built-up Land* is occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel.
- *Other Land* includes low-density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing, confined livestock, poultry or aquaculture facilities; strip mines; borrow pits; and water bodies smaller than forty acres; and vacant and nonagricultural land surrounded on all sides by urban development and greater than forty acres.

As shown on Figure 7-2, the majority of land encircling the urbanized area of Turlock is categorized as Prime Farmland. The exception is to the south, where most of the land is Farmland of Statewide Importance, with significant patches of Unique Farmland, especially in the southeast quadrant of the Study Area. These classifications do not provide information about actual productivity of the land, which is also affected by availability of irrigation water, and the use of agricultural management techniques. Many valuable commodities (for example, milk) are produced in areas with relatively poor soils.

Recognizing that agricultural preservation policies should not be based solely on soil classification, Stanislaus County's General Plan Agriculture Element (updated 2007) calls for a definition of "most productive agricultural areas" that takes into account soil ratings as well as other factors.

## FARMLAND CONSERVATION

### Williamson Act

The California Land Conservation Act of 1965, also known as the Williamson Act, aims to discourage the unnecessary and premature conversion of productive agricultural land to other land uses. Farmers with land under Williamson Act contracts agree not to develop their land for 10 years, and in exchange, they are taxed according to the land's farm income-producing value, as opposed to its "highest and best use." Contracts are automatically renewed every year; cancellation requires "extraordinary circumstances," payment of a penalty of 12.5 percent of the land's fair market value, and a public hearing. Local governments receive an annual subvention of foregone property taxes from the State, through the Open Space Subvention Act of 1971.

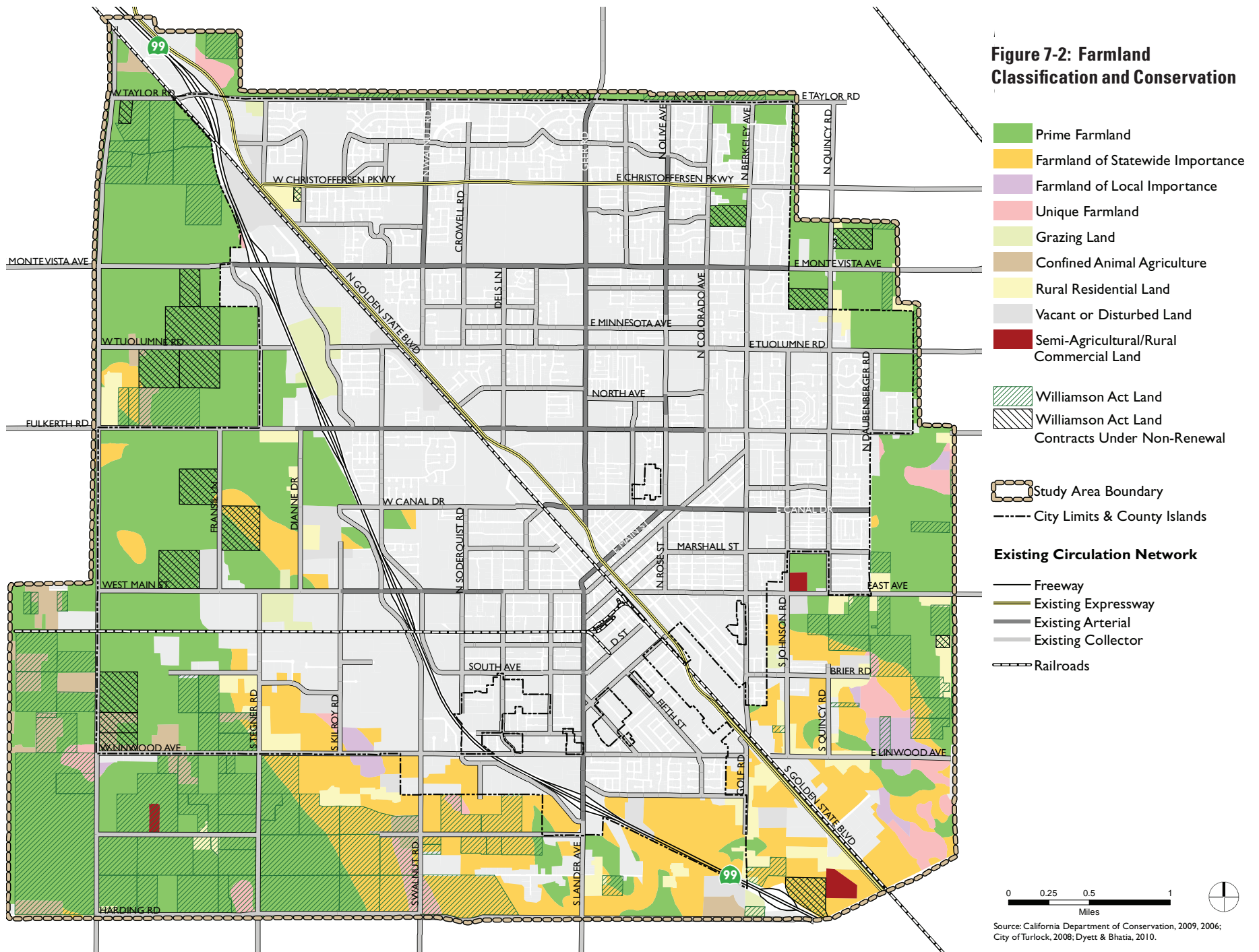
As of 2011, a total of 2,833 acres (35 percent of the total agricultural acreage in the Study Area) were under Williamson Act contracts. Of this land, 467 acres (6 percent of the Study Area's farmland) were in non-renewal as of 2011, meaning that at the end of their 10-year period, they will not renew their contracts (parcels whose contracts expired between 2006 and 2009 are not counted). Williamson Act parcels are most prevalent in the Study Area's southwest, which is not planned for urban growth under the General Plan. A considerable amount of farmland in areas designated for growth under the General Plan is also under contract. There are several expiring Williamson Act parcels in the Turlock Regional Industrial Park.

### Role of the General Plan

The General Plan plays an important role in the conservation of farm land, because the City's growth over the next 20 years will be guided by General Plan policies and the Land Use Diagram. While the General Plan emphasizes infill development, projected growth in the Study Area will also necessitate some conversion of agricultural land. If the General Plan were developed to its full capacity, just over 1,000 acres of agricultural land would be replaced by urban development (including parks and schools.) Land classified as "Prime Farmland" and "Farmland of Statewide Importance" account for almost 90 percent of this land, or 570 and 332 acres, respectively. Much



**Figure 7-2: Farmland Classification and Conservation**



Source: California Department of Conservation, 2009, 2006; City of Turlock, 2008; Dyett & Bhatia, 2010.

of the farmland that is expected to be urbanized over the next 20 years is inside City limits, mainly in the Turlock Regional Industrial Park, and was designated for development previous to this General Plan. More than 6,400 acres within the Study Area would remain in agricultural use at the end of the planning period. The percent of the Study Area composed of farm land by classification is shown in Table 7-2, for the present and by the time of General Plan buildout.

### Economic Impacts of Farmland Conversion

In 2011, the price of agricultural land was generally under \$100,000 per acre, compared to up to \$200,000 per acre for industrial land and \$300,000 to \$500,000 per acre for centrally-located commercial and residential land in parts of Turlock.<sup>2</sup> This price differential, along with the uncertainty of farm income, explains why farmland is vulnerable to conversion to urban uses.

Agriculture employed 8.9 percent of the labor force in Stanislaus County in 2007, and 6.5 percent of the labor force in Turlock.<sup>3</sup> Agriculture’s overall share of employment is expected to decline over the coming years as non-farm employment in industries such as manufacturing, services, education, and healthcare grows. In absolute terms agricultural employment levels are expected to remain fairly stable, and agriculture will remain an important part of the regional economy.

**TABLE 7-2: FARMLAND CLASSIFICATION IN THE STUDY AREA**

TYPE	EXISTING ACRES	PERCENT OF STUDY AREA	ACRES AT GENERAL PLAN BUILDOUT	PERCENT OF STUDY AREA	CHANGE
Prime Farmland	4,973	29%	4,403	25%	(570)
Farmland of Statewide Importance	1,705	10%	1,373	8%	(332)
Unique Farmland	240	1%	177	1%	(63)
Farmland of Local Importance	119	1%	58	<0.5%	(61)
Grazing Land	144	1%	136	1%	(8)
Confined Animal Agriculture	286	2%	282	2%	(4)
<b>Total Farmland</b>	<b>7,467</b>	<b>43%</b>	<b>6,429</b>	<b>37%</b>	<b>(1,038)</b>
<b>Study Area</b>	<b>17,449</b>	<b>100%</b>	<b>17,449</b>	<b>100%</b>	<b>-</b>

Sources: Department of Conservation, Division of Land Resource Protection, 2009, City of Turlock, 2008, Dyett & Bhatia, 2010.

<sup>2</sup> LoopNet Commercial Real Estate Listings, 2011.

<sup>3</sup> California Employment Development Department, 2008.

The average production value from agricultural land was approximately \$2,352 per acre in 2009.<sup>4</sup> If secondary impacts were to be included, with a high multiplier<sup>5</sup> of 5, loss of income associated with agriculture would be about \$11,760 per year for each acre of land converted to other uses. At this rate, urbanization over the next 20 years of approximately 1,000 acres of agricultural land contiguous to Turlock's City limits, consistent with General Plan policies, will result in the loss of \$2.4 million annually, in current dollars, of direct agricultural income, and an estimated \$12.2 million including secondary impacts. Economic losses would be offset by the value of urban development and its multiplier effects, but agricultural productivity in the Study Area would be diminished.

## SOILS AND SOIL EROSION

### Soils in the Study Area

A region's geology ultimately determines the types of soils that cover its surface, and soils have implications for agricultural productivity, natural hazards, and development potential. Almost all of the soils in the Study Area are sandy loam or loamy sand, meaning they have high sand content, low clay content, and low to moderate silt content. According to soil survey information obtained from the United States Department of Agriculture's Natural Resources Conservation Service (NRCS), three soil types, Dinuba sandy loam, Hilmar loamy sand, and Delhi loamy sandy, account for two-thirds of the Study Area's soil.<sup>6</sup> Some 23 additional soil types are present in relatively small amounts. For a more detailed discussion of soils, see the Environmental Impact Report.

### Soil Erosion

Soil erosion is a process by which soil materials are worn away and transported to another area, either by wind or water. Rates of erosion can vary depending on the soil material and structure, and the placement and level of human activity. Soil containing high amounts of silt can be easily eroded, while sandy soils are less susceptible. Erosion is most likely to occur on sloped areas with

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<sup>4</sup> Stanislaus County Department of Agriculture. *2009 Annual Crop Report*.

<sup>5</sup> The ratio of primary plus secondary economic impacts to primary impacts is termed a "multiplier."

<sup>6</sup> Dinuba sandy loam, Hilmar loamy sand, and many other soils are further distinguished by additional characteristics, such as soil depth, drainage capacity, and salinity. The soil type designator (e.g., DrA) refers to the specific variant.



*Top: While the General Plan emphasizes infill development, projected growth in the Study Area will also necessitate some conversion of agricultural land.*

*Bottom: Buffers should function to mark the urban edge, provide public open space, and ensure that urban development does not constrain agricultural practices.*

exposed soil. In the case of agricultural or open space uses, erosion potential is highest when there is little vegetation. Soil erosion matters for agricultural land because it causes the fertile topsoil to wash away.

Soil erosion potential or susceptibility is identified by the soil’s “K factor,” which indicates a soil’s inherent susceptibility to erosion, absent slope and groundcover factors. Values of K range from 0.05 to 0.43; the higher the value, the more susceptible the soil is to sheet erosion by water.<sup>7</sup> In the Study Area, 647 acres have K values of 0.43; these soils are located in the far west of the Study Area, where agriculture is planned to remain the predominant use. Other agricultural areas have soils moderately susceptible to erosion. Good agricultural management is important in conserving soil. Soil hazards are further discussed in Chapter 10, Safety, and displayed in Figure 10-3.

## **POLICIES**

*See also Chapters 2 and 3 for policies relating to preserving agricultural areas through urban growth management.*

### **Guiding Policies**

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**7.2-a Preserve Farmland.** Promote the preservation and economic viability of agricultural land adjacent to the City of Turlock.

**7.2-b Limit Urban Expansion.** Retain Turlock’s agricultural setting by limiting urban expansion to designated areas and minimizing conflicts between agriculture and urban activities.

**7.2-c Protect Soil and Water.** Work to protect and restore natural resources essential for agricultural production.

*The quality of soil and water affect agricultural productivity. Policies are in other sections of this Element.*

**7.2-d Support Air Quality Improvements.** Support efforts to reduce air quality impacts created in part by agricultural operations.

*See Chapter 8, Air Quality and Greenhouse Gases, for more detail about air quality issues.*

<sup>7</sup> Institute of Water Research, Michigan State University, website: <http://www.iwr.msu.edu/rusle/kfactor.htm>. Viewed April 13, 2007.

## Implementing Policies

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**7.2-e Require Compact Development.** Require development at densities higher than typical in recent years in order to limit conversion of agricultural land and minimize the urban/agricultural interface.

*Refer to Chapter 2: Land Use and Economic Development for more detail on historic and proposed development density.*

**7.2-f Annex Land As Needed.** Annex land to the City only as it is needed for development of designated growth areas, consistent with policies in Chapter 3 and with the City's Annexation Policy. Do not annex agricultural land unless urban development consistent with the General Plan has been approved.

*The Program specifies that City staff will reject as premature any application proposing rezoning and annexation of land that is not contiguous to the City's existing urban limits or that is not within the City's approved Sphere of Influence.*

**7.2-g Participation in county-wide agricultural mitigation program.** Continue to work collaboratively with Stanislaus County and jurisdictions within the county on the development of a countywide agricultural mitigation program, which would mitigate the loss of Important Farmland to urban development through the required purchase of agricultural easements or other similar measures.

**7.2-h Allow Agricultural Uses to Continue.** Where agriculture exists within City limits, allow uses to continue until urban development occurs on these properties, including the establishment of community gardens serving the immediate neighborhood.

**7.2-i Support Participation in Williamson Act Program.** Support participation in the Williamson Act program by Study Area landowners.

*About half of the farmland in the Area is under Williamson Act contract; see discussion of Williamson Act above. Under the Williamson Act program, farmers agree not to develop their land for 10 years in exchange for a lower tax rate, whereby they are taxed on the land's income-producing value, rather than its "highest and best use."*

- 7.2-j Support Right to Farm.** Support the implementation of Stanislaus County’s Agricultural Element and Right-to-Farm ordinance.

*The County’s ordinance establishes a number of mechanisms designed to protect normal agricultural operations from pressures that can be created by urban neighbors.*

- 7.2-k Create Buffer.** Require a permanent buffer to be established between residential and agricultural activities along the long-term urban edge of Turlock.

*See policies in Chapter 6: City Design for buffer standards.*

- 7.2-l Support Agricultural Industry.** Support agricultural industry within the city, while discouraging industrial uses in the unincorporated portions of the Planning Area.

*Stanislaus County allows agricultural industry on land designated in its General Plan for Agriculture. If adjacent or near the city, such industrial activity would blur the city’s edge and could create demand for annexation and city services. Industrial development within the city is supported by the provision of industrially-zoned land. Furthermore, agricultural industries are supported through economic development programs, cost-of-business advantages, and other aspects addressed in Chapter 2: Land Use and Economic Development.*

- 7.2-m Reduce Pollution.** Participate in inter-jurisdictional efforts to improve agricultural practices in order to reduce pollution and health problems associated with particulate matter production and use of agricultural chemicals.

*Projects may be undertaken by the San Joaquin Valley Air Pollution Control District, StanCOG, or other organizations.*

- 7.2-n Minimize Soil Erosion.** Require new development to implement measures to minimize soil erosion related to construction. Identify erosion-minimizing site preparation and grading techniques in the zoning code.

## 7.3 HYDROLOGY AND WATER QUALITY

There are no natural defined streams in the Planning Area. Three open irrigation canals, Turlock Irrigation District (TID) Laterals 3, 4, and 5, pass through the Planning Area from east to west, spaced two and a half miles apart. There are also several local detention basins distributed throughout the City, which capture runoff during stormwater events and then discharge it to the canals.

Turlock is located in the Turlock Subbasin of the San Joaquin Groundwater Basin. All of the City's current potable water supply comes from a deep groundwater aquifer. The City also uses shallow groundwater for irrigation of some landscape areas. The City of Turlock is evaluating a Regional Surface Water Supply Project (RSWSP) that would supply treated Tuolumne River water from the TID to provide an additional source of potable water.

Because the Planning Area does not have natural streams, and because both surface water and groundwater in the Planning Area are closely related to the City's urban water use and stormwater drainage systems, the General Plan discussion of hydrology and water quality is covered in Section 3.3 Infrastructure.

### POLICIES

*See Section 3.3: Infrastructure for policies regarding protection of water quality, conservation of groundwater, and development of the water, sewer, and stormwater systems.*

## 7.4 BIOLOGICAL RESOURCES

### WILDLIFE HABITATS

Up until about 150 years ago, Turlock was a part of a larger grass- and marsh land where wild animals roamed freely. However, Turlock's eventual agricultural land use and urban development have resulted in a general absence of native vegetation in the Study Area. In addition, the lack of natural waterways and topography contribute to a dearth of habitat. However, agricultural uses do not preclude the use of the land by some species, particularly birds and small mammals. Orchards act as food sources and migratory corridors for some wildlife; livestock pastures serve as habitat to rodents and snakes. Detention basins, when holding water, can act as intermittent water sources and habitat for waterfowl. There are no riparian areas or vernal

pools in the Study Area—the only large surface-water bodies are irrigation canals and man-made retention basins such as Donnelly Lake.

### SPECIAL STATUS SPECIES

Special-status species are plants and animals that, because of their documented rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or other agencies. Some of these species receive specific protection that is defined by federal or state endangered species legislation. Others have been designated as “sensitive” on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local government agencies to meet local conservation objectives.

According to the California Natural Diversity Database (CNDDDB), two special-status species are presumed to be present in the Study Area, as shown on Figure 7-3. Swainson’s hawk is listed as Threatened in the state of California. Swainson’s hawk usually breeds in stands along riparian areas, and forages in grasslands, pastures, hay and alfalfa fields, and row cropland.<sup>8</sup> While the Study Area does not contain land typical for the hawk’s breeding and nesting, it is presumed to be present.

The Hoary bat roosts in trees, and hunts over open areas or lakes. It is migratory, and its North American population is found from Canada to the southern United States, and is presumed to be present along Monte Vista Avenue west of Highway 99 (see Figure 7-3). The Hoary bat is not listed on Federal or State registers or identified by as a Species of Special Concern by the California Department of Fish and Game (CDFG), but it is monitored in the CNDDDB.

Other species may occur within the Study Area, and are presumed to exist in the vicinity. Table 7-3 summarizes the sensitive plant or animal species that may occur in the Study Area, based on a search of the CNDDDB for the four USGS quadrangles encompassing the Study Area. Portions of the study Area may provide potential habitat, and pastures, vineyards, row crops, and orchards in the Study Area may provide foraging areas for some of these species.

The Valley elderberry longhorn beetle is native to riparian forests of the Central Valley, and is in long-term decline due to habitat loss and fragmentation. It is listed as threatened under the

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<sup>8</sup> Audubon Society WatchList, <http://www.audubon2.org/watchlist/viewSpecies.jsp?id=199> and California Department of Fish and Game Life History Accounts and Range Maps, <http://www.dfg.ca.gov/biogeodata/cwhr/cawildlife.aspx>



federal Endangered Species Act. With its lack of suitable habitat, the species is not likely to be present in the Study Area.

Five other animal species present in the vicinity of the Study Area do not have legal status but are considered species of Special Concern. The hardhead is a fish, and lacks suitable habitat in the Study Area. The silvery legless lizard lives in loose sandy soil or leaf litter, typically in dunes, an environment not characteristic of the Study Area. The tricolored blackbird, the western pond turtle, and the Suisun song sparrow rely on riparian, pond, or marsh habitats, which are present in the region but not in the Study Area.

Two species of native vegetation, Merced Monardella and San Joaquin Valley Orcutt Grass, were identified as potentially existing in the Study Area. The California Native Plant Society (CNPS) presumes the Merced Monardella to be extinct; San Joaquin Valley Orcutt Grass is listed as threatened by the federal government and endangered in California. Due to the prevalence of urban and agricultural uses in the Study Area, it is more likely that this grass species is present in the general region but not in the Study Area.

## POLICIES

### Guiding Policies

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**7.4-a Increase Biological Diversity.** Make efforts to enhance the diversity of Turlock’s flora and fauna, including street trees.

### Implementing Policies

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**7.4-b Sensitive Site Planning.** Protect mature trees and natural vegetation and features wherever feasible in new development areas.

**7.4-c Urban Trees.** Protect and expand Turlock’s urban forest through public education, sensitive maintenance practices, and a long-term financial commitment adequate to protect these resources. Continue to require the planting of appropriately-spaced street trees in new development areas.

**7.4-d Special Review if New Information Becomes Available.** Establish environmental review procedures, such as site reconnaissance and certification by a biologist, as part of the project development application process if new information to support existence of a Special Status species becomes available.



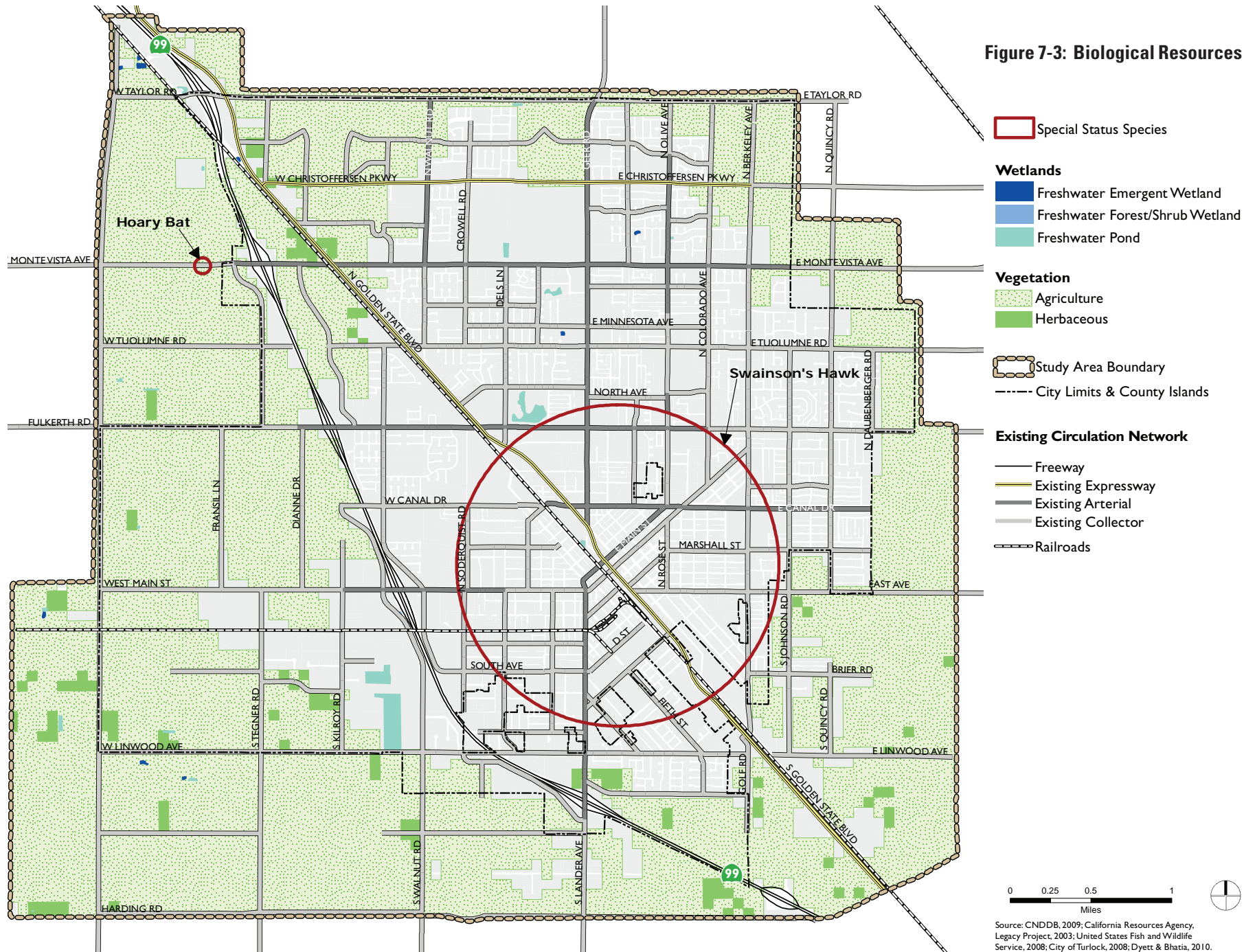
*Swainson's hawk is one of two special-status species presumed to be present in Turlock. Swainson's hawk is listed as Threatened in the State of California.*

**TABLE 7-3: SENSITIVE BIOLOGICAL RESOURCES POTENTIALLY FOUND IN THE STUDY AREA**

COMMON NAME (SCIENTIFIC NAME)	FEDERAL / STATE STATUS	CDFG STATUS	CNPS STATUS	PRESENCE IN PLANNING AREA
<i>Animal Species</i>				
Valley elderberry longhorn beetle ( <i>Desmocerus californicus dimorphus</i> )	Threatened / None			
Swainson's hawk ( <i>Buteo swainsoni</i> )	None / Threatened			Presumed Present
Hardhead ( <i>Mylopharodon conocephalus</i> )	None / None	SC		
Hoary bat ( <i>Lasiurus cinereus</i> )	None / None			
Silvery legless lizard ( <i>Anniella pulchra pulchra</i> )	None / None	SC		
Suisun song sparrow ( <i>Melospiza melodia maxillaris</i> )	None / None	SC		
Tricolored blackbird ( <i>Agelaius tricolor</i> )	None / None	SC		
Western pond turtle ( <i>Emys marmorata</i> )	None / None	SC		
Hoary bat ( <i>Lasiurus cinereus</i> )	None / None			Presumed Present
Merced kangaroo rat ( <i>Dipodomys heermanni dixonii</i> )	None / None			
Moestan blister beetle ( <i>Lytta moesta</i> )	None / None			
<i>Plant Species</i>				
San Joaquin Valley Orcutt grass ( <i>Orcuttia inaequalis</i> )	Threatened / Endangered		1B.1	
Merced monardella ( <i>Monardella leucocephala</i> )	None / None		1A	
<b>Key to Special Status Designations</b>				
<u>California Department of Fish and Game (CDFG)</u>				
SC: Species of Special Concern (those considered to be indicators of regional habitat changes; no legal status but should be taken into special consideration)				
<u>California Native Plant Society (CNPS)</u>				
1A: Presumed extinct; has not been seen or collected in the wild in California for many years.				
1B: Rare, threatened, or endangered in California and elsewhere; category fulfills the criteria of "rare" under CEQA and should be considered in Environmental Impact Reports				
0.1 to 0.3 indicates level of endangerment, with 0.1 being most endangered.				

Sources: California Natural Diversity Database, California Department of Fish and Game 2010; California Native Plant Society 2010

**Figure 7-3: Biological Resources**





*Mature trees provide many benefits to residents and to the environment, and should be maintained and protected.*

**7.4-e Identify and protect nesting habitat.** Projects on greenfield sites proposing to commence construction or other ground-disturbing activities during the typical nesting season (February through mid-September) shall be required to conduct a survey by a qualified biologist no more than 10 days prior to the start of disturbance activities. If nests are found, no-disturbance buffers around active nests shall be established as follows until the breeding season has ended or until a qualified biologist determines that the birds have fledged and are no longer dependent on the nest for survival:

- 250 feet for non-listed bird species;
- 500 feet for migratory bird species; and
- One-half mile for listed species and fully protected species.

