

TURLOCK GENERAL PLAN

Draft Environmental Impact Report

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Executive Summary

This Draft Environmental Impact Report (EIR) evaluates the potential impacts of the proposed City of Turlock General Plan.¹ The proposed Plan was developed in response to policy direction provided by the City Council and the Planning Commission as well as community concerns identified through an extensive public participation and outreach program, including newsletters, community workshops and public meetings in 2009-2011. The City of Turlock is the lead agency for this EIR, as defined by the California Environmental Quality Act (CEQA). As the lead agency, the City is required to evaluate the potential effects of the Plan in an EIR.

An EIR is intended to inform decision-makers and the general public of the potential significant environmental impacts of a proposed project. The EIR also identifies mitigation measures to minimize significant impacts and evaluates reasonable alternatives to the proposed project that may reduce or avoid one or more significant environmental effects. These alternatives must include a “No Project” alternative that represents the result of not implementing the project and a range of reasonable alternatives to the project, which would feasibly attain most of the basic objectives but would avoid or substantially lessen any of the significant effects of the project.² Based on the alternatives analysis, an environmentally superior alternative is identified.

This EIR is a program EIR that examines the potential effects resulting from implementing designated land uses and policies in the proposed General Plan. The impact assessment evaluates the General Plan as a whole and identifies the broad, regional effects that may occur with its implementation. As a programmatic document, this EIR does not assess site-specific impacts. Any future development project made possible by the General Plan will be subject to individual, site-specific environmental review, as required by State law.

Proposed Project

The proposed Turlock General Plan is intended to replace the existing General Plan, which was last comprehensively updated in 1992 and partially updated in 2002. The General Plan is composed of goals, policies, a land use diagram, and other graphic figures and maps (e.g., open space systems, a transportation network, and public facilities) to guide future development within the City’s boundaries and in the immediately surrounding unincorporated area, referred to in the proposed Plan as the “Study Area,” through the year 2030.

Turlock is located in south central Stanislaus County, on the eastern side of California’s San Joaquin Valley, approximately 100 miles east of the San Francisco Bay Area. The City is on the State Route 99

¹ Throughout this document, the term “proposed City of Turlock General Plan” is used interchangeably with “proposed General Plan,” “proposed Plan” or the “proposed Project.”

² CEQA Guidelines 15126.6(a)

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corridor, linking it to other Central Valley cities including Modesto, Stockton, and Sacramento to the north and Fresno and Bakersfield to the south.

The Study 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 Study 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 proposed Study Area comprises 17,460 acres, or 27 square miles of both incorporated and unincorporated land bearing relation to the City’s future growth. More specifically, the Study Area roughly extends to Taylor Road to the north, Waring Road and Verduga Road to the east, Harding Road to the south, and Commons Road and Washington Road to the west.

The Plan includes the seven elements required by State law, including Land Use, Transportation/Circulation, Open Space (included in the Parks, Schools, and Community Facilities Element, below), Conservation, Noise, and Safety. Due to State requirements pertaining to the timing and nature of Housing Element preparation, the Housing Element is adopted separately from the General Plan and is contained in a separate volume. It also includes three optional elements, including New Growth Areas and Infrastructure; Parks, Schools, and Community Facilities; City Design; and Air Quality and Greenhouse Gases (required for cities in the San Joaquin Valley per AB 170). Economic Development policies are included in the Land Use Element.

VISION STATEMENT AND THEMES OF THE PROPOSED GENERAL PLAN

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 the proposed Plan’s elements and policies:

1. Establish limits to urban growth that will maintain Turlock as a freestanding city surrounded by productive agricultural land.
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.
3. Attract new businesses to Turlock to create well-paying jobs and maintain a good jobs/housing balance.
4. Improve the local and regional circulation system to serve businesses and new residential development.
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.

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.
7. Manage growth using the Master Planning process to implement General Plan policies and enhance Turlock’s quality of life.
8. Provide a wide variety of recreation and cultural activities for all ages.

These themes are described in greater detail in Section 2 of this EIR.

ESTIMATED BUILDOUT OF THE PROPOSED GENERAL PLAN

Full development under the General Plan is referred to as “buildout.” Although the General Plan envisions policies and land use intentions in the Plan to be realized by 2030, the year is not intended to be certain; nor does the designation of a site for a certain use necessarily mean the site will be built or redeveloped with that use in the next 20 years. The Land Use Element and the New Growth Areas and Infrastructure Element of the proposed General Plan provide a more detailed analysis of General Plan buildout.

Residential Development

Approximately 24,400 housing units currently exist in the Study Area. The General Plan is intended to accommodate an additional 20,600 housing units. General Plan buildout would result in approximately 45,000 housing units in the Study Area.

Buildout Population

As shown in **Table ES-1**, the Study Area would accommodate a population of approximately 126,800 people at buildout, an increase of about 78 percent over the current estimated population, or 55,400 new residents. Over a 20-year period, this represents an average annual growth rate of 2.9 percent, a slightly higher rate than that experienced over the last 20 years, which was about 2.6 percent.

TABLE ES-1: POPULATION, HOUSING UNITS, HOUSEHOLDS, AND JOBS AT BUILDOUT¹

	<i>Existing (2010)</i>	<i>Additional</i>	<i>Buildout (2030)</i>	<i>Annual Growth (percent)</i>
Population ²	71,100	55,700	126,800	2.9
Households	23,500	19,900	43,400	3.1
Housing Units	24,400	20,600	45,000	3.1
Jobs	28,300	32,000	60,300	3.9

Notes:

1. All numbers rounded to the nearest hundred.

2. Buildout population calculated assuming 2.92 persons per household and 3.6 percent residential vacancy rate.

Source: California Department of Finance, 2010; Dyett & Bhatia, 2011; Economic & Planning Systems, 2009.

Buildout Employment

Turlock will accommodate approximately 60,300 jobs at buildout, an increase of about 113 percent. The total additional employment accommodated by the proposed General Plan is about 32,000 jobs. Over a 20-year period, this represents an average annual growth rate of 3.9 percent.

Alternatives to the Proposed General Plan

The following alternatives are described and evaluated in this EIR:

Alternative A: Infill and Master Plan Areas Southeast 1, 2, and 3

Alternative 1 fills in growth on infill sites and in master plan areas Southeast 1 (Morgan Ranch), Southeast 2, and Southeast 3 only—the equivalent of “Phase 1” of development of the proposed General Plan. This is roughly the amount of new development that could take place before necessitating the construction of a new S.R. 99 interchange around Youngstown Road, in the southeast corner of the Study Area.

Alternative 1 could support a total of some 104,500 residents and 53,800 jobs, leading to a jobs/employed residents ratio of 1.29. The population that this alternative could support essentially meets Turlock’s low-end population projection for 2030 of 106,000 residents. This alternative produces the fewest number of housing units, new residents, and jobs compared with the proposed project and Alternative 2, but more than the No Project alternative.

Alternative B: Infill and Master Plan Areas Southeast 1, 2, 3, 4, and 5

Alternative 2 fills in growth on infill sites and in master plan areas Southeast 1 (Morgan Ranch), Southeast 2, Southeast 3, Southeast 4, and Southeast 5, filling out the Study Area boundary in the southeast. With the development of areas Southeast 4 and 5, a new freeway interchange at Youngstown Road, in the southeast corner of the Study Area, would be required, as would major upgrades to the potable water system. This alternative represents the maximum amount of residential development that could take place in Turlock under proposed density/intensity standards without moving west of S.R. 99.

Alternative 2 could support a total of approximately 114,800 residents and 57,700 jobs, leading to a jobs/employed residents ratio of 1.26. This alternative produces the greatest number of housing units, new residents, and jobs compared with the other alternatives, but less than the proposed project. This alternative would support the mid-point population projection for the city of 115,000 residents.

No Project Alternative

The No Project Alternative assumes continuation of land development under the 1992 General Plan and the current Zoning Ordinance (which implements the General Plan). Similar to Alternative 2, this alternative would result in development of the full southeast quadrant of the Study Area, but with a different development pattern and lower overall densities and intensities. Even though it covers the same land area as Alternative 2, the No Project alternative would actually add the fewest number of new housing units and jobs of any alternative due to its lower overall density and intensity of development. Buildout under the No Project alternative would support 36,100 housing units, approximately 101,600 residents, and 49,100 jobs (a jobs/employed residents ratio of 1.21). Residential development under the No Project alternative falls short of meeting even the low end population projection for the City of 106,000 residents by 2030.

TABLE ES-2: COMPARISON OF KEY CHARACTERISTICS; EXISTING, ALTERNATIVES, AND PROPOSED GENERAL PLAN¹

	<i>Existing</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>No Project</i>	<i>Proposed General Plan</i>
Housing Units	24,400	37,120	40,778	36,105	45,037
Households ²	23,530	35,783	39,310	34,805	43,416
Population ³	71,100	104,487	114,786	101,632	126,774
Employed Residents ⁴	26,700	41,795	45,915	40,653	50,710
Jobs	28,260	53,803	57,677	49,125	60,258
Jobs/Employed Residents Ratio	1.06	1.29	1.26	1.21	1.19

Notes:

1. Alternatives and General Plan values represent total development potential: existing + approved projects (not shown) + net new.
2. Buildout estimations of households assume a 3.6 percent housing unit vacancy rate.
3. Assumes 2.92 persons per household.
4. Estimates of employed residents based on 40 percent labor force participation rate for the buildout population.

Source: Dyett & Bhatia, 2011

Areas of Controversy

Although there are no clear-cut areas of controversy, impacts classified as significant and unavoidable have been identified in the issue areas of farmland preservation, transportation, air quality, and greenhouse gas emissions, and in as much as they may be considered controversial to the general public, agencies, or stakeholders, they are described briefly here.

Agricultural Land Preservation

Implementation of the proposed Plan would result in the conversion of farmland, much of it classified by the State as Prime Farmland, to urban uses. While the proposed land use diagram allows for—and proposed policies encourage—intensification of the existing urbanized area on infill opportunity sites, Turlock’s expected population and employment growth cannot reasonably be accommodated within its current city limits. Some conversion of farmland to urban uses is therefore essentially inevitable.

In addition to promoting infill, the proposed General Plan includes numerous strategies and policies to minimize the pace and amount of agricultural land converted, most prominently in its growth management/phasing strategy of master planning compact, mixed use neighborhoods. New neighborhoods may only be developed one master plan at a time; development of the subsequent area may not proceed until at least 70 percent of building permits for the preceding master plan area are issued. Master plans must also meet minimum overall residential density requirements (which are higher than the overall average density of Turlock currently) and must provide appropriate agricultural buffer areas at the edges of development.

Traffic Generation

In general, implementation of the proposed Plan would contribute to population and job growth resulting in higher amounts of traffic generation in Turlock and on SR 99. More specifically, it would

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result in significant impacts related to levels of service exceeding Caltrans and StanCOG standards on Caltrans facilities. In addition, some significant impacts on city roadways would remain even after all feasible improvements were made. However, the City has made a policy determination to accept some traffic congestion at some times if that means being able to achieve better circulation and access for other modes of transportation and avoidance of impacts on private property. The proposed General Plan takes a new approach to determining when and to what extent city roads should be improved to accommodate increased vehicle traffic. Level of service will still be used as a trigger for making improvements, but the extent to which the roadway shall be widened or otherwise improved will be based on the proposed Circulation Diagram and standards set forth in the proposed Plan—as opposed to using level of service to dictate the ultimate design of the roadway. The ultimate design of each facility was determined based on a number of factors, of which level of service was one, but also included right of way constraints, safety and accessibility via other modes of transit, and other feasibility factors. The goal is to achieve a roadway system that adequately provides for all means of travel and does not favor the automobile above other modes, while still facilitating vehicular travel at an acceptable level.

Air Quality and Greenhouse Gas Emissions

Implementation of the proposed General Plan will result in a significant and unavoidable impact on air quality and greenhouse gas emissions associated primarily with the increase in vehicle miles traveled, which is directly related to population and job growth. Current modeling methods for transportation and emissions are unable to fully account for trip reduction and emissions reduction associated with land use and policy-based reduction efforts, and thus more trip growth and emissions are projected than are actually anticipated to occur. Any plan designed to accommodate population and job growth in this way is likely to result in this unavoidable significant impact until such time as transportation models and emissions models can fully account for trip reductions associated with policy-based efficiency measures.

The proposed General Plan includes a wide range of policies that satisfy the requirements of the San Joaquin Valley Air Pollution Control District and the California Air Pollution Control Officers Association. And, while population and employment growth in Turlock through 2030 is expected to be significant, and increased air pollution and greenhouse gas emissions are inevitable as growth occurs, analysis also shows that the proposed Plan results in a reduced rate of greenhouse gas emissions per service population (residents + jobs) than the “business as usual” scenario (allowing the current General Plan to remain in place). This reduced rate is not quite low enough to avoid a significant impact relative to SB 375 and AB 32 directives, but it indicates that the plan is setting the city on the right track. Moreover, as discussed above, more emissions reductions may well take place as a result of plan policies that cannot yet be quantified.

Noise

Implementation of the proposed General Plan would also result in a significant and unavoidable impact relative to permanent increases in ambient noise levels. Like air quality and greenhouse gas emissions, this impact is directly related to an increase in vehicle trips and miles traveled throughout the Study Area. The proposed Plan includes a number of policies in its Noise Element that aim to attenuate noise impacts, including requiring more detailed noise analyses for any project located where noise exposure would be anything other than “normally acceptable” and requiring buffers and mitigation measures where appropriate and necessary. However, given the uncertainty as to whether future noise impacts could be adequately mitigated for all individual projects, potential impacts related to substantial permanent increases in ambient noise related to traffic, railroads, and stationary sources are considered significant and unavoidable.

The proposed General Plan is being offered despite these significant impacts because the City is in need of an updated General Plan that can thoughtfully and creatively accommodate projected population growth, provide for jobs and economic development over the next 20 years, and address new challenges pertaining to transportation, air quality, greenhouse gas emissions, and other environmental issues. The current General Plan is no longer practical for Turlock for a number of reasons. At buildout under the current plan, Turlock would not be able to support the household and employment growth it is expected to experience. The current plan also lacks concrete policies supporting development of Complete Streets, minimizing impacts of growth, and addressing global climate change and greenhouse gas emissions. The proposed Plan presents a balanced approach to supporting new residential and non-residential development while promoting a compact, sustainable urban form. The significant impacts related to the proposed General Plan would not be considerably different under any other likely growth/land use scenario that accommodates this level of growth for the city.

Impacts Summary and Environmentally Superior Alternative

IMPACTS SUMMARY

Table ES-3 presents the summary of the significant impacts of the proposed General Plan identified in the EIR and the proposed General Plan policies and mitigation measures that reduce these impacts to the extent possible. Detailed discussions of the impacts and proposed policies that would reduce impacts are in Chapter 3. **Table ES-4** presents those impacts determined to be less than significant, accompanied by the policies that render them as such. For both significant and less than significant impacts, the level of significance is determined by comparing the impact to the significance criteria described in Chapter 3.