**7.4-f Swainson’s Hawk protection.** If Swainson’s Hawks are found foraging in an agricultural area prior to or during construction, project proponents shall consult a qualified biologist for recommended proper action, and incorporate appropriate mitigation measures. If specific project activities on sites where suitable nesting habitat may exist are to take place during the normal breeding season (February through mid-September), project proponents shall be required to conduct a survey by a qualified biologist for nesting raptors in all potentially suitable trees no more than 10 days prior to the start of disturbance activities. If an active Swainson’s Hawk nest is found, appropriate mitigation measures may include, but are not limited to:

- Establishing a one-half mile buffer around the nest until the breeding season has ended or until a qualified biologist determines that the birds have fledged and are no longer dependent on the nest for survival
- Mitigating habitat loss within a 10 mile radius of known nest sites as follows:
  - Providing a minimum of one acre of habitat management land for each acre of development for projects within one mile of an active nest tree
  - Providing a minimum of 0.75 acres of habitat management land for each acre of development for projects within between one and five miles of an active nest tree
  - Providing a minimum of 0.5 acres of habitat management land for each acre of development for projects within between five and 10 miles of an active nest tree

## 7.5 CULTURAL AND HISTORIC RESOURCES

One objective of the General Plan is to preserve community assets, which include sites with cultural significance. These cultural resources include sites, buildings, structures, or objects that may have archaeological, paleontological, historical, cultural, or scientific significance. The Study Area has a rich history of human habitation, including primarily the Yocut tribe of Native Americans. Related to more recent history, a substantial inventory of historically significant buildings in Turlock has been developed, which contribute to the City's visual interest and unique sense of place. The existence of cultural resources of all varieties in Turlock underscores the need for policies to protect the resources of which we are aware and to guide actions if and when additional resources are discovered in the future.

### RESOURCE IDENTIFICATION

State laws (notably CEQA) protect archaeological and other cultural resources. In order to preserve historic resources, the State has formed the State Historical Resources Committee that conducts the State Historic Resource Inventory and maintains the California Register of Historic Resources. This body also makes recommendations for the National Register of Historic Places.

### Tribal Consultation

Passed in 2004, Senate Bill (SB) 18, now Government Code Section 65351 and 65352, establishes a procedure to help tribes and jurisdictions define tribal cultural resources and sacred areas more clearly and incorporate protection of these places earlier into the General Plan process. The SB 18 process mirrors the federal 106 Review process used by archaeologists as part of the environmental review conducted under NEPA. While not a component of CEQA review per se, the Lead agency is required to request consultation with responsible and trustee agencies, such as NAHC and neighboring tribes, during the initial study and EIR process.

In December 2008, a letter to the Native American Heritage Commission requested a review of the sacred lands file applicable to the Study Area and a list of Native American contacts within the region. The sacred lands file did not contain any known cultural resources information for the immediate Study Area.



*The Turlock Carnegie Library, built in 1916, and the Turlock High School Auditorium and Gym, built in 1925, are listed on the National Register of Historic Places. The Carnegie Library, gutted by fire in 2006, has been restored for use as an arts center.*

## HISTORIC RESOURCES IN THE STUDY AREA

A records search conducted by the Central California Information Center (CCIC) of the California Historic Resources Information System at CSUS identified 38 properties in the Study Area included in the state's Historic Property Data File. Most of Turlock's historic properties are residential, dating from as early as 1906 and as late as 1957 (buildings must be at least fifty years old to qualify).

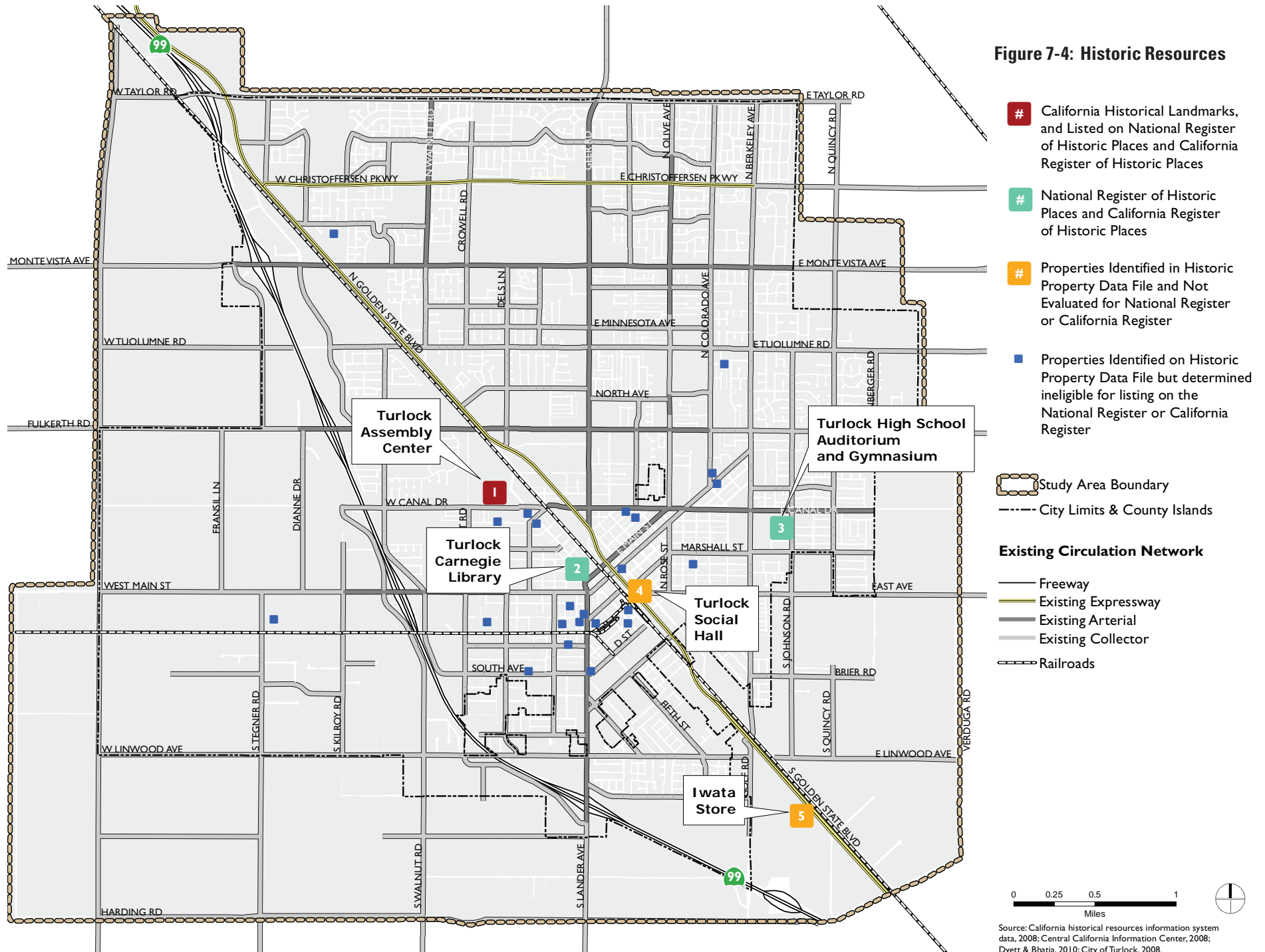
There are three properties listed on the National Register of Historic Places and the California Register of Historic Places in Turlock. The oldest of these is the Turlock Carnegie Library, built in 1916 in the Classical Revival style. While under renovation in 2006, the library was gutted by fire. Also on the National and State Register is the Turlock High School Auditorium and Gymnasium, a handsome example of the Mission-Spanish Revival style, from 1925. Third, the site of the Turlock Assembly Center, at the Stanislaus County Fairgrounds, is a nationally- and state-listed historic property and is also a California Historical Landmark. In the summer of 1942, the Fairgrounds was used as an "assembly center" where 3,699 Japanese-Americans were imprisoned before being moved to longer-term relocation sites. Later, the site was used as a U.S. Army Rehabilitation Center. While many of the Fairgrounds buildings from that time remain, there is no evidence of Assembly Center structures, and no historical marker.

Two additional properties on the list, Iwata Store, 2305 South Golden State Boulevard, and Turlock Social Hall, 326 S. Center Street, were identified in a Reconnaissance Level Survey, but have not been evaluated for National Register status. All of the remaining properties in the Historic Property Data File have been determined ineligible for the National Register. Figure 7-4 maps Turlock's historic properties, most of which are in and around the Downtown area; these are listed in Table 7-4.

TABLE 7-4: HISTORIC RESOURCES IN THE STUDY AREA		
MAP ID	ADDRESS (NAME)	YEAR CONSTRUCTED
<i>California Historical Landmarks, and Listed on National Register of Historic Places and California Register of Historic Places</i>		
1	Turlock Assembly Center	1942 <sup>1</sup>
<i>National Register of Historic Places and California Register of Historic Places</i>		
2	250 N Broadway (Turlock Carnegie Library; burned in 2006)	1916
3	1574 E Canal Drive (Turlock High School Auditorium and Gymnasium)	1925
<i>Properties Identified in Historic Property Data File and Not Evaluated for National Register or California Register</i>		
4	326 S Center Street (Turlock Social Hall)	1913
5	2305 S Golden State Boulevard (Iwata Store)	1921
<p>Notes:</p> <p>1 Year of historic occupancy.</p> <p>Other sites shown on Figure 7-4 are on the Historic Property Data File but have been determined ineligible for listing on the National Register.</p>		

Source: Central California Information Center, 2008.

**Figure 7-4: Historic Resources**





## POLICIES

### Guiding Policies

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- 7.5-a Protect Archaeological Resources.** Protect significant archaeological resources in the Study Area that may be identified during construction.
- 7.5-b Preserve Historic Places.** Integrate historic preservation into planning for Downtown and other areas with historic significance.

### Implementing Policies

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*See also Section 6.6: Historic Preservation.*

- 7.5-c Evaluate Resource Discoveries.** Should archaeological or human remains be discovered during construction, work shall be immediately halted within 50 meters of the find until it can be evaluated by a qualified archaeologist. If it is determined to be historically or culturally significant, appropriate mitigation measures to protect and preserve the resource shall be formulated and implemented.
- 7.5-d Follow State Certified Local Government Guidelines for Historic Preservation.** Form an historic preservation committee in accordance with State Certified Local Government guidelines which would conduct a survey when requested by the owner, occupant, or other knowledgeable source.
- 7.5-e Historical Site Contracts.** Continue to support the preservation, maintenance, and adaptive reuse of historic buildings by administering historic site contracts as provided for under Chapter 9-5 Article 8 of the Turlock Municipal Code and facilitating property tax abatement under the Mills Act.
- 7.5-f State Historic Building Code.** For State-designated historic buildings, use the State’s historic building code to ease adaptive reuse.



*The City should encourage the preservation and adaptive reuse of historic buildings through incentives to property owners and revisions to the zoning code.*

## 7.6 MINERAL RESOURCES

The Study Area is underlain by two geologic units, the Modesto Formation and Riverbank Formation. Both are comprised of alluvial fan deposits which include sand, gravel, silt, and clay. The Modesto Formation is estimated to range in age from about 9,000 to less than 100,000 years old, while the Riverbank Formation is estimated to range from about 130,000 to 450,000 years old.

The Study Area does not include any known historic or current mining operations other than minor excavations for fill material, which is not considered a significant resource. The only significant mineral commodities that might be found in the two formations mentioned above are sand and gravel for road and building construction. The sources of most sand and gravel used in the road and construction industry in the Study Area are from mining operations along the Tuolumne River and Merced River.

The California Geological Survey's Mineral Land Classification in Stanislaus County study completed in 1993 provides more detailed information on mineral resources within the Study Area.

### POLICIES

#### Guiding Policies

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**7.6-a Protect Significant Resources.** Cooperate with regional agencies to protect significant mineral resources in the Study Area that may be identified in the future.

#### Implementing Policies

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**7.6-b Plan After Discovery.** When and if significant mineral resources are discovered in the Study Area, work with regional agencies to determine a course of action to protect the resources.

# 8 Air Quality and Greenhouse Gases

Good air quality is essential for protecting public health and ensuring a high quality of life, and a review of air pollution and strategies for improvement is an essential component of the General Plan. This Element complies with AB 170 (an update to Government Code Section 65302.1) by providing data on air quality attainment and standards for criteria air pollutants; local, district, state, and federal programs and regulations; and a comprehensive set of guiding and implementing policies.

The Element also describes climate change and its potential impacts on the city and region, providing an overview of climate change regulations, Turlock’s energy use and efforts to reduce greenhouse gas (GHG) emissions. Hazardous air pollutants and GHGs are generated by many of the same sources, and so efforts to reduce emissions of one type are also relevant to the other.

## 8.1 AIR QUALITY

### CLIMATE AND ATMOSPHERIC CONDITIONS

#### San Joaquin Valley Air Basin

Turlock is located in the San Joaquin Valley Air Basin (SJVAB), a largely flat area bordered on the east by the Sierra Nevada Mountains; on the west by the Coast Ranges; and to the south by the Tehachapi Mountains. The SJVAB is approximately 250 miles long and an average of 35 miles wide, making it the second-largest air basin in California. Marine air flows eastward through gaps in the Coast Range at the Golden Gate and Carquinez Strait. The mountain ranges ringing the San Joaquin Valley restrict air movement through and out of the air basin, making the region highly susceptible to pollutant accumulation over time.<sup>1</sup> Air quality in the Valley is compromised both by pollutants transported eastward from the urbanized Bay Area and by local emissions.

<sup>1</sup> San Joaquin Valley Air Pollution Control District, 2002.



*Air pollutants in the Central Valley come from a variety of sources.*

### Wind Conditions and Air Pollutants

During winter, low wind speeds contribute to high concentrations of certain air pollutants. In the summer, winds usually originate from the north end of the basin and flow in a south-southeasterly direction through the valley, through the Tehachapi pass and into the neighboring Southeast Desert Air Basin. Persistent summertime inversions – when a layer of cool, marine air is trapped below a mass of warmer air above – prevent vertical dispersion of air pollutants.

### Climate

The entire SJVAB has an “Inland Mediterranean” climate, characterized by hot, dry summers and cooler winters. The region averages over 260 sunny days a year, and around 12 inches of rainfall annually. High daily summer temperatures reach an average of 95 degrees Fahrenheit, while average daily lows in winter are around 45 degrees. Average high temperatures in the winter are in the 50s. In winter, temperatures are very rarely below freezing, but can be in the high 30s and 40s on days with particularly heavy fog or low cloud cover.

High temperatures in the summer contribute to ozone formation. In addition, temperature inversions in the valley air basin also affect pollutant dispersion. Vertical dispersion of pollutants is limited by persistent temperature inversions. Temperature inversions occur when a layer of warm air traps cooler air beneath it. Air above and below the inversion base does not mix because of differences in air density; warm air above the inversion is less dense than the cool air below, which prevents air exchange. Ozone and its precursors will mix and react to produce higher concentrations under an inversion, and inversions trap and hold directly emitted pollutants like carbon monoxide (CO). Concentrations of particulates are also directly related to inversion layers due to the limitation of mixing space. Temperature inversions are more persistent during the winter months.<sup>2</sup>

### SOURCES OF AIR POLLUTION

In general, air pollutants in the Valley are generated by motor vehicles, farming operations, industrial activities, wood burning, and windblown dust. The San Joaquin Valley Air Pollution Control District (SJVAPCD or the Air District) maintains an Emissions Inventory, which estimates the

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<sup>2</sup> San Joaquin Valley Air Pollution Control District, 2002.

total volume of air pollutants generated each day by approximately 100 “areawide” sources, point sources such as factories, gas stations and power plants, and mobile sources (vehicles).

Cars and trucks are responsible for most of the smog-producing pollutants (nitrogen oxides and reactive organic gases) in the air and two-thirds of the carbon monoxide. Farming is the major source of organic gases, including reactive organic gases that contribute to smog. Other areawide sources, especially dust from roads and construction, produce most of the particulate air pollutants. Fuel combustion in factories, food processing plants, electric utilities, and similar sources accounts for more than half of sulfur oxide production.

The following sections discuss the different types of air pollution, and the different types of monitoring and regulations that apply. They include:

- Criteria Air Pollutants
- Toxic Air Pollutants
- Regional Air Quality Management
- Air Quality and Transportation Planning
- Local Government Responsibilities

### CRITERIA AIR POLLUTANTS

As required by the Federal Clean Air Act, US EPA has established National Ambient Air Quality Standards for several “criteria pollutants” to protect public health and welfare. California has adopted more stringent ambient air quality standards for most of the criteria air pollutants (referred to as State Ambient Air Quality Standards or State standards) and regulates additional pollutants as well.

#### Federal Clean Air Act

The Federal Clean Air Act establishes the framework for federal air pollution control, including direction for the EPA to develop national emission standards for carbon monoxide (CO); ozone (O<sub>3</sub>); respirable particulate matter (PM<sub>10</sub>); fine particulate matter (PM<sub>2.5</sub>); nitrogen dioxide (NO<sub>2</sub>); sulfur dioxide (SO<sub>2</sub>); and lead. If an area, defined as an air basin, does not meet the



*Cars and trucks are responsible for most of the smog-producing pollutants in the air and two-thirds of the carbon monoxide (top). Farming is the major source of organic gases that contribute to smog, while factories and other stationary sources account for most sulfur oxides in the air (bottom).*

federal standard for a pollutant, the state is required to prepare and adopt a State Implementation Plan (SIP) to show how the standards will be attained.

### California Air Resources Board and the California Clean Air Act

The California Air Resources Board (CARB) is responsible for establishing and reviewing California ambient air quality standards, developing and managing the California SIP, and securing approval of this plan from US EPA. The California Clean Air Act of 1988 focuses on attainment of the state ambient air quality standards, which, for certain pollutants and averaging periods, are more stringent than the comparable federal standards. In addition, California has established State ambient air quality standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

**TABLE 8-1: STATE AND NATIONAL CRITERIA AIR POLLUTANT STANDARDS, EFFECTS, AND SOURCES**

POLLUTANT	AVERAGING TIME	CALIFORNIA STANDARD	NATIONAL PRIMARY STANDARD	MAJOR POLLUTANT SOURCES	POLLUTANT HEALTH AND ATMOSPHERIC EFFECTS
Ozone	1 hour	0.09 ppm	—	On-road motor vehicles, other mobile sources, solvent extraction, combustion, industrial and commercial processes.	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.
	8 hour	0.07 ppm	0.08 ppm		
Carbon Monoxide	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.	Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.
	8 hour	9.0 ppm	9.0 ppm		
Nitrogen Dioxide	1 hour	0.18 ppm	—	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.	Irritating to eyes and respiratory tract. Colors atmosphere reddish brown.
	Annual Average	0.03 ppm	0.053 ppm		
Sulfur Dioxide	1 hour	0.25 ppm	—	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.	Irritates upper respiratory tract, injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron and steel. Limits visibility and reduces sunlight.
	24 hour	0.04 ppm	0.14 ppm		
	Annual Average	—	0.03 ppm		
Respirable Particulate Matter (PM10)	24 hour	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	Dust- and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).	May irritate eyes and respiratory tract, decreases lung capacity and increases risk of cancer and mortality. Produces haze and limit visibility.
	Annual Average	20 µg/m <sup>3</sup>	—		
Fine Particulate Matter (PM2.5)	24 hour	—	35 µg/m <sup>3</sup>	Fuel combustion in motor vehicles, equipment and industrial sources; residential and agricultural burning. Also formed from photochemical reactions of other pollutants, including NO <sub>x</sub> , sulfur oxides, and organics.	Increases respiratory disease, lung damage, cancer and premature death. Reduces visibility and results in surface soiling.
	Annual Average	12 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>		
Lead	Monthly Average	1.5 µg/m <sup>3</sup>	—	Present source: lead smelters, battery manufacturing and recycling facilities. Past source: combustion of leaded gasoline.	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuro-muscular and neurologic dysfunction.
	Quarterly	—	1.5 µg/m <sup>3</sup>		

Note: ppm=parts per million; and µg/m<sup>3</sup>=micrograms per cubic meter

Source: California Air Resource Board, available at [www.arb.ca.gov/research/aaqs/aaqs2.pdf](http://www.arb.ca.gov/research/aaqs/aaqs2.pdf), Published April 2008. Accessed June 2, 2008.

### Attainment of Air Quality Standards

The San Joaquin Valley Air Basin is considered in attainment for Federal and state standards for carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead. The region is designated a “severe non-attainment” area for the state 1-hour standard for ozone. The valley is also in non-attainment of the state 8-hour ozone standard, and is an “extreme nonattainment” area for the federal eight-hour ozone standard. The Air Basin is in non-attainment of both state and federal standards for fine particulate matter (PM<sub>2.5</sub>). It has recently achieved federal attainment status for respirable particulate matter (PM<sub>10</sub>), but fails to attain California’s standards.

The San Joaquin Valley Air Pollution Control District operates a regional monitoring network to measure ambient concentrations of the six criteria pollutants identified above. One of the District’s monitoring stations is located on South Minaret Avenue in Turlock, providing a good gauge for air quality in the Study Area. Ozone levels in Turlock have exceeded state standards for both the one-hour and eight-hour periods in each of the past five years. Turlock’s air also violated state standards for respirable particulate matter (PM<sub>10</sub>) and surpassed contemporary standards for PM<sub>2.5</sub> in each of these years.

Table 8-2 shows the Study Area’s attainment status with respect to the national and State ambient air quality standards for criteria pollutants. A table showing measured pollutant concentrations from the Turlock monitoring station over the last five years and ambient air quality standards for these criteria pollutants is found in the General Plan EIR.



**TABLE 8-2: ATTAINMENT STATUS FOR CRITERIA POLLUTANT STANDARDS, SAN JOAQUIN VALLEY AIR BASIN**

<b>POLLUTANT AND AVERAGING TIME</b>	<b>STANDARD</b>	<b>ATTAINMENT STATUS</b>
<b>OZONE (O3)</b>		
1 Hour	State	Nonattainment/Severe
8 Hour	State	Nonattainment
	Federal	Nonattainment/Extreme
<b>RESPIRABLE PARTICULATE MATTER (PM10)</b>		
24 Hour	State	Nonattainment
	Federal	Attainment
Annual Mean	State	Nonattainment
<b>FINE PARTICULATE MATTER (PM2.5)</b>		
24 Hour	Federal and State	Nonattainment
Annual Mean	State	Nonattainment
	Federal	Nonattainment
<b>CARBON MONOXIDE (CO)</b>		
8 Hour	State	Attainment/Unclassified <sup>1</sup>
	Federal	Attainment/Unclassified <sup>1</sup>
1 Hour	State	Attainment/Unclassified <sup>1</sup>
	Federal	Attainment/Unclassified <sup>1</sup>
<b>NITROGEN DIOXIDE (NO2)</b>		
Annual Mean	State	Attainment
	Federal	Attainment/Unclassified <sup>1</sup>
1 Hour	State	Attainment
	Federal	Attainment/Unclassified <sup>1</sup>
<b>SULFUR DIOXIDE (SO2)</b>		
24 Hour	State	Attainment
1 Hour	State	Attainment
	Federal	Attainment/Unclassified <sup>1</sup>

TABLE 8-2: ATTAINMENT STATUS FOR CRITERIA POLLUTANT STANDARDS, SAN JOAQUIN VALLEY AIR BASIN		
POLLUTANT AND AVERAGING TIME	STANDARD	ATTAINMENT STATUS
<b>LEAD</b>		
30-Day Average	State	Attainment
Calendar Quarter	Federal	Attainment
Rolling 3-Month Average	Federal	Attainment
<b>VISIBILITY REDUCING PARTICLES</b>		
8 Hour	State	Unclassified <sup>1</sup>
<b>SULFATES</b>		
24 Hour	State	Attainment
<b>HYDROGEN SULFIDE</b>		
1 Hour	State	Unclassified <sup>1</sup>
<b>VINYL CHLORIDE</b>		
24 Hour	State	Attainment
Notes		
1. Attainment status is identified as "unclassified" when the concentration of a pollutant becomes so low that the Air District has determined measurement is no longer necessary.		
<b>Bold</b> indicates nonattainment of standards.		
<i>Source: California Air Resources Board, 2009.</i>		

## TOXIC AIR POLLUTANTS

The ambient background of toxic air contaminants (TACs) is the combined result of many diverse human activities, including emissions from gasoline stations, automobiles, dry cleaners, industrial operations, hospital sterilizers, and painting operations. Toxic pollutants are regulated at the federal and State levels. The primary concern is risk of harm to public health.

### Federal Clean Air Act

National Emission Standards for Hazardous Air Pollutants developed by EPA in accordance with Title III of the 1990 federal Clean Air Act Amendments regulate “major source” facilities that emit large quantities of toxic air contaminants (TACs). These rules require that emissions be reduced using the Maximum Achievable Control Technology (MACT).

## State Regulations

### *AB 1807 (Tanner Bill)*

As directed by AB 1807, the Tanner Bill, the California Air Resources Board (CARB) identifies the most important toxic pollutants by considering risk of harm to public health, amount or potential amount of emissions, manner of usage of the substance, persistence in the atmosphere, and concentration in the outdoor air. CARB regulates mobile emissions sources in California, such as construction equipment, trucks, and automobiles, and oversees the activities of air quality management districts, which are organized at the county or regional level. Air districts regulate toxic air contaminants from stationary sources through their permit processes. Mobile sources of toxic air contaminants are regulated indirectly by the State and EPA through vehicle emissions standards and fuel specifications.

Cities play a role in reducing public exposure to TACs by enforcing zoning ordinances and ensuring proper buffer zones between stationary sources that emit toxic contaminants and sensitive receptors located down wind.

### *AB 2588 (Air Toxics “Hot Spots” Act)*

In 1987, the California State legislature enacted, through Assembly Bill 2588, the Air Toxics Hot Spots Information and Assessment Act, which requires companies in California to provide information to the public about emissions of toxic air contaminants and their possible impact on public health. The Air District implements this act through the local Air Toxics “Hot Spots” Program.

## Hazardous Pollutants in the San Joaquin Valley

Both the Air District and the State monitor hazardous air pollutants and share emissions data through the California Toxics Inventory (CTI). According to the District’s 2007 Annual Report on the District’s Air Toxics Program, the toxic pollutants most prevalent in the Valley are diesel particulate matter (averaging 7,695 tons per year); formaldehyde (4,396 tons); benzene (1,789 tons); and acetaldehyde (1,761 tons).

Over half (52 percent) of hazardous air pollutants are emitted from mobile sources (cars, trucks, buses, farm and construction equipment). These sources are primarily regulated by the State and EPA, though the Air District also has incentive programs to reduce mobile source emissions.

About 30 percent of hazardous pollutants come from “areawide” sources such as roads. About one fifth of hazardous air pollutants come from point sources that are directly regulated by the Air District.

The Air District keeps detailed information on emissions from about 200 “point sources” in the San Joaquin Valley, including Turlock’s Walnut Energy Center; California Dairies; Purina Mills; Associated Feed; Evergreen Beverage Packaging; Foster Farms; Varco Pruden Buildings; West Coast Equipment; and Cargill. The District also estimates industry-wide emissions for sectors characterized by many small facilities such as dry cleaning operations. Facilities that are determined to pose a significant risk to the public are required to submit plans to bring emissions below significant levels. The Air District reports that all sixteen facilities determined to pose a health risk due to toxic emissions have reduced emissions so that risks to the public are no longer considered significant.<sup>3</sup>

#### *Airborne Toxics Control Measures*

The State Air Resources Board and the SJVAPCD have both made major efforts in recent years to reduce risks posed by air pollution by adopting control measures for airborne toxics. Since diesel particulate matter has been found to pose the greatest risk, control measures for diesel engines have been a major focus. State and District rules adopted since 2004 include requirements for Best Available Control Technology (BACT) in new or replaced stationary diesel engines; stringent standards for off-road diesel vehicles (tractors, construction equipment); stringent standards for diesel vehicles that are part of public or utility fleets; and a measure to limit idling by commercial diesel trucks.