Policy References

Throughout the following table and in the subsequent chapters of the EIR, policies marked with an asterisk are those that were introduced subsequent to the release of the October 2011 Public Review Draft General Plan. The policy number refers to the current policy that the new one will follow. For example, a policy labeled “3.2-c*” would follow the policy currently numbered 3.2-c in the October 2011 Public Review Draft. These policies, as well as revisions to any existing policies, and their updated language, are all included in the General Plan Errata memorandum that is being prepared to accompany this EIR and the October 2011 Draft General Plan. The policy changes and other revisions described in that memorandum will be incorporated into the General Plan document for the Hearing Draft. Policies throughout the document will be renumbered at that time.

IDENTIFICATION OF ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Based on the comparative analysis in Chapter 4 of this Draft EIR, and setting aside the No Project alternative (as provided by CEQA), Alternative 1 is identified as the environmentally superior alternative. This determination is based on the fact that Alternative 1, compared to the proposed General Plan and Alternative 2, would result in less environmental impacts due to its buildout supporting lower population and job numbers. This factor would primarily reduce potential impacts that are related to vehicle trips and miles traveled: air quality, noise, greenhouse gas emissions, and congestion on County and Caltrans roadways. It would also convert the least amount of farmland to urban uses. However, Alternative 1 may not meet the city’s long term development needs, as it can only support the lowest forecasted population for Turlock in 2030. Therefore, given that the San Joaquin Valley as a whole is expected to bear the majority of growth in California, Alternative 1 could result in placing greater pressure on other cities in the region and on unincorporated areas of Stanislaus and Merced counties. The proposed General Plan ensures that Turlock plays its part in accommodating regional growth in a sustainable, compact, urban form.

TABLE ES-3: SUMMARY OF SIGNIFICANT IMPACTS AND PROPOSED GENERAL POLICIES AND MITIGATION MEASURES THAT REDUCE THE IMPACT

<i>Impact</i>	<i>Proposed General Policies that Reduce the Impact</i>	<i>Proposed Mitigation Measures</i>
Agriculture		
<p>3.1-1 Buildout of the proposed General Plan would convert substantial amounts of Important Farmland to non-agricultural use, and would conflict with existing zoning for agricultural use or Williamson Act contracts. (Significant and Unavoidable)</p>	<p><u>Conservation Element Policies</u></p> <p>7.2-a Preserve Farmland. 7.2-b Limit Urban Expansion. 7.2-c Protect Soil and Water. 7.2-e Require Compact Development. 7.2-f Annex Land As Needed. 7.2-g Allow Agricultural Uses to Continue. 7.2-h Support participation in Williamson Act Program. 7.2-k Support Agricultural Industry.</p> <p><u>Growth Management and Infrastructure Element Policies</u></p> <p>3.1-a Proactively manage growth. 3.1-c Promote good design in new growth areas. 3.1-e Continue rezoning. 3.1-g Master Plan Areas. 3.2-f Minimum average densities established for master plan areas.</p>	<p>This General Plan reflects a policy determination to allow a certain amount of growth to occur in the Study Area, which necessitates conversion of farmland to urban uses. The proposed Plan includes growth management policies to prevent the premature conversion of farmland, by encouraging infill development, by requiring new development to be built at considerably higher densities than Turlock has traditionally seen, and by phasing of new master planned growth areas. These policies are intended to offset the impact to agricultural land conversion to the greatest degree possible. Beyond limiting the amount of total growth permitted, which is proposed in the alternatives presented in Chapter 4, there are no feasible mitigation measures to agricultural land conversion that would also fulfill the objectives of and implement the General Plan as proposed.</p>

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<i>Impact</i>	<i>Proposed General Policies that Reduce the Impact</i>	<i>Proposed Mitigation Measures</i>
Transportation		
3.3-1 The proposed General Plan would conflict with an applicable plan, congestion management program, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. Specifically, several local roadways would operate below LOS D (measured at the average daily traffic level) and all segments of SR 99 in the Study Area would operate below LOS C (measured at the peak hour) at General Plan buildout after all identified, feasible improvements were implemented. (Significant and Unavoidable)	5.2-a A safe and efficient roadway system 5.2-b Implement planned roadway improvements. 5.2-c Complete Streets. 5.2-d Design for street improvements. 5.2-e Use of existing facilities. 5.2-h Circulation System Enhancements. 5.2-j Work with Caltrans on freeway improvements. 5.2-k Coordinate standards. 5.2-l New southeast interchange. 5.2-m Amend Regional Expressway Study. 5.2-n Use of Congestion Management Process 5.2-o Off-site roadway mitigation. 5.2-p Area of Influence fee. 5.2-q Regional fair-share fee program. 5.2-r Follow circulation plan diagram. 5.2-r* Trigger for improvements. 5.2-s Follow adopted City standards. 5.2-t Roundabouts. 5.2-u Maintain standards through ongoing improvements. 5.2-v Expressway access from private property. 5.2-w CFF and Capital Improvement Program. 5.2-x Streets in County Islands. 5.2-aa Impacts of new development.	There are no additional mitigation measures that would reduce or eliminate the significant impacts to local and regional roads in the Study Area. For local roads, in development of the proposed Circulation Diagram, every segment projected to operate below LOS D at buildout was examined individually to determine whether an improvement would be feasible. Where improvements were feasible, they have been incorporated into the proposed plan, and the roadways are no longer shown to operate below LOS D at buildout. Therefore, the roadways that remain below the threshold are those for which no mitigating improvement was determined feasible without contradicting other proposed General Plan policies (e.g. adding automobile lanes by removing bike lanes and sidewalks, which would not support Complete Streets that serve all modes) or by taking private property. For regional roads, there are no feasible mitigation measures that the City of Turlock can perform independently. To mitigate the impact to SR 99, the freeway would have to be widened in each direction—a substantial undertaking

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<i>Impact</i>	<i>Proposed General Policies that Reduce the Impact</i>	<i>Proposed Mitigation Measures</i>
	5.2-aa* Downtown exempted from LOS standards. 5.2-ag Utilize outside funding sources.	involving planning, funding, and coordination at the state and regional level. StanCOG’s Regional Transportation Plan (RTP), the document that identifies and prioritizes roadway improvements in the county, does not identify widening SR 99 in the Study Area as a Tier I project (i.e., a high priority with funding identified). In the absence of this, the necessary improvement will not occur. While growth in the City of Turlock will contribute to the facility’s future congestion, it is not feasible for the City to mitigate this impact.
Air Quality		
3.4-2 Implementation of the proposed Turlock General Plan would result in a cumulatively considerable net increase of criteria pollutants which may conflict with or violate an applicable air quality standard or contribute substantially to an existing or projected air quality violation. (Significant and Unavoidable, Contribution Cumulatively Considerable)	8.1-a Prioritize Air Quality in Local Planning. 8.1-b Participate in Regional Efforts. 8.1-c Coordination with Other Agencies. 8.1-d Transportation and Residential Density. 8.1-e Establish Land Use Pattern That Supports Trip Reduction. 8.1-f Plant and Maintain Trees in Streets and Parks. 8.1-g Reduce Roadway Dust. 8.1-j Support Indirect Source Review Program. 8.1-k Air Quality Improvement Fee. 8.1-l Use Air District Guidance in Environmental Review. 8.1-m Minimize Roadway Dust. 8.1-m* Construction-Related Air Emissions Impacts.	As stated above, the City will implement a variety of policies designed to address air quality issues. Future compliance with SJVAPCD permitting as part of environmental review for new master plan or specific plan areas, or for proposed development that is not consistent with earlier EIRs covering specific plan areas such as the TRIP will also help to reduce air quality emissions associated with individual projects. However, total emissions associated with development of the proposed General Plan would still exceed SJVAPCD thresholds for PM10 and PM2.5. No

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<i>Impact</i>	<i>Proposed General Policies that Reduce the Impact</i>	<i>Proposed Mitigation Measures</i>
	<p>8.1-n Reduce Trips by City Government.</p> <p>8.1-o Transition to Clean City Fleet.</p> <p>8.1-q Institute Green Contracting.</p> <p>8.1-r Promote Public Awareness.</p> <p>8.1-s Expand Spare-the-Air Efforts.</p> <p>8.1-t Implement REMOVE II Program.</p> <p>8.1-u Support Employer-Based Trip Reduction.</p> <p><i>Energy and Climate Change</i></p> <p>8.2-b Decrease Vehicle-Miles Travelled.</p> <p>8.2-d Promote Energy Conservation.</p> <p>8.2-g Develop Circulation System That Facilitates Alternative Transportation Modes.</p> <p>8.2-h Establish Connective Street Network to Minimize Trip Length.</p> <p>8.2-i Provide Bicycle Facilities.</p> <p>8.2-j Minimize Parking.</p> <p>8.2-k Establish Land Use Pattern That Supports Trip Reduction</p> <p>8.2-l Pedestrian-Oriented Site Design.</p> <p>8.2-m Improve Energy Efficiency in Public Buildings.</p> <p>8.2-m* Wastewater and Water System Efficiency.</p> <p>8.2-m** Outdoor Lighting.</p> <p>8.2-n Promote Energy Conservation Programs.</p> <p>8.2-o Encourage Greater Energy Efficiency in New Development.</p> <p>8.2-p Require Energy Efficiency for Projects Receiving</p>	<p>additional feasible mitigation measures are currently available to reduce this impact to a less-than-significant level. Consequently, the impact remains significant and unavoidable.</p>

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<i>Impact</i>	<i>Proposed General Policies that Reduce the Impact</i>	<i>Proposed Mitigation Measures</i>
	<p>Public Assistance.</p> <p>8.2-q Encourage Solar Power Generation.</p> <p>8.2-r Encourage Other Onsite Renewable Energy Systems.</p> <p>8.2-r* Methane Capture.</p> <p><u>Circulation Element</u></p> <p><i>Roadway Network, Standards, and Improvements</i></p> <p>5.2-c Complete Streets.</p> <p>5.2-as General transit and pedestrian access.</p> <p><i>Pedestrian and Bicycle Circulation</i></p> <p>5.3-a Promote walking and bicycling.</p> <p>5.3-c Develop a safe and efficient non-motorized circulation system.</p> <p>5.3-d Integration of land use planning.</p> <p>5.3-e Provision of bicycle facilities.</p> <p>5.3-f Street trees for shade and comfort.</p> <p>5.3-g Children’s access to schools.</p> <p>5.3-i Air quality funding for bikeways plans.</p> <p>5.3-k Bicycle Master Plan..</p> <p>5.3-l Reduced fees for Downtown and Pedestrian Priority Areas.</p> <p>5.3-m Street trees in Capital Improvement Program.</p> <p>5.3-n Bicycle use by City employees.</p> <p>5.3-o Bicycling access to parks.</p> <p>5.3-p Bicycle safety.</p> <p>5.3-q Demarcation of Class III Bikeways.</p> <p>5.3-r Improved bikeway visibility.</p>	

TABLE ES-3: SUMMARY OF SIGNIFICANT IMPACTS AND PROPOSED GENERAL POLICIES AND MITIGATION MEASURES THAT REDUCE THE IMPACT

<i>Impact</i>	<i>Proposed General Policies that Reduce the Impact</i>	<i>Proposed Mitigation Measures</i>
	<p>5.3-s Pedestrian access to shopping centers.</p> <p>5.3-t Pedestrian connections at employment centers.</p> <p>5.3-u Bikeway improvements in infill areas.</p> <p><i>Public Transportation</i></p> <p>5.4-a Promote safe, efficient, and convenient public transportation.</p> <p>5.4-b Work with multiple agencies and jurisdictions.</p> <p>5.4-d Improvements to Demand-Responsive transit.</p> <p>5.4-h Funding for transit services.</p> <p>5.4-i Transit usability.</p> <p>5.4-j Transit services marketing.</p> <p>5.4-k Transit for seniors.</p> <p>5.4-l Development that supports transit.</p> <p>5.4-n Correspondence between local and regional transit.</p> <p>5.4-o Regional rail.</p> <p>5.4-p Support existing regional transit services.</p> <p>5.4-r Regional Transit Agency.</p> <p><u>Other Elements</u></p> <p>Policies in the Land Use, Infrastructure and New Growth Areas, and City Design Elements will also contribute to an overall land use and development pattern that supports decreasing vehicle-miles-travelled per capita and more trips being made by walking, biking, and transit.</p>	
<p>3.4-3 Implementation of the proposed Turlock General Plan would expose sensitive receptors to</p>	<p><u>New Growth Areas and Infrastructure Policies</u></p> <p>3.3-ae Encourage Use of Less Toxic Agricultural Chemicals.</p>	<p>As stated above, the City will implement a variety of policies and implementation measures designed to address air quality</p>

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<i>Impact</i>	<i>Proposed General Policies that Reduce the Impact</i>	<i>Proposed Mitigation Measures</i>
<p>substantial pollutant concentrations. (Significant and Unavoidable, Contribution Cumulatively Considerable).</p>	<p><u>Air Quality and Greenhouse Gases Policies</u> 8.1-f Plant and Maintain Trees in Streets and Parks. 8.1-h Protect Sensitive Receptors from Toxic Air Emissions.</p>	<p>issues. Importantly, the proposed General Plan helps to create a clear separation between industrial uses and the great majority of residential areas. In addition, the City will ensure that future CEQA documentation be prepared as part of environmental review for new master plan or specific plan areas, or for proposed development that is not consistent with earlier EIRs covering specific plan areas such as the TRIP that will (if technically possible) mitigate any potential air quality impacts to a less-than-significant level. However, given the uncertainty as to whether future air quality impacts associated with the potential exposure of sensitive receptors to substantial pollutant concentrations could be adequately mitigated, this impact remains significant and unavoidable. No additional feasible mitigation is currently available.</p>
Climate Change		
<p>3.5-1 Implementation of the proposed General Plan, combined with regional growth, would result in annual greenhouse gas emissions in the Study Area in an amount greater than 6.6 metric tons of carbon dioxide equivalent</p>	<p>CAPCOA Recommended Action #1: Promotion of Smart Growth, Jobs/Housing Balance, Transit-Oriented Development, and Infill through Land Use Designations, Zoning, and Public/Private Partnerships <u>Land Use and Economic Development Element Policies</u> <i>Downtown</i> 2.4-a Preserve and enhance Downtown Turlock.</p>	<p>A wide range of policies recommended by State agencies are included in the proposed General Plan. In addition, new measures identified as part of the City's strategic plan process under policy 8.2-f would be adopted within three years, building on the above measures. Policies included in the proposed General Plan</p>