## **REGIONAL AIR QUALITY MANAGEMENT**

### **San Joaquin Valley Air Pollution Control District (SJVAPCD)**

In 1991, the State Legislature determined that management of an air basin by a single agency would be more effective than management through each county within that basin. Most metropolitan areas in California now fall under the authority of multi-county air pollution control

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<sup>3</sup> San Joaquin Air Pollution Control District, 2005 Annual Report on the District’s Air Toxics Program.

districts. The SJVAPCD has jurisdiction over air quality matters in the eight counties that make up the San Joaquin Valley Air Basin.

Air districts are responsible for monitoring the concentration of pollutants, regulating stationary sources of pollution (industrial facilities), and developing air quality plans to demonstrate how the Air Basin will meet air quality standards. These plans are expected to feature transportation control measures (TCMs) and other programs to reduce mobile source emissions. As a result, it is important for air districts to work closely with cities, counties, and regional transportation planning agencies.

#### *Senate Bill (SB) 709 - State of California*

SB 709 amends the Health and Safety Code to give the San Joaquin Valley Air Pollution Control District more responsibility in terms of permitting, fee implementation, and agricultural assistance. It gives the District the authority to require the use of best available control technology for existing emissions sources, promote cleaner-burning alternative fuels, and encourage and facilitate ridesharing. The Bill also amends the Vehicle Code to allow the District to adopt a surcharge on motor vehicle registration fees.

### **Regional Air Quality Plans**

As noted above, if an air basin does not meet federal or state standards for a pollutant, the Air District is required to prepare and adopt air quality attainment plans demonstrating how standards will be attained. Attainment plans must be approved by CARB, and by the US EPA if federal standards are involved.

#### *Ozone*

##### **2007 Ozone Plan**

The Air District adopted the 2007 Ozone Plan to address the Valley's nonattainment of 8-hour standards for ozone. This plan was approved by CARB in June of 2007. It aims to reduce nitrogen oxides (NO<sub>x</sub>), precursors to both ozone and particulate matter (PM), by 75 percent by 2023 to achieve the federal health-based standard for ozone. This would come on top of the 42 percent reduction in NO<sub>x</sub> in the Valley between 1990 and 2005, largely attributable to effective District rules.

The 2007 Ozone Plan relies on a combination of regulatory measures and incentives, to be carried out by the Air District, the State, and local jurisdictions. The Plan commits to new rules for stationary sources, which already face strict emissions regulations in the San Joaquin Valley. Larger reductions must come from mobile sources, which are responsible for 80 percent of NO<sub>x</sub> in the Valley air. Here, State and Federal controls are critical for the success of the Plan. These include annual inspections for older vehicles and high-mileage vehicles, and cleaner heavy-duty trucks. District incentives are expected to speed the turnover of the vehicle fleet and the presence of vehicles built according to new, stringent tail-pipe standards.

### *Particulate Matter*

#### **2007 PM<sub>10</sub> Plan**

The Air District has produced a series of plans to bring the Valley into attainment of federal standards for respirable particulate matter (PM<sub>10</sub>). In 2006 the District's monitoring data showed that the Valley had attained national standards for PM<sub>10</sub>, and the following year it submitted the 2007 Maintenance Plan and Request for Redesignation as an attainment area. EPA approved the maintenance plan in September 2008, and redesignated the San Joaquin Valley as an attainment area for PM<sub>10</sub>.

As part of the *2003 PM<sub>10</sub> Plan*, the eight metropolitan planning organizations (MPOs) in the San Joaquin Valley adopted a set of Reasonably Available Control Measures (RACM) to reduce emissions from vehicles. These measures remain in effect in the State Implementation Plan (SIP), because analysis of RACM for subsequent plans has determined that additional control measures would not substantially advance attainment of air quality standards.

#### **2008 PM<sub>2.5</sub> Plan**

Also in 2008, the District adopted the 2008 PM<sub>2.5</sub> Plan and submitted it to EPA. The Plan sets a course for the Air Basin to achieve both federal and state standards for fine particulate matter (2.5 micron diameter or smaller.) It builds on the strategy and control measures developed for the 2007 Ozone Plan, placing a similar emphasis on reducing nitrogen oxide emissions. The Plan notes that fine particulate matter emissions in the Valley have been decreasing due to successful regulatory efforts, and concludes that the Valley can attain the national standard for annual PM<sub>2.5</sub> exposure by 2014.

## AIR QUALITY, TRANSPORTATION AND LAND USE PLANNING

### Federal Regulations

#### *Federal Clean Air Act*

The federal Clean Air Act outlines requirements for ensuring that federal transportation plans, programs, and projects conform to the State Implementation Plan's purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards. Transportation planning agencies must demonstrate that Regional Transportation Plans (RTPs) conform with air quality plans, and RTPs and Transportation Improvement Programs (TIPs) that require federal funding or approval must be included in the SIP emissions budget.

#### *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)*

SAFETEA-LU, building on previous federal transportation funding acts, has guided federal transportation investment since 2005. SAFETEA-LU incorporates the Congestion Mitigation and Air Quality Improvement (CMAQ) program, which provides funding to State and local governments for projects and programs that support air quality improvements. Funds are targeted to areas that are or have been in nonattainment of federal air quality standards. SAFETEA-LU also continues funding for the Transportation Enhancements (TE) program, which provides a funding source for pedestrian and bicycle infrastructure and other non-traditional roadway improvements which may advance air quality goals.

### State Regulations

#### *Assembly Bill (AB) 32: California Global Warming Solutions Act of 2006*

AB 32 requires the reduction of statewide greenhouse gas (GHG) emissions to 1990 levels by the year 2020. Reduced GHG emissions will go hand in hand with reduced emission of criteria air pollutants. See Section 8.2 for more information on AB 32.

### *Senate Bill (SB) 375: Sustainable Communities and Climate Protection Act of 2008*

SB 375, the Sustainable Communities and Climate Protection Act of 2008, requires regional transportation planning agencies to develop a Sustainable Communities Strategy to reduce vehicle miles travelled and to achieve greenhouse gas reduction targets for cars and light trucks. By reducing vehicle-miles travelled, the Sustainable Communities Strategy also affects a major source of criteria air pollutants. See Section 8.2 for more information on SB 375.

### **Regional Plans**

#### *Regional Transportation Plan*

Stanislaus Council of Governments (StanCOG) is responsible for regional transportation planning for the Study Area. The 2011 Regional Transportation Plan, adopted in July 2010, guides the allocation of Federal and State funds to transportation projects in Stanislaus County. The RTP is a long-term strategy for accommodating growth with transportation investments.

The Plan is required to evaluate regional environmental effects, and to demonstrate conformity with the transportation emissions “budgets” in San Joaquin Valley air quality plans. Since 1992, the eight regional transportation agencies in the San Joaquin Valley have had a memorandum of understanding (MOU) with the Air District which is meant to ensure a coordinated approach throughout the Valley, and to help comply with State and federal Clean Air Acts.

The 2011 RTP observes the guiding principles established for the San Joaquin Valley Blueprint in its selection of Tier I projects, and places increased emphasis on alternate transportation modes. With the passage of SB 375 (see above), the next RTP also must include a “Sustainable Communities Strategy” that would allow the region to meet its greenhouse gas emission reduction targets.

#### *San Joaquin Valley Blueprint*

The San Joaquin Valley Blueprint Plan is a region-wide effort to develop a land use and transportation plan based on “smart growth” principles. Funded by the State of California and the San Joaquin Valley Air Pollution Control District, the process brings together eight metropolitan planning organizations (MPOs) to develop a comprehensive growth management strategy meant to guide local jurisdictions as they update their general plans.



## LOCAL GOVERNMENT RESPONSIBILITIES

As discussed above, air quality management districts are responsible for regulating stationary emissions sources at facilities within their geographic areas, monitoring ambient air quality, and preparing the air quality plans required under the Federal Clean Air Act and California Clean Air Act. Implementation of many of the Transportation Control Measures (TCMs) and other strategies in these plans is the responsibility of cities, counties, and Councils of Government.

Local government responsibilities for air quality include:

- Land Use Planning: carrying out policies in this General Plan that support air quality improvement, including higher housing densities and mixed uses
- Environmental Review: reviewing and mitigating the environmental impacts of development projects
- Transportation: developing and maintaining the transportation infrastructure in the community, including transit systems and bicycle and pedestrian networks
- Local Programs: implementing local air quality programs such as commute-based trip reduction, ridesharing, and promotion of fuel-efficient vehicles

### Land Use Planning

Local governments have jurisdiction over local land use, and are required to prepare general plans that set forth long-range goals for development, infrastructure investment, resource protection, and other subjects. The success of the sustainable regional planning efforts will depend on land use planning that supports shorter vehicle trips and alternative travel modes. Reducing air pollutants from vehicles will require that cities undertake more compact development patterns. Among the primary goals of this General Plan is to establish a compact land use pattern and walkable new neighborhoods.

### *Smart Valley Places Program and the Sustainable Communities Partnership*

The General Plan Update is funded in part by Smart Valley Places, a program of the California Partnership for the San Joaquin Valley. The program brings together 14 cities, 4 non-profit organizations, CSU-Fresno, and the San Joaquin Valley Policy Council to implement the smart growth principles of the San Joaquin Valley Blueprint.

Smart Valley Places was awarded a competitive Sustainable Communities Regional Planning Grant from the U.S. Department of Housing and Urban Development (HUD). Grants are specifically targeted to support regional planning efforts that take on the interrelated challenges of economic competitiveness; access to opportunity; energy use and climate change; and public health and environmental impact.

The grants are part of an initiative, the Partnership for Sustainable Communities, that brings together the three agencies whose programs most directly impact the physical form of communities—HUD, the Department of Transportation, and the Environmental Protection Agency. It recognizes the following “Livability Principles:”

- Provide more transportation choices
- Promote equitable, affordable housing
- Enhance economic competitiveness
- Support existing communities
- Coordinate and leverage federal policies and investment
- Value communities and neighborhoods

This General Plan update intends to establish a compact land use pattern and walkable new neighborhoods, while reinforcing downtown and facilitating economic development. As recognized by the Partnership for Sustainable Communities, there are critical linkages between compact and walkable land use patterns; a transportation system that enables short trips and travel by other means; and improved air quality.

*Assembly Bill (AB) 170 - State of California*

In 2003, the State adopted Assembly Bill (AB) 170, which requires cities and counties in the San Joaquin Valley to address air quality in their general plans. Specifically, general plans should describe local air quality conditions and attainment status; summarize applicable air quality regulations; and include policies and implementation measures to achieve air quality improvements. This General Plan is intended to fulfill the requirements of AB 170.

**Environmental Review**

The Air District has prepared guidance documents to aid local governments in performing environmental reviews, including:

- Air Quality Guidelines for General Plans
- Guideline for Assessing and Mitigating Air Quality Impacts
- Environmental Review Guidelines

**Transportation Infrastructure**

Regional transportation plans are required to conform to the air quality goals of the State Implementation Plan (SIP). It is the responsibility of regional transportation planning agencies to make this conformity finding. Local governments in turn must ensure that their own investments in transportation infrastructure, and the transportation policies in the General Plan, do not undermine the RTP.

**Air Quality Programs**

The California Clean Air Act allows air districts to delegate the implementation of transportation control measures in air quality plans to local agencies, as long as the following conditions are met: (1) the agency must submit an implementation plan to the district for approval; (2) the agency must adopt and implement measures at least as stringent as those in the District’s plan; and (3) the District must adopt procedures for reviewing the performance of the local agency in implementing the measures.



*General Plan policies aim to make the City more accessible for pedestrians, bicycles, and buses (top). The City should transition to a clean fuel vehicle fleet and encourage contractors and the general public to do the same (bottom).*

## POLICIES

*See also Chapter 2: Land Use and Economic Development; Chapter 3: New Growth Areas and Infrastructure; Chapter 5: Circulation; and Chapter 6: City Design for related policies that seek to improve air quality and reduce emissions through land use, transportation, and urban design strategies. See the next section in this chapter for related policies that seek to improve air quality through energy conservation and clean energy.*

### Guiding Policies

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- 8.1-a Prioritize Air Quality in Local Planning.** Continue efforts to improve air quality in Turlock by integrating air quality analysis and mitigation in land use and transportation planning, environmental review, public facilities and operations, and special programs.
- 8.1-b Participate in Regional Efforts.** Cooperate with the San Joaquin Valley Air Pollution Control District and Stanislaus Council of Governments in developing and implementing air quality regulations and incentives.

### Implementing Policies

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#### **Coordination**

- 8.1-c Coordination with Other Agencies.** Work with neighboring jurisdictions and affected agencies to address cross-jurisdictional and regional transportation and air quality issues.

#### **Transportation and Land Use**

*See also policies in Section 5.2: Roadway Network, Standards and Improvements; Section 6.1: City Form; and Section 6.3: Street Design and Connectivity.*

- 8.1-d Transportation and Residential Density.** Designate residential land uses to be higher density than in the past in order to meet population demand and reduce total vehicle miles travelled.
- 8.1-e Establish Land Use Pattern That Supports Trip Reduction.** Establish land use pattern that enables alternatives to automobile use and reduces trip lengths, including transit-oriented, mixed use development and neighborhood commercial areas.

**8.1-f Plant and Maintain Trees in Streets and Parks.** Adopt a comprehensive tree-planting and maintenance program that recognizes the effect of air pollutants on trees and the role trees can play in removing particulate matter and gaseous pollutants. Provide a viable financing program, particularly in older neighborhoods that are not in a landscape and lighting assessment district.

*See also policies in Sections 5.2: Roadway Network, Standards and Improvements and 6.3: Street Design and Connectivity relating to street trees.*

*Studies have shown that immediately adjacent to arterial streets, the lead content of air can be about 15 times as high as “normal.” Hardy trees, or those adapted to such conditions, are likely to do much better over time with less care than trees that are unsuited.*

*Rows of trees planted close together and selected and spaced to provide a buffer between the streets and the surrounding areas (such as by a combination of low and high branching trees planted in alternate rows) can be effective in filtering fumes and particulate matter.*

*The update of the street tree ordinance should also consider reducing existing spacing standards between trees. Spacing standards vary from 40 to 60 feet for all streets on the list; in older areas, such as along Sycamore Street, tall trees are planted as close as 20 feet apart.*

*Shade trees also reduce radiation heating (the “heat island effect,”) helping to cool the urban environment and reduce peak energy use, and consequently reduce both ozone formation and greenhouse gas production.*

**8.1-g Reduce Roadway Dust.** Improve City roads to reduce dust to the greatest extent feasible by planting shoulders and medians. Dust from roadways contributes to PM10 pollution.

**8.1-h Protect Sensitive Receptors from Toxic Air Emissions.** For all new development, maintain a minimum 300-foot overlay zone on either side of Highway 99 within the Study Area to protect sensitive receptors from toxic air emissions, with the goal of providing a 500-foot buffer. Within this overlay, avoid approval of new sensitive land uses, and for those projects permitted, require site-specific project design improvements (such as higher-performance windows and HVAC systems) in order to reduce public health risks associated with poor air quality in these locations.



*Street trees filter fumes and particulate matter, and reduce the urban heat island effect.*

*Sensitive receptors are those segments of the population most susceptible to poor air quality, such as children, the elderly, and those with pre-existing serious health problems affected by air quality. Land uses where sensitive receptors are most likely to spend time include, but are not limited to, hospitals and other medical facilities, schools and school yards, senior centers, child care centers, parks and playgrounds, and residential communities. In traffic related studies, additional non-cancer health risk attributable to proximity was seen within 1,000 feet and was strongest within 300 feet. California freeway studies show about a 70 percent drop-off in particulate pollution levels at 500 feet.<sup>4</sup>*

- 8.1-i Protect Residential Uses from Noxious Odors.** Continue the present policy of not permitting any residential uses within a one-half mile radius of the Turlock Regional Water Quality Control Facility. Require that any new potential odor source locating within project screening trigger levels of sensitive receptors, as established by the SJVAPCD, undertake a detailed odor analysis.

***Development Review and Environmental Assessment***

- 8.1-j Support Indirect Source Review Program.** Support the San Joaquin Valley Air Pollution Control District in implementing its indirect source review program to reduce emissions of NOx and PM10 from new development projects. Under ISR, projects will be required to estimate off-site emissions and to pay a fee to the District to mitigate these emissions. Other General Plan policies encourage or require new development to have qualities that mitigate air quality impacts and consequently lower Indirect Source fees. These include bicycle lanes, mixed uses, cleaner construction vehicles, and superior energy efficiency.

*City Staff reviews new development projects for air quality impacts and refers projects to the San Joaquin Valley Air Pollution Control District for comments.*

- 8.1-k Air Quality Improvement Fee.** In the Capital Facilities Fee (CFF) program, establish a fund to collect a fee to be paid by all new development to assist in the funding of local projects that contribute to the enhancement of air quality.

*The City of Turlock's Air Quality Trust Fund, adopted in 1993, was applied to the Northwest Triangle Specific Plan Area; the new fund should collect fees citywide.*

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<sup>4</sup> California Environmental Protection Agency, California Air Resources Board, "Air Quality and Land Use Handbook: A Community Health Perspective", April 2005.

- 8.1-l Use Air District Guidance in Environmental Review.** Continue to use the San Joaquin Valley Air Pollution Control District’s Guide for Assessing and Mitigating Air Quality Impacts for determining and mitigating project air quality impacts and related thresholds of significance for use in environmental documents. Coordinate with the Air District, project applicants, and other interested parties, during pre-development consultation and negotiation over CEQA preparation.
- 8.1-m Minimize Roadway Dust.** Require all access roads, driveways, and parking areas serving new development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use. To balance the goals of dust reduction and water infiltration, encourage the use of permeable paving or well-maintained gravel for parking spaces.
- 8.1-n Construction-Related Air Emissions Impacts.** Continue to require mitigation measures as a condition of obtaining permits to minimize dust and air emissions impacts from construction. Require contractors to implement dust suppression measures during excavation, grading, and site preparation activities. Techniques may include, but are not limited to:
- Site watering or application of dust suppressants;
  - Phasing or extension of grading operations;
  - Covering of stockpiles;
  - Suspension of grading activities during high wind periods (typically winds greater than 25 miles per hour); and
  - Revegetation of graded areas.

***Public Facilities and Operations***

- 8.1-o Reduce Trips by City Government.** Take the lead in implementing a trip-reduction program for City employees. The program may include carpooling and ridesharing; reimbursement of transit costs; encouragement of flexible work schedules, telecommuting, and teleconferencing.
- 8.1-p Transition to Clean City Fleet.** Ensure through its long-range capital expenditure plans that the City deploys cutting-edge technologies and available incentives to minimize emissions from the City’s fleet.
- 8.1-q Institute Green Contracting.** Using the Air District’s model ordinance as a guide, establish and follow a “green contracting” rule, awarding points in the bidding process to companies that use low-emission vehicles and equipment.

### ***Special Programs***

- 8.1-r Promote Public Awareness.** Support the Air District’s efforts to promote public awareness about air pollution and its relationship to land use and transportation.
- 8.1-s Expand Spare-the-Air Efforts.** Be an active partner with the Air District in its “Spare the Air” program. Encourage businesses and residents to avoid pollution-producing activities such as the use of fireplaces and wood stoves, charcoal lighter fluid, pesticides, aerosol products, oil-based paints, and automobiles and other gasoline engines on days when high ozone levels are expected, and promote low-emission vehicles and alternatives to driving.
- 8.1-t Implement REMOVE II Program.** Support the Air District in implementing its REMOVE II incentive program to reduce mobile source emissions. Seek funding for City projects, publicize the availability of incentive funding, and identify potentially eligible projects. As defined by the Air District, the following projects may be eligible:
- Public transportation and commuter vanpool passenger subsidies;
  - Telecommunications, including videoconferencing, distance learning, and internet-based business transactions;
  - Bike path construction;
  - Alternative-fuel mechanic training.
- 8.1-u Support Employer-Based Trip Reduction.** Support the Air District’s requirement that companies and organizations with 100 or more employees establish ride-sharing programs, and provide incentives to companies with 25 to 100 employees that do the same. Ridesharing programs may include market-based incentives such as cash for ridesharing, preferential parking for carpools, transit subsidies, cash allowances in lieu of parking spaces, telecommuting and flexible work schedules.



## 8.2 ENERGY AND CLIMATE CHANGE

### GLOBAL CLIMATE CHANGE

Global climate change is currently one of the most important and widely debated scientific, economic, and political issues in the United States. The term refers to a change in the average climate of the earth that may be measured by wind patterns, storms, precipitation, and temperature. The baseline by which these changes are measured originates in historical records identifying temperature changes that have occurred in the distant past, such as during previous ice ages. The rate of temperature change has typically been incremental, with warming and cooling occurring over the course of thousands of years. In the past 10,000 years the earth has experienced incremental warming as glaciers retreated across the globe. However, scientists have observed an unprecedented increase in the rate of warming over the past 150 years, roughly coinciding with the industrial revolution.

### Potential Impacts in California

According to the California Climate Action Team (CCAT), accelerating global climate change has the potential to cause a number of adverse impacts in California, including:

- A shrinking Sierra snowpack that would threaten the state's water supply;
- Public health threats caused by higher temperatures and more smog;
- Damage to agriculture and forests due to reduced water storage capacity, rising temperatures, increasing salt water intrusion, flooding, and pest infestations;
- Critical habitat modification and destruction;
- Eroding coastlines; and
- Increased wildfire risk; and increased electricity demand.<sup>5</sup>

These impacts have and will continue to have considerable costs associated with them.

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<sup>5</sup> California Climate Action Team, April 2006.

## Greenhouse Gases

Gases that trap heat in the Earth's atmosphere are called greenhouse gases (GHGs). These gases play a critical role in determining the Earth's surface temperature. Some GHGs occur naturally and are emitted to the atmosphere through natural processes and human activities, while others are created and emitted solely through human activities. The six primary GHGs are:

- **Carbon dioxide (CO<sub>2</sub>)**, emitted as a result of fossil fuel combustion, with contributions from cement manufacture;
- **Methane (CH<sub>4</sub>)**, produced through the anaerobic decomposition of waste in landfills, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion;
- **Nitrous oxide (N<sub>2</sub>O)**, typically generated as a result of soil cultivation practices, particularly the use of commercial and organic fertilizers, fossil fuel combustion, nitric acid production, and biomass burning;
- **Hydrofluorocarbons (HFCs)**, primarily used as refrigerants;
- **Perfluorocarbons (PFCs)**, originally introduced as alternatives to ozone depleting substances and typically emitted as by-products of industrial and manufacturing processes; and
- **Sulfur hexafluoride (SF<sub>6</sub>)**, primarily used in electrical transmission and distribution systems.

Greenhouse gas emissions contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Major sources in California include fossil fuel consumption from transportation (38 percent), industry (20 percent), electricity production (25 percent), residential (6 percent), and agricultural (6 percent) sectors.<sup>6</sup>

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<sup>6</sup> California Climate Action Registry, 2009.

## Counteracting Climate Change

These trends call for significant changes over the coming five, ten, and twenty years in the way we produce and consume energy. The City of Turlock can do its part by shifting to renewable energy use and energy conservation in its municipal operations, and by promoting and incentivizing smart energy choices by Turlock residents and businesses. Such actions as installing solar panels and shifting to fuel-efficient vehicles make economic as well as environmental sense. This economic angle must not be overlooked.

## REGULATORY CONTEXT

Federal and State regulations have established a framework for responding to climate change, and a context for local planning. Some key regulations are described below by theme. A comprehensive listing of climate change measures is provided in the Environmental Impact Report.

### Federal Role in Regulating Greenhouse Gases

In 2007, the U.S. Supreme Court ruled on *Massachusetts v. EPA*, finding that the EPA has a statutory authority to formulate standards and regulations to address greenhouse gases, which it historically has not done. In 2009, the EPA officially found that the six greenhouse gases identified above threaten the public health and welfare, and that the combined emissions of these gases from motor vehicles contribute to greenhouse gas pollution.

The EPA acted on this mandate in 2010, updating the Corporate Average Fuel Efficiency (CAFE) standards. The new “Clean Car Rule” standards require passenger cars, light-duty trucks, and medium-duty passenger vehicles, to meet an estimated combined average emissions level of 250 grams of CO<sub>2</sub> per mile and 34.1 miles per gallon in model year 2016.<sup>7</sup>

### Statewide Greenhouse Gas Reduction Goal

#### *Assembly Bill (AB) 32: California Global Warming Solutions Act of 2006*

In 2006, Governor Schwarzenegger signed AB 32, requiring the reduction of statewide GHG emissions to 1990 levels by the year 2020. This is equivalent to an estimated 29 percent reduction

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<sup>7</sup> U.S. EPA, 2010 (c)

from “business as usual” levels, in absolute terms, and an even larger reduction per capita, when growth is considered. This change will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources and address GHG emissions from vehicles.

CARB’s Scoping Plan outlines the combination of policies, programs, and measures necessary to reduce statewide GHG emissions to achieve AB 32’s statewide reduction goals. Many of the measures would, when implemented, contribute to emission reductions statewide as well as in local communities. CARB continues to adopt measures outlined in the Scoping Plan and is in the process of preparing rules to implement these measures. Turlock’s General Plan responds to CARB’s implementation strategy as it pertains to cities’ general planning efforts.

*Executive Order S-3-05 (Gov. Schwarzenegger, June 2005)*

This Order recognizes California’s vulnerability to climate change, and set greenhouse gas reduction targets for California. It calls on the State to reduce GHG emissions to 2000 levels by 2010; to 1990 levels by 2020; and by 80 percent below 1990 levels by 2050.

### Regional GHG Reduction Targets and Plans

*Senate Bill (SB) 375: Sustainable Communities and Climate Protection Act of 2008*

SB 375, the Sustainable Communities and Climate Protection Act of 2008, promotes better integration of transportation and land use planning throughout California. The statute was intended to complement efforts under AB 32 by requiring CARB to develop regional GHG emissions reduction targets. CARB was tasked with establishing targets for the years 2020 and 2035 for each region covered by the state’s 18 federally-designated metropolitan planning organizations (MPOs), which in turn would be required to meet that target by considering the impacts of land use and transportation on GHG emissions. Based on targets adopted in September 2010, StanCOG is expected to achieve a 5 percent reduction in per capita CO<sub>2</sub> emissions due to passenger vehicles by 2020, and a 10 percent reduction by 2035.

Second, SB 375 requires each MPO to develop a Sustainable Communities Strategy (SCS) outlining how the region will meet its GHG reduction target by integrating land use planning, transportation planning and funding, and housing needs. The SCS will be incorporated into

the Regional Transportation Plan, typically prepared by each MPO every 4 to 5 years. CARB is required to review each SCS to determine whether it would achieve the necessary GHG emission reduction for each region.

### *Regional Transportation Plan*

Stanislaus Council of Governments (StanCOG) is responsible for regional transportation planning for the Study Area. Pursuant to SB 375, the next RTP also must include a Sustainable Communities Strategy (see above) that would enable the region to meet its greenhouse gas emission reduction targets. See Section 8.1 for more detail on the RTP.

### *Regional Climate Change Action Plan*

The San Joaquin Valley Air Pollution Control District adopted a Climate Change Action Plan (CCAP) in August 2008. The Plan directs the Air District to develop guidance to assist District staff, valley businesses, land-use agencies, and others in addressing GHG emissions as part of the CEQA process. The Air District has since published Best Performance Standards (BPS) for stationary sources and development projects, and guidance for valley land-use agencies.

### **State Green Building Standards Code**

The California Building Code (Title 24 of the State Code of Regulations) includes the country's first Green Building Standards. The Green Building Standards were introduced in 2008 as a set of voluntary measures. With the 2010 update of the Building Code, parts of the Green Building Standards became mandatory as of January 2011. Among these are requirements to reduce water consumption, divert construction waste from landfills, and install low pollutant-emitting finish materials. Requirements vary for residential and nonresidential buildings.

The Green Building Standards are a key part of the State's efforts to achieve the AB 32 goal of reducing greenhouse gas emissions to 1990 levels by 2020. Future updates are expected to continue to strengthen environmentally responsible building requirements as these practices become mainstream. Local jurisdictions are responsible for ensuring that State standards are met, at a minimum. The 2010 Green Building Standards Code also establishes a system designed to give cities and counties the option of adopting local codes that go beyond the minimum standards.<sup>8</sup>

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<sup>8</sup> California Building Standards Commission, 2010.

## SOURCES OF GREENHOUSE GASES IN THE STUDY AREA

Greenhouse gases in the Study Area are generated by residential, commercial, and industrial energy use from both natural gas and electricity; by vehicle emissions; by industrial sources; by High Global Warming Potential (GWP) substances used in refrigerants and other common applications; by waste and recycling; and by agricultural processes. Table 8-3 lists current and projected GHG emissions in the Study Area by source, for three top sources analyzed in the General Plan. The General Plan is designed to help Turlock contribute to statewide and regional emissions reduction goals. For more detail on greenhouse gas inventory and projections, refer to the EIR.

TABLE 8-3: CURRENT AND PROJECTED GREENHOUSE GAS EMISSIONS BY SOURCE				
	2008	2030 AT BUILDOUT	CHANGE	CHANGE (%)
<i>Service Population</i>				
Residents	71,100	104,500	33,400	47%
Jobs	28,260	53,800	25,540	90%
<b>Total</b>	<b>99,360</b>	<b>158,300</b>	<b>58,940</b>	<b>59%</b>
<i>GHG Emissions from 3 Top Sources (metric tons CO2e per year)</i>				
Electricity and Natural Gas <sup>1</sup>	376,200	524,700	148,500	39%
Transportation	263,800	299,700	35,900	14%
Solid Waste	108,400	196,900	88,500	82%
<b>Total</b>	<b>748,400</b>	<b>1,021,300</b>	<b>272,900</b>	<b>36%</b>
CO2e per Service Population	7.53	6.45	-1.08	-14%
Target for 2020	NA	6.6	-0.93	-12%
Target for 2030	NA	3.8	-3.73	-50%

<sup>1</sup> Residential and commercial emissions reflect a 7.7% reduction in 2030 compared to overall Business-as-Usual emissions as a result of State mandates.

<sup>2</sup> Transportation emissions reflect Pavley 1 and 2 and the Low Carbon Fuel Standard, estimated to result in a 16.0% reduction in 2030 compared to Business-as-Usual emissions.

<sup>3</sup> Target for 2020 based on AB32; 2030 target based on meeting State emissions reduction goal for 2050 under EO-S-05.

*Sources: California Air Resources Board (CARB), 2012, 2008; California Climate Action Registry (CCAR), 2007; California Department of Finance (DOF), 2008; California EDD, 2008; Dyett & Bhatia, 2012; EPA, 2004; Intergovernmental Panel on Climate Change (IPCC), 2006, 1996; Omni Means, 2012; PG&E, 2010; Stanislaus County Department of Environmental Resources, 2010; Turlock Irrigation District, 2010.*

### Stationary Source Emissions

Turlock Irrigation District (TID), the publicly-owned supplier of electricity in the Study Area, operates two natural gas-fired power plants in Turlock: the 250-megawatt-capacity Walnut Energy Center and the adjacent 49-megawatt-capacity Walnut plant used only for peak period use or emergencies. According to TID estimates, these plants produced 696,000 metric tons of CO<sub>2</sub> in 2008, contributing almost all of the natural gas-generated power generated by the utility. Because these plants supply customers not only in the Study Area but also in other parts of TID's service area and beyond, it is more appropriate to consider the impact of indirect emissions due to energy used in the Study Area. CARB is responsible for regulating GHG emissions from these and other stationary sources under AB 32.

### Electricity and Natural Gas Use in Buildings

Electricity and natural gas consumption in buildings are the Study Area's principal source of greenhouse gas emissions. TID estimates that its approximately 29,000 retail customers in Turlock used 733 million kilowatt-hours (kwh) of energy in 2008.<sup>9</sup> PG&E provides natural gas to customers in the Study Area, and estimates that approximately 25 million therms of natural gas were used in the latest year data were available.<sup>10</sup> Applying California Climate Action Registry (CCAR) emission rate factors, energy to light, power, heat and cool buildings, machinery, swimming pools, and other parts of the built environment currently produces about 376,000 metric tons of CO<sub>2</sub> equivalent greenhouse gases annually in the Study Area.

If per capita emissions are adjusted for State-mandated energy efficiency improvements, GHG emissions from energy use in buildings would rise to approximately 525,000 metric tons at General Plan buildout, an increase of 39 percent over current levels.

### Transportation Energy

Transportation represents the next largest source of greenhouse gas emissions in the Study Area. According to the General Plan's traffic model, the Study Area now experiences an estimated 1,330,000 daily vehicle-miles travelled, using approximately 76,000 gallons of fuel, assuming 17.5

<sup>9</sup> California Climate Action Registry, 2008 Annual Emissions Report, Turlock Irrigation District, 2010; Turlock Irrigation District, 2009.

<sup>10</sup> Pacific Gas & Electric, 2010.



*Turlock Irrigation District and the City of Turlock have developed a fuel cell at the Regional Water Quality Control Facility which generates renewable energy from methane gas (top).*

*Energy audits can identify improvements needed to make existing buildings more energy-efficient. In many cases these improvements can be done at relatively low cost, and TID provides rebates for retrofitting with energy-efficient lighting, ventilation, refrigeration, and other systems (bottom).*

miles per gallon.<sup>11</sup> Applying a set of factors accepted by the California Climate Action Registry (CCAR), approximately 264,000 metric tons of CO<sub>2</sub>-equivalent emissions are released annually in the Study Area from vehicles.

This is projected to grow to 300,000 metric tons by 2030, assuming the vehicle-miles-travelled per service population rises slightly based on traffic modeling, fuel efficiency improves to 27.3 miles per gallon, and the other state measures take effect. This translates to a 14 percent increase over current emissions, but a 23 percent reduction per capita.<sup>12</sup> The California Air Resources Board, in consultation with local agencies and the public, has established a target for San Joaquin Valley areas to achieve a further 10 percent per capita GHG reduction by 2035 by changing land use and transportation patterns and developing transportation measures at the local and regional level, under SB 375 (see above.)

### Solid Waste Stream

When waste decomposes, methane, a greenhouse gas, is released into the atmosphere along with carbon dioxide. In 2008, the Study Area generated approximately 49,000 tons of solid waste, which were transported to the Fink landfill in western Stanislaus County. Based on data from Stanislaus County Department of Environmental Resources and the emissions calculation model, the Study Area's solid waste produced about 108,000 metric tons of CO<sub>2</sub>-equivalent greenhouse gases in 2008. Based on modeling, this would increase to about 197,000 metric tons by 2030.

### Agriculture

Agricultural processes produce greenhouse gases as well: nitrogen-based fertilizer applied to crops releases carbon dioxide, while cattle digestion and waste produce methane. The Study Area includes about 6,700 acres of cropland and 27 acres of livestock. Assuming an average of 140 pounds of synthetic fertilizer are applied per acre of cropland, and following IPCC assumptions for greenhouse gas emissions from fertilizer, cropland in the Study Area currently produces an estimated 2,750 metric tons of CO<sub>2</sub>-equivalent greenhouse gases. The impact of livestock was

<sup>11</sup> OMNI MEANS, 2009; Metropolitan Transportation Commission, 2009.

<sup>12</sup> OMNI MEANS, 2009; California Climate Action Registry General Reporting Protocol Version 3.1, 2009, Dyett & Bhatia, 2012.



not calculated due to the relatively small amount of land (27 acres) used for raising livestock in the Study Area. GHG emissions from agriculture are projected to fall as some agricultural land is converted to urban uses.

## CLEAN ENERGY AND ENERGY CONSERVATION

Energy use in buildings and energy used for transportation are by far the largest sources of heat-trapping gases in the Study Area. The greatest potential greenhouse gas reductions can be made by lowering the carbon content of energy, and by lowering per-capita energy use. Current efforts and potential programs are outlined below.

### Renewable Energy

Turlock Irrigation District (TID) operates eight hydroelectric power plants, as well as three natural gas-fired power plants, including the 250-megawatt Walnut Energy Center completed in 2006 in Turlock's TRIP. The District sells a portion of the power it generates and buys from other sources a portion of the power it sells to its customers.

TID is investing in renewable energy production, including a 136-megawatt wind energy facility and a geothermal plant, as well as increasing its purchasing of renewable energy. The utility aims to achieve compliance with the State Renewables Portfolio Standard (RPS) for 33 percent of power deliveries to be from renewable sources by 2020. The City can support a shift toward renewable energy through its own purchasing decisions; by facilitating distributed energy production such as small rooftop solar arrays; and other means outlined in the Policies section.

Meanwhile gasoline refiners selling in California will be required to achieve the State's Low Carbon Fuel Standard (LCFS), reducing the carbon intensity of transportation fuels by 10 percent by 2020, as well as the federal Renewable Fuels Standard (RFS) requiring 36 billion gallons of biofuels to be sold annually in the U.S. by 2022, a fivefold increase from 2007.

### Energy Conservation

It is possible to improve energy efficiency associated with transportation, industrial buildings, and homes and still maintain a high standard of living and a competitive local economy. By reducing the amount of energy consumed across land uses and transportation choices, as well as using more renewable sources of energy, residents and businesses in Turlock can see many



*Turlock's General Plan plays an important role in establishing urban design standards that facilitate travel by foot and by bike, for example this park/pedestrian route between school and homes (top).*

*Compact and mixed use development patterns enable shorter trips and more trips by means other than driving, reducing dependency on fossil fuels (bottom).*

benefits: better protection of the environment, improved public health, and ultimately reduced cost of infrastructure and energy delivery.

### *Energy Efficiency in Buildings*

Site planning that takes advantage of shade and solar orientation, along with building design standards that recommend use of better materials and insulation, reduce the need for fuel for heating and cooling in buildings (see Section 6.4, Sustainable Site Planning). As described above, the California Building Code includes Green Building Standards, some of which became mandatory in January 2011. These standards are intended to help the State achieve the AB 32 goal of reducing GHG emissions to 1990 levels by 2020. Local jurisdictions have the option of adopting procedures by ordinance to improve the level of construction beyond this minimum standard, and may base their building codes on CalGreen Tier 1 or Tier 2 thresholds.<sup>13</sup> This General Plan sets targets for new development in Master Plan Areas to achieve or surpass the CalGreen Tier 1 standards, with incentives for performance above the State's minimum requirements.

At the same time, the energy efficiency of existing buildings can be significantly improved. Subsidized energy audits can identify needed improvements, which in many cases can be done free or at low cost. Energy rebates awarded to homeowners and businesses for retrofitting with energy-efficient lighting, ventilation, refrigeration, and other systems helped TID conserve 10.9 megawatt-hours of electricity in 2008, and this will continue to be an important strategy.

### *Land Use and Transportation Patterns*

Energy efficiency can also be achieved through good urban design. Compact and mixed use development patterns enable walking and bicycling and shorter automobile trips, reducing dependency on fossil fuels for transportation. California's SB 375 requires the State Air Resources Board to adopt regional greenhouse gas emission reduction targets, and requires regional agencies to aim to reach these targets by reducing vehicle-miles-travelled through their transportation plans. Based on targets adopted in September 2010, StanCOG is expected to achieve a 5 percent reduction in per capita CO<sub>2</sub> emissions due to passenger vehicles by 2020, and a 10 percent reduction by 2035.

<sup>13</sup> California Building Standards Commission, 2010.

Turlock’s General Plan plays an integral role in establishing land use and development patterns that support walking, biking, the use of public transportation, and the ability to satisfy many needs with short trips. At the same time it lays out a future circulation system that is functional for all modes of travel. Policies related to reducing overall and per capita energy use in this Element and in the Land Use, City Design, and Transportation elements combine to help Turlock achieve a more sustainable energy future.

## **POLICIES**

*See also policies in the preceding section on Air Quality, and note that many of the policies that follow also provide air quality benefits.*

### **Guiding Policies**

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- 8.2-a Reduce Greenhouse Gas Emissions.** Reduce greenhouse gas emissions to support statewide GHG reduction goals under the California Global Warming Solutions Act (AB 32).
- 8.2-b Decrease Vehicle-Miles Travelled.** Promote a broad range of transportation, land use, and site design measures that result in a decrease in the number of automobile trips and vehicle-miles traveled per capita.
- 8.2-c Facilitate Energy-Efficient Buildings.** Encourage energy efficiency through good urban design and site-planning practices, as well as through building design, maintenance and retrofit.
- 8.2-d Promote Energy Conservation.** Support understanding of the relationship between energy consumption, air quality, and greenhouse gases, and promote energy-saving practices.
- 8.2-e Reduce Waste.** Reduce per capita landfill waste generation by promoting reuse, recycling, and composting.

## Implementing Policies

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### ***Planning for Climate Change***

**8.2-f GHG Emissions Reduction Implementation.** Within three years of General Plan adoption, prepare a strategic plan for reducing greenhouse gas emissions, focusing on technically and financially feasible implementation measures that can be taken by the City. The Plan will guide the City to lower emissions from its buildings, fleet, and operations.

*A Stanislaus County greenhouse gas inventory will be funded by a Proposition 84 grant from the State. The next Regional Transportation Plan is due in 2013 and will include a Sustainable Communities Strategy to meet the requirements of Senate Bill 375. Data and programs from these sources will be incorporated in the GHG Emissions Reduction Plan.*

### ***Transportation***

**8.2-g Develop Circulation System That Facilitates Alternative Transportation Modes.**

Promote alternatives to automobile use by establishing a Circulation Plan and street design standards that enable safe, comfortable, and attractive access and travel for pedestrians, bicyclists, motorists, and transit users of all ages and abilities. Plan Elements include a citywide bike network and traffic calming street design. See Chapter 5, Circulation.

**8.2-h Establish Connective Street Network to Minimize Trip Length.** Minimize vehicle-miles travelled by establishing a connective circulation network providing multiple, direct paths. See Chapter 5, Circulation.

**8.2-i Provide Bicycle Facilities.** Require minimum bike parking for multi-family residential and commercial development, and encourage provision of additional end-of-trip facilities.

**8.2-j Minimize Parking.** Encourage the provision of minimum parking required to support uses.

**8.2-k Support Alternative Fuel Vehicles.** Provide incentives for the provision of priority parking for alternative fuel vehicles and electronic vehicle charging stations as individual project measures for new development.

## ***Land Use***

**8.2-l Establish Land Use Pattern That Supports Trip Reduction.** Establish a land-use pattern that enables alternatives to automobile use and reduces trip-lengths, including increased residential density, transit-oriented and mixed-use development, neighborhood commercial areas, and pedestrian realm enhancements.

**8.2-m Pedestrian-Oriented Site Design.** Orient development to encourage pedestrian and transit accessibility. Strategies include locating buildings and primary entrances adjacent to public streets; placing parking at the rear of sites or in structures above retail; and providing clear and direct pedestrian paths across parking areas.

*The Land Use and Economic Development, City Design, and Circulation elements outline detailed measures pertaining to these policies.*

## ***Energy Efficiency and Conservation***

**8.2-n Wastewater and Water System Efficiency.** Maximize the efficiency of City-operated wastewater treatment, water treatment, pumping, and distribution equipment. This measure may be part of the GHG Emissions Reduction Plan described in 8.2-f.

**8.2-o Outdoor Lighting.** Establish outdoor lighting standards to minimize energy use while ensuring appropriate light levels. Standards could include:

- Photocells or astronomical time switches;
- Directional and shielded LED lights
- Security lights with motion detectors;
- Prohibition against continuous all-night outdoor lighting unless required for security reasons.

*New outdoor lighting standards should apply to municipal operations, including traffic signals, as well as to new private development.*

**8.2-p Improve Energy Efficiency in Public Buildings.** Prepare and implement a plan to increase energy efficiency in public buildings, as part of the GHG Emissions Reduction Plan described in 8.2-f. Measures may include but not be limited to the following:

- Conduct energy audits for all municipal facilities;
- Retrofit municipal facilities for energy efficiency where feasible and when remodeling or replacing components, including increased insulation, installing green or

reflective roofs, installing automated lighting controls, and retrofitting heating and cooling systems.

- Require that any newly constructed, purchased, or leased municipal space meet minimum standards, such as exceeding Title 24 energy efficiency by 20 percent;
- Educate employees on energy conservation.

**8.2-q Promote Energy Conservation Programs.** Promote and support State and TID energy conservation programs for housing construction and rehabilitation, including energy audits, weatherization assistance, and energy rebates for energy-efficient appliances and lighting, ventilation, and other systems.

- For participants in the Home Rehabilitation Loan program, provide information and technical support regarding available rebate and incentive programs (through TID and PG&E) for energy efficient appliances and weatherization tools.
- Require Energy Star electrical appliances when replacing appliances in City-funded Home Rehabilitation projects.

*A sizable portion of the residential structures in Turlock were constructed before energy efficiency standards were established, and should be improved.*

**8.2-r Encourage Greater Energy Efficiency in New Development.** For new Master Plan Areas, seek to expedite permit processing for new buildings that meet or exceed the Tier 1 optional standards in the California Green Building Standards Code.

*Achievement of at least 20 percent greater energy efficiency than the Title 24 standards is among the Best Performance Standards (BPS) for Development Projects proposed by the Air District, for credit toward the assignment of “less than significant” environmental impact.*

*See Section 6.4 for policies on solar orientation and other aspects of sustainable site planning.*

**8.2-s Require Energy Efficiency for Projects Receiving Public Assistance.** Require that projects receiving assistance from the City of Turlock, including but not limited to infrastructure projects and affordable housing, include energy efficiency measures beyond the minimum standards of Title 24.

### ***Clean Energy Production***

- 8.2-t Encourage Solar Power Generation.** Encourage the use of passive and active solar devices such as solar collectors, solar cells, and solar heating systems into the design of buildings and parking areas by participating in existing incentive programs and considering new incentives for Turlock property owners.
- 8.2-u Encourage Other Onsite Renewable Energy Systems.** Encourage the installation of other renewable energy systems in new or existing development. Renewable power generation may count toward the Air District’s proposed BPS for projects with systems capable of generating at least 2.5 percent of their energy need.
- 8.2-v Methane Capture.** Produce energy through methane capture at the Regional Water Quality Control Facility. Explore opportunities to enhance waste-to-energy generation if feasible.

### ***Solid Waste***

- 8.2-w Reduce Solid Waste.** Maintain the City’s long-standing commitment to innovative solutions that reduce solid waste and increase diversion rates. Waste reduction and diversion can contribute significantly to reducing greenhouse gas emissions. waste reduction.

*See Section 3.3, Infrastructure for waste reduction and diversion policies.*

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# 9 Noise

Noises are undesirable or unwanted sounds that vary widely in their scope, source, and volume. They range from individual occurrences such as a leaf blower or holiday firecrackers, to regular though intermittent disturbance by aircraft flying overhead, or an infrequent train going through town, to the fairly constant noise generated by traffic on freeways.

This chapter identifies the noise sources that exist within the study Area, describes noise impacts that may result from the General Plan, and establishes policies to mitigate potential impacts through both preventative and responsive actions. The regulation of noise sources such as traffic, railroad operations and aircraft operations is overseen by state and federal agencies; therefore, this element has a direct correlation with the land use, circulation, and housing elements. It guides the location of industrial land uses and transportation facilities, since they are common sources of excessive noise levels. This element also guides the location of particularly noise-sensitive uses, such as residences, schools, churches, and hospitals, so that they may be less affected by noise.

## 9.1 NOISE CHARACTERISTICS AND MEASUREMENT

### NOISE MEASUREMENT

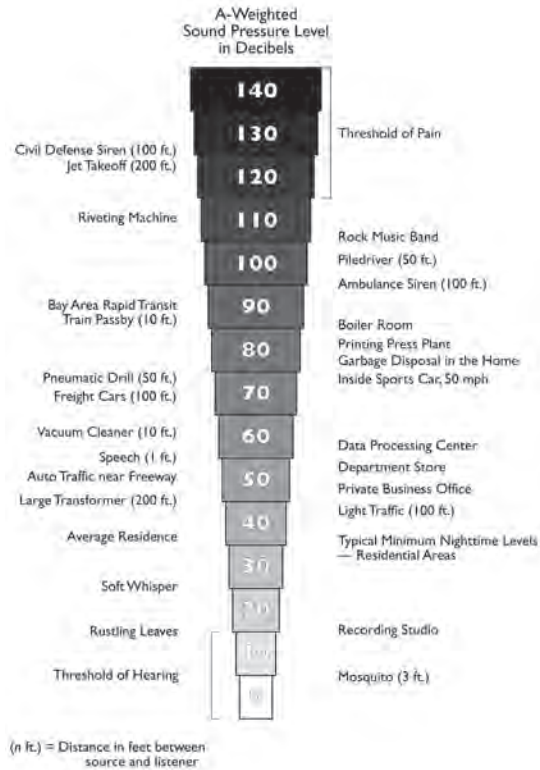
Three aspects of noise are used in assessing the community noise environment:

- **Level** is the magnitude or loudness of sound. Sound levels are measured and expressed in decibels (dB) with 10 dB roughly equal to the threshold of hearing. The accompanying graphic shows the decibel levels associated with different common sounds.
- **Frequency** is the composition or spectrum of the sound. Frequency is a measure of the pressure fluctuations per second.
- **Variation** is sound level over time. Most community noise is produced by many distant noise sources that change gradually throughout the day and result in steady background noise with no identifiable source. Identifiable events of brief duration, such as aircraft flyovers, cause the community noise level to vary from instant to instant. A single number called the equivalent sound level (Leq) describes the average noise exposure level over a period of time. Transient noise events



*Roadway traffic is a common source of noise in urban environments.*

**Figure 9-1: Typical Sound Levels**



may be described by their maximum noise level (Lmax), measured in decibels “A-weighted” to correct for the frequency response of the human ear (dBA).

### REPORTING NOISE LEVELS

Measuring and reporting noise levels involves accounting for variations in sensitivity to noise during the daytime versus nighttime hours. Noise descriptors used for analysis need to account for human sensitivity to nighttime noise; background noise levels are generally lower than in the daytime and outside noise intrusions are more noticeable. The Community Noise Equivalent Level (CNEL) is an indicator that reflects noise exposure over an average day with weighting to reflect the increased sensitivity to noise at night.

Knowledge of the following relationships is helpful in understanding how changes in noise and noise exposure are perceived:

- Except under special conditions, a change in sound level of 1 dB cannot be perceived;
- A 3 dB change is considered a just noticeable difference;
- A 5 dB change is required before any noticeable change in community response would be expected. A 5 dB increase is often considered a significant impact; and
- A 10 dB increase is subjectively heard as an approximate doubling in loudness and almost always causes an adverse community response.

In establishing noise contours for land use planning, it is customary to ignore noise attenuation afforded by buildings, roadway elevations, and depressions, and to minimize the barrier effect of natural terrain features. The result is a worst-case estimate of the existing and future (projected) noise environment. The purpose of noise contours is to identify the potential need for more detailed acoustical studies, not to predict with certainty the noise level throughout the City. The assumption is that it is desirable to overestimate the potential noise at a future noisesensitive development site than to underestimate the noise environment and allow for potentially incompatible land use development.

## 9.2 NOISE GENERATION IN TURLOCK

The major noise sources in Turlock are related to roadways and vehicle traffic. Other noise sources include aircraft, rail transportation, industry, and equipment. Figure 9-2 maps existing noise contours. Figure 9-3 maps future noise contours, associated with full buildout of the General Plan. According to common practice, maximum noise levels of 60 dB are considered “normally acceptable” for unshielded residential development. Noise levels from 60 dB to 70 dB fall within the “conditionally unacceptable” range, and those in the 70 to 75 dB range are considered “normally unacceptable.”

### TRAFFIC

Motor vehicles, including automobiles, trucks, buses, and motorcycles, are the most pervasive source of noise in the Planning Area. The level of vehicle-generated noise is related to the volume of vehicles, the speed of traffic, and the number trucks in the flow of traffic. Vehicle noise is a combination of the noises produced by the engine, exhaust, tires, and wind generated by taller vehicles. Other factors that affect the perception of traffic noise include distance from the highway, terrain, vegetation, and natural and structural obstacles. While tire noise from autos is generally located at ground level, truck noise sources can be located as high as ten to fifteen feet above the roadbed due to tall exhaust stacks and higher engines. Noise exposure contours for Turlock’s major roadways were modeled by applying the Federal Highway Administration’s noise modeling procedure. These noise contours are conservative, meaning that the contours are modeled with minimal noise attenuation by natural barriers and buildings.

The highest noise levels are along Highway 99, resulting in noise levels above 70 dB (normally unacceptable) in certain residential areas close to the highway. Noise levels above 65 dB are typical of residential areas somewhat further from Highway 99 and along the Golden State Boulevard corridor, as well as along stretches of several arterial or collector roads, including Monte Vista Avenue, Geer Road, Christoffersen Parkway, Fulkerth Road, Hawkeye Avenue, West Main Street, and Lander Avenue. Much of the City between Highway 99 and Golden State Boulevard, as well as parts of neighborhoods east of Golden State Boulevard and near arterial roads, have noise levels above 60 dB. These noise conditions may create impacts to sensitive receptors such as residences, schools, churches, and hospitals in many parts of Turlock.

## RAILROAD

Railroad activity includes approximately 18 freight train operations per day along the Union Pacific Railroad (UPRR) track running northwest-southeast through the Planning Area parallel to Golden State Boulevard. A maximum of two local freight trains operate per day on the UPRR spur, which run parallel to Castor Street.

Several factors combine to produce railroad noises, including grade, type of track, length and speed of trains, number of engines, and number of trips. Because the railroad is directly parallel to Golden State Boulevard through most of the Planning Area and Highway 99 in the far north, noise from the railroad is mixed with traffic noise. Two long-term noise measurements were collected along the rail line. Both measurements, taken between Golf Road and F Street and just south of Pedras Road, respectively, found a DNL of 79 dB. Noise levels are assumed to attenuate at a rate of 3 dBA for every doubling of distance from the railroad. Because train noise only lasts a few minutes each time, it is considered less severe than traffic noise from high-volume roadways.

## AIRPORT NOISE

There are no airports within the Study Area. Turlock Municipal Airport, approximately six miles east of the eastern edge of the Study Area, is a public General Aviation airport with a single runway and currently no commercial flights. Modesto City-County Airport, approximately seven miles northwest of the northern boundary of the Planning Area, is a primary commercial service airport with two runways.

The greatest potential for noise intrusion from airports occurs when aircraft land, take off, or run their engines while on the ground. Noise contours developed for these two airports (not shown) show noise levels elevated above 65 dB only in close proximity to the airports.

## INDUSTRIAL ACTIVITY

Industrial uses are another source of noise that can have a varying impact on adjacent uses. A variety of mechanical equipment, generators, and vehicles all contribute to noise levels at industrial sites. The greatest potential for problems created by industrial noise arises when residential areas are affected. Most industrial expansion during the General Plan period will take place in the Westside Industrial Specific Plan area, which is separated from residences and other sensitive

noise receptors. However, industrial activities south of Downtown and in the South Golden State Boulevard corridor have the potential to affect some residential areas. Evening and nighttime operations at a number of industrial plants can make the problem worse.