TABLE ES-3: SUMMARY OF SIGNIFICANT IMPACTS AND PROPOSED GENERAL POLICIES AND MITIGATION MEASURES THAT REDUCE THE IMPACT

<i>Impact</i>	<i>Proposed General Policies that Reduce the Impact</i>	<i>Proposed Mitigation Measures</i>
<p>(MTCO₂e) gases per service population in 2020, or greater than 3.8 MTCO₂e in 2030 (Significant Cumulative Impact, Project Contribution Cumulatively Considerable).</p>	<p>2.4-b Update the Downtown Zoning Overlay District and Design Guidelines. 2.4-h Facilitate mixed use. 2.4-i Preserve residential adjacency. <i>Residential Areas</i> 2.5-a Housing type diversity. 2.5-b New neighborhood character. 2.5-c Infill and existing neighborhoods. 2.5-d Zoning ordinance revision to match General Plan. 2.5-e “No net loss” of housing. 2.5-f Master planning required. 2.5-g Locations for high density development. 2.5-h Transit and pedestrian accessibility from housing. 2.5-i Housing downtown. 2.5-j Redevelopment in existing neighborhoods. 2.5-k Improvements in existing neighborhoods. 2.5-l Graduated density. <i>Retail, Commercial, and Mixed Use Areas</i> 2.6-b Neighborhood and community commercial areas 2.6-c Downtown retail. 2.6-d Pedestrian orientation of commercial areas. 2.6-g Local-serving shopping in new neighborhoods. 2.6-h Incentives for mixed use projects. 2.6-k Small neighborhood groceries allowed. <i>Professional Office and Business Park Areas</i> 2.8-b Office locations. 2.8-f City administrative offices located Downtown.</p>	<p>are expected to substantially reduce GHG emissions. In order to be on track to reach the State’s emissions reduction goal for 2050, and still accommodate growth, it is likely that additional action at the regional or State level will be necessary. Despite policies in the proposed General Plan, the proposed General Plan would result in a significant and unavoidable impact.</p>

TABLE ES-3: SUMMARY OF SIGNIFICANT IMPACTS AND PROPOSED GENERAL POLICIES AND MITIGATION MEASURES THAT REDUCE THE IMPACT

<i>Impact</i>	<i>Proposed General Policies that Reduce the Impact</i>	<i>Proposed Mitigation Measures</i>
	<p><i>The Planning Area and City/County Relationships</i></p> <p>2.9-c Encourage infill development to protect farmland.</p> <p><i>Economic Development</i></p> <p>2.11-g Maintain the jobs-workers balance.</p> <p>2.11-ee Enable renovation of Downtown buildings.</p> <p>2.11-ff Market the Downtown Turlock commercial district.</p> <p><u><i>New Growth Areas and Infrastructure Element Policies</i></u></p> <p><i>Land Use and Design of New Growth Areas</i></p> <p>3.2-f Minimum average densities established for master plan areas.</p> <p>3.2-g Mix of housing types and densities required.</p> <p>3.2-h Neighborhood centers required.</p> <p><u><i>City Design Element Policies</i></u></p> <p><i>Overall City Form and Edge Conditions</i></p> <p>6.1-c Promote compact growth.</p> <p>6.1-e Enable mixed use development.</p> <p>6.1-h Promote infill.</p> <p><i>Neighborhood Form</i></p> <p>6.2-a Develop complete neighborhoods.</p> <p>6.2-b Promote housing type diversity and land use mix.</p> <p>6.2-e Master plans for mixed use neighborhoods.</p> <p>6.2-f Mixed use in neighborhood centers.</p> <p><i>Urban Design</i></p> <p>6.7-d Neighborhood centers.</p> <p>6.7-e Pedestrian scale and neighborhood character.</p>	

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<i>Impact</i>	<i>Proposed General Policies that Reduce the Impact</i>	<i>Proposed Mitigation Measures</i>
	<p>6.7-f Support transit.</p> <p>6.7-i Public orientation of development.</p> <p>6.7-j Multi-modal access and movement.</p> <p>6.7-l Fine grain of development.</p> <p>6.7-m Design and placement of parking areas.</p> <p>6.7-n Retail center location and design.</p> <p>6.7-o Building to street relationship.</p> <p>6.7-p Neighborhood center uses.</p> <p>6.7-t Pedestrian linkages.</p> <p>6.7-u Sidewalks and the pedestrian environment.</p> <p>6.7-x Public orientation of medium and high density development.</p> <p><u>Air Quality and Greenhouse Gases Element Policies</u></p> <p><i>Energy and Climate Change</i></p> <p>8.2-b Decrease Vehicle-Miles Travelled</p> <p>8.2-k Establish Land Use Pattern That Supports Trip Reduction.</p> <p>8.2-l Pedestrian-Oriented Site Design.</p> <p>CAPCOA Recommended Action #2: Support for and funding of transit, bicycle, and pedestrian connections through transit and trail planning and regional cooperation.</p> <p><u>New Growth Areas and Infrastructure Element Policies</u></p> <p><i>Land Use and Design of New Growth Areas</i></p> <p>3.2-m Maximum block sizes.</p> <p>3.2-n Limit Cul-de-sacs.</p> <p>3.2-o Local street connections between neighborhoods.</p>	

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<i>Impact</i>	<i>Proposed General Policies that Reduce the Impact</i>	<i>Proposed Mitigation Measures</i>
	<p>3.2-p Pedestrian and bicycle connections.</p> <p><u>Circulation Element Policies</u> <i>Roadway Network, Standards, and Improvements</i></p> <p>5.2-c Complete Streets. 5.2-g Reduce Vehicle Miles Traveled. 5.2-as General transit and pedestrian access. 5.2-at Bus access on arterials.</p> <p><i>Pedestrian and Bicycle Circulation</i></p> <p>5.3-a Promote walking and bicycling. 5.3-b Meet the needs of all users. 5.3-c Develop a safe and efficient non-motorized circulation system. 5.3-d Integration of land use planning. 5.3-e Provision of bicycle facilities. 5.3-f Street trees for shade and comfort. 5.3-g Children’s access to schools. 5.3-h Universal design. 5.3-i Air quality funding for bikeways plan. 5.3-j Funding for bikeways through street construction funds. 5.3-k Bicycle Master Plan. 5.3-l Reduced fees for Downtown and Pedestrian Priority Areas 5.3-m Street trees in Capital Improvement Program. Include street trees as part of Capital Improvement Program programming and implementation. 5.3-n Bicycle use by City employees.</p>	

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<i>Impact</i>	<i>Proposed General Policies that Reduce the Impact</i>	<i>Proposed Mitigation Measures</i>
	5.3-o Bicycling access to parks. 5.3-p Bicycle safety. 5.3-q Demarcation of Class III Bikeways. 5.3-r Improved bikeway visibility. 5.3-s Pedestrian access to shopping centers. 5.3-t Pedestrian connections at employment centers. 5.3-u Bikeway improvements in infill areas <i>Public Transportation</i> 5.4-a Promote safe, efficient, and convenient public transportation. 5.4-b Work with multiple agencies and jurisdictions. 5.4-c Improve local transit operations. 5.4-d Improvements to Demand-Responsive transit. 5.4-e Consistency with Stanislaus Congestion Management System. 5.4-h Funding for transit services. 5.4-i Transit usability. 5.4-j Transit services marketing. 5.4-k Transit for seniors. 5.4-l Development that supports transit.. 5.4-m Regional transit to support SB 375 compliance. 5.4-n Correspondence between local and regional transit. 5.4-o Regional rail. 5.4-p Support existing regional transit services. 5.4-q Denair Amtrak Station. 5.4-r Regional Transit Agency.	

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<i>Impact</i>	<i>Proposed General Policies that Reduce the Impact</i>	<i>Proposed Mitigation Measures</i>
	<p><u>City Design Element Policies</u> <i>Street Design and Connectivity</i> 6.3-b Encourage public and pedestrian orientation. 6.3-e Block size and maximum street spacing. 6.3-l Create “Pedestrian Priority Areas.” 6.3-m Traffic calming devices.</p> <p><u>Air Quality and Greenhouse Gases Element Policies</u> <i>Air Quality</i> 8.1-k Air Quality Improvement Fee. 8.1-t Implement REMOVE II Program. 8.1-u Support Employer-Based Trip Reduction.</p> <p><i>Energy and Climate Change</i> 8.2-g Develop Circulation System That Facilitates Alternative Transportation Modes. 8.2-h Establish Connective Street Network to Minimize Trip Length. 8.2-i Provide Bicycle Facilities. 8.2-j Minimize Parking.</p> <p>CAPCOA Recommended Action #3: Promotion of energy- and water- efficient buildings (e.g., LEED buildings) through green building ordinances, project timing prioritization, and other implementing tools.</p> <p><u>New Growth Areas and Infrastructure Element Policies</u> <i>Infrastructure</i> 3.3-m Conservation. 3.3-n Recycled Water.</p>	

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<i>Impact</i>	<i>Proposed General Policies that Reduce the Impact</i>	<i>Proposed Mitigation Measures</i>
	<p><u>City Design Element Policies</u> <i>Sustainable Site Planning</i> 6.4-c Conserve energy and water. Reduce demand for and consumption of energy and water through site planning techniques. 6.4-g Heat island reduction. 6.4-h Solar orientation. 6.4-j Bicycle and pedestrian network.</p> <p><u>Parks, Schools and Community Facilities Element Policies</u> <i>Parks and Recreational Open Space</i> 4.1-z Native Plants.</p> <p><u>Air Quality and Greenhouse Gases Element Policies</u> <i>Energy and Climate Change</i> 8.2-c Facilitate Energy-Efficient Buildings. 8.2-d Promote Energy Conservation. 8.2-m Improve Energy Efficiency in Public Buildings. 8.2-m* Wastewater and Water System Efficiency. 8.2-m** Outdoor Lighting. 8.2-n Promote Energy Conservation Programs. 8.2-o Encourage Greater Energy Efficiency in New Development. 8.2-p Require Energy Efficiency for Projects Receiving Public Assistance.</p> <p>CAPCOA Recommended Action #4: Promotion of green</p>	

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<i>Impact</i>	<i>Proposed General Policies that Reduce the Impact</i>	<i>Proposed Mitigation Measures</i>
	<p>procurement and alternative fuel vehicle use through municipal mandates and voluntary bid incentives.</p> <p>8.1-n Reduce Trips by City Government. 8.1-o Transition to Clean City Fleet. 8.1-q Institute Green Contracting.</p> <p>CAPCOA Recommended Action #5: Support for alternative fuel facilities and infrastructure through land use designations, zoning, and public-private partnerships.</p> <p>8.2-j* Support Alternative Fuel Vehicles.</p> <p>CAPCOA Recommended Action #6: Support for renewable energy generation (utility and residential) through feasibility evaluations, land use designations, and zoning.</p> <p>8.2-q Encourage Solar Power Generation. 8.2-r Encourage Other Onsite Renewable Energy Systems. NEW Methane Capture.</p> <p>CAPCOA Recommended Action #7: Promotion of waste diversion, recycling, energy efficiency and energy recovery in cooperation with public services districts and private entities.</p> <p><u>New Growth Areas and Infrastructure Element Policies</u></p> <p>3.3-ag Reduce Solid Waste. 3.3-ah Construction and Demolition Waste. 3.3-ak Green waste.</p> <p><u>Air Quality and Greenhouse Gases Element Policies</u></p>	

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<i>Impact</i>	<i>Proposed General Policies that Reduce the Impact</i>	<i>Proposed Mitigation Measures</i>
	<p>8.2-e Reduce Waste. 8.2-s Reduce Solid Waste.</p> <p>CAPCOA Recommended Action #8: Support for urban and rural forestry through tree planting requirements and programs.</p> <p>8.1-f Plant and Maintain Trees in Streets and Parks..</p> <p>CAPCOA Recommended Action #9: Community outreach and education to foster community involvement, input, and support for GHG reduction planning and implementation.</p> <p>8.1-r Promote Public Awareness. 8.1-s Expand Spare-the-Air Efforts.</p> <p>CAPCOA Recommended Action #10: Regional cooperation to find cross-regional efficiencies in GHG reduction investments and to plan for regional transit, energy generation, and waste recovery facilities.</p> <p>8.1-b Participate in Regional Efforts. 8.1-c Coordination with Other Agencies. 8.1-l Use Air District Guidance in Environmental Review</p> <p>Other Policies That Reduce the Potential Impact Two important policies that do not fit neatly into the CAPCOA Guidance would reinforce the City’s intention to help the State meet the AB 32 GHG reduction goal, and to undertake a strategic plan for GHG emissions reductions, focusing on implementation measures that can be taken by the City. This Plan would be conducted in sync with regional transportation planning under</p>	

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<i>Impact</i>	<i>Proposed General Policies that Reduce the Impact</i>	<i>Proposed Mitigation Measures</i>
	SB 375. 8.2-a Reduce Greenhouse Gas Emissions. 8.2-f GHG Emissions Reduction Implementation.	
3.5-2 Buildout of the proposed General Plan, combined with regional growth, could result in the generation of GHG emissions from passenger vehicles in an amount greater than 3.53 metric tons per capita by 2020 or 3.47 metric tons per capita by 2030, not accounting for State mandates (Significant Cumulative Impact, Contribution Cumulatively Considerable)	The Plan contains a variety of policies that are not readily quantified but that may be expected to reduce the impact. For example, the connective street pattern, the requirements for streets to be built to accommodate all modes, and the specific commitments to invest in a bicycle network and pedestrian improvements should also favor a reduction in per capita VMT as the proposed Plan is implemented. These policies are enumerated under Impact 3.5-1.	A wide range of policies recommended by State agencies are included in the proposed General Plan. In addition, new measures identified as part of the City's strategic plan process under policy 8.2-f would be adopted within three years, building on the above measures. Policies included in the proposed General Plan are expected to substantially reduce GHG emissions. These General Plan policies will help to support a Sustainable Communities Strategy (SCS) that demonstrates achievement of SB 375 thresholds at the regional level. This will be completed with the next update of the Regional Transportation Plan for Stanislaus County, including the Study Area.
Noise		
3.6-1 New development under the proposed General Plan could result in a substantial permanent increase in ambient noise levels (Significant and Unavoidable).	9.4-a Land Use Compatibility. 9.4-b Prevent Degradation of Noise Environment. 9.4-c Protect Residential Areas and Sensitive Uses 9.4-d Required Noise Analysis. 9.4-e Noise-Attenuating Features. 9.4-g Noise-Sensitive Uses—Required Mitigation.	The City will continue to implement its Noise Ordinance. In addition, the City will ensure that noise analysis and mitigation be conducted for individual projects (with project-specific data) that will, if possible, mitigate potential noise impacts to a less-than-significant level.