## CONSTRUCTION

Construction can be another substantial, though short-term, source of noise. Construction is most disruptive when it takes place near sensitive land uses, or occurs at night or in early morning hours. The dominant construction equipment noise source is usually a diesel engine without sufficient muffling. In a few cases, however, such as impact pile driving or pavement breaking, process noise dominates.

## OTHER EQUIPMENT

Other portable or small-scale pieces of equipment may also produce noise. Mechanical equipment such as pumps and fans may produce low noise levels, but continuously and for substantial distances. Rooftop or otherwise exposed mechanical equipment can also produce constant and disturbing noises. Portable power equipment, such as leaf blowers and drills, can produce very high noise levels at the location of the work. Other amplified sounds such as automotive audio equipment or loudspeakers also create noise exposure.

Existing and future noise levels along arterial roadways in Turlock were calculated using the FHWA's Highway Traffic Noise Prediction Model and traffic volume data collected for the General Plan. Future noise contours are illustrated in Figure 9-3. Future development within the Study Area will result in increased noise levels due primarily to automobile traffic. Generally, an increase of three decibels (dB) is barely perceptible. Noise increases along many Turlock roadways are expected to be perceptible, but relatively low:

- Noise along Highway 99 is projected to increase by 2 dB to 4 dB, as is noise along Hawkeye Avenue east of Berkeley Avenue;
- Noise along Golden State Boulevard, West Main Street, South Tegner Road, Countryside Drive, Olive Avenue, and Monte Vista Avenue east of Olive is projected to increase by 3 dB;



*Noises are produced by a variety of sources, including industrial activities and equipment.*

- Noise along Berkeley Avenue south of Canal Drive is projected to increase by 3 dB to 5 dB, along Daubenberger Road by 4 dB, and along Linwood Avenue east of South Tegner Road by 4 dB to 5 dB.
- Along Washington Road, Walnut Road, East Avenue, Fulkerth Road west of Highway 99, and Christofferson Parkway west of Olive Avenue, noise is projected to increase by 5 dB.

The most pronounced noise increases are projected along certain roadways, primarily those serving the new growth areas:

- Noise along portions of Golf Road may increase by up to 8 dB
- Along portions of Canal Drive, noise is projected to increase by between 4 and 10 dB
- Along Christofferson Parkway east of Olive, noise may increase by up to 11 dB
- Data for existing conditions along Verduga Road are not available. In the future, traffic noise along Verduga Road is projected to be DNL 71 dB to DNL 74 dB at a distance of 50 feet from the roadway centerline

The traffic model found a reduction in noise of between 1 and 5 dB along most of Taylor Road east of Highway 99, as more traffic is directed onto other roadways.

The actual level of impact will depend on the presence and location of existing or proposed land uses or barriers in relation to the noise source. The General Plan seeks to reduce noise levels at the source through mitigation policies and reduce the impact on sensitive receptors.

### 9.3 NOISE EXPOSURE STANDARDS

State standards, and City standards established in this General Plan, are designed to protect community members and sensitive receptors from noise hazards and establish criteria to mitigate development accordingly.

#### STATE REGULATIONS

Title 24 of the California Code of Regulations, the Building Standards Administrative Code, contains the State Noise Insulation Standards, which specify interior noise standards for new hotels, motels, apartment houses, and dwellings other than single-family homes. Such new structures must be designed to reduce outdoor noise to an interior level of no more than 45 dB in any habitable room. They require an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than 60 dB. Title 24 standards are enforced through the building permit application process.

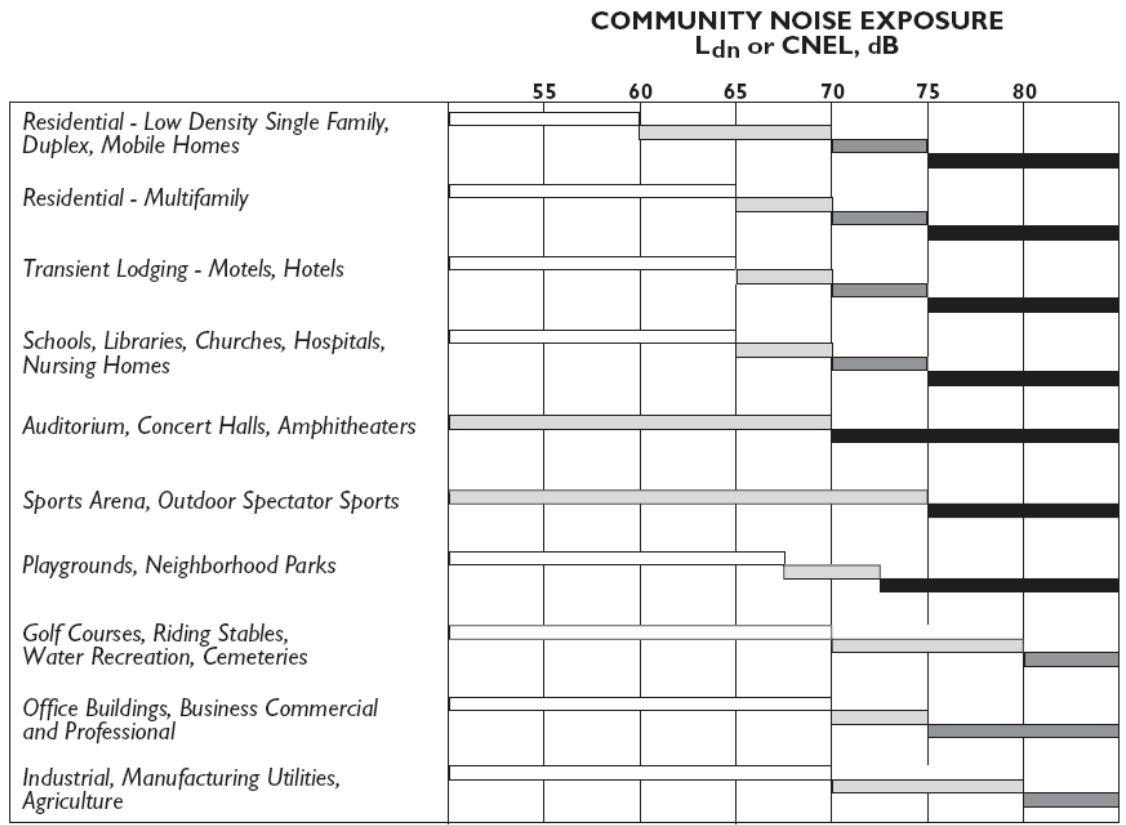
#### NOISE STANDARDS

General Plan noise standards are shown in Table 9-1 and Table 9-2.

#### Community Noise Exposure

Table 9-1 presents the community noise exposure matrix, establishing criteria the City can use to evaluate land use compatibility based on noise levels. This matrix is adapted from guidelines provided by the Office of Noise Control in the State Department of Health Services. The State indicates that locating housing in areas where exterior ambient noise levels exceed 65 dBA is undesirable.

**TABLE 9-1: LAND USE CLASSIFICATIONS AND DENSITY – MINIMUMS AND MAXIMUMS**



Normally Acceptable     
  Conditionally Acceptable  
 Normally Unacceptable     
  Clearly Unacceptable



Noise exposure levels are classified as being “normally acceptable”, “conditionally acceptable,” “normally unacceptable,” or “clearly unacceptable” for different land use types.

#### *Normally Acceptable*

- Indoor Uses: Either the activities associated with the land use are inherently noisy or standard construction methods will sufficiently attenuate exterior noise to an acceptable level; for land use types that are compatible because of inherent noise levels, sound attenuation must be provided for associated office, retail, and other noise-sensitive indoor spaces sufficient to reduce exterior noise to an interior maximum of 50 dB CNEL.
- Outdoor Uses: Outdoor activities associated with the land use may be carried out with minimal interference.

#### *Conditionally Acceptable*

- Indoor Uses: Noise reduction measures must be incorporated into the design of the project to attenuate exterior noise to the indoor noise levels listed in Table 9-2.
- Outdoor Uses: Noise reduction measures must be incorporated into the design of the project to attenuate exterior noise to the outdoor noise levels listed in Table 9-2. Acceptability is dependent upon characteristics of the specific use.

#### *Normally Unacceptable*

- Indoor Uses: Extensive mitigation techniques are required to make the indoor environment acceptable for indoor activities. Noise level reductions necessary to attenuate exterior noise to the indoor noise levels listed in Table 9-2 are difficult to achieve and may not be feasible.
- Outdoor Uses: Severe noise interference makes the outdoor environment unacceptable for outdoor activities. Noise level reductions necessary to attenuate exterior noise to the outdoor noise levels listed in Table 9-2 are difficult to achieve and may not be feasible.

#### *Clearly Unacceptable*

New construction or development should generally not be undertaken.

**Figure 9-2: Existing Noise Contours**

- 60 to 65 dB
- 65 to 70 dB
- 70 to 75 dB
- > 75 dB

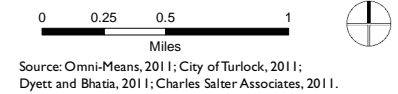
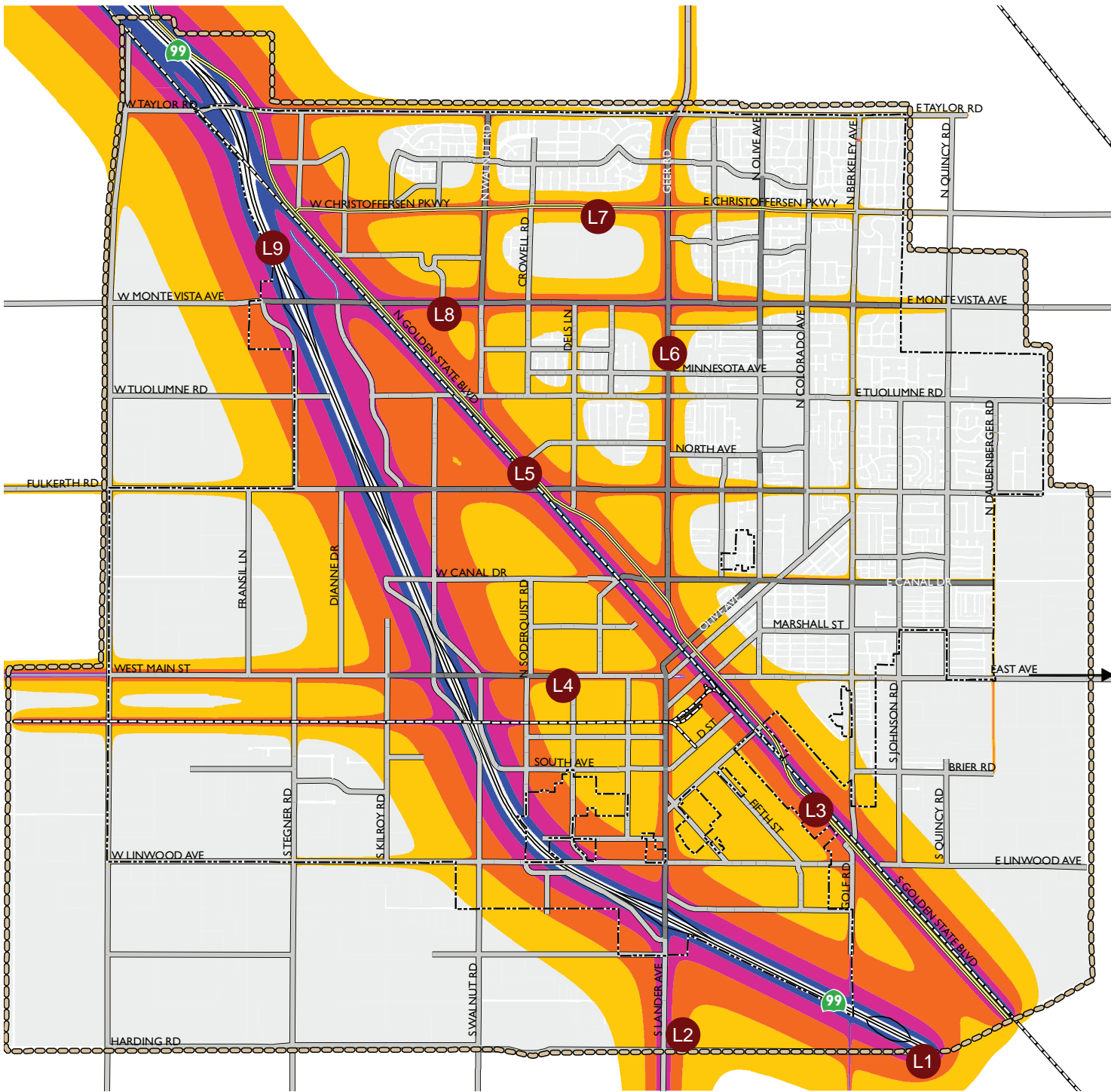
# Noise Monitoring Stations

**Boundaries**

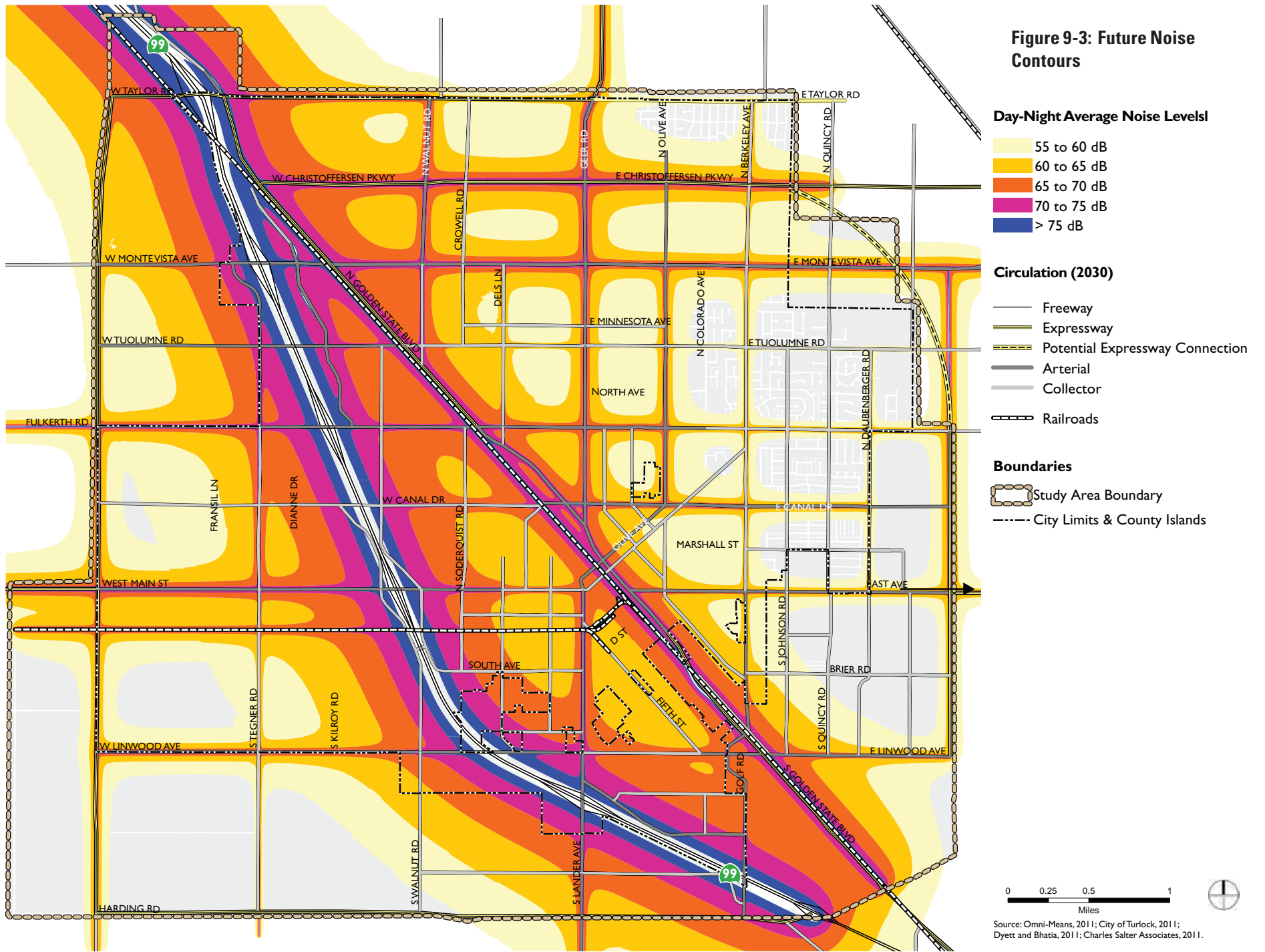
- Study Area Boundary
- City Limits & County Islands

**Existing Circulation Network**

- Freeway
- Existing Expressway
- Existing Arterial
- Existing Collector
- Railroads



**Figure 9-3: Future Noise Contours**



### Allowable Noise Exposure

Table 9-2 indicates acceptable limits of noise for various land uses for both exterior and interior environments. These limits are based on guidelines provided by the California Office of Planning and Research.

TABLE 9-2: ALLOWABLE NOISE EXPOSURE		
LAND USE	OUTDOOR ACTIVITY <sup>1, 2</sup> AREAS (CNEL)	INTERIOR SPACES (CNEL) <sup>1</sup>
Residential	60	45
Motels, Hotels	60	45
Hospitals, Nursing Homes, Schools, Libraries, Museums, Churches	60	45
Playgrounds, Parks, Recreation Uses	65	50
Commercial and Office Uses	65	50
Industrial Uses	70	65
Notes:		
1 For non-residential uses, where an outdoor activity area is not proposed, the standard does not apply. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving use.		
2 Where it is not possible to reduce noise in outdoor activity areas to the allowable maximum, levels up to 5 dB higher may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.		

Source: California Office of Planning and Research, 2011

The General Plan also provides standards for exposure to non-transportation noise sources such as industrial facilities, automotive servicing, or equipment yards, in Table 9-3. These standards apply to the noise sources themselves, as well as to proposed development that may be affected by existing noise sources.

TABLE 9-3: NOISE LEVEL PERFORMANCE STANDARDS FOR NON-TRANSPORTATION SOURCES		
NOISE LEVEL DESCRIPTOR	DAYTIME (7 A.M. TO 10 P.M.)	NIGHTTIME (10 P.M. TO 7 A.M.)
Hourly $L_{eq}$ , dB	55	45
Maximum Level, dB	75	65
<p>Note:</p> <p>Each of the noise levels specified above shall be lowered by 5 dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.</p>		

## POLICIES

### Guiding Policies

- 9.4-a Land Use Compatibility.** Ensure that new development is compatible with the noise environment, by continuing to use potential noise exposure as a criterion in land use planning.
- 9.4-b Prevent Degradation of Noise Environment.** Protect public health and welfare by eliminating existing noise problems where feasible, maintaining an acceptable indoor and outdoor acoustic environment, and preventing significant degradation of the acoustic environment.
- Decreasing noise magnitude at the source and limiting the times certain types and volumes of noise can occur are two of the approaches to noise attenuation taken in the City's Noise Control Ordinance.*
- 9.4-c Protect Residential Areas and Sensitive Uses.** Minimize excessive noise exposure in residential areas and in the vicinity of such uses as schools, hospitals, and senior care facilities.



*The most pronounced noise increases are projected to be along roadways serving the new growth areas. The General Plan seeks to make land use compatible with the noise environment, reduce noise levels at the source, and ensure effective mitigation.*

## Implementing Policies

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*See also section 5.5 Aviation, Rail, and Goods Movement for policies related to transportation noise sources.*

**9.4-d Required Noise Analysis.** Use the noise and land use compatibility matrix (Table 9-1) and Future Noise Contours map (Figure 9-2) as review criteria for all new development. For proposed development located where projected noise exposure would be other than “normally acceptable,” and which require discretionary review, require that a noise analysis be conducted.

*A required noise analysis should:*

- Be prepared by a certified noise consultant or acoustical engineer;
- Be funded by the applicant;
- Include a representative, on-site day and night sound level measurement;
- Include a delineation of current (measured) and projected (10 years) noise contours with and without the proposed project, ranging from 55 to 75 dBA (Ldn) within the proposed development site; and
- Include a description of adequate and appropriate noise abatement measures where sound measurements exceed Table 9-2 standards for the proposed use.

*A list of accredited noise consultants is available from the State Department of Health Services, Office of Noise Control.*

**9.4-e Noise-Attenuating Features.** For all projects that have noise exposure levels other than “normally acceptable” and which require discretionary review, require site planning and architecture to incorporate noise-attenuating features. With mitigation, development should meet allowable outdoor and indoor noise exposure standards in Table 9-2. In particular, new residential, transient lodging, school, library, church, hospital, and convalescent home development should be designed to provide a suitable interior noise environment of no greater than 45 dB CNEL or Ldn.

*Site planning measures include setbacks, building placement in relation to topography, and orientation of sensitive indoor and outdoor activity areas away from noise sources.*

*Building measures may include:*

- Facades constructed substantial weight and insulation;
- Sound-rated windows and doors;
- Active cancellation;
- Acoustic baffling of vents for chimneys, fans, and gable ends;
- Ventilation system affording comfort under closed-window conditions;
- Double doors and heavy roofs with ceilings of two layers of gypsum board on resilient channels.

**9.4-f Vibration Reduction.** Require that new development near railroad tracks is limited as follows to avoid impact from excessive noise vibration:

- No new buildings where low ambient vibration is essential for interior operations may be located within 225 feet of railroad tracks. These uses may include, but are not limited to, vibration-sensitive research and manufacturing; hospital research areas; concert halls; and TV/recording studios.
- No new residences or other buildings where people sleep may be located within 100 feet of railroad tracks. These include multi-family dwellings, houses, hospital patient rooms, and hotels.
- No schools, churches, or commercial offices may be located within 70 feet of railroad tracks.

**9.4-g Noise-Sensitive Uses—Required Mitigation.** Do not allow new development of noise-sensitive uses where the noise level due to non-transportation noise sources will exceed the noise level standards of Table 9-3, as measured immediately within the property line of the new development, unless effective noise mitigation measures have been incorporated into the development design to achieve the standards specified in the table.

**9.4-h Non-Transportation Noise Sources—Required Mitigation.** Require mitigation of noise created by new proposed non-transportation noise sources so that it does not exceed the noise level standards of Table 9-3 as measured immediately within the property line of lands designated for noise-sensitive uses. Appropriate mitigation measures include:

- Dampen or actively cancel noise sources;
- Increase setbacks for noise sources from adjacent dwellings;

- Use soundproofing materials and double-glazed windows;
- Screen and control noise sources, such as parking and loading facilities, outdoor activities, and mechanical equipment;
- Use open space, building orientation and design, landscaping and running water to mask sounds; and
- Control hours of operation, including deliveries and trash pickup.

*This policy does not apply to noise sources associated with agricultural operations on lands zoned for agricultural uses.*

- 9.4-i Noise Ordinance.** Continue to enforce the City Noise Control Ordinance and update as necessary.

*The City’s ordinance addresses a wide range of noise-generating activities, establishing community standards and providing a basis for enforcement.*

- 9.4-j Transportation Noise Buffers.** Where feasible, develop and implement noise reduction measures when undertaking improvements, extensions, or design changes to City streets. Measures may involve some combination of setbacks, earth berms, solid noise walls, placement of non-occupancy accessory structures or windowless building sites towards the noise source, and building insulation techniques.

*Mitigation through the design and construction of a noise barrier (wall, berm, or combination wall/berm) is the most common way of alleviating traffic noise impacts. Noise barriers often have the disadvantage of unsightliness; however, properly landscaped berms or walls shielded with climbing vines can, over time, become visual assets. The use of noise barriers should be minimized.*



# 10 Safety

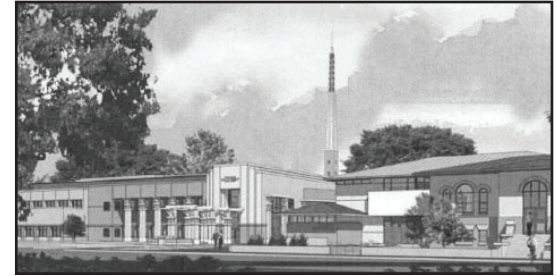
The Safety Element identifies the natural and manmade hazards that exist within the city and seeks to mitigate their potential impacts through both preventative and response measures. This Element addresses potentially hazardous materials and operations; seismic and geologic hazards; flooding and drainage; fire hazards; and emergency management. Potential health hazards related to air quality are addressed in Chapter 8: Air Quality and Greenhouse Gases. Storm drain infrastructure related to flooding and drainage is discussed in Chapter 3, New Growth Areas and Infrastructure.

## 10.1 HAZARDOUS MATERIALS AND OPERATIONS

Sites where hazardous chemical compounds have been released into the environment can pose health threats. Historic or current activities, most often associated with industrial or commercial uses (including gas stations, car washes, etc.) may result in the release, leak, or disposal of toxic substances on or below the ground surface, where they can then contaminate soil and ground water. Furthermore, disturbance of the ground through grading or excavation can result in exposure of these chemicals to the public. Improper handling of contaminated sites may result in further exposure via airborne dust, surface water runoff, or vapors. However, proper waste management and disposal practices can minimize public concern over toxicity and the contamination of soils, water, and the air.

### LAWS AND REGULATIONS

Federal and State laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, transported and disposed of, and in the event that such materials are accidentally released, to prevent or mitigate injury to health or the environment. The primary Federal agencies with responsibility for hazardous materials management include the U.S. Environmental Protection Agency (EPA), U.S. Department of Labor Occupational Safety and Health Administration (OSHA), and the U.S. Department of Transportation (DOT).



*Putting Police and Fire Departments together in a new public safety building is anticipated to improve response time, increase communication and teamwork, and allow efficient sharing of space.*



*Railroad lines and storage of chemicals present potential hazards in the Study Area (top).*

*Most of the cleanup sites being monitored by the State Water Resources Control Board (SWRCB) are Leaking Underground Storage Tanks (LUSTs), mainly associated with current or former gas stations (bottom).*

In many cases, California State law mirrors or is more restrictive than federal law, and enforcement of these laws has been delegated to the State or a local agency. The California Department of Toxic Substances Control works to prevent exposure to hazardous materials and oversees cleanup at contaminated sites. The State Water Resources Control Board administers programs to ensure safe practices and monitor operations of aboveground and underground storage tanks, in coordination with the Stanislaus County Environmental Resources Department.

The Environmental Resources Department is responsible for implementing the state-mandated Countywide Integrated Waste Management Plan (CIWMP). The Plan includes a Household Hazardous Waste Element, which establishes the framework for safe disposal in the County and participating cities, including Turlock. The Plan must be reviewed at least every five years; a process most recently completed in 2007. The Department also prepares and implements the county's Hazardous Waste Management Plan, and the household hazardous waste collection program, providing information to consumers and running the permanent collection facility in Modesto.

### **CLEANUP SITES AND WASTE-HANDLING FACILITIES**

The California Department of Toxic Substances Control (DTSC) and the State Water Resources Control Board (SWRCB) report inventories of cleanup sites. Not including sites that have been fully remediated or where cleanup is now listed as “inactive,” 24 contaminated sites were identified in the Study Area as of October 2010 (see Table 10-1). All but three of these sites are Leaking Underground Storage Tanks (LUSTs), mainly associated with current or former gas stations.

Two sites are being monitored by both the DTSC and SWRCB. One is the Turlock Manufactured Gas Plant on South Golden State Boulevard; the other is at Valley Wood Preserving, Inc., at 2237 South Golden State. This site is also a Federal Superfund cleanup site. Cleanup of soil and groundwater contaminated by the wood preserving process began in the early 1990s and continued intermittently through 2007. A shallow, localized plume of low-level groundwater contamination remains, but the site has been deemed safe for future commercial and industrial activities and poses no threat to drinking water sources by the US EPA, Region 9.

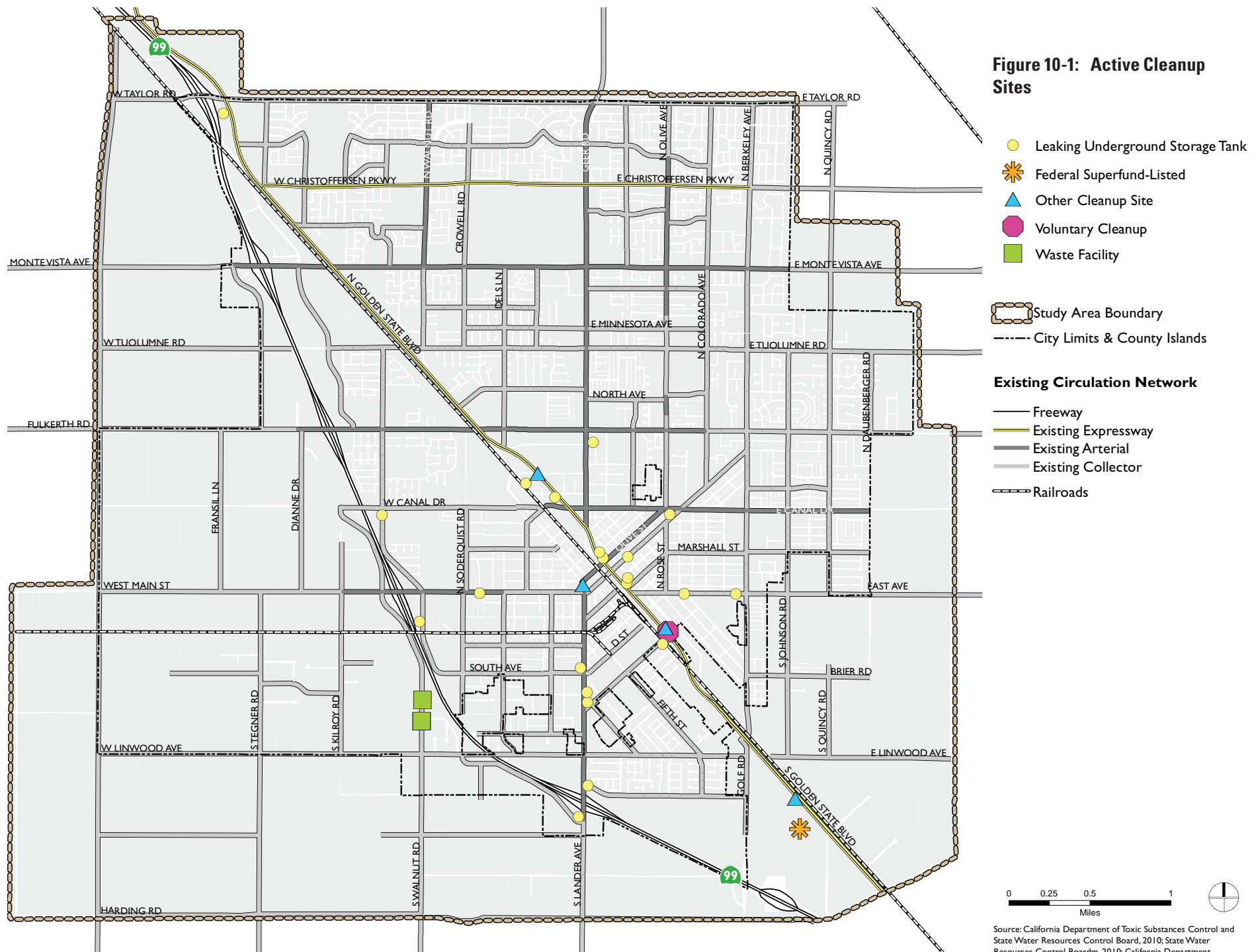
The California Department of Resources Recycling and Recovery (CalRecycle) is responsible for managing California’s solid waste stream, and works in partnership with local government, industry, and the public to reduce waste disposal and ensure environmentally safe landfills. Table 10-1 also identifies three solid waste facilities in the Study Area; two of these are active and one is no longer used. Hazardous material cleanup sites and solid waste facilities are shown in Figure 10-1.

TABLE 10–1: ACTIVE CLEANUP SITES AND WASTE FACILITIES			
SITE	TYPE	CLEANUP STATUS	ADDRESS
<i>Sites Identified by the California Department of Toxic Substances Control</i>			
So Cal Gas/Turlock Manufactured Gas Plant	Voluntary Cleanup	Active	650 S. Golden State Blvd.
Valley Wood Preserving, Inc.	Federal Superfund-Listed	Active - Land Use Restrictions	2237 S. Golden State Blvd.
<i>Sites Identified by the State Water Resources Control Board</i>			
Betco Petroleum	LUST Cleanup Site	Open - Site Assessment	632 Ninth aka 1034 Lander Ave.
Rodgers Mini Mart Case #2	LUST Cleanup Site	Open - Site Assessment	1570 East
Town Service Case / Goodrich Oil Case #1	LUST Cleanup Site	Open - Site Assessment	238 S. Golden State
Arco #6161	LUST Cleanup Site	Open - Remediation	210 N. Golden State Blvd.
Auto King #3	LUST Cleanup Site	Open - Remediation	952 Lander Ave.
Gomes and Sons Inc.	LUST Cleanup Site	Open - Remediation	725 Tully Rd.
Goodrich Oil Co. Short Property	LUST Cleanup Site	Open - Remediation	722 S. First
Monfredini Property aka Gaddys Shell	LUST Cleanup Site	Open - Remediation	402 E. Main
Pacific Pride / Cardlock Facility	LUST Cleanup Site	Open - Remediation	309 S Tully
Reflections Car Wash	LUST Cleanup Site	Open - Remediation	1400 Geer Rd.
Stop n Save #4	LUST Cleanup Site	Open - Remediation	825 Main
Suburban Propane	LUST Cleanup Site	Open - Remediation	4625 N. Golden State Blvd.
Unocal / Weiss Oil	LUST Cleanup Site	Open - Remediation	881 N. Golden State Blvd.
Unocal Bulk Plant No. 0796 (Former)	LUST Cleanup Site	Open - Remediation	1000 N. Front
Utility Service & Electric Company	LUST Cleanup Site	Open - Remediation	713 Lander
Arco West Main	LUST Cleanup Site	Open - Verification Monitoring	1030 W. Main
Barrell Inn Liquors	LUST Cleanup Site	Open - Verification Monitoring	2219 Lander Ave.
Beacon Station #54 Case #2	LUST Cleanup Site	Open - Verification Monitoring	216 N. Golden State Blvd.
Chevron #90510	LUST Cleanup Site	Open - Verification Monitoring	100 E. Glenwood

TABLE 10-1: ACTIVE CLEANUP SITES AND WASTE FACILITIES			
Darpetro Gasco USA	LUST Cleanup Site	Open - Verification Monitoring	1250 East
Fernandes Speed Shop	LUST Cleanup Site	Open - Verification Monitoring	214 S. Center
Turlock Manufactured Gas Plant	Other Cleanup Site	Open - Site Assessment	645 S. Golden State Blvd.
City of Turlock Dry Cleaners - Turlock PCE Investigation	Other Cleanup Site	Open - Remediation	E. Main & Olive and W. Main & Locust Sts.
Valley Wood Preserving, Inc.	Other Cleanup Site	Open - Remediation	2013, 2031 S. Golden State Blvd.
<i>Waste Facilities and Sites in the Study Area</i>			
SITE	TYPE	OPERATIONAL STATUS	ADDRESS
City of Turlock Water Quality Control Facility	Composting Facility (Sludge)	Active	901 S. Walnut
Turlock Transfer	Large Volume Transfer/ Processing Facility	Active	1100 S. Walnut
Turlock Disposal Site	Solid Waste Disposal Site	Closed	901 S. Walnut

Sources: California Department of Toxic Substances, 2010; State Water Resources Control Board, 2010; California Department of Resources Recycling and Recovery, Solid Waste Information System, 2010.

**Figure 10-1: Active Cleanup Sites**



Source: California Department of Toxic Substances Control and State Water Resources Control Board, 2010; State Water Resources Control Board, 2010; California Department of Resources Recycling and Recovery, 2010; City of Turlock, 2008; Dyett and Bhatia, 2010;

## POTENTIALLY HAZARDOUS OPERATIONS

### Railroads

Potential hazards associated with railroads include collisions and train derailment. Either of these incidents can lead to human injury or death as well as causing various environmental impacts. The Federal Railroad Administration regulates railroad safety and provides oversight to the use of railroads.

The Union Pacific Railroad (UPRR) corridor traverses the Study Area from northwest to southeast parallel to Golden State Boulevard, and carries an average of 18 trains per day. A maximum of two trains operate per day on the UPRR spur, which runs parallel to Castor Street.

### Utility Corridors

One of the primary causes of disruption to underground natural gas pipelines, which are present in the Study Area, is external force damage that occurs during excavation activities. Such damage can create pipeline leaks or ruptures and lead to hazardous health and safety conditions. However, a national program is in place to prevent accidental pipeline damage caused by excavation. For areas adjacent to an underground utility pipeline, the U.S. Department of Transportation Office of Pipeline Safety requires that individuals contact the state “One-Call” center prior to beginning excavation. Advanced planning, effective use of these one-call systems, accurate locating and marking of underground facilities, and the use of safe-digging practices can all be effective in reducing underground facility damage and potentially hazardous conditions.

## POLICIES

### Guiding Policies

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**10.1-a Protect Lives and Property.** Prevent loss of lives, injury, illness, and property damage due to hazardous materials and wastes.

**10.1-b Protect Natural Resources.** Protect soils, surface water, and groundwater from contamination from hazardous materials.

**10.1-c Coordinate Efforts to Minimize Risks.** Cooperate with State agencies and the Stanislaus County Environmental Resources Department efforts to identify hazardous materials users, implement hazardous materials plans, provide safe waste disposal sites, and minimize risks associated with hazardous cargoes, agricultural spraying, and electromagnetic fields.

**10.1-d Incorporate Safety Considerations Into Land Use Policies.** Coordinate land use policies with concerns about potential hazards.

*Policies calling for buffers between urban and agricultural activities will reduce the risk of exposure of urban residents to agricultural chemicals. Concentration of industrial activity west of the highway away from housing reduces the risk from accidents that might occur at industrial sites, and also helps to separate industrial vehicle traffic from other traffic on local streets.*

### Implementing Policies

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**10.1-e Implement Countywide Integrated Waste Management Plan.** Implement measures specified in the Household Hazardous Waste Element of the Countywide Integrated Waste Management Plan (CIWMP).

**10.1-f Reduce Hazardous Waste Disposal.** Continue to reduce per capita disposal of hazardous waste by promoting reuse and recycling of materials as appropriate, by providing information to the public, operating waste collection facilities, and other means.

**10.1-g Raise Public Awareness of Appropriate Hazardous Waste Disposal.** Provide information and conduct outreach to educate the public about proper disposal methods for household hazardous waste.

**10.1-h Maintain Inventory of Contaminated Sites.** Maintain for public review an up-to-date inventory of identified hazardous waste sites in the City based on State databases. This information should be identified and addressed if needed as part of Turlock’s review and analysis of each discretionary development proposal.

*All currently identified contaminated sites are listed in the Environmental Impact Report (EIR).*

**10.1-i Support Cleanup Efforts.** Work with the Stanislaus County Environmental Resources Department, other agencies, and landowners to enable clean-up of contaminated sites.

*The City should not approve a use change or any development project on a contaminated site until such time as the site is cleaned to a level where it is no longer hazardous for the proposed use.*

**10.1-j Evaluate Safety of Railroad Crossings.** In close cooperation with the railroads, evaluate the safety characteristics of existing at-grade railroad crossings, and promote improvements to the extent feasible and as necessary to reduce potential for mishaps involving hazardous cargo. Support grade-separated railroad crossings where feasible.

**10.1-k Locate Buildings With High-Public-Occupancy at Safe Distance from Railroad and Highway.** To the extent feasible, locate new buildings of high public occupancy — particularly schools, hospitals, civic and institutional uses at least 100 feet from main railroad alignments and the highway, to minimize risks to life and property in the event of a hazardous cargo accident.

**10.1-l Maintain Land Use Separation Between Hazardous Waste Handling Sites and Incompatible Uses.** Ensure compatibility between hazardous material users and surrounding land use through the development review process. Separate hazardous waste facilities from incompatible uses including, but not limited to, schools, daycares, hospitals, public gathering areas, and high-density residential housing through development standards and the review process.

**10.1-m Require Hazardous Materials Studies When Appropriate.** Ensure that the proponents of new development projects address applicable hazardous materials concerns through the preparation of Phase I or Phase II hazardous materials studies, as necessary, for each identified site as part of the design phase for each project. Require projects to implement federal or State cleanup standards outlined in the studies during construction.

**10.1-n Require Safe Design and Construction of Storage Tanks.** Require that all fuel and chemical storage tanks are appropriately constructed; include spill containment areas to prevent seismic damage, leakage, fire and explosion; and are structurally or spatially separated from sensitive land uses.



## 10.2 SEISMIC AND GEOLOGIC HAZARDS

Geologic and soils hazards include steep slopes and landslides, subsidence, expansive soils, and soil erosion. Seismic hazards related to earthquakes include groundshaking and ground failures such as liquefaction and landslides. In general, geologic and seismic hazards do not pose a substantial risk to development or to overall public safety in Turlock.

### SEISMICITY

#### Regional Faults

There are no known active faults in the Study Area or in the valley portion of Stanislaus County. Nearest are the Bear Mountain and Melones faults in the eastern part of Stanislaus County, which have been inactive for the last 150 million years<sup>1</sup>, and the Tesla Ortigalita fault in the Diablo Range. Two potentially active faults have been identified in the San Joaquin Valley. The San Joaquin Fault, lying close to Interstate 5 about 18 miles west of Turlock, is a Late Quaternary fault that shows displacement during the last 700,000 years. The Vernalis Fault, lying about 20 miles northwest of Turlock, is thought to belong to the Quaternary Period with displacement sometime during the past 1,600,000 years.

The Study Area could be impacted by earthquakes along faults in other parts of the region and elsewhere in California. However, impacts resulting from such an event are not likely to be severe. Figure 10-2 identifies active and potentially active faults in the larger region.

#### Seismic Structural Safety

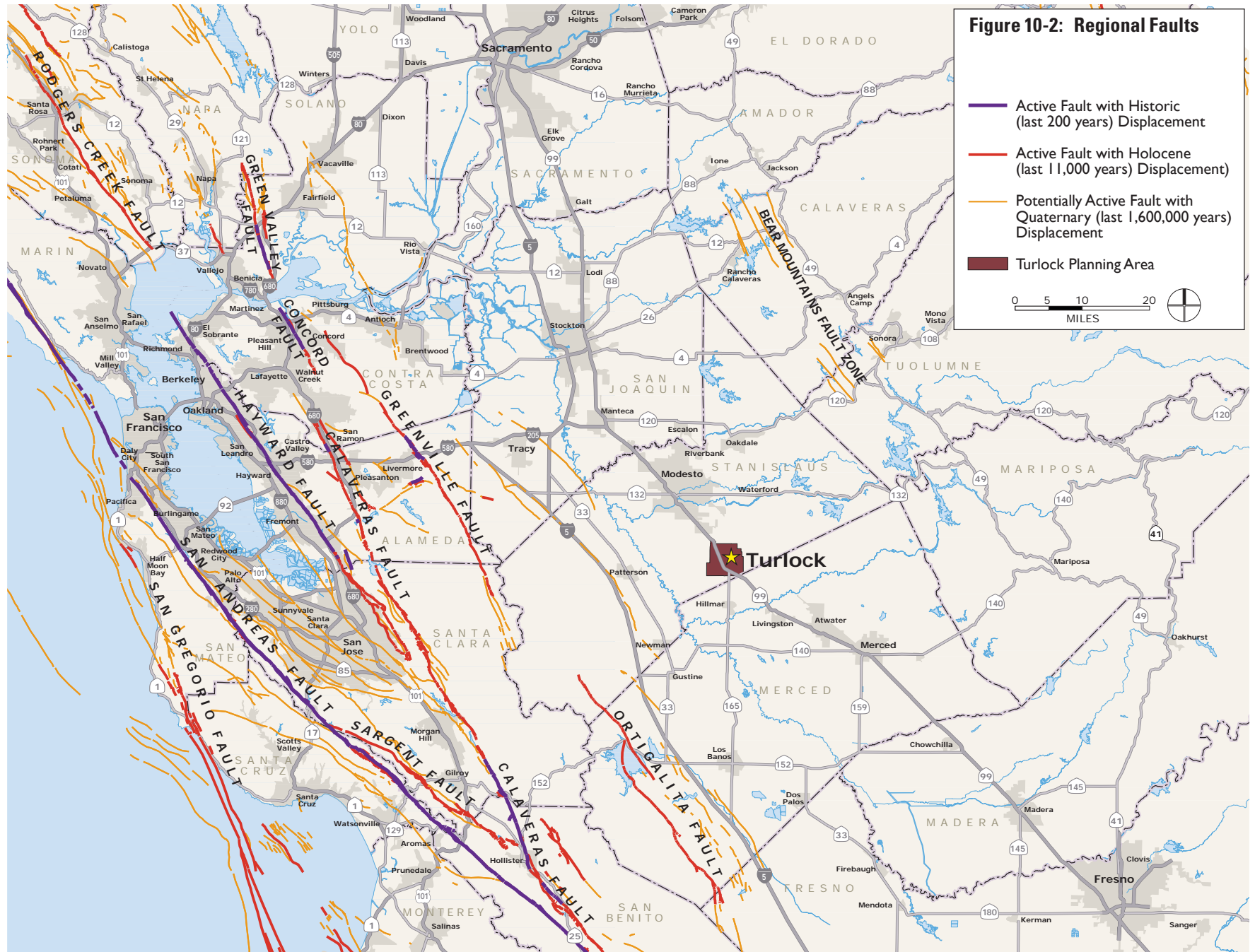
Because there are no known active faults within or near the Study Area, the greatest seismic hazard in Turlock is the structural danger posed by groundshaking from earthquakes originating outside of the area. A maximum-intensity earthquake would be capable of causing considerable damage in ordinary structures, and in turn, risk of injuries, loss of life, and property damage.

Damage from ground shaking is a combined function of the structural integrity of the buildings before the earthquake, and the quality of soils or bedrock underlying the buildings. A foundation of rock or very firm material can intensify short-period motions, which affect low-rise

<sup>1</sup> Stanislaus County General Plan Support Documentation, 1987.

**Figure 10-2: Regional Faults**

- Active Fault with Historic (last 200 years) Displacement
- Active Fault with Holocene (last 11,000 years) Displacement
- Potentially Active Fault with Quaternary (last 1,600,000 years) Displacement
- Turlock Planning Area



buildings more than tall, flexible ones. A deep layer of saturated alluvium can cushion low-rise buildings, but it can also accentuate the motion in tall buildings.

Older structures generally were not built to withstand the lateral stress imposed by the groundshaking of a major earthquake. This applies particularly to buildings having walls of non-reinforced brick held together by sand-lime mortar, and in general to all multistoried buildings that do not have steel reinforcements. Other potentially dangerous conditions include architectural features that are not firmly anchored, such as parapets and cornices; roadways, including column and pile bents and abutments for bridges and overcrossings; and above-ground storage tanks and their mounting devices.

Most masonry structures in Turlock's Downtown were built in the 1920s, well before the adoption of stricter building requirements imposed in 1933. However, these structures, many of which have unoccupied second floors, have withstood the test of time defined by the Historical Building Code, and no action is planned to bring them up to code.

## GEOLOGIC HAZARDS

Geologic hazards that may exist within the Study Area include soil erosion, expansive soils, settlement and subsidence. The Study Area is primarily flat, and so the risk of unstable soils or landslides is considered low and not discussed further.

### Soil Erosion

Soil erosion is a process by which soil materials are worn away and transported to another area, either by wind or water. Rates of erosion can vary depending on the soil material and structure, and the placement and level of human activity. Soil containing high amounts of silt can be easily eroded, while sandy soils are less susceptible. Erosion is most likely to occur on sloped areas with exposed soil, especially where unnatural slopes are created by cut-and-fill activities.

Not accounting for slope and groundcover factors, soils high in clay have low susceptibility to erosion because they are resistant to detachment. Coarse textured soils, such as sandy soils, also have low erosion potential despite their easy detachment, because of low runoff. Medium textured soils, such as the silt loam soils, are moderately susceptible to erosion, while soils with a high silt content are the most susceptible.<sup>2</sup>

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<sup>2</sup> Institute of Water Research, Michigan State University, website: <http://www.iwr.msu.edu/rusle/kfactor.htm>. Viewed April 13, 2007.

Just over half of the Study Area is underlain by soils that are moderately or highly susceptible to erosion, with K values greater than 0.25 (K values range from 0.05 to 0.43, with higher values corresponding to greater susceptibility to erosion.) Soils covering 647 acres have K values of 0.41 to 0.43, indicating high susceptibility for erosion. These soils are located in the far west of the Study Area, primarily underlying land designated for agricultural use through the planning period. Since the Study Area is primarily flat and has no natural waterways, the risk of soil erosion due to water is relatively low. However, if stormwater is not managed well, especially during construction, drainage can be a significant cause of soil erosion. Excessive soil erosion can eventually damage building foundations and roadways.

### Expansive Soils

Expansive soils possess a “shrink-swell” characteristic. Shrink-swell is the change in volume (expansion and contraction) that occurs in fine-grained clay sediments from the process of wetting and drying. Structural damage may occur over a long period of time, usually the result of inadequate soil and foundation engineering, or the placement of structures directly on expansive soils.

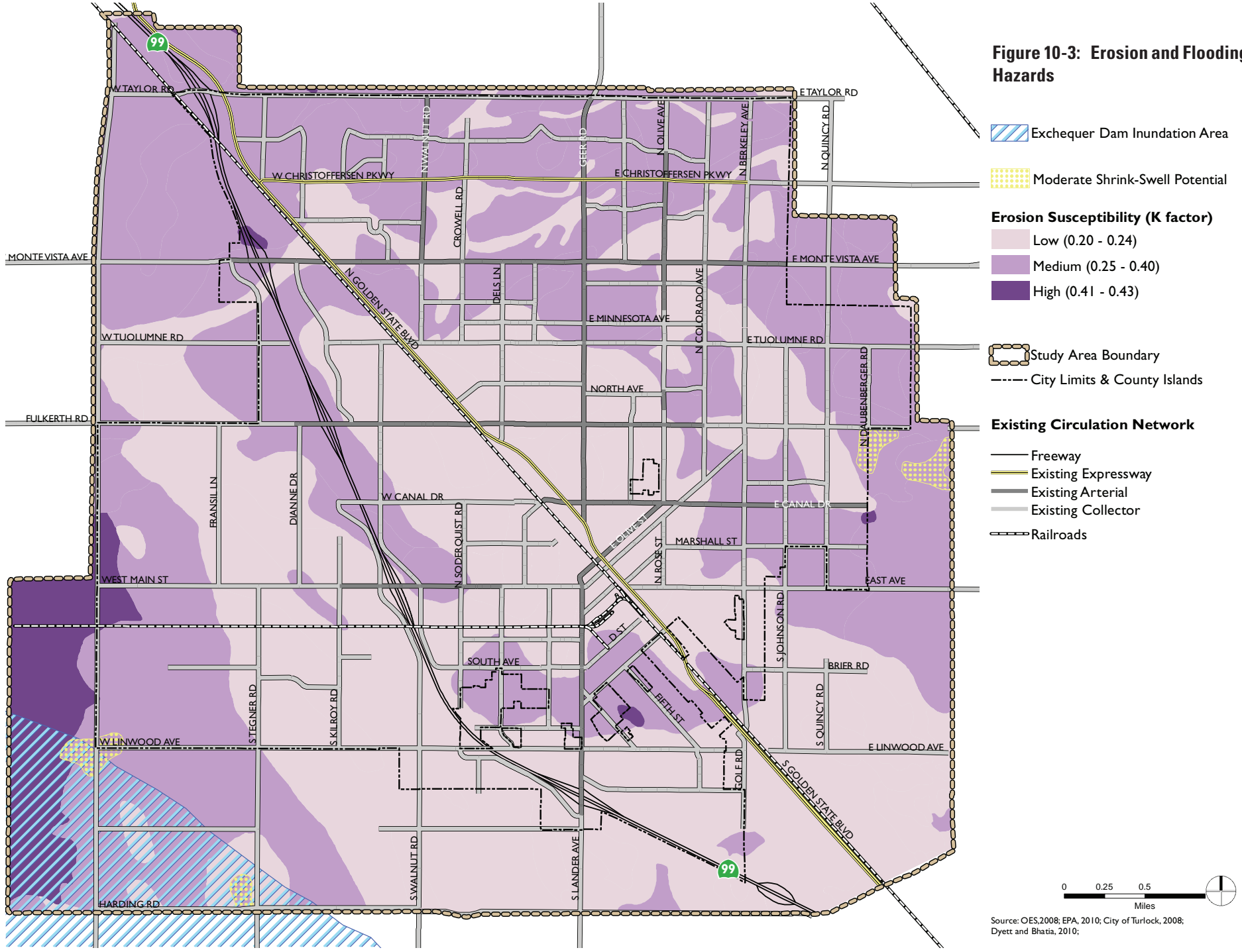
Soils covering 99 percent of the Study Area are considered to have a low shrink-swell potential. The two moderate shrink swell soils, Madera sandy loam (MdA) and Snelling sandy loam (SnA), are found only in small areas on the eastern edge of the Study Area and at the southwest corner of the WISP.

Erosion and shrink-swell potential in the Study Area are shown in Figure 10-3.

### Settlement

Settlement is the depression of the bearing soil when a load, such as that of a building or new fill material, is placed upon it. Soils tend to settle at different rates and by varying amounts depending on the load weight, which is referred to as differential settlement. Differential settlement can be a greater hazard than total settlement if there are variations in the thickness of previous and new fills or natural variations in the thickness and compressibility of soils across an area. Settlement commonly occurs as a result of building construction or other large projects that require soil stockpiles. If these areas are comprised of soil stockpiles or other areas of unconsolidated fill materials, they have the potential to respond more adversely to additional load weights as compared to adjacent native soils.

**Figure 10-3: Erosion and Flooding Hazards**



Source: OES, 2008; EPA, 2010; City of Turlock, 2008; Dyett and Bhatia, 2010;

## Subsidence

Subsidence occurs when a large portion of land is displaced vertically, usually due to the withdrawal of groundwater, oil, or natural gas. Soils that are particularly subject to subsidence include those with high silt or clay content. Given the falling water table in the vicinity of Turlock (see Chapter 7), subsidence is a possibility, particularly in areas with high clay content soils.

## POLICIES

### Guiding Policies

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**10.2-a Minimize Geologic and Seismic Risk.** Continue to use building codes as the primary tool for reducing seismic risk in structures.

*The California Building Code, which has been adopted by Turlock, Stanislaus County and the other cities in the County, is intended to ensure that buildings resist major earthquakes of the intensity or severity of the strongest experienced in California, without collapse, but with some structural as well as nonstructural damage. In most structures, it is expected that structural damage could be limited to repairable damage, even in a major earthquake.*

### Implementing Policies

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**10.2-b Meet Most Current Seismic Standards.** Continue to require all new buildings in the City to be built under the seismic requirements of the latest adopted California Building Code.

**10.2-c Provide Incentives for Rehabilitation.** Provide information and incentives for property owners to rehabilitate existing buildings using construction techniques to protect against seismic hazards.

**10.2-d Prohibit Higher Intensity Use for Seismically Unsafe Buildings.** For buildings identified as seismically unsafe, prohibit a change to a higher occupancy or more intensive use until an engineering evaluation of the structure has been conducted and structural deficiencies corrected consistent with City building codes.

**10.2-e Ensure Stability of Sensitive Public Facilities.** Evaluate the structural stability and ability to withstand seismic activity of water tanks, underground utilities, berms, and other sensitive public facilities, and plan for any needed repairs.