TABLE ES-3: SUMMARY OF SIGNIFICANT IMPACTS AND PROPOSED GENERAL POLICIES AND MITIGATION MEASURES THAT REDUCE THE IMPACT

<i>Impact</i>	<i>Proposed General Policies that Reduce the Impact</i>	<i>Proposed Mitigation Measures</i>
	9.4-h Non-Transportation Noise Sources—Required Mitigation. 9.4-i Noise Ordinance. 9.4-j Transportation Noise Buffers.	The ability to mitigate potential impacts is contingent upon a variety of factors including the severity of the noise impact, existing land use conditions and the technical feasibility of implementing proposed mitigation measures. Given the uncertainty as to whether future noise impacts could be adequately mitigated for all individual projects that will be developed under the updated General Plan, this impact remains significant and unavoidable. No additional feasible mitigation is currently available.
Hydrology and Water Quality		
3.12-1 Buildout of the proposed General Plan would lead to a water demand that exceeds the currently available and sustainable groundwater supply (Significant, mitigable) .	3.3-h Water System Master Plan. 3.3-i Pursue Surface Water and Other Alternative Water Supply Sources. 3.3-j Secure Surface Water Rights. 3.3-k Rate and Fee Studies. 3.3-l Infrastructure Construction. 3.3-m Conservation. 3.3-n Recycled Water. 3.3-o Optimize Groundwater Recharge. 3.3-p Groundwater Related Coordination. 3.3-q Reuse of Stormwater.	The following mitigation measures would reduce this impact to a less than significant level: <ul style="list-style-type: none"> – Successfully implement the RSWSP by the time the groundwater demands exceeds 24,550 ac-ft per year (estimated to be the year 2017). – Successfully identify and implement other potable water supply options by the time the groundwater demands exceeds 24,550 ac-ft per year (estimated to be the year 2017). – Implement increased water

TABLE ES-3: SUMMARY OF SIGNIFICANT IMPACTS AND PROPOSED GENERAL POLICIES AND MITIGATION MEASURES THAT REDUCE THE IMPACT

<i>Impact</i>	<i>Proposed General Policies that Reduce the Impact</i>	<i>Proposed Mitigation Measures</i>
		conservation and /or increased use of recycled/ nonpotable water within the City to reduce groundwater use and delay the required timing for implementation of the two mitigation measures listed above.

TABLE ES-4: SUMMARY OF LESS THAN SIGNIFICANT AND BENEFICIAL IMPACTS

<i>Impact</i>	<i>Proposed General Policies that Render the Impact Less than Significant or Beneficial</i>
Agriculture	
3.1-2 Buildout of the proposed General Plan would result in changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use.	Policies listed under Impact 3.1-1, 3.1-2, as well as: <u>Growth Management and Infrastructure Element Policies</u> 3.2-c Urban/rural edge. <u>Conservation Element Policies</u> 7.2-i Support Right to Farm. 7.2-m Minimize Soil Erosion.
Land Use	
3.2-1 The proposed General Plan would not physically divide any established communities and would increase connectivity locally and regionally.	The following proposed General Plan policies seek to increase connections in Turlock: <u>Land Use and Economic Development Element Policies</u> 2.4-f Continue to improve access and wayfinding. <u>New Growth Areas and Infrastructure Element Policies</u> 3.2-l Consistency with General Plan circulation diagram. 3.2-m Maximum block sizes. 3.2-n Limit Cul-de-sacs.

TABLE ES-4: SUMMARY OF LESS THAN SIGNIFICANT AND BENEFICIAL IMPACTS

<i>Impact</i>	<i>Proposed General Policies that Render the Impact Less than Significant or Beneficial</i>
	<p>3.2-o Local street connections between neighborhoods.</p> <p>3.2-p Pedestrian and bicycle connections.</p> <p><u>Circulation Element Policies</u></p> <p><i>See also Section 3.3 of this EIR, Transportation, for additional policies pertaining to circulation and connectivity improvements.</i></p> <p>5.2-b Implement planned roadway improvements.</p> <p>5.2-c Complete Streets.</p> <p>5.3-r Pedestrian access to shopping centers.</p> <p>5.3-s Pedestrian connections at employment centers.</p> <p>5.4-l Development that supports transit..</p> <p><u>City Design Element Policies</u></p> <p>6.1-f Contiguous growth.</p> <p>6.2-a Develop complete neighborhoods.</p> <p>6.2-d Encourage community orientation</p> <p>6.3-a Continue gridded street network.</p> <p>6.3-b Encourage public and pedestrian orientation.</p> <p>6.3-e Block size and maximum street spacing.</p> <p>6.7-i Public orientation of development.</p> <p>6.7-j Multi-modal access and movement.</p>
<p>3.2-2 The proposed General Plan would not conflict with an applicable land use plan, policy, or regulation.</p>	<p><u>Land Use and Economic Development Element Policies</u></p> <p>2.5-d Zoning ordinance revision to match General Plan.</p> <p>2.9-a Agriculture belongs in unincorporated areas.</p> <p>2.9-b Urban land uses belong in incorporated areas.</p> <p>2.9-c Encourage infill development to protect farmland.</p> <p>2.9-g Stanislaus County plans for Denair and Keyes.</p> <p>2.9-h Cooperate at the City/County line.</p>

TABLE ES-4: SUMMARY OF LESS THAN SIGNIFICANT AND BENEFICIAL IMPACTS

<i>Impact</i>	<i>Proposed General Policies that Render the Impact Less than Significant or Beneficial</i>
	2.9-i LAFCO approval for Sphere of Influence changes and annexations. 2.9-i Fee-sharing programs. 2.8-k Work with StanCOG on regional issues. 2.10-b Reclassifying Urban Reserve land. <u>New Growth Areas and Infrastructure Element Policies</u> 3.1-n Continue Prezoning and Annexation.
Transportation	
3.3-2 The proposed General Plan will not result in inadequate emergency access.	10.4-b Provide High-Quality Public Safety Services. 10.4-c Expand Services in Coordination With Growth. 10.4-e Coordinate With Other Agencies and Community Organizations. 10.4-g Strategic Planning. 10.4-h Meet Response Time Standard Throughout Study Area. 10.4-i Coordinate Facilities Planning With Urban Expansion. 10.4-j Maintain Mutual Aid Agreements. 10.4-l Maintain Appropriate Urban Design Standards. 10.4-p Evaluate Beat System to Optimize Police Service. 10.4-t Complete Public Safety Building Project. 10.4-v Coordinate Facilities Planning With Urban Expansion. 10.4-y Maintain Coordinated Emergency Response Program. 10.4-z Maintain Evacuation Routes.
3.3-3 The proposed General Plan will not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	5.2-c Complete Streets. 5.2-as General transit and pedestrian access. 5.2-at Bus access on arterials. 5.2-au Standards for transit stops and headways. 5.3-a Promote walking and bicycling

TABLE ES-4: SUMMARY OF LESS THAN SIGNIFICANT AND BENEFICIAL IMPACTS

<i>Impact</i>	<i>Proposed General Policies that Render the Impact Less than Significant or Beneficial</i>
	5.3-b Meet the needs of all users.
	5.3-c Develop a safe and efficient non-motorized circulation system.
	5.3-e Provision of bicycle facilities.
	5.3-h Universal design.
	5.3-j Funding for bikeways through street construction funds.
	5.3-k Bicycle Master Plan.
	5.4-p Bicycle safety.
	5.4-q Demarcation of Class III Bikeways.
	5.4-r Improved bikeway visibility.
	5.4-s Pedestrian connections at employment centers.
	5.4-b Work with multiple agencies and jurisdictions.
	5.4-c Improve local transit operations..
	5.4-d Improvements to Demand-Responsive transit..
	5.4-e Consistency with Stanislaus Congestion Management System.
	5.4-f Transit stop spacing.
	5.4-g New transit center location.
	5.4-h Funding for transit services.
	5.4-i Transit usability.
	5.4-j Transit services marketing.
	5.4-k Transit for seniors.
	5.4-l Development that supports transit.
	5.4-m Regional transit to support SB 375 compliance.
	5.4-n Correspondence between local and regional transit..
	5.4-o Regional rail.

TABLE ES-4: SUMMARY OF LESS THAN SIGNIFICANT AND BENEFICIAL IMPACTS

<i>Impact</i>	<i>Proposed General Policies that Render the Impact Less than Significant or Beneficial</i>
	5.4-p Support existing regional transit services. 5.4-q Denair Amtrak Station. 5.4-r Regional Transit Agency.
Air Quality	
3.4-1 Implementation of the proposed Turlock General Plan would not conflict with or obstruct implementation of the goals and Control Measures in regional air quality plans.	<p><u>Air Quality Element Policies</u></p> 8.1-j Support Indirect Source Review Program. 8.1-n Reduce Trips by City Government. 8.1-q Institute Green Contracting. 8.1-r Promote Public Awareness. 8.1-s Expand Spare-the-Air Efforts. 8.1-u Support Employer-Based Trip Reduction. 8.2-q Encourage Solar Power Generation. 8.2-r Encourage Other Onsite Renewable Energy Systems. 8.2-r* Methane Capture. 8.2-m Improve Energy Efficiency in Public Buildings. 8.2-m* Wastewater and Water System Efficiency. 8.2-m** Outdoor Lighting. 8.2-n Promote Energy Conservation Programs. 8.2-o Encourage Greater Energy Efficiency in New Development. 8.2-p Require Energy Efficiency for Projects Receiving Public Assistance. 8.1-t Implement REMOVE II Program.
	<p><u>Parks, Schools, and Community Facilities Element Policies</u></p> 4.1-k Recreation Corridors and Greenways.
	<p><u>Circulation Element Policies</u></p>

TABLE ES-4: SUMMARY OF LESS THAN SIGNIFICANT AND BENEFICIAL IMPACTS

<i>Impact</i>	<i>Proposed General Policies that Render the Impact Less than Significant or Beneficial</i>
	<p>5.4-a Promote safe, efficient, and convenient public transportation.</p> <p>5.4-b Work with multiple agencies and jurisdictions.</p> <p>5.4-c Improve local transit operations.</p> <p>5.4-d Improvements to demand-responsive transit.</p> <p>5.4-e Consistency with Stanislaus Congestion Management System.</p> <p>5.4-f Transit stop spacing.</p> <p>5.4-g New transit center location.</p> <p>5.4-h Funding for transit services.</p> <p>5.4-i Transit usability.</p> <p>5.4-j Transit services marketing.</p> <p>5.4-k Transit for seniors.</p> <p>5.4-l Development that supports transit.</p> <p>Policies 5.2-a through 5.2-ad concern design and performance of the circulation network under the proposed General Plan. Policies are provided under Impact 3.4-2 below or in Chapter 3.3 Transportation. Policies include the following:</p> <p>5.2-b Implement planned roadway improvements.</p> <p>5.2-h Circulation System Enhancements.</p> <p>5.2-j Work with Caltrans on freeway improvements.</p> <p>5.2-m Amend Regional Expressway Study.</p> <p>5.2-n Use of Congestion Management Process.</p> <p>Bicycle facilities are covered extensively in the proposed Plan and are the subject of the following policies. Policies are provided under Impact 3.4-2 below or in Chapter 3.3 Transportation.</p> <p>5.3-a Promote walking and bicycling.</p> <p>5.3-e Provision of bicycle facilities.</p> <p>5.3-i Air quality funding for bikeways plan.</p>

TABLE ES-4: SUMMARY OF LESS THAN SIGNIFICANT AND BENEFICIAL IMPACTS

<i>Impact</i>	<i>Proposed General Policies that Render the Impact Less than Significant or Beneficial</i>
	<p>5.4-j Funding for bikeways through street construction funds.</p> <p>5.3-k Bicycle Master Plan.</p> <p>5.4-n Bicycle use by City employees.</p> <p>5.4-o Bicycling access to parks.</p> <p>5.3-p Bicycle safety.</p> <p>5.3-q Demarcation of Class III Bikeways.</p> <p>5.3-r Improved bikeway visibility.</p> <p>5.3-u Bikeway improvements in infill areas.</p> <p><u>City Design Element Policies</u></p> <p>6.4-g Heat island reduction.</p> <p><u>Parks Element Policies</u></p> <p>4.1-k Recreation Corridors and Greenways.</p>
<p>3.4-4 Implementation of the proposed Turlock General Plan would not create objectionable odors affecting a substantial number of people.</p>	<p><u>Land Use and Economic Development Element Policies</u></p> <p>2.7-a Concentrate industrial uses in the TRIP.</p> <p>2.7-c Focus industrial uses west of Highway 99.</p> <p>2.7-g Buffers between uses.</p> <p><u>New Growth Areas and Infrastructure Element Policies</u></p> <p>3.2-c Urban/rural edge.</p> <p><u>Parks, Schools and Community Facilities Element Policies</u></p> <p>4.1-k Recreation Corridors and Greenways..</p> <p><u>City Design Element Policies</u></p> <p>6.1-k Agricultural Buffer Design.</p> <p><u>Conservation Element Policies</u></p> <p>7.2-j Create Buffer.</p> <p><u>Air Quality Element Policies</u></p> <p>8.1-i Protect Residential Uses from Noxious Odors.</p>

TABLE ES-4: SUMMARY OF LESS THAN SIGNIFICANT AND BENEFICIAL IMPACTS

<i>Impact</i>	<i>Proposed General Policies that Render the Impact Less than Significant or Beneficial</i>
Noise	
3.6-2 New development under the proposed General Plan would not cause the exposure of an increased number of persons to noise levels in excess of existing standards as defined in the current General Plan.	See policies under Impact 3.6-1.
3.6-3 New development under the proposed General Plan would not result in a substantial temporary or periodic increase in ambient noise levels.	9.4-i Noise Ordinance.
3.6-4 New development in the proposed General Plan would not cause the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.	Policies under Impact 3.6-1 and 3.6-3, as well as: 9.4-f Vibration Reduction.
Aesthetics	
3.7-1 Implementation of the proposed Turlock General Plan would not block views of significant landscape features as seen from public areas.	<p><u>New Growth Areas & Infrastructure Element Policies</u></p> <p>3.2-l Consistency with General Plan circulation diagram.</p> <p>3.2-n Limit Cul-de-sacs.</p> <p>3.2-o Local street connections between neighborhoods.</p> <p><u>City Design Element Policies</u></p> <p>6.1-k Agricultural Buffer Design.</p> <p>6.3-a Continue gridded street network.</p> <p>6.3-e Block size and maximum street spacing.</p> <p>6.7-j Multi-modal access and movement.</p> <p>6.7-aa Use of sound walls [single family gated communities].</p> <p>6.7-ee Use of walls [multifamily gated communities].</p>
3.7-2 Implementation of the proposed Turlock	<u>Land Use & Economic Development Element Policies</u>

TABLE ES-4: SUMMARY OF LESS THAN SIGNIFICANT AND BENEFICIAL IMPACTS

<i>Impact</i>	<i>Proposed General Policies that Render the Impact Less than Significant or Beneficial</i>
<p>General Plan would not create significant contrasts with the scale, form, line, color and /or overall visual character of the existing landscape in areas with sensitive visual resources or high visual quality, or add a modern element to a historic area.</p>	<p>2.4-a Preserve and enhance Downtown Turlock. 2.4-b Update the Downtown Zoning Overlay District and Design Guidelines. 2.4-d Preserve and promote historic character. 2.5-j Redevelopment in existing neighborhoods. 2.5-k Improvements in existing neighborhoods. 2.5-m Traditional Neighborhood Overlay Zones.</p> <p><u>City Design Element Policies</u></p> <p>6.2-c Preserve existing neighborhoods. 6.2-h Design Principles. 6.2-i Areas for Traditional Neighborhood overlay zones. 6.3-c Beautify “gateway” roads. 6.3-d Provide attractive, landscaped streetscapes. 6.3-f Implement the Turlock Beautification Master Plan as it pertains to the “Gateway Zones.” 6.3-i Improvements to Major Corridors. 6.6-a Recognize the value of historic preservation. 6.6-b Formalize historic preservation planning. 6.6-c Continue to engage the Turlock Historical Society. 6.7-a Use of Design and Site Plan review. 6.7-q Visual interest and compatibility in residential design.</p> <p><u>Conservation Element Policies</u></p> <p>7.5-b Preserve Historic Places. 7.5-f State Historic Building Code.</p>