- 10.2-f Require Geotechnical Investigations for Proposed Critical Structures.** Require that geotechnical investigations be prepared for all proposed critical structures before construction or approval of building permits, if deemed necessary. Critical structures include police stations, fire stations, emergency equipment storage buildings, water towers, wastewater lift stations, electrical substations, fuel storage facilities, large public assembly buildings, designated emergency shelters, buildings three or more stories high, and any others deemed at the time of application. The investigation shall include estimation of the maximum credible earthquake, maximum ground acceleration, duration, and the potential for ground failure because of liquefaction or differential settling.
- 10.2-g Require Investigations for All Development On Sites Where Soils Pose Risk.** Require soils reports for new development projects where soils pose a potential geologic risk, and use the information to determine appropriate permitting requirements, if deemed necessary.
- 10.2-h Require Erosion Control Plans.** Require new development to include grading and erosion control plans prepared by a qualified engineer or land surveyor.

## 10.3 FLOODING AND DRAINAGE

### FLOOD ZONES

Flood risk is a consequence of rainfall characteristics, topography, water features, vegetation and soil coverage, impermeable surfaces, and urban stormwater management infrastructure. Turlock has an extremely low risk of a major flood event. While there are rivers in the vicinity of the Turlock, the Study Area's only water features are irrigation canals, stormwater detention ponds, and a few small freshwater ponds. No part of the Study Area is within either the FEMA-designated 100-year or 500-year flood plain.

Due to its flat terrain, Turlock can occasionally experience shallow flooding after heavy rainfall in the winter months. Although major flooding is not anticipated, as agricultural and open space lands are converted to urban uses, there will be an increase in stormwater runoff from additional impervious surfaces. To minimize those impacts, General Plan policies seek to manage

stormwater runoff, through the permitting process, good stormwater management practices, and the construction of drainage basins. See also Section 3.3, Infrastructure.

### DAM SAFETY AND INUNDATION HAZARD

The previous General Plan reported that the New Don Pedro Dam presented a potential flooding hazard to the Study Area in the case of maximum water releases. Current dam inundation hazard mapping by the California Emergency Management Agency shows the Turlock Study Area to be entirely outside the Dam Inundation Area for New San Pedro Dam.

As shown on Figure 10-3, Geologic and Flooding Hazards, an area in the far southwest of the Study Area falls within the Dam Inundation Area for New Exchequer Dam, located on the Merced River in Mariposa County. This dam, completed in 1967, holds back just over one million acre-feet of water in Lake McClure. Large-scale inundation could be called by dam failure resulting from extreme storm, earthquake, or erosion of the embankment and foundation.

Stanislaus County and its cities have prepared a Multi-Jurisdictional Hazard Mitigation Plan. The Plan, updated in 2010, identifies actions that will be taken to respond to flood-related emergencies in the event that flooding occurs.

### POLICIES

*See also Section 3.3, Infrastructure for policies on storm drainage.*

#### Guiding Policies

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**10.3-a Protect the Community from Flood Hazards.** Protect the community from risks to life and property damage posed by flooding.

#### Implementing Policies

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**10.3-b Cooperate in Multi-Jurisdictional Hazard Mitigation Plan.** Continue to cooperate with the County and appropriate State and federal agencies in preparing and implementing the Multi-Jurisdictional Hazard Mitigation Plan.



**10.3-c Reduce Stormwater Runoff from Private Development.** Integrate new standards into the Municipal Code that would Update Zoning Ordinance and development review process as needed to reduce peak-hour stormwater flow and increase groundwater recharge.

*See Section 6.4: Sustainable Site Planning for policies on stormwater Best Management Practices.*

**10.3-d Improve Stormwater Management from Streets.** Update City street design standards to allow for expanded stormwater management techniques. These may include:

- Canopy trees to absorb rainwater and slow water flow.
- Directing runoff into or across vegetated areas to help filter runoff and encourage groundwater recharge.
- Disconnecting impervious areas from the storm drain network and maintain natural drainage divides to keep flow paths dispersed.
- Providing naturally vegetated areas in close proximity to parking areas, buildings, and other impervious expanses to slow runoff, filter out pollutants, and facilitate infiltration.
- Directing stormwater into vegetated areas or into water collection devices.
- Using devices such as bioretention cells, vegetated swales, infiltration trenches and dry wells to increase storage volume and facilitate infiltration.
- Diverting water away from storm drains using correctional drainage techniques.



*Limiting the extent of impervious surfaces allows stormwater to drain and filter, minimizing the impacts of stormwater runoff.*

## 10.4 PUBLIC SAFETY AND EMERGENCY MANAGEMENT

### FIRE AND EMERGENCY SERVICES

#### Facilities and Staffing

The Turlock City Fire Department is an all risk department that provides fire and emergency response within the city limits. Areas outside city limits but within the Study Area are served by the Turlock Rural Fire District, the Keyes Fire Department, and the Denair Fire Department. Urban growth according to the General Plan requires annexation, and new development will be served by the City's Fire Department.

The Turlock Fire Department operates four fire stations located in districts that are designed to maximize efficiency and help reduce response times. There is one staffed fire engine at each of the four fire stations with three firefighters on each engine. The current total staffing level is 13 line personnel each day. The Department also operates a 110-foot aerial ladder truck (Truck 71) that is used for suppression activities, air support, technical rescue, and light support. The truck is cross-staffed by personnel at Fire Station No. 1. As of 2011, the Department had 45 line personnel and four administrative staff. In addition to responding to fire and medical emergencies, Department personnel also train and respond to Hazardous Materials and Technical Rescue calls, investigate fire causes, conduct plan review and fire safety inspection, and provide CPR training and public education, among other services.

As the City of Turlock plans for future growth, fire station location will be an important consideration to meet demand for emergency calls and minimize the response times. The General Plan anticipates that one new fire station will be developed with expansion into the Southeast master plan areas. Existing and proposed fire stations are shown in Figure 10-4. The precise location of future stations may change. A feasibility study should be conducted to analyze the impacts of the City's growth on the Fire Department.

#### Fire Threats

Turlock Fire Department responds to commercial and residential structure fires, vehicle fires, rubbish fires, and vegetation fires. Grass fires occur in the urban interface area; on May 22, 2008, a wind-driven grass fire burned about 100 acres and threatened several buildings.

Wildland fire threats are greatest in mountain and foothill areas, where steep slopes, volatile vegetation, and windy conditions increase fire risk. Since the Study Area is almost all flat urbanized or agricultural land, fire risk is low.

The characteristics of the urban environment in Turlock do not make it a high risk area for urban fires—the building stock is in generally good condition and the City Fire Department provides adequate service to the area. The California Department of Forestry and Fire Protection has designated the entire Study Area as a Low Risk Area (LRA). Small areas at the northwest corner, near Keyes, are designated as being moderately threatened (see Figure 10-4).

### ISO Rating

The City of Turlock has an Insurance Services Office (ISO) rating of Class 3. A Class 3 ISO rating indicates that the Fire Department has adequate facilities, personnel, equipment, and expertise to serve the current population. As the City grows, the Department’s service capacity will need to continue to increase in order to maintain this rating.

### Emergency Response

Turlock adopted the Stanislaus County Multi-Jurisdictional Hazard Mitigation Plan, updated in 2010. The plan identifies measures to reduce the impacts of natural and manmade hazards and to facilitate the recovery and repair of structures if damage should occur from hazardous events. Adoption of the plan ensures that Turlock is eligible for certain federal and State funds for disaster recovery in case of such an event.

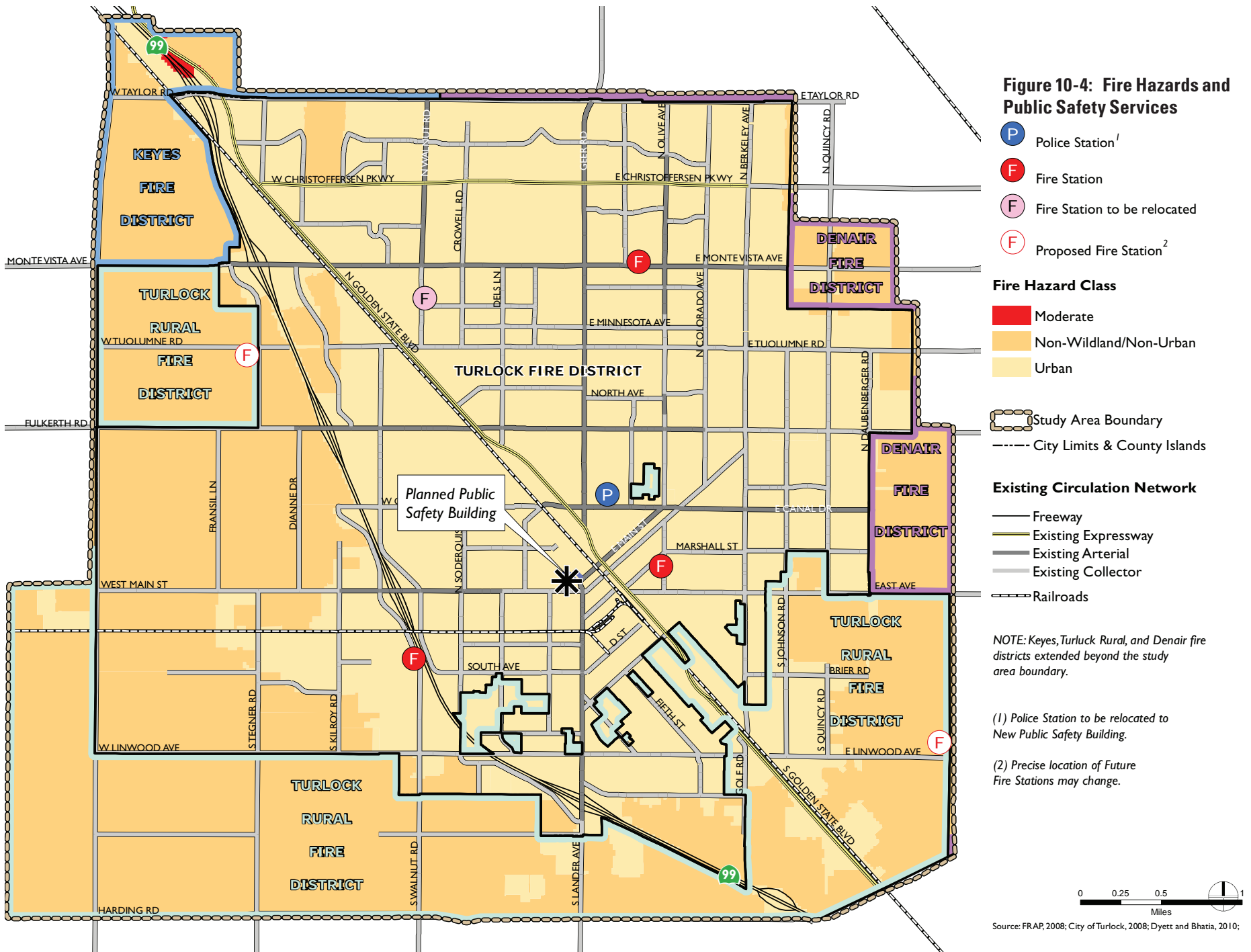
Fire response time is typically measured as an average for the entire department, as well as for each engine company. The Fire Department has maintained an average response time standard of five minutes. The General Plan calls for the Fire Department to strive to achieve a standard of a six-minute response time on average for all calls citywide. Training facilities are essential for the City’s ability to prepare for and mitigate emergency calls. Future training grounds should include an up-to-date drill tower, props, and classroom, where the City could offer training and classes for other fire agencies in the south County area.

The Fire Department will also monitor business growth, especially the development and operation of large facilities in the WISP, to ensure that it is capable of mitigating emergencies at these facilities.



*Water fire-flow capability must be regularly monitored to ensure adequate fire protection (top).*

*The design of streets and new development sites must meet Fire Department access standards; these in turn should be evaluated for unnecessary impacts on design quality (bottom).*



## POLICE SERVICES

### Facilities and Infrastructure

Police services within city limits are provided by the Turlock Police Department, while unincorporated parts of the Study Area are served by the Stanislaus County Sheriff and/or the California Highway Patrol. As with fire protection, the Turlock Police Department will serve new growth areas.

As of 2011, the Turlock Police Department has a staff of 125, 81 of whom are sworn patrol officers. A 2007 Space Needs Assessment confirmed that existing facilities and staffing are not adequate to maintain a sufficient level of service for future population growth. To address this concern, the City is in the process of developing a new public safety facility for police and fire administration. The new facility, to be located at 244 North Broadway, is to accommodate a projected staff of 262 by 2030, as calculated in the Needs Assessment.

While initially both the Police and Fire Departments will be housed in the new facility, the Needs Assessment views the Fire Department space serving as the expansion area for the Police Department over the long term (10 to 20 years), at which point the Fire Department would move to an addition or to a new facility. In the meantime, housing the two departments together is anticipated to improve response time, increase communication and teamwork between the two departments, and allow efficient sharing of space.

At the same time, staff has emphasized the importance of recognizing the connection between the location of new growth and policing needs. As soon as a new development project breaks ground, officers are needed for general oversight and vandalism prevention. Development areas that are noncontiguous and physically separated from the existing urbanized area can strain existing police resources, as they require additional beats and expanded radio coverage. This General Plan's careful sequencing of growth areas, with priority given to areas in the Southeast contiguous to existing neighborhoods, reduces the impact on the Police Department.

A critical element of police services is radio communication. The Turlock Police Department Communications Center currently serves as a Public Safety Answering Point (PSAP) and provides primary dispatching services for four emergency service agencies including the Turlock Police Department, the Turlock Fire Department, California State University – Stanislaus Police Department (during certain days/hours) and the Gustine Police Department.

The infrastructure of the Turlock Police Communications Center also provides other departments and agencies inside and outside the City of Turlock with communication abilities. As development continues in the City of Turlock, additional infrastructure may be necessary to ensure adequate communication capacity. This includes but is not limited to a minimum radio coverage ratio and minimum signal strength in and out of structures.

### **Community Oriented Policing**

The City is interested in expanding its focus on Community Oriented Policing. Community Oriented Policing is comprised of three key components including community partnerships, organizational transformation, and problem solving. Community partnerships involve collaborative relationships between the law enforcement agency and the individuals and organizations to develop solutions to problems and increase public trust. Organizational transformation aligns management, structure, personnel, and information systems to support community partnerships and problem-solving efforts. Problem solving is the process of engaging in the proactive and systematic examination of issues to develop and evaluate effective responses.

The Police Department is focused on continually improving its operations and effectiveness. Some of the Department's strategic goals are summarized below.

#### *Organizational Transformation*

The Department aims to improve its climate and culture by reinforcing a commitment to the community policing philosophy and the strategic plan, being proactive, and being transparent. Leadership, labor unions, and front-line officers all have a responsibility to work as partners.

#### *Community Partnerships*

The Department's relationship to the community should be enhanced, by encouraging officers to take a team approach to problem solving; devoting enough human and financial resources to community policing; and considering geographic deployment plans to enhance customer service and facilitate more contact between police and citizens.

#### *Problem Solving*

Problem-solving involves a series of steps, from scanning to analysis to response and assessment. Effective scanning involves a careful examination of basic problems and their scope. Analysis

requires an understanding of the dynamics of the problem and the limits of current responses, toward identification of an effective and appropriate response. Response strategies should then be continually assessed.

### Crime Prevention Through Environmental Design

Crime Prevention through Environmental Design (CPTED) is a crime prevention philosophy that proper design and effective use of the built environment can lead to a reduction in fear and incidents of crime and an improved quality of life. The goal of CPTED is to reduce opportunities for crime that may be inherent in the design of structures or neighborhoods. CPTED evaluates environmental conditions and utilizes intervention methods to control human / criminal behavior and reduce fear of crime.

The Turlock Police Department recognizes the value of CPTED and intends to evaluate the feasibility of implementing a comprehensive CPTED program. See Section 6.7, Urban Design for related policies.

### Part One Crime Ratio

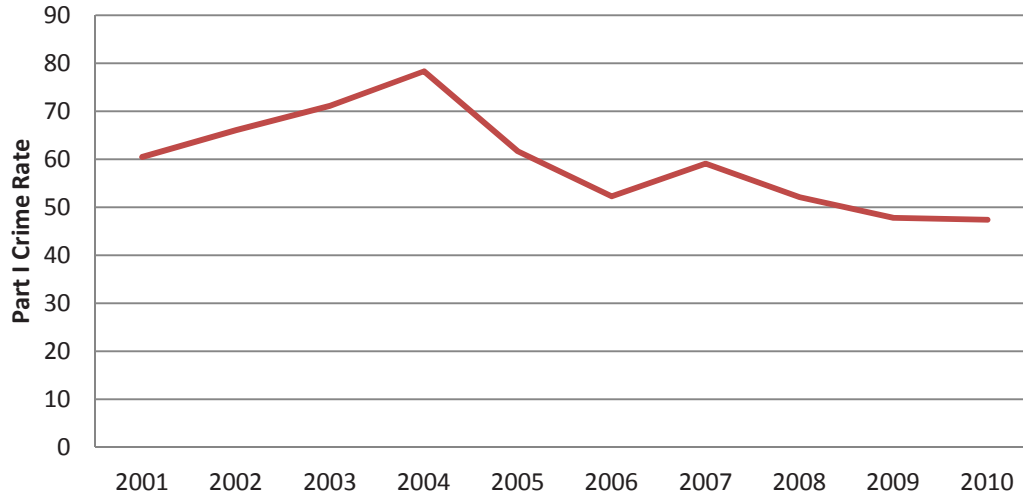
Uniform crime reporting is a collective effort on the part of city, county, state, tribal, and federal law enforcement agencies to present a nationwide view of crime. Agencies throughout the country participating in the Uniform Crime Reporting (UCR) Program provide summarized reports on eight Part I offenses known to law enforcement and reports on persons arrested. The Turlock Police Department submits crime reports monthly to a centralized crime records facility in California. The California UCR Program then forwards the data, using uniform offense definitions, to the FBI's national UCR Program. The FBI compiles, publishes, and distributes the data to participating agencies, state UCR Programs and others interested in the Nation's crime data.

UCR requires crimes to be categorized in one of two classifications, Part I or Part II. Part I crimes are the more serious and include criminal homicide, forcible rape, robbery, aggravated assault, burglary, larceny – theft (except motor vehicle), motor vehicle theft, and arson. Figure 10-5 depicts the Part I crime ratio in the City of Turlock over the last ten years.

Over the last several years, the Turlock Police Department has significantly reduced the Part I crime rate thereby creating a more desirable degree of safety and quality of life throughout the

community. As the city expands through development a key consideration will be the potential impact to the crime rate. The police department will require the facilities, equipment, resources, partnerships, and staffing to ensure the crime rate does not increase as a result of development.

**Figure 10-5: Part 1 Crime Rate**



*Source: City of Turlock Police Department, 2011.*

### Response Times and Available Time

Response times are measured from the time a call for service is received until the time a police employee arrives. Response times are categorized by priority. Priority 1 is the most urgent call for service while Priority 3 poses no immediate, ongoing risk to the public. The following table represents the average response times for Priority 1, Priority 2, and Priority 3 calls for the last ten years. The Turlock Police Department has standardized Priority 1 response times of 6.5 minutes. The impact additional development may have on standardized response time should be a consideration.



**TABLE 10-2: POLICE DEPARTMENT RESPONSE TIMES**

YEAR	PRIORITY 1	PRIORITY 2	PRIORITY 3	NUMBER OF PRIORITY 1 INCIDENTS
2010	06:51	10:40	33:33	594
2009	06:02	09:31	34:02	524
2008	06:24	12:20	37:46	564
2007	07:14	14:47	45:28	552
2006	06:46	12:40	35:56	483
2005	07:15	14:11	42:56	505
2004	07:48	13:30	43:50	491
2003	06:45	12:12	40:04	447
2002	06:51	12:51	40:37	366
2001	06:17	12:04	37:44	358

*Source: City of Turlock Police Department, 2011.*

The amount of time a police officer has to engage in proactive activities is known as “Available Time.” The Turlock Police Department recognizes the value of proactive policing strategies. This includes education, enforcement, community relations, quality of life concerns, and community oriented policing activities. Adequate staffing levels are directly related to the percentage of officer available time.

### Public Employees per 1,000 Residents

The United States Department of Justice (DOJ) Bureau of Justice Statistics (BJS) produces a report compiled from a representative sample of law enforcement agencies nationwide. According to the December 2010 report, for communities of 50,000 to 99,999 residents, the nationwide average number of sworn police officers is 1.8 per 1,000 residents. In 2010, the number of sworn officers per capita in the City of Turlock was 1.2, up from 0.8 in 2006. While this ratio should not be used as the sole gauge for adequate police staffing, it is an important tool for long term staffing trend analysis and its correlation to the crime index. As development continues in Turlock it will be necessary to ensure that police service adjusts to an increased population.

## POLICIES

### Guiding Policies

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- 10.4-a Protect from Hazards.** Continue to protect people and property from natural and manmade hazards.
- 10.4-b Provide High-Quality Public Safety Services.** Continue to provide a level of service standard that meets or exceeds the national average in response to police protection and fire protection/prevention through efficient organization, administration and annual funding.
- 10.4-c Expand Services in Coordination With Growth.** Continue to promote the orderly and efficient expansion of public safety facilities to adequately meet the needs of the community while minimizing adverse fiscal and environmental impacts. Continue to coordinate capital improvements planning for public safety facility needs with implementing policies set forth in this Plan with respect to the direction, extent, and timing of Turlock’s growth.
- 10.4-d Establish Equitable Funding Mechanisms.** Continue to implement and review existing, and consider establishing new, equitable methods for minimizing public facility and service costs associated with new development. Take advantage of State and federal funding and grant opportunities as they become available.
- 10.4-e Coordinate With Other Agencies and Community Organizations.** Continue to cooperate with other agencies and community organizations to improve the efficiency and effectiveness of fire and police protection within the Study Area.
- 10.4-f Educate the Public on Prevention Strategies.** Work with nonprofits, service providers, private businesses, the media and the public to educate on prevention and protection strategies.
- 10.4-g Be Prepared for Emergencies.** Continue to cooperate with Stanislaus County and other jurisdictions in preparing and implementing Emergency Preparedness Plans.
- 10.4-h Strategic Planning.** Continue to develop strategic plans that identify high-priority community needs and organizational, staffing, and resource requirements to meet those needs.

## Implementing Policies

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### **Fire Service**

- 10.4-i Meet Response Time Standard Throughout Study Area.** Adequately distribute fire-fighting equipment and personnel throughout the Sphere of Influence to ensure quick response time (strive to achieve 5 minute response time to all calls within the primary service area of each fire station, 90% of the time). Critical factors that affect response times are station locations and road circulation patterns.
- 10.4-j Coordinate Facilities Planning With Urban Expansion.** As part of master planning for areas outside current City limits, determine an appropriate location for new fire stations/facilities, based on the configuration and phasing of new development and urban expansion. Ease of access and efficient service areas should be major determinants. When preparing master plans, assess the ability of the Fire Department to meet established service standards, and identify strategies to mitigate potential service impacts. Ensure that the Capital Facility Fee program, the Community Facilities District #2 and any other funding mechanisms are updated to provide adequate funding of required facilities, equipment, apparatus and services.
- 10.4-k Maintain Mutual Aid Agreements.** Maintain mutual aid agreements with other fire and emergency service departments in Stanislaus County.
- 10.4-l Monitor Water Capacity.** Continue to monitor water fire-flow capability throughout the City and improve water availability if any locations have flows considered inadequate for fire protection.
- 10.4-m Maintain Appropriate Urban Design Standards.** Roadways shall be developed in accordance with General Plan standards contained in Chapter 5 of the General Plan. Deviations from roadway standards shall not be granted unless it is determined by the Fire Department and the City Engineer that it shall have no impact on the delivery of fire services to the affected area.
- 10.4-n Enforce Fire Safety Codes.** Continue enforcement of all aspects of Chapter 4-3 of the Municipal Code, Fire Codes and Administration.
- 10.4-o Maintain ISO Rating.** Strive to maintain the City's Class 3 ISO rating, or better, for fire protection. As necessary, identify and implement additional financing mechanisms.
- 10.4-p Training Facilities.** Ensure that training facilities are maintained and upgraded as needed.

**Police Service**

**10.4-q Evaluate Beat System to Optimize Police Service.** Continue to monitor and revamp as necessary the Police Department’s beat system to provide high quality and efficient crime deterrence, ensure a minimal response time, and optimize police available time throughout the City as it grows.

*The Police Department strives to achieve a 6.5-minute response time to all Priority 1 calls, and will consider developing a performance indicator for police available time.*

**10.4-r Community Crime Prevention Programs.** Continue and encourage existing community crime prevention programs such as Neighborhood Watch, PAL, DARE, and gang awareness, to help deter crime throughout the City.

**10.4-s Emphasize Community-Oriented Policing.** Maintain the commitment to the Community Oriented Policing philosophy implemented in 1993. Implement the Community Oriented Policing Program through cooperative staff efforts and necessary funding.

**10.4-t Maintain Community Partnerships.** Form proactive and creative community partnerships that develop responsible ownership for public safety in Turlock. The policy is accomplished as follows:

- Educate the public in how they can improve their personal safety;
- Use a proactive and preventative approach that is issue-oriented;
- Support innovative approaches to problem-solving;
- Establish mutual trust and communication among Police Services staff and the community;
- Provide positive role models and values through activities in the neighborhoods and community as a whole.
- Utilize an ongoing evaluative and flexible approach to community safety.
- Apply professional service and equitable application of the law.

***Combined Public Services***

**10.4-u Complete Public Safety Building Project.** Complete the construction of the new Public Safety Building.

**10.4-v Examine Capital Facilities and Community Facilities District Fees.** Undertake a reexamination of the present Capital Facilities and Community Facilities District fee schedules to reflect changes in Public Safety facility needs identified in this Plan.

**10.4-w Coordinate Facilities Planning With Urban Expansion.** When preparing master plans, assess the ability of the Police Department to maintain service levels, and identify strategies to mitigate potential service impacts. Ensure that the Capital Facility Fee program, the Community Facilities District #2 and any other funding mechanisms are updated to provide adequate funding of required facilities, equipment, apparatus and services.

*This may include implementation of the second phase of the Public Safety Building pursuant to the Space Needs Assessment.*

**10.4-x Radio Infrastructure Requirements.** Amend Chapter 8 (Building Regulations) of the Turlock Municipal Code to require all new construction to be designed to amplify emergency radio communications within larger buildings.

**10.4-y Maintain Access to Fire Hydrants.** Develop and implement a program to apply and maintain red curbing at all fire hydrants.

***Emergency Management***

**10.4-z Maintain Coordinated Emergency Response Program.** Update the Emergency Management Plan periodically to maintain currency with available information. Continue to cooperate with Stanislaus County and other jurisdictions in preparing and implementing Emergency Preparedness Plans.

**10.4-aa Maintain Evacuation Routes.** Ensure that major access and evacuation corridors are available and unobstructed in case of major emergency or disaster.