TABLE ES-4: SUMMARY OF LESS THAN SIGNIFICANT AND BENEFICIAL IMPACTS

<i>Impact</i>	<i>Proposed General Policies that Render the Impact Less than Significant or Beneficial</i>
3.7-3 Implementation of the proposed Turlock General Plan would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.	6.1-j Minimize urban-agricultural conflicts. 6.1-k Agricultural Buffer Design.
Cultural Resources	
3.8-1 Buildout of the proposed General Plan would not cause a substantial adverse change to the significance of a historical resource, defined as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historic resource would be materially impaired	<u>Conservation Element Policies</u> 7.5-b Preserve Historic Places. 7.5-d Follow State Certified Local Government Guidelines for Historic Preservation. 7.5-e Historical Site Contracts. 7.5-f State Historic Building Code. <u>City Design Element Policies</u> 6.6-b Formalize historic preservation planning. 6.6-c Continue to engage the Turlock Historical Society.
3.8-2 Buildout of the proposed General Plan would not cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5	7.5-a Protect Archaeological Resources 7.5-c Evaluate Resource Discoveries.
3.8-3 Buildout of the proposed General Plan would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	See policies under Impact 3.8-2.
3.8-4 Buildout of the proposed General Plan would not disturb any human remains, including those interred outside of formal cemeteries.	See policies under Impact 3.8-2.
Biological Resources	
3.9-1 Buildout of the proposed General Plan would	<u>Growth Management and Infrastructure Element Policies</u>

TABLE ES-4: SUMMARY OF LESS THAN SIGNIFICANT AND BENEFICIAL IMPACTS

<i>Impact</i>	<i>Proposed General Policies that Render the Impact Less than Significant or Beneficial</i>
<p>not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations; by the California Department of Fish and Game; or by the U.S. Fish and Wildlife Service.</p>	<p>3.1-a Proactively manage growth. 3.1-c Promote good design in new growth areas. 3.3-ad Low Impact Development (LID) and Water Quality Best Management Practices (WQBMPs) 3.3-ae Encourage Use of Less Toxic Agricultural Chemicals. 3.3-af Minimize Industrial Contamination.</p> <p><u>Conservation Element Policies</u></p> <p>7.2-a Preserve Farmland. 7.2-b Limit Urban Expansion. 7.2-c Protect Soil and Water. 7.2-e Require Compact Development. 7.2-g Allow Agricultural Uses to Continue. 7.2-h Support Participation in Williamson Act Program. 7.2-i Support Right to Farm. 7.2-m Minimize Soil Erosion. 7.4-a Increase Biological Diversity. 7.4-b Sensitive Site Planning. 7.4-c Urban Trees. 7.4-d Special Review if New Information Becomes Available.</p>
<p>3.9-2 Buildout of the proposed General Plan would not have a substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations; by the California Department of Fish and Game; or by the U.S. Fish and Wildlife Service, through direct removal, filling, hydrological</p>	<p>None</p>

TABLE ES-4: SUMMARY OF LESS THAN SIGNIFICANT AND BENEFICIAL IMPACTS

<i>Impact</i>	<i>Proposed General Policies that Render the Impact Less than Significant or Beneficial</i>
interruption, or other means.	
3.9-3 Buildout of the proposed General Plan would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means	None
3.9-4 Buildout of the proposed General Plan would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	See policies listed under Impact 3.9-1.
3.9-5 Buildout of the proposed General Plan would not conflict with any local policies or ordinances protecting biological resources, or with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.	See policies listed under Impact 3.9-1.
Geologic and Seismic Hazards	
3.10-1 Implementation of the proposed Plan would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map or based on other substantial evidence of a known fault; strong seismic ground shaking; seismic-related ground	10.2-a Minimize Geologic and Seismic Risk. 10.2-b Meet the Most Current Seismic Standards. 10.2-c Provide Incentives for Rehabilitation. 10.2-d Prohibit Higher Intensity Use for Seismically Unsafe Buildings 10.2-e Ensure Stability of Sensitive Public Facilities. 10.2-f Require Geotechnical Investigations for Proposed Critical Structures.

TABLE ES-4: SUMMARY OF LESS THAN SIGNIFICANT AND BENEFICIAL IMPACTS

<i>Impact</i>	<i>Proposed General Policies that Render the Impact Less than Significant or Beneficial</i>
failure, including liquefaction; and landslides.	
3.10-2 Implementation of the Proposed Plan would not result in substantial soil erosion or topsoil loss.	<p><u>Conservation Element Policies</u></p> <p>7.2-c Protect Soil and Water.</p> <p>7.2-m Minimize Soil Erosion.</p> <p><u>Safety Element Policies</u></p> <p>10.2-h Require Erosion Control Plans.</p>
3.10-3 Implementation of the Proposed Plan would not locate structures on expansive soils or on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse and create substantial risks to life or property.	10.2-g Require Investigations for All Development On Sites Where Soils Pose Risk.
3.10-4 Implementation of the Proposed Plan would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.	<p>7.6-a Protect Significant Resources.</p> <p>7.6-b Plan After Discovery.</p>
Hazardous Materials and Wildland Fires	
3.11-1 Implementation of the Proposed Plan would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	<p>10.1-a Protect Lives and Property.</p> <p>10.1-b Protect Natural Resources.</p> <p>10.1-c Coordinate Efforts to Minimize Risks.</p> <p>10.1-d Incorporate Safety Considerations Into Land Use Policies.</p> <p>10.1-e Implement Countywide Integrated Waste Management Plan.</p> <p>10.1-f Reduce Hazardous Waste Disposal.</p>

TABLE ES-4: SUMMARY OF LESS THAN SIGNIFICANT AND BENEFICIAL IMPACTS

<i>Impact</i>	<i>Proposed General Policies that Render the Impact Less than Significant or Beneficial</i>
	10.1-g Raise Public Awareness of Appropriate Hazardous Waste Disposal. 10.1-h Maintain Inventory of Contaminated Sites. 10.1-i Support Cleanup Efforts. 10.1-j Evaluate Safety of Railroad Crossings. 10.1-k Locate Buildings With High-Public-Occupancy at Safe Distance from Railroad and Highway. 10.1-l Maintain Land Use Separation Between Hazardous Waste Handling Sites and Incompatible Uses. 10.1-m Require Hazardous Materials Studies When Appropriate. 10.1-n Require Safe Design and Construction of Storage Tanks.
3.11-2 Implementation of the proposed General Plan would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	See policies listed under Impact 3.11-1.
3.11-3 Implementation of the proposed General Plan would not result in hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	See policies listed under Impact 3.11-1.
3.11-4 Implementation of the proposed General Plan would not have a potentially adverse impact if it allows development on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.	See policies listed under Impact 3.11-1.

TABLE ES-4: SUMMARY OF LESS THAN SIGNIFICANT AND BENEFICIAL IMPACTS

<i>Impact</i>	<i>Proposed General Policies that Render the Impact Less than Significant or Beneficial</i>
<p>3.11-5 Buildout of the General Plan would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.</p>	<p>10.4-y Maintain Coordinated Emergency Response Program. 10.4-z Maintain Evacuation Routes.</p>
<p>3.11-6 Buildout of the proposed General Plan would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.</p>	<p><u>New Growth Areas and Infrastructure Element Policies</u> 3.1-c Promote good design in new growth areas. 3.1-f Provide adequate public services. 3.1-l Capital Facilities Fee program.</p> <p><u>Safety Element Policies</u> 10.4-a Protect from Hazards. 10.4-b Provide High-Quality Public Safety Services. 10.4-c Expand Services in Coordination With Growth. 10.4-d Establish Equitable Funding Mechanisms. 10.4-e Coordinate With Other Agencies and Community Organizations. 10.4-f Educate the Public on Prevention Strategies. 10.4-g Strategic Planning. 10.4-h Meet Response Time Standard Throughout Study Area. 10.4-i Coordinate Facilities Planning With Urban Expansion. 10.4-j Maintain Mutual Aid Agreements. 10.4-k Monitor Water Capacity. 10.4-l Maintain Appropriate Urban Design Standards. 10.4-m Enforce Fire Safety Codes. 10.4-n Maintain ISO Rating</p>

TABLE ES-4: SUMMARY OF LESS THAN SIGNIFICANT AND BENEFICIAL IMPACTS

<i>Impact</i>	<i>Proposed General Policies that Render the Impact Less than Significant or Beneficial</i>
	10.4-o Training Facilities.
Hydrology and Water Quality	
3.12-2 Buildout of the proposed General Plan would not lead to increased urban pollutants and decreased stormwater runoff quality.	<p><u>New Growth Areas and Infrastructure Element Policies</u></p> <p>3.3-w Stormwater Master Plan. 3.3-x Rate and Fee Studies. 3.3-y Infrastructure Construction. 3.3-ad Low Impact Development (LID) and Water Quality Best Management Practices (WQBMPs).</p> <p><u>City Design Element Policies</u></p> <p>6.4-a Protect existing resources. 6.4-b Retain natural processes. 6.4-c Conserve energy and water. 6.4-d Minimize site disturbance. 6.4-e Impervious surfaces. 6.4-f On-site stormwater management.</p>
3.12-3 Buildout of the proposed General Plan would not lead to increased runoff rates and/or altered drainage patterns that would result in substantial erosion or siltation on- or off-site.	Policies 3.3-w, 3.3-x, 3.3-y, 3.3-ad and 6.4-a through 6.4-f. (Full text listed under Impact 3.12-2)
3.12-4 Buildout of the proposed General Plan would not lead to increased runoff volumes and rates which could lead to altered drainage patterns or exceeding the capacity of existing or proposed drainage system, which in turn could lead to increased flooding on- or off-site.	Policies 3.3-w, 3.3-x, 3.3-y, 3.3-ad and 6.4-a through 6.4-f. (Full text listed under Impact 3.12-2)
3.12-5 Buildout of the proposed General Plan would not result in housing or other development	Not applicable

TABLE ES-4: SUMMARY OF LESS THAN SIGNIFICANT AND BENEFICIAL IMPACTS

<i>Impact</i>	<i>Proposed General Policies that Render the Impact Less than Significant or Beneficial</i>
<p>within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map or place structures with a 100-year flood hazard area, which would impede or redirect flood flows.</p>	
<p>3.12-6 Buildout of the proposed General Plan would not expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, or inundation by seiche, tsunami, or mudflow.</p>	<p>Not applicable</p>
Parks, Recreation, and Open Space	
<p>3.13-1 Implementation of the proposed Plan would not increase the use of existing parks and recreational facilities such that substantial physical deterioration would occur or be accelerated.</p>	<p>4.1-a High-Quality Park System. 4.1-b Park Standards and Priorities. 4.1-c Cooperation With School District. 4.1-d Park Fees and Land Dedication. 4.1-e Special User Groups. 4.1-f Community Parks. 4.1-h Neighborhood-Serving City Parks. 4.1-i Neighborhood School Parks. 4.1-j Pocket Parks. 4.1-l Community and Neighborhood Parks. 4.1-m Increase Level of Service and Update Standards. 4.1-o Fees for Non-Residential Development. 4.1-u. Maintenance of Parks System.</p>
<p>3.13-2 Implementation of the proposed Plan would not result in the need for development of new parks and recreational facilities that</p>	<p>Policies listed under impact 3.13-1, as well as: <i>Parks Policies</i></p>

TABLE ES-4: SUMMARY OF LESS THAN SIGNIFICANT AND BENEFICIAL IMPACTS

<i>Impact</i>	<i>Proposed General Policies that Render the Impact Less than Significant or Beneficial</i>
<p>would have an adverse physical effect on the environment.</p>	<p>4.1-f Parks, Recreation, and Open Space Master Plan. 4.1-h Neighborhood-Serving City Parks. 4.1-i Neighborhood School Parks. 4.1-k Recreation Corridors and Greenways. 4.1-n Park Location Criteria. 4.1-o Minimum Park Buildout. 4.1-p Design for Park Safety. 4.1-q Park Improvement Fees. 4.1-s Land Acquisition Costs. 4.1-t Funding for Maintenance of New Parks. 4.1-v Coordinated Planning for Greenways and Non-Motorized Transportation. 4.1-w Shared Rights-of-Way. 4.1-x Joint School Park Use Agreement. 4.1-y Joint-Use Recreation Facilities. 4.1-z Native Plants. 4.1-aa Mature Trees.</p> <p><i>Recreation Facilities Policies</i></p> <p>4.2-a Facilities to Serve Community Needs. 4.2-b Special User Groups. 4.2-c Prioritize Projects and Study Feasibility. 4.2-d Establish Partnerships and Funding Strategy. 4.2-e Plan, Develop and Operate New Facilities.</p>
Public Facilities and Services	
<p>3.14-1 Implementation of the proposed Plan would not result in substantial adverse physical</p>	<p><i>Schools</i></p> <p>4.3-a School Facility Planning.</p>

TABLE ES-4: SUMMARY OF LESS THAN SIGNIFICANT AND BENEFICIAL IMPACTS

<i>Impact</i>	<i>Proposed General Policies that Render the Impact Less than Significant or Beneficial</i>
<p>impacts associated with the provision of new or physically altered schools, libraries, or other community facilities in order to maintain acceptable service.</p>	<p>4.3-b Coordination With School Districts. 4.3-d School Facilities Plans. 4.3-e Coordination of Urban Growth and School District Service. 4.3-f New School Sites. 4.3-g Additional School Capacity. 4.3-h Joint Use Agreements for Parks and Recreation. 4.3-i Joint Use School/Community Library. 4.3-n Joint Use of CSUS Facilities. <i>Community Facilities and Services</i> 4.2-a Facilities to Serve Community Needs. 4.2-b Special User Groups. 4.2-f Carnegie Arts Center. 4.2-g Library Expansion and Enhancement. 4.2-h Cultural Activities. 4.2-i New Community Centers. 4.2-k Health and Community Services.</p>
<p>3.14-2 Implementation of the proposed Plan would not result in substantial adverse physical impacts associated with the provision of new or physically altered public safety facilities, in order to maintain acceptable service ratios, response times or other performance objectives.</p>	<p><u>Safety Element Policies</u> 10.4-a Protect from Hazards. 10.4-b Provide High-Quality Public Safety Services. 10.4-c Expand Services in Coordination With Growth. 10.4-d Establish Equitable Funding Mechanisms. 10.4-e Coordinate With Other Agencies and Community Organizations. 10.4-f Educate the Public on Prevention Strategies. 10.4-g Strategic Planning. <i>Fire Service</i></p>

TABLE ES-4: SUMMARY OF LESS THAN SIGNIFICANT AND BENEFICIAL IMPACTS

<i>Impact</i>	<i>Proposed General Policies that Render the Impact Less than Significant or Beneficial</i>
	<p>10.4-h Meet Response Time Standard Throughout Study Area.</p> <p>10.4-i Coordinate Facilities Planning With Urban Expansion.</p> <p>10.4-j Maintain Mutual Aid Agreements.</p> <p>10.4-k Monitor Water Capacity.</p> <p>10.4-l Maintain Appropriate Urban Design Standards.</p> <p>10.4-m Enforce Fire Safety Codes.</p> <p>10.4-n Maintain ISO Rating.</p> <p>10.4-o Training Facilities.</p> <p><i>Police Service</i></p> <p>10.4-p Evaluate Beat System to Optimize Police Service.</p> <p>10.4-q Community Crime Prevention Programs.</p> <p>10.4-r Emphasize Community-Oriented Policing.</p> <p>10.4-s Maintain Community Partnerships.</p> <p><i>Combined Public Services</i></p> <p>10.4-t Complete Public Safety Building Project.</p> <p>10.4-u Examine Capital Facilities Fees.</p> <p>10.4-v Coordinate Facilities Planning With Urban Expansion.</p> <p>10.4-w Radio Infrastructure Requirements.</p> <p>10.4-x Maintain Access to Fire Hydrants.</p> <p><i>Emergency Management</i></p> <p>10.4-y Maintain Coordinated Emergency Response Program.</p> <p>10.4-z Maintain Evacuation Routes.</p>
Utilities	
<p>3.15-1 Buildout of the proposed General Plan would not lead to the construction of new groundwater wells and groundwater treatment systems that could cause adverse</p>	<p><u>New Growth Areas and Infrastructure Element Policies</u></p> <p>3.3-h Water System Master Plan.</p> <p>3.3-k Rate and Fee Studies.</p>

TABLE ES-4: SUMMARY OF LESS THAN SIGNIFICANT AND BENEFICIAL IMPACTS

<i>Impact</i>	<i>Proposed General Policies that Render the Impact Less than Significant or Beneficial</i>
environmental effects.	3.3-l Infrastructure Construction. 3.3-o Optimize Groundwater Recharge. 3.3-p Groundwater Related Coordination.
3.15-2 Buildout of the proposed General Plan would not result in sanitary sewer over flows by exceeding the capacity of existing or proposed sewers.	<u>New Growth Areas and Infrastructure Element Policies</u> 3.3-r Sanitary Sewer Master Plan. 3.3-u Rate and Fee Studies. 3.3-v Infrastructure Construction.
3.15-3 Buildout of the proposed General Plan would lead to the expansion of the existing TRWQCF.	3.3-s Wastewater Treatment Plant Master Plan. 3.3-t Recycled Water Master Plan. 3.3-u Rate and Fee Studies. 3.3-v Infrastructure Construction. 3.3-w Stormwater Master Plan.
3.15-4 Buildout of the proposed General Plan would cause an increase in waste generation.	3.3-ag Reduce Solid Waste. 3.3-ah Construction and Demolition Waste. 3.3-ai Implement Measures. 3.3-aj Landfill capacity. 3.3-ak Green waste.

1 Introduction

This Program Environmental Impact Report (EIR) has been prepared on behalf of the City of Turlock in accordance with the California Environmental Quality Act (CEQA). This chapter outlines the purpose of and overall approach to the preparation of the EIR on the proposed 2030 Turlock General Plan (hereafter referred to as the “General Plan” or “Plan”). The City of Turlock is the lead agency responsible for ensuring that the proposed General Plan complies with CEQA.

Purpose

The EIR of the proposed General Plan has three primary purposes:

- The EIR will help the City of Turlock meet California Environmental Quality Act (CEQA) requirements for analysis of environmental impacts by including a complete and comprehensive programmatic evaluation of the physical impacts of the proposed General Plan and its alternatives;
- The EIR will inform residents and members of the City Council and Planning Commission of the environmental impacts prior to the Commission and Council taking action on the Plan. This information will assist City officials in reviewing and adopting the proposed Plan; and
- The EIR will assist local decision-makers in determining appropriate amendments to Turlock’s land use regulations and other implementation actions, based on a balanced assessment of the environmental impacts of the proposed General Plan.

The EIR also identifies further measures that decision-makers may want to incorporate into the General Plan or implementation programs to minimize environmental effects.

The proposed General Plan consists of policies and proposals to guide the future growth of the City of Turlock within its Study Area (see Chapter 2 for discussion and map of planning and jurisdictional boundaries). The Study Area includes all areas within and adjacent to the current city limits that have a potential for long-term development or conservation. Not all land within the Study Area is anticipated to be utilized for urban growth. This Draft EIR evaluates the potential impacts of the adoption of the proposed General Plan. In addition, the EIR will be used as a reference for subsequent environmental review of specific plans, infrastructure improvements, zoning amendments, impact fees and development proposals.

CEQA requires that the lead agency, which is the agency with the primary responsibility over the approval of a project, evaluate the potential impacts of the project in an EIR. The City is required to prepare an EIR on the General Plan in order to provide the City Council, as the ultimate decision maker, with an informational document for use in evaluating the proposed Plan. After adoption, the EIR will serve the additional function of providing direction to the City in implementation of the new Plan. The EIR also identifies mitigation measures to minimize significant impacts and evaluate reasonable alternatives to the proposed Plan. The “No Project Alternative” discusses the result of not implementing the proposed General Plan or any of the alternatives. An environmentally superior alternative also is identified as part of the alternatives analysis.

1 Introduction

This Draft EIR will be used by Turlock residents, elected officials, and City staff during the 45-day comment period. The Draft EIR and Final EIR, which includes responses to public comments received, will be certified by the Turlock City Council prior to consideration of the proposed General Plan. The proposed Plan and the EIR have been prepared concurrently and policies in the proposed Plan take into consideration the EIR discussion of impacts and mitigation measures.

General Plan Process and Public Involvement

The General Plan update was initiated in the summer of 2008. To help prepare the General Plan, series of interim tasks were undertaken, including researching existing conditions, developing sketch alternative plans, determining a preferred plan, and drafting policies. In addition, the Housing Element was prepared in the spring of 2009 under separate cover (subject to the statutory deadline of August 30, 2009).

Plans are most effective when they express the goals and values of the community; therefore, a comprehensive public participation process was an important component of the General Plan update. Three community-wide meetings were held, one in March of 2009 to discuss general planning concerns and conduct a visioning exercise, one in January of 2010 to present and discuss the Alternative Concepts, and another in October of 2011 to provide feedback on the Public Review Draft Plan. Discussions were organized in small groups and each group was given the opportunity to report back to the workshop as a whole. A wide variety of viewpoints were expressed by participants from all segments of the community. Public feedback at these workshops and those expressed indirectly through the General Plan Update website and other means have been incorporated into the planning process. Additionally, stakeholder interviews and joint City Council/Planning Commission study sessions were also held to formulate draft policies. Finally, in order to update the community on the progress of the planning effort, several newsletters were prepared and distributed to residents during the entire General Plan update process. All of the documents, maps, and meeting agendas were also made available for public download through the City of Turlock's General Plan Update website, at www.gpupdate.turlock.ca.us.

The proposed General Plan will be considered by the City Council at public hearings following public review of this Draft EIR. If approved, the proposed Plan will become the City's new General Plan and be used to guide land use decision-making to the year 2030 or until a subsequent General Plan is adopted.

Approach to the EIR

The EIR for the 2030 Turlock General Plan is a program EIR, defined in the CEQA Guidelines Section 15168 as: "an EIR which may be prepared on a series of actions that can be characterized as one large project and are related either: (1) Geographically; (2) As logical parts in the chain of contemplated actions; (3) In connection with the issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or (4) As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental impacts which can be mitigated in similar ways."

Program EIRs can be used as the basic, general environmental assessment for an overall program of projects developed over a planning horizon.¹ A program EIR has several advantages. First, it provides a basic reference document to avoid unnecessary repetition of facts or analysis in subsequent project-specific assessments. Second, it allows the lead agency to look at the broad, regional impacts of a program of actions

¹ In this case, the EIR reviews programs proposed by the 2030 Turlock General Plan. It has a planning horizon of 20 years, counting from the year 2010.

Turlock General Plan: Draft Environmental Impact Report

before its adoption and eliminates redundant or contradictory approaches to the consideration of regional and cumulative impacts.

As a program EIR, this document focuses on the overall effects of the proposed General Plan in the Study Area; the analysis does not examine the effects of potential site-specific projects that may occur under the overall umbrella of this program in the future. In fact, this EIR assumes that specific development projects and infrastructure improvement proposals submitted to the City of Turlock will necessitate independent environmental assessment in accordance with the requirements of CEQA. The nature of long-range planning is such that many proposed policies are intended to be general, with details to be determined during implementation.

In order to put into effect many of the proposed General Plan policies, the City will adopt or approve specific actions—zoning regulations, zoning map amendments, development impact fees, specific plans, capital improvement programs, development projects, etc.—that would be consistent with the policies of the Plan. This program EIR does not preclude the need for environmental review of specific plans subsequent to Council adoption of the proposed General Plan.

CEQA mandates that lead agencies adopt mitigation monitoring and reporting programs for projects identified as having significant impacts where mitigation measures have been identified. Mitigation monitoring and reporting programs are intended to ensure compliance during project implementation. These programs provide the additional advantage of providing staff and decision-makers with feedback on mitigation effectiveness and can inform the development of future mitigation measures.

The proposed General Plan is intended to be self-mitigating, in that the policies and programs of the proposed Plan are designed to anticipate and mitigate possible environmental impacts. This EIR clearly shows how the impacts of future development in Turlock will be addressed through implementation of the policies and programs of the proposed Plan. Any residual impact after implementation of these proposed policies and programs is identified as measured against the significance criteria established for each impact area. The significance criteria are identifiable quantitative, qualitative, or performance levels for each environmental effect; compliance with significance criteria indicates that the effect is significant.

This EIR represents the best effort to evaluate the potential environmental effects of the proposed General Plan given its long-term planning horizon. It can be anticipated that conditions will change; however, the assumptions herein are the best available at the time of preparation and reflect existing knowledge of natural resources, community needs, and patterns of development and travel.

The proposed General Plan EIR is based on the following key assumptions:

- *Full Implementation.* This EIR assumes that all policies in the proposed General Plan will be fully implemented and all development will be consistent with the proposed General Plan Land Use Diagram. Key components of the proposed General Plan include the definition of discrete master plan areas for new development; identification of the general locations, types, and sizes of new parks, schools, and other community facilities; policies for the creation of Complete Streets that support all travel modes; consideration of environmental assets and constraints, including air quality and greenhouse gases; and an economic development strategy.
- *Buildout in 2030.* This EIR assumes that buildout of the proposed General Plan will occur by 2030. It is understood that development under the proposed General Plan will be incremental and timed in response to market conditions. The proposed General Plan includes policies intended to control the

1 Introduction

amount and location of new growth according to specific phasing, with thresholds and triggers in place to guide when development may shift from one area to the next.

Scope of the EIR

The issues evaluated in this EIR were determined during the initial phase of the project. A Notice of Preparation (NOP) for the EIR on the City of Turlock General Plan Update was circulated in January of 2011 and the City received comments during a 30-day review period. The NOP and the comments received are in Appendix A of this EIR. These comments, along with input received during public workshops and meetings, helped to identify the major planning and environmental issues and concerns in the General Plan and informed the framework and focus of the environmental analysis.

The first step toward completion of this Draft EIR was the initial analysis of the environmental setting. This analysis compiled specific information on the current conditions in the Study Area, the characteristics of the City, and the major issues it faces. Information on the environmental setting provides background regarding relevant issues and is used to evaluate potential impacts. Based on the initial analysis of the environmental setting, as well as the NOP comments and public meetings, the following issues are analyzed in this EIR:

- Agriculture and Soil Resources
- Land Use and Housing
- Transportation
- Air Quality
- Climate Change
- Noise
- Aesthetics and Visual Resources
- Cultural Resources
- Biological Resources
- Geologic and Seismic Hazards
- Hazardous Materials, Wildland Fires, and Other Hazards
- Hydrology and Water Resources
- Parks, Recreation, and Open Space
- Public Facilities and Services
- Utilities

Each of these topics is addressed in Chapter 3: Settings, Impacts, and Mitigation, of this EIR.

Intended Uses of the EIR

The proposed General Plan and EIR provide specific guidance for implementation of Plan concepts and establish a basis for coordinated action by the City, adjacent jurisdictions, Stanislaus County, and regional, State, and federal agencies, including that coordination involving the use of this EIR for the consideration of future development. The City of Turlock, as the Lead Agency, will use this EIR in consideration of the proposed General Plan, as well as amendments to the Zoning Ordinance and other actions to implement the

General Plan. This document will provide environmental information to several other agencies affected by the project, or those which are likely to have an interest in the project. Agencies, boards and commissions that are expected to have an interest in this EIR or to use it in their decision-making include, but are not limited to, the following:

FEDERAL AGENCIES

- **United States Fish and Wildlife Service (USFWS).** The USFWS is responsible for conserving and protecting wildlife, endangered species, and their habitats for the benefit of the public at large.
- **United States Department of Agriculture (USDA).** The USDA is responsible for conservation and monitoring of agricultural lands.
- **United States Army Corps of Engineers (USACE).** The USACE is empowered to regulate the protection and conservation of all waters of the United States which include navigable rivers and wetlands.

STATE AGENCIES

- **California Department of Transportation (Caltrans).** Caltrans is responsible for approval of roadway improvements along all State highways within California. It is also responsible for design, construction, and future improvements to State highways.
- **California Environmental Protection Agency (CalEPA).** The CEPA is the primary State agency concerned with degradation of the environment and how it affects human physical and mental health. It is responsible for the prevention of pollution of sources of public water supplies, the establishment of ambient air quality standards, and the monitoring of environmental pollution.
- **State Water Resources Control Board (SWRCB).** The SWRCB has the responsibility to preserve, enhance and restore the quality of California's water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations.
- **California Air Resources Board (CARB).** The CARB is charged to attain and maintain healthy air quality, conduct research into the causes of and solutions to air pollution, and systematically attack the serious problem caused by motor vehicles, which are the major causes of air pollution in the State.
- **California Department of Fish and Game (CDFG).** The CDFG is responsible for the protection, conservation, propagation and enhancement of California's wildlife resources.
- **California Department of Water Resources (CDWR).** The CDWR is responsible for the planning of future water needs through the California Water Project which builds, operates, and maintains water facilities.
- **California Department of Food and Agriculture (CDFA).** The CDFA establishes legislation and regulations in the California Food and Agricultural Code which are enforced through county departments of agriculture.
- **California Energy Commission (CEC).** The CEC is the State's primary energy policy and planning agency.