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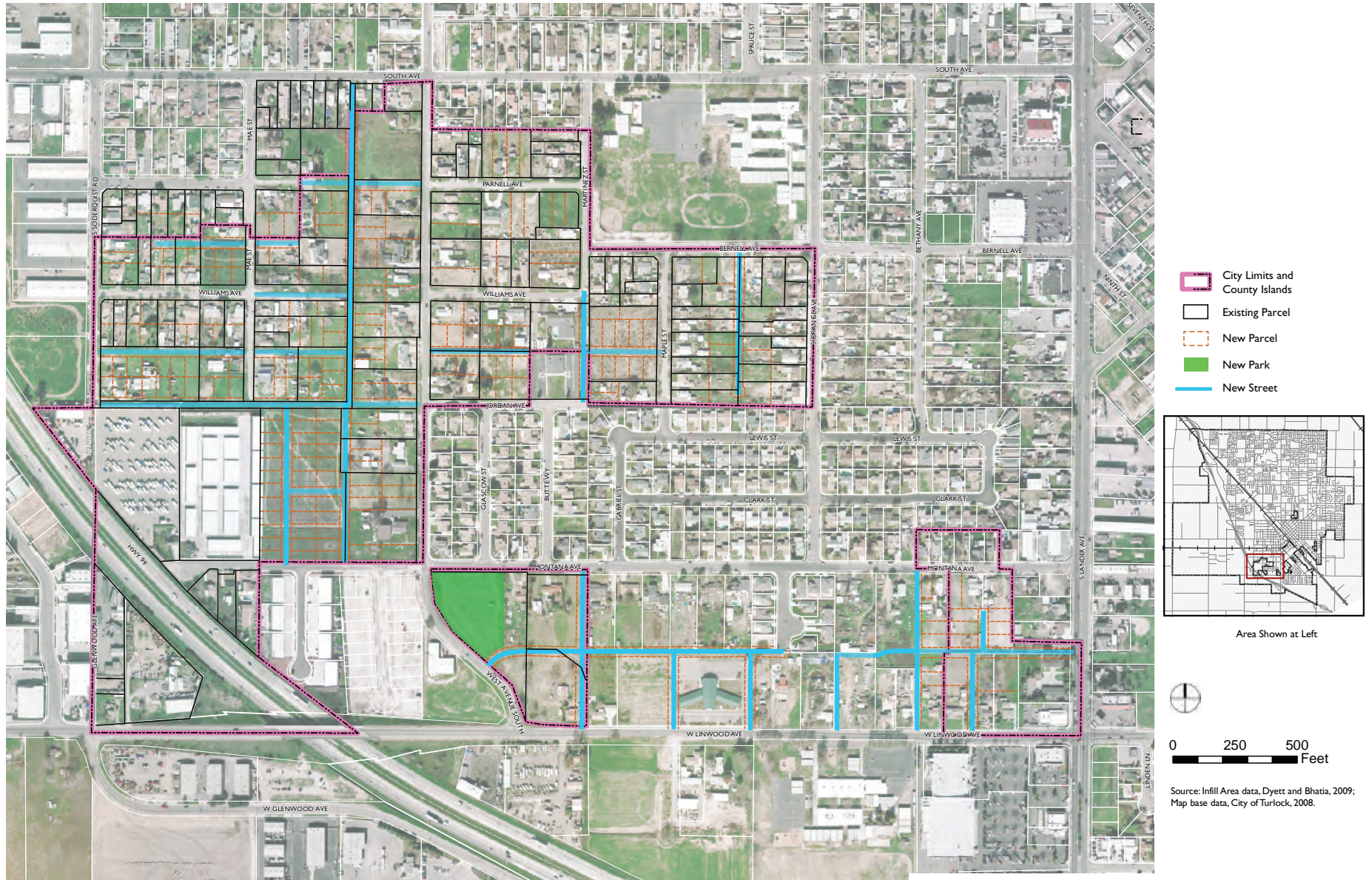
## Appendix A: Montana-West Street Plan

“Montana-West” is an area encompassing three of Turlock’s seven unincorporated County Islands, including the largest one, comprising approximately 50 acres. Low density residential development is the predominant land use, with a significant number of vacant and/or underutilized parcels.

The lot sizes, development density, and parcel pattern within the County Islands create a significant opportunity for introduction of new streets and parcel subdivisions on a lot-by-lot basis. The illustrative plan shown here would provide an attractive neighborhood street network, adding value and allowing owners to subdivide. The new streets would allow the area to avoid an overabundance of “flag lots” and overuse of existing, substandard streets, while creating a new neighborhood feel. Subdivision of large lots would create opportunities for a denser, more connected neighborhood while retaining the area’s single family character. Improvements to the street and infrastructure system would be financed by the subdivision process. Overall, approximately 200 new single family lots could be created in the County Islands in the Montana-West Master Plan Area.

This lotting plan is meant as an illustrative example that would retain the predominantly single-family character of the area. A strategic plan as described in Chapter 3 should be done to evaluate whether development at this density would support infrastructure improvements meeting City standards. Medium and high-density development may be an appropriate alternative for some sites.

**Figure A-1: Illustrative Street and Lot Plan for Montana-West Area**





# Appendix B: Capital Facilities Fee Update

## ROADWAY IMPROVEMENTS

Table B-1 lists the roadway improvements to be incorporated in to the Capital Facilities Fee (CFF) update. The facilities are illustrated in Figure 5-2, the General Plan Circulation Diagram at buildout. New local streets and collectors in master plan areas will be funded by the master plan fees for those respective areas; however, some new collectors are shown in this table to illustrate their relationship to the overall circulation network.

TABLE B-1: PLANNED ROADWAY IMPROVEMENTS						
STREET	EXTENTS		CURRENT ROADWAY TYPE AND # OF LANES	FUTURE CLASSIFICATION	GENERAL PLAN BUILDOUT (2030)	TYPE
	FROM	TO				
<i>Improvements To Existing Streets</i>						
Canal Drive	Tully Road	Soderquist Road	2-Lane Collector	Arterial	2 Lanes	Commercial
East Avenue	Golden State Boulevard	Johnson Road	2-Lane Rural	Arterial*	4 Lanes	Residential
East Avenue	Johnson Road	Verduga Road	2-Lane Rural	Arterial*	4 Lanes	Residential
Linwood Avenue	Washington Road	West Glenwood Road	2-Lane Collector	Arterial	4 Lanes	Commercial
Linwood Avenue	West Avenue	Lander Avenue	2-Lane Collector	Arterial	4 Lanes	Commercial
Linwood Avenue	5th Street	Golf Road	2-Lane Collector	Arterial*	4 Lanes	Residential
Linwood Avenue	Johnson Road	Daubenberger Road Extension	2-Lane Collector	Arterial	4 Lanes	Residential
Linwood Avenue	Daubenberger Road Extension	Verduga Road	2-Lane Collector	Arterial	4 Lanes	Residential
Olive Avenue	Canal Drive	North Avenue	2-Lane Collector	Arterial*	4 Lanes	Residential
Olive Avenue	Tuolumne Road	Tornell Avenue	2-Lane Collector	Arterial*	4 Lanes	Commercial
Golf Road	SR 99 Overcrossing	West Glenwood Road	2-Lane Rural	Arterial	2 Lanes	Residential
Golf Road	West Glenwood Road	Linwood Road	2-Lane Rural	Arterial	4 Lanes	Residential
Berkeley Avenue	Golden State Boulevard	East Avenue	2-Lane Collector	Arterial	2 Lanes	Residential
Tegner Road	Fulkerth Road	Ball Fields	2-Lane Collector	Arterial	4 Lanes	Commercial
Fulkerth Road	Washington Road	Tegner Road	2-Lane Rural	Arterial	4 Lanes	Commercial

**TABLE B-1: PLANNED ROADWAY IMPROVEMENTS**

EXTENTS						
STREET	FROM	TO	CURRENT ROADWAY TYPE AND # OF LANES	FUTURE CLASSIFICATION	GENERAL PLAN BUILDOUT (2030)	TYPE
Fulkerth Road	Tegner Road	Dianne Drive	2-Lane Rural	Arterial	4 Lanes	Commercial
Main Street	Washington Road	Tegner Road	2-Lane Collector	Arterial	4 Lanes	Commercial
Main Street	Tegner Road	Walnut Road	2-Lane Collector	Arterial	4 Lanes	Commercial
Golden State Boulevard	Taylor Road	Christofferson Parkway	4-Lane Collector	Expressway	6 Lanes	Commercial
Verduga Road	Hawkeye Avenue	East Avenue	2-Lane Collector	Expressway	4 Lanes	Residential
Verduga Road	East Avenue	Linwood Avenue	2-Lane Collector	Expressway	4 Lanes	Residential
Lander Avenue	Harding Avenue	West Glenwood Avenue	2-Lane Rural	Arterial	4 Lanes	Commercial
Washington Road	Fulkerth Road	Main Street	2-Lane Collector	Expressway	4 Lanes	Commercial
Washington Road	Main Street	Linwood Road	2-Lane Collector	Expressway	4 Lanes	Commercial
<i>New Streets</i>						
Canal Drive Extension	Washington Road	Tegner Road	N/A	Collector	2 Lanes	Commercial
Canal Drive Extension	Tegner Road	Walnut Road	N/A	Collector	2 Lanes	Commercial
Canal Drive Extension	Daubenberger Road	Verduga Road	N/A	Arterial	2 Lanes	Commercial
Tegner Road Extension	Main Street	Fulkerth Road	N/A	Arterial	2 Lanes	Commercial
Morgan Ranch Arterial	Lander Avenue	Golf Road	N/A	Arterial	4 Lanes	Residential
Morgan Ranch Arterial	Golf Road	West Glenwood Road	N/A	Arterial	2 Lanes	Residential
Northeast Expressway	Christofferson Parkway @ Berkeley Avenue	Hawkeye Avenue @ Verduga Road	N/A	Expressway	4 Lanes	Residential
Daubenberger Road Extension	Brier Road	Linwood Road	N/A	Collector	2 Lanes	Residential
Waring Road Extension	East Avenue	Linwood Road	N/A	Collector	2 Lanes	Residential

\*Some arterials will be sub-standard facilities due to existing right-of-way constraints.

Source: *Omni-Means, 2012*

## ADDITIONAL IMPROVEMENTS

Table B-2 lists facilities, services, and studies that should be incorporated into the Capital Facilities Fee update following the adoption of the General Plan. These items are in addition to the roadway improvements listed in table B-1 .

TABLE B-2: FACILITIES, SERVICES, AND STUDIES FOR INCLUSION IN CFF UPDATE
<i>Transportation</i>
<b>Freeway Overcrossings, Railroad Overcrossings and Railroad At-Grade Crossings</b>
Tuolumne Road overcrossing (over SR 99)
Berkeley Avenue at Golden State Boulevard railroad at-grade crossing improvements
Linwood Avenue overcrossing (over railroad and Golden State Boulevard)
Linwood Avenue overcrossing widening (over SR 99)
<b>Interchange Improvements and Associated Project Study Reports</b>
Taylor Road
Fulkerth Road
West Main Street
Lander Avenue
Southeast Interchange
<b>Plan Line Studies</b>
East side expressway connection from Daubenberger/East Avenue to Christofferson Parkway
Washington Road from Linwood Road to Fulkerth Road
<b>Transit, Pedestrian, and Bikeway Improvements</b>
Transit facilities and amenities
Class I multi-use path construction
Class II bike lane striping
Class III bike route signage and demarcation
Bikeway Improvements Feasibility Study
<b>Circulation Network: Other</b>
Traffic signals and other operational improvements on existing streets
Downtown parking structures
Roadway circulation study for east side expressway
Fund for local air quality improvements

TABLE B-2: FACILITIES, SERVICES, AND STUDIES FOR INCLUSION IN CFF UPDATE	
<i>Police</i>	
	Outdoor facilities option (shooting range)
	Indoor facilities option (shooting range)
	Animal Services
	Public Safety Facility and expansion
	Vehicles, equipment, and other apparatuses required to support new facilities
<i>Fire</i>	
	Fire training facility site
	New fire station east of Highway 99
	Feasibility Study for determining new fire station location and facility needs
	Vehicles, equipment, and other apparatuses required to support new facilities
<i>General Government</i>	
	City Hall/Municipal Services/Recreation – reconfiguration of existing space
	City Hall/Municipal Services/Recreation – Phase I additions to existing buildings
	City Hall/Municipal Services/Recreation – Phase II additions to existing buildings
	City Hall/Municipal Services/Recreation – Phase III additions to existing buildings
	City Hall/Municipal Services/Recreation – Phase IV Purchase of new 25,000 s.f. building, and tenant improvements
	Corporation Yard
	Transit Center Feasibility
	Facilities and Recreation Department – locker and shower rooms; existing building remodel
	Feasibility study for recreational/community facilities
	Recreational equipment and facilities associated with new community park: a fully improved parking lot; play equipment; lighted tennis courts; a four-diamond ballfield complex; full basketball courts; a bocce court; horseshoe pits with lights and arbor; a maintenance/concession building; rose garden; dog park; and restroom facilities
	Recreational equipment and facilities associated with new neighborhood parks: swing set; play equipment; and either a basketball half court, sand volleyball, horseshoe pits, bocce ball, or shuffleboard
	Discount Superstore Demand Analysis
	Sanitary Sewer Master Plan
	Stormwater Master Plan

**TABLE B-2: FACILITIES, SERVICES, AND STUDIES FOR INCLUSION IN CFF UPDATE**

<i>General Government Cont'd</i>
CFF Funding Evaluation
Next General Plan Update
<i>Administration</i>
3% CFF Administration Fee

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# Appendix C: Projected Roadway Levels of Service

Table C-1 lists the anticipated average daily trips (ADT) and average daily level of service (LOS) of roadway segments in the Study Area at General Plan buildout, in 2030. LOS thresholds are defined in Table C-2. Entries in bold are those projected to operate at LOS E or F at full buildout..

TABLE C-1: FULL BUILDOUT LOS					
ROADWAY	LOCATION	FACILITY TYPE	VOLUME / CAPACITY	GP BUILDOUT / ADT	LOS
State Route 99	<b>s/o Golden State Boulevard</b>	<b>Six-Lane Freeway</b>	<b>115%</b>	<b>137,819</b>	<b>F</b>
	<b>s/o SR 165 By-Pass</b>	<b>Six-Lane Freeway</b>	<b>100%</b>	<b>119,576</b>	<b>E</b>
	<b>s/o Lander Avenue</b>	<b>Six-Lane Freeway</b>	<b>111%</b>	<b>133,425</b>	<b>F</b>
	<b>s/o Main Street</b>	<b>Six-Lane Freeway</b>	<b>118%</b>	<b>142,187</b>	<b>F</b>
	<b>s/o Fulkerth Road</b>	<b>Six-Lane Freeway</b>	<b>125%</b>	<b>150,387</b>	<b>F</b>
	<b>s/o Monte Vista Avenue</b>	<b>Six-Lane Freeway</b>	<b>120%</b>	<b>143,555</b>	<b>F</b>
	<b>s/o Taylor Road</b>	<b>Six-Lane Freeway</b>	<b>113%</b>	<b>135,197</b>	<b>F</b>
	<b>n/o Taylor Road</b>	<b>Six-Lane Freeway</b>	<b>97%</b>	<b>116,166</b>	<b>E</b>
Old State Route 165	s/o Clausen Road	Four-Lane Arterial	25%	7,971	A
	s/o State Route 99	Four-Lane Arterial	63%	20,289	B
Golden State Boulevard	s/o State Route 99	Four-Lane Expressway	48%	18,242	A
	s/o Daubenberger Road Extension	Four-Lane Expressway	49%	18,609	A
	s/o Linwood Overcrossing	Four-Lane Expressway	61%	23,163	B
	s/o Berkeley Avenue	Four-Lane Expressway	47%	17,676	A
	s/o East Avenue	Four-Lane Arterial	55%	17,589	A
	s/o Olive Avenue	Four-Lane Arterial	77%	24,658	C
	<b>s/o Geer Avenue</b>	<b>Four-Lane Arterial</b>	<b>95%</b>	<b>30,351</b>	<b>E</b>
	s/o Canal Drive	Four-Lane Arterial	64%	20,604	B
	s/o Hawkeye Avenue	Six-Lane Arterial	65%	31,083	B
	s/o Walnut Avenue	Six-Lane Arterial	62%	29,866	B
s/o Tuolumne Road	Six-Lane Arterial	59%	28,261	A	
s/o Monte Vista Avenue	Six-Lane Expressway	43%	27,694	A	
s/o Christofferson Parkway	Six-Lane Expressway	57%	32,257	A	

**TABLE C-1: FULL BUILDOUT LOS**

ROADWAY	LOCATION	FACILITY TYPE	VOLUME / CAPACITY	GP BUILDOUT / ADT	LOS
Golden State Boulevard	s/o Taylor Road	Six-Lane Expressway	62%	35,403	B
Washington Road	s/o Linwood Avenue	Two-Lane Collector	69%	8,242	B
	s/o Main Street	Two-Lane Collector	73%	8,781	B
	s/o Fulkerth Road	Four-Lane Expressway	32%	12,093	A
	s/o Tuolumne Road	Four-Lane Expressway	13%	4,977	A
	s/o Monte Vista Avenue	Four-Lane Expressway	13%	5,023	A
	s/o Taylor Road	Two-Lane Expressway	22%	2,123	A
Tegner Road	s/o Linwood Avenue	Two-Lane Collector	8%	900	A
	s/o Main Street	Two-Lane Collector	47%	5,602	A
	s/o Fulkerth Road	Four-Lane Arterial	51%	16,383	A
	s/o Tuolumne Road	Four-Lane Arterial	60%	19,309	A
	s/o Monte Vista Avenue	Four-Lane Arterial	49%	15,649	A
Countryside Drive	s/o Tuolumne Road	Four-Lane Arterial	63%	20,041	B
	<b>s/o Monte Vista Avenue</b>	<b>Four-Lane Arterial</b>	<b>102%</b>	<b>32,665</b>	<b>F</b>
Walnut Avenue	s/o Linwood Avenue	Two-Lane Collector	7%	864	A
	s/o Main Street	Two-Lane Arterial	68%	10,864	B
	s/o Tuolumne Road	Two-Lane Collector	65%	7,763	A
	s/o Monte Vista Avenue	Two-Lane Collector	88%	10,523	D
	s/o Christofferson Parkway	Four-Lane Arterial	62%	19,910	A
	s/o Taylor Road	Four-Lane Arterial	30%	9,452	A
Dels Lane	s/o Tuolumne Road	Two-Lane Collector	81%	9,709	C
	s/o Monte Vista Avenue	Two-Lane Collector	54%	6,447	A
Lander Avenue	<b>s/o East Glenwood Avenue</b>	<b>Four-Lane Arterial</b>	<b>115%</b>	<b>36,784</b>	<b>F</b>
	<b>s/o Linwood Avenue</b>	<b>Four-Lane Arterial</b>	<b>92%</b>	<b>29,319</b>	<b>E</b>
	s/o Main Street	Four-Lane Arterial	83%	20,560	D
Geer Road	s/o Canal Drive	Four-Lane Arterial	55%	17,567	A
	s/o Hawkeye Avenue	Four-Lane Arterial	75%	23,935	C
	s/o Tuolumne Road	Four-Lane Arterial	84%	26,796	D
	s/o Monte Vista Avenue	Four-Lane Arterial	75%	24,072	C



**TABLE C-1: FULL BUILDOUT LOS**

ROADWAY	LOCATION	FACILITY TYPE	VOLUME / CAPACITY	GP BUILDOUT / ADT	LOS
Geer Road	s/o Christofferson Parkway	Four-Lane Arterial	62%	19,845	A
	s/o Taylor Road	Four-Lane Arterial	57%	18,086	A
Olive Avenue	s/o Hawkeye Avenue	Four-Lane Arterial	66%	20,988	B
	s/o Tuolumne Road	Four-Lane Arterial	62%	19,699	A
	s/o Monte Vista Avenue	Four-Lane Arterial	62%	19,786	A
	s/o Christofferson Parkway	Four-Lane Arterial	40%	12,685	A
Golf Road	s/o Morgan Ranch Arterial	Two-Lane Arterial	65%	10,461	B
	s/o Glenwood Avenue	Two-Lane Arterial	78%	12,483	C
	s/o Linwood Avenue	Four-Lane Arterial	50%	16,006	A
	s/o Golden State Boulevard	Four-Lane Arterial	48%	15,445	A
Berkeley Avenue	s/o Paulson Road	Two-Lane Arterial	70%	11,239	B
	s/o East Avenue	Two-Lane Arterial	53%	8,452	A
	s/o Canal Drive	Two-Lane Collector	48%	5,771	A
	s/o Hawkeye Avenue	Two-Lane Collector	83%	9,907	C
	s/o Tuolumne Road	Two-Lane Collector	44%	5,330	A
	s/o Monte Vista Avenue	Two-Lane Collector	52%	6,187	A
	s/o Christofferson Parkway	Two-Lane Collector	22%	2,679	A
	s/o Taylor Road	Two-Lane Collector	69%	8,298	B
Daubenberger Road	s/o Brier Road Extension	Two-Lane Collector	45%	5,425	A
	s/o East Avenue	Two-Lane Collector	67%	7,993	A
	s/o Canal Drive	Two-Lane Collector	20%	2,348	A
	s/o Hawkeye Avenue	Two-Lane Collector	10%	1,227	A
	s/o Tuolumne Road	Two-Lane Collector	2%	228	A
Verduga Road	s/o Brier Road Extension	Four-Lane Expressway	20%	7,415	A
	s/o East Avenue	Four-Lane Expressway	23%	8,618	A
	s/o Canal Drive	Four-Lane Expressway	46%	17,458	A
	s/o Hawkeye Avenue	Four-Lane Expressway	47%	17,827	A
Northeast Expressway	s/o Tuolumne Road	Four-Lane Expressway	46%	17,669	A
	s/o Monte Vista Avenue	Four-Lane Expressway	41%	15,642	A

**TABLE C-1: FULL BUILDOUT LOS**

ROADWAY	LOCATION	FACILITY TYPE	VOLUME / CAPACITY	GP BUILDOUT / ADT	LOS
Northeast Expressway	s/o Zeering Road	Four-Lane Expressway	33%	12,642	A
Harding Road	w/o Tegner Road	Two-Lane Collector	5%	632	A
	w/o Walnut Avenue	Two-Lane Collector	4%	481	A
	w/o Old State Route 165	Two-Lane Collector	4%	481	A
Morgan Ranch Arterial	w/o Golf Road	Two-Lane Collector	6%	771	A
	w/o Glenwood Avenue	Four-Lane Arterial	44%	14,221	A
	w/o Golf Road	Two-Lane Arterial	19%	2,984	A
Linwood Avenue	w/o Tegner Road	Four-Lane Arterial	28%	8,838	A
	w/o Walnut Avenue	Four-Lane Arterial	28%	8,935	A
	w/o Lander Avenue	Four-Lane Arterial	62%	19,741	A
	w/o 5th Street	Two-Lane Collector	88%	10,553	D
	w/o Golf Road	Four-Lane Collector	64%	15,242	B
	w/o Daubenberger Road	Four-Lane Arterial	36%	11,660	A
	w/o Verduga Expressway	Four-Lane Arterial	25%	7,937	A
Main Street	w/o Tegner Road	Four-Lane Arterial	65%	20,757	B
	w/o Walnut Avenue	Four-Lane Arterial	75%	24,024	C
	w/o Soderquist Road	Four-Lane Arterial	87%	27,849	D
	w/o Lander Avenue	Two-Lane Collector	89%	10,690	D
East Avenue	w/o Berkeley Avenue	Four-Lane Collector	65%	15,574	B
	w/o Verduga Expressway	Four-Lane Collector	42%	10,077	A
Canal Drive Extension	w/o Tegner Road	Two-Lane Arterial	10%	1,653	A
	w/o Walnut Avenue	Two-Lane Arterial	91%	14,500	D
Canal Drive	w/o Soderquist Road	Two-Lane Arterial	86%	13,802	D
	w/o Golden State Boulevard	Four-Lane Arterial	57%	18,174	A
	w/o Geer Road	Four-Lane Arterial	83%	26,648	D
	w/o Olive Avenue	Four-Lane Arterial	51%	16,226	A
	w/o Berkeley Avenue	Four-Lane Arterial	69%	21,990	B
Fulkerth Road	w/o Verduga Expressway	Two-Lane Arterial	42%	6,718	A
	w/o Tegner Road	Four-Lane Arterial	55%	17,474	A

**TABLE C-1: FULL BUILDOUT LOS**

ROADWAY	LOCATION	FACILITY TYPE	VOLUME / CAPACITY	GP BUILDOUT / ADT	LOS
<b>Fulkerth Road</b>	<b>w/o Countryside Drive</b>	<b>Four-Lane Arterial</b>	<b>105%</b>	<b>33,722</b>	<b>F</b>
	<b>w/o Golden State Boulevard</b>	<b>Four-Lane Arterial</b>	<b>110%</b>	<b>35,188</b>	<b>F</b>
Hawkeye Avenue	w/o Geer Road	Four-Lane Arterial	64%	20,549	B
	w/o Olive Avenue	Four-Lane Arterial	53%	16,840	A
	w/o Berkeley Avenue	Two-Lane Collector	63%	7,544	A
	w/o Verduga Expressway	Two-Lane Collector	53%	6,358	A
Tuolumne Road	w/o Countryside Drive	Four-Lane Arterial	58%	18,411	A
	<b>w/o Golden State Boulevard</b>	<b>Four-Lane Arterial</b>	<b>100%</b>	<b>31,869</b>	<b>E</b>
	w/o Geer Road	Two-Lane Collector	29%	3,512	A
	w/o Olive Avenue	Two-Lane Collector	33%	3,934	A
Monte Vista Avenue	w/o Northeast Expressway	Two-Lane Collector	10%	1,209	A
	w/o Countryside Drive	Six-Lane Arterial	90%	43,062	D
	<b>w/o Golden State Boulevard</b>	<b>Four-Lane Arterial</b>	<b>129%</b>	<b>41,224</b>	<b>F</b>
	<b>w/o Walnut Avenue</b>	<b>Four-Lane Arterial</b>	<b>103%</b>	<b>32,887</b>	<b>F</b>
Christofferson Parkway	w/o Geer Road	Four-Lane Arterial	87%	27,773	D
	w/o Olive Avenue	Four-Lane Arterial	56%	17,955	A
	w/o Northeast Expressway	Four-Lane Arterial	40%	12,930	A
	w/o Walnut Avenue	Four-Lane Expressway	72%	27,281	C
Taylor Road	w/o Geer Road	Four-Lane Expressway	80%	30,569	C
	w/o Berkeley Avenue	Four-Lane Expressway	74%	28,273	C
	w/o Northeast Expressway	Four-Lane Expressway	50%	19,180	A
	w/o State Route 99	Two-Lane Collector	36%	4,266	A
Christofferson Parkway	w/o Golden State Boulevard	Six-Lane Expressway	80%	45,818	C
	w/o Tegner Road	Two-Lane Collector	68%	8,149	B
	w/o Walnut Avenue	Two-Lane Collector	54%	6,479	A
	w/o Geer Road	Two-Lane Collector	34%	4,035	A
Christofferson Parkway	w/o Berkeley Avenue	Two-Lane Collector	78%	9,313	C

Source: Omni-Means, 2012

**TABLE C-2: LOS THRESHOLDS**

	LOS "A"	LOS "B"	LOS "C"	LOS "D"	LOS "E"
All Facilities					
(Volume-to-Capacity Ratio (V/C))	<0.6	0.6-0.7	0.7-0.8	0.8-0.9	0.9-1.0
	<b>AVERAGE DAILY TRAFFIC (ADT) – TOTAL OF BOTH DIRECTIONS</b>				
<b>ROADWAY TYPE</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
Eight-Lane Freeway	96,000	112,000	128,000	144,000	160,000
Six-Lane Freeway	72,000	84,000	96,000	108,000	120,000
Four-Lane Freeway	48,000	56,000	64,000	72,000	80,000
Six-Lane Expressway	35,000	40,000	46,000	52,000	57,000
Four-Lane Expressway	23,000	27,000	31,000	35,000	38,000
Six-Lane Arterial	29,000	34,000	39,000	44,000	48,000
Four-Lane Arterial	20,000	23,000	26,000	29,000	32,000
Two-Lane Arterial	10,000	12,000	13,000	15,000	16,000
Four-Lane Collector	15,000	17,000	20,000	22,000	24,000
Two-Lane Collector	8,000	9,000	10,000	11,000	12,000



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