REGIONAL AND LOCAL AGENCIES

- **Stanislaus County.** This jurisdiction acts as a Responsible Agency for the proposed Plan as Turlock is located within Stanislaus County. In addition, policies within the General Plan may lead to the annexation of areas currently under the County's jurisdiction.

1 Introduction

- **Stanislaus Council of Governments (StanCOG).** StanCOG is a cooperative body of local governments in Stanislaus County established to exchange planning information between the member agencies as related to area-wide development, with emphasis on growth management, agricultural land preservation, and transportation. They are also the coordinating agency for the Valleywide Blueprint Project.
- **San Joaquin Valley Air Pollution Control District (SJVAPCD).** The SJVAPCD serves as the regional air quality control district and has the responsibility for the implementation of the California Clean Air Act.
- **Turlock Unified School District (TUSD).** The TUSD is the primary provider of elementary, middle, and high school public education to children of the City of Turlock and outlying territory within the District Area.
- **Denair Unified School District (DUSD).** The DUSD is the primary provider of elementary, middle, and high school public education to children of the unincorporated community of Denair, located just northeast of the City of Turlock. A portion of the City of Turlock lies within the DUSD district boundary; therefore, some children in Turlock attend DUSD schools.
- **Hughson Unified School District (HUSD).** The HUSD provides elementary, middle, and high school education to children in the town of Hughson. A portion of the HUSD boundary lies just north of the Study Area boundary.
- **Keyes Union School District (KUSD).** The KUSD provides elementary and middle school education to children in unincorporated parts of the Study Area to the northwest of the Turlock city limits. Children may attend TUSD high schools.
- **Chatom Union School District (CUSD).** The CUSD provides elementary and middle school education to children in unincorporated parts of the Study Area to the west and southwest of the Turlock city limits. Children attend TUSD high schools.
- **Denair Fire District (DFD).** The Denair Fire District provides fire protection services to the unincorporated community of Denair and the surrounding area, including some portions of the Study Area to the northeast of the Turlock city limits.
- **Keyes Fire District.** The Keyes Fire District provides fire protection services to the unincorporated community of Keyes, northwest of Turlock, and the surrounding area, including some portions of the Study Area to the northwest of the Turlock city limits.
- **California State University, Stanislaus (CSUS).** CSUS is one of the State's 23 campuses in the CSU system. Occupying a 228 acre campus on the north side of Turlock since 1965, the university enrolls over 6,700 full time equivalent (FTE) students and primarily serves the counties in the northern Central Valley (including Calaveras, Mariposa, Merced, San Joaquin, Stanislaus, and Tuolumne). An additional off-campus site is located in the City of Stockton.
- **Stanislaus County Local Agency Formation Commission (LAFCO).** This agency is responsible for processing land annexation, Sphere of Influence, and incorporation applications in Stanislaus County.

City of Turlock

- A list of City Departments, Commissions, and Boards that will use this EIR in consideration of future development is provided in Section 2.6 of this EIR.

Documents Incorporated by Reference

Section 15150 of the CEQA Guidelines permits documents of lengthy technical detail to be incorporated by reference in an EIR. Specifically, Section 15150 states that an EIR may "incorporate by reference all or portions of another document which is a matter of public record or is generally available to the public..." Incorporated documents are to be briefly summarized in the EIR and be made available to the public for inspection or reference. The City of Turlock General Plan Update Draft EIR incorporates by reference the documents noted below, which are available at the Planning Division of the City of Turlock Development Services Department, 156 S. Broadway, Turlock, CA, 95380, as well as the City's website at: <http://www.gpupdate.turlock.ca.us/documents>.

- *Existing Conditions and Key Issues: Turlock General Plan Report #1 (March 2009)* – This document provides baseline information regarding existing conditions that will influence future development in the City of Turlock. The report uses maps to illustrate the supply of available land in the City, which will help guide the decision-making process regarding future growth and conservation. The document also highlights information for natural resources, land uses, and civic and transportation infrastructure throughout the City and its surrounding Study Area
- *Future Turlock Growth: Concept Alternatives and Infrastructure Improvements (May 2010)* – This document, also referred to as the Alternatives Report, presents various land use and transportation alternatives that may be incorporated into the proposed General Plan and compares these with the current General Plan.

Other project and program EIRs that have been prepared for projects in the Turlock Study Area have been reviewed during preparation of this EIR. These EIRs address approved development and development currently underway.

Organization of EIR

The Draft EIR is organized into the following main chapters:

- **Chapter 2: Project Description.** This chapter includes a detailed description of the proposed General Plan. The Project Description presents the proposed General Plan Land Use Diagram, the proposed land use classification system, key policies and buildout estimates.
- **Chapter 3: Settings, Impacts, and Mitigation Measures.** This chapter analyzes the environmental impacts of the proposed General Plan. Impacts are organized by major topic and are, with a few exceptions, in the order that issues are addressed in the proposed General Plan. Each topic area includes a description of the environmental setting, significance criteria, impact analysis, and policies in the proposed General Plan that would avoid or reduce the impacts. If further mitigation is found to be required, recommendations are presented.
- **Chapter 4: Alternatives Analysis.** This chapter compares the impacts of the proposed General Plan with three land use alternatives including a No Project Alternative and two alternatives that portray different quantities and types, and arrangements of proposed new development. Chapter 4 concludes with a determination of the Environmentally Superior Alternative.
- **Chapter 5: CEQA Required Conclusions.** Chapter 5 provides a summary of significant environmental impacts, including unavoidable, irreversible, growth-inducing, and cumulative impacts.

1 Introduction

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2 Project Description

The project analyzed in this EIR is the proposed Turlock General Plan. Under California Government Code Section 65300 et. seq., cities are required to prepare a general plan that establishes policies and standards for future development, housing affordability, and resource protection for the entire planning area. By law, a general plan must be an integrated, internally consistent statement of City policies. Section 65302 requires that a general plan include the following seven elements: Land Use, Circulation, Housing, Conservation, Open Space, Noise, and Safety. Additional elements may be included in the general plan as well, at the discretion of the City. Optional elements in the proposed Turlock General Plan include New Growth Areas and Infrastructure; Parks, Schools, and Community Facilities; and City Design. Economic Development policies are found in the Land Use element. All elements of the General Plan have equal weight, and no one element supersedes another. Cities may amend the general plan four times a year (each amendment may include any number of changes), and cities are encouraged to keep the plan current through regular updates.

Turlock's Housing Element was updated in 2009-2010 through a separate process and is not part of this environmental review; a Negative Declaration was certified in March 2010. The Housing Element was certified by the California Housing and Community Development Department in November 2011 and adopted by the Turlock City Council in January 2012.

This chapter introduces the purpose and objectives of the proposed Turlock General Plan and summarizes specific information to describe the proposed Plan and complete the EIR analysis. This includes a description of the existing regional and local project setting, an outline of the projected population and employment growth rates and development patterns through the planning horizon year, the proposed land use diagram, key data tables, and key policy direction. This project description provides the basis for the environmental analysis in Chapter 3.

2.1 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 2.1-1 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.

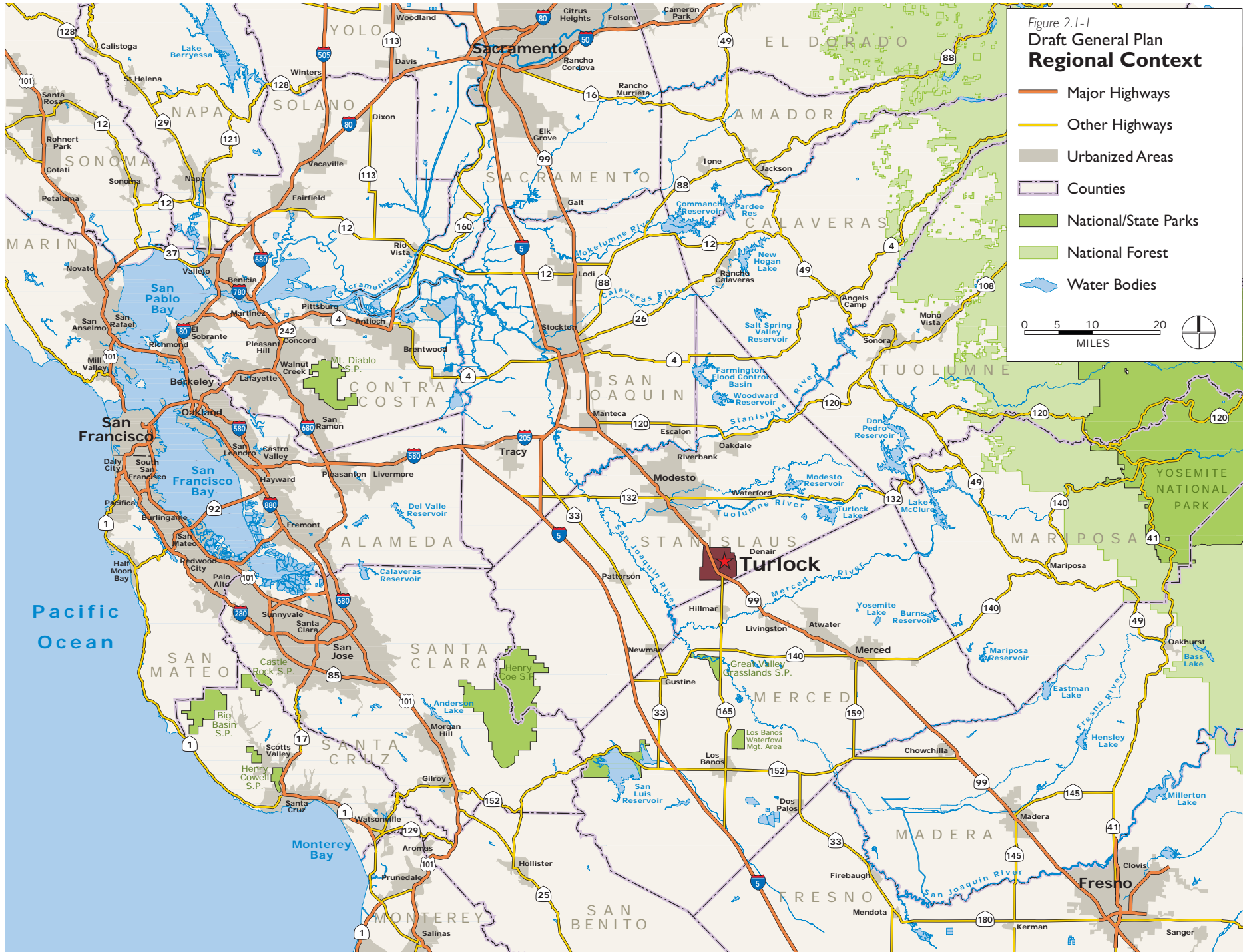


Figure 2.1-1
**Draft General Plan
 Regional Context**

- Major Highways
- Other Highways
- Urbanized Areas
- Counties
- National/State Parks
- National Forest
- Water Bodies

0 5 10 20
 MILES

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 2.1-2, 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 is a subset of the Planning Area. It was defined as the area in which the City would study the extent to which Turlock’s urban development would need to expand in order to accommodate growth over the next 20 years. Only land within the Study Area has been assigned urban uses or designated as Urban Reserve. All areas designated for urbanization are contained within the Study Area boundary, but there are other areas also within the Study Area boundary that will not urbanize by 2030. These areas are designated 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.

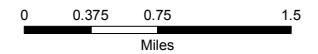
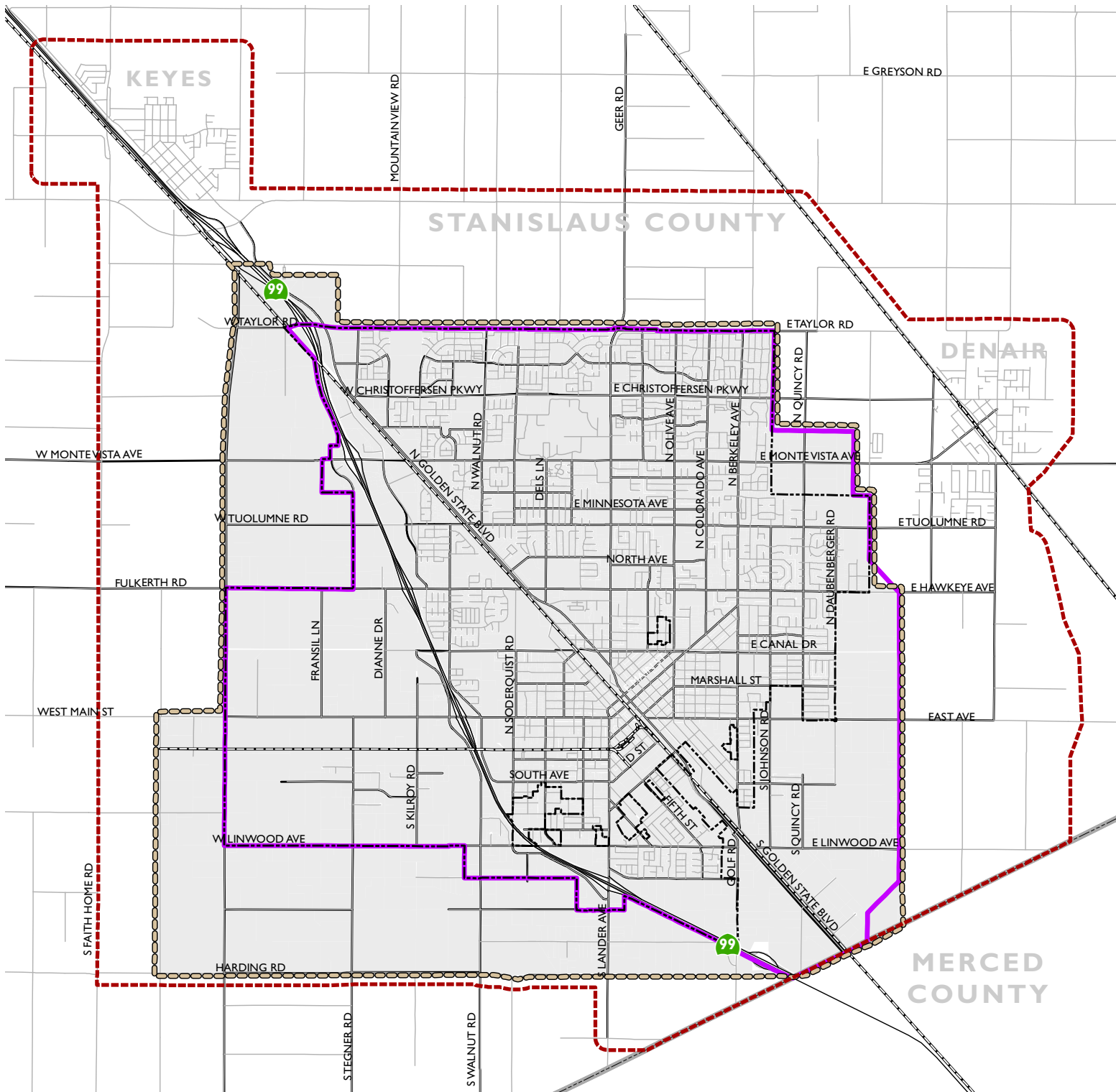
The majority of existing conditions research, analysis, and policy formulation pertains only to the Study Area, and this is the area that is depicted on the Land Use Diagram and other supporting maps in the General Plan. The Study Area is roughly bounded by Taylor Road to the north, Waring and Verduga 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 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. The SOI is a boundary that encompasses lands that are expected to ultimately be annexed by the City, and the City will apply to LAFCO to expand the SOI to match the extent of planned urban development as part of the General Plan Update. 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.

Figure 2.1-2
 Draft General Plan
Planning Boundaries

-  Planning Boundary
-  Study Area Boundary
-  Existing Sphere of Influence
-  County Line
-  City Limits & County Islands
-  Freeway
-  Roads
-  Railroads



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

City Limits

The City of Turlock's existing city limits encompasses approximately 8,730 acres (13.6 square miles) of incorporated land or 51 percent of the Study Area (Figure 2.1-2). The city limits include residential, commercial and industrial developments as well as public facilities, including parks and schools.

2.2 Purpose and Objectives of the General Plan

CEQA Guidelines Section 15124(b) requires a description of project purpose and objectives.

PLAN 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, describing 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.

The proposed General Plan is intended to respond directly to changes experienced in Turlock since the adoption of the current General Plan (1992). New policies are introduced to respond to the City's changing demographics and economic environment, land use demands, as well as State and federal laws. Plan policies respond to key ideas from the community and focuses on current and future community needs, economic development opportunities, how to encourage mixed use and infill development, satisfy housing demand, and improve the quality of life. It also addresses environmental resource conservation and the health and safety needs of residents. Lastly, it responds to resident preferences about where different land uses such as shopping, public services, parks and recreation, housing, and other resources should be located and how best the City could achieve the Plan's goals.

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.

PLAN OBJECTIVES

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.”

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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 both 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 two development 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 (TRIP) area, 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 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 rapidly increasing 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.

2.3 The Proposed General Plan Land Use Diagram and Land Use Classifications

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. 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.

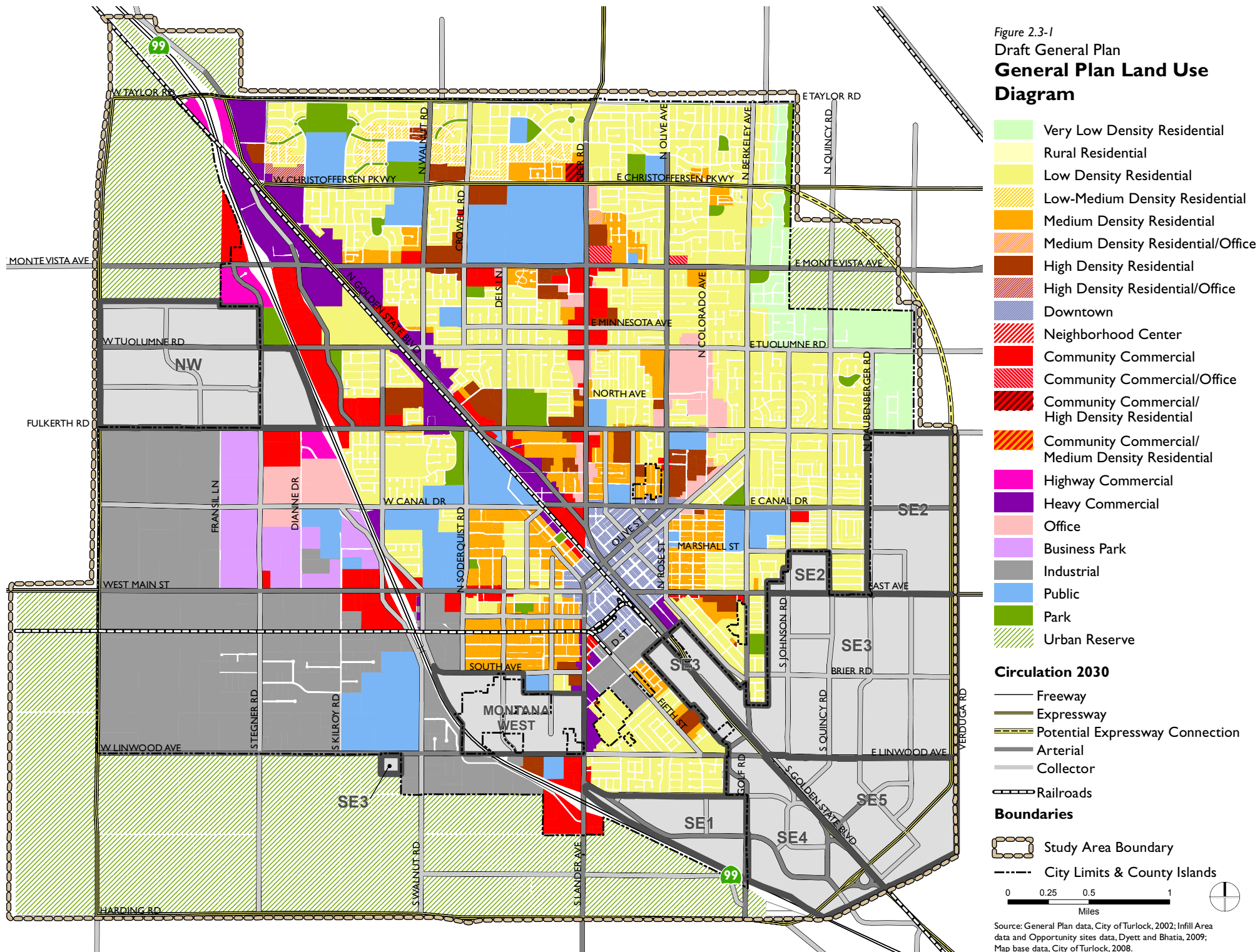
The General Plan Land Use Diagram and the land use policies will have a major impact on Turlock's form and character over the life of the General Plan. Critical issues faced by Turlock that are addressed in this Element include: direction of urban expansion and phasing of growth, location of retail and 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.

THE GENERAL PLAN LAND USE DIAGRAM

The General Plan Land Use Diagram, illustrated in Figure 2.3-1, shows the planned future land use pattern for the Turlock Study Area. The Diagram is the product of a community driven design process that began in October 2008. It is shaped by ideas from the public and developed by City staff in consultation with the Planning Commission and City Council. As the General Plan took shape, the Diagram has evolved to more accurately depict a workable land development pattern, responding to development opportunities, environmental constraints, and the needs and desires of the community.

The basic premise of the Plan is to provide complete, compact, mixed use new neighborhoods to serve Turlock's growing population. Most of the future residential growth is expected to occur in five new master planned neighborhoods in the southeastern portion of the Study Area, with the potential for one additional new neighborhood in the northwest. Another master plan area, called Montana-West, is designated within city limits and corresponds to an area with numerous contiguous unincorporated "county island" parcels. Significant new residential and commercial development can also be accommodated on infill sites within the current city limits, both Downtown and along major corridors and in neighborhoods. The Plan preserves and enhances the city's historic core and surrounding neighborhoods, while ensuring that new housing and employment centers can serve new population and contribute to the city's economic vitality. Development beyond the current city limits will occur in a phased, orderly fashion, using the master planning process to prezone and annex new areas accompanied by appropriate infrastructure. The Plan also calls for the development of new parks and proposes a network of multi-use trails and greenways through new neighborhoods. Trails will accommodate both pedestrians and cyclists, and the greenways in which they are contained may also host stormwater drainage basins and server as buffers between urban and agricultural areas.

Figure 2.3-1
 Draft General Plan
**General Plan Land Use
 Diagram**



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LAND USE CLASSIFICATIONS

While the General Plan Land Use Diagram shows the proposed location, distribution, and the extent of land uses desired at buildout in 2030 (the plan horizon year), the land use classifications—shown as color/graphic patterns, letter designations, or labels on the diagram—provide a range for housing density and building intensity for each type of designated land use. For residential uses, the density/intensity standards are expressed as the number of housing units per gross acre. For non-residential uses, a measure known as Floor Area Ratio (FAR) is specified. In design terms, FAR is defined as the permitted ratio of gross floor area to site area. The land use classifications are to be used and interpreted in conjunction with the General Plan Land Use Diagram. The land use classifications are described in detail below.

Total acreage for each land use classification is presented in Tables 2.3-1 and 2.3-2. The land use classifications are meant to be general enough to give the City flexibility in implementing policy, but clear enough to provide sufficient direction to carry out the proposed Plan. The City's Zoning Ordinance, which will be amended to become consistent with the General Plan once the Plan is adopted, will contain more detailed provisions and standards. More than one zoning district may be developed within a single General Plan land use classification.

Residential

Very Low Density. This designation is intended for single family detached residential development, allowing 0.2 to 0.3 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. This designation is intended for single family detached residential development, allowing 3.0 to 7.0 units per gross acre. It 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 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 average density assumed for General Plan calculations is 5.0 units per gross acre.

Low-Medium Density. 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 = nine 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 average density assumed for General Plan calculations is 7.5 units per gross acre.

Medium Density. 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 average 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.

High Density. 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.

TABLE 2.3-1: GENERAL PLAN BUILDOUT BY LAND USE DESIGNATION: RESIDENTIAL

<i>Land Use</i>	<i>Acres</i>	<i>Average Gross Density (du/ac)</i>
Very Low Density Residential	308	1.6
Low Density Residential	2,996	5.0
Low/Medium Density Residential	793	7.5
Medium Density Residential	1,109	11.0
High Density Residential	442	22.5
Office and/or High Density Residential ¹	14	22.5
Office and/or Medium Density Residential ²	6	11.0
Community Commercial and/or High Density Residential ³	9	22.5
Downtown Mixed Use ⁴	168	22.5
Neighborhood Center ⁵	40	22.5
Total	6,938	

Notes:

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 50% buildout as residential. Assumption supported by Housing Element analysis. Actual buildout may vary.
4. Assumes 25% 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.

Source: Dyett & Bhatia, 2012

COMMERCIAL AND MIXED USE

Downtown Mixed Use. 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 3.0. 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. 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. 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. 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 households, at which time the land use can be reconsidered. Policy 2.6-e provides detail on implementation.

Highway Commercial. 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.

Heavy Commercial. 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.

Neighborhood Center. The Neighborhood Center designation is shown only in illustrative land use concepts for master plan areas. It designates mixed use areas outside of Downtown—new neighborhood centers designed as part of new master planned residential neighborhoods. Neighborhood Centers are

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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 30 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.

INDUSTRIAL

Industrial. 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) area, 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. 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

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.

TABLE 2.3-2: GENERAL PLAN BUILDOUT BY LAND USE DESIGNATION: NON-RESIDENTIAL

<i>Land Use</i>	<i>Acres</i>	<i>Typical FAR</i>
Downtown Mixed Use ¹	168	1.0
Office	251	0.35
Office and/or High Density Residential ²	14	0.35
Community Commercial	589	0.25
Community Commercial and/or Office	15	0.3
Community Commercial and/or High Density Residential ³	9	0.3
Office and/or Medium Density Residential ⁴	6	0.35
Heavy Commercial	476	0.35
Highway Commercial	134	0.35
Industrial ⁵	288	0.6
Business Park ⁶	41	0.35
Neighborhood Center ⁷	40	0.3
Total	1,989	

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

1. Assumes 75% buildout as non-residential. Actual buildout may vary.
2. Assumes 50% buildout as office. Actual buildout may vary.
3. Assumes 50% buildout as non-residential. Actual buildout may vary.
4. Assumes 50% buildout as non-residential. Actual buildout may vary.
5. Assumes 15% buildout of available land inventory, per employment projections.
6. Assumes 15% buildout of available land inventory, per employment projections.
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.

Source: Dyett & Bhatia, 2012

Parks

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. Specialized public recreation facilities that may be accessed only through reservations, such as the Regional Sports Park, are indicated as parkland on the General Plan Land Use Diagram, but their acreage does not count towards the city's park acreage per population ratio.

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 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 of 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.

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Urban Reserve

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.

2.4 Buildout under the Proposed General Plan

Full development under the proposed General Plan is referred to as “buildout.” Although the proposed General Plan horizon is the year 2030, the Plan is not intended to specify or anticipate when buildout will actually occur; nor does the designation of a site for a certain use necessarily mean the site will be used in such a way within the next 20 years. This section describes the implications of the proposed General Plan buildout in terms of future housing units, population, and jobs.

SUMMARY OF DENSITY AND INTENSITY

The density and intensity (FAR) standards used in the proposed General Plan are shown in Table 2.4-1.

TABLE 2.4-1: LAND USE CLASSIFICATIONS AND DENSITY – MINIMUMS AND MAXIMUMS

<i>Land Use</i>		<i>Minimum and Maximum Residential Density (gross dwelling units per acre)</i>	<i>Maximum Non-Residential Density (FAR)¹</i>	
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 ²	7.0 – 40.0		
NC	Neighborhood Center ³	7.0 – 30.0	Plus	1.5
O	Office			0.35
CC	Community Commercial		0.25	
HC	Heavy Commercial		0.35	
HWC	Highway Commercial		0.35	
RC	Regional Commercial		0.35 ⁴	
I	Industrial		0.60	
BP	Business Park		0.35	
PUB	Public/Semi-Public		NA	
P	Park		NA	
UR	Urban Reserve		NA	

Notes:

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. The Neighborhood Center designation is only found in master plan areas. It allows a combination of residential development of 7.0 to 30.0 units per acre as well as non-residential development of FAR 1.5 maximum.
4. FAR for a hotel in the Regional Commercial designation may be up to 3.0.

POPULATION GROWTH AND HOUSING

Buildout Population

Based on past development trends, regional growth forecasts, and applying assumptions on future growth, the Turlock Planning Area will accommodate approximately 126,800 residents and 44,100 housing units at maximum buildout, an increase of about 79 percent over the current population estimate of 71,000.

Residential Development

As shown in Table 2.4-2, approximately 24,400 housing units currently exist in the Turlock Planning Area. The proposed General Plan will accommodate a further 20,600 housing units through new development and infill development at maximum buildout. Most of the new residential developments are expected to be in compact, mixed-use master planned neighborhoods in the Study Area’s Southeast and Northwest areas. A

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smaller portion of new housing will be developed on infill sites closer to Downtown and elsewhere in existing city limits.

New Development in Master Plans

The General Plan introduces six new master plan areas for future neighborhood development, five of which are located in the southeast and one in the northwest. An additional master plan area is identified within the city's current boundaries, encompassing significant areas of unincorporated "county islands." The concept behind provision of master plan areas is twofold: to ensure that future development at the urban edge of Turlock proceeds in a discrete, orderly fashion, according to prescribed phasing and with adequate infrastructure; and second, to create complete neighborhoods that are compact, walkable, and mixed use, with a variety of housing types and public amenities.

A Master Plan or Specific Plan must be prepared for each area. The General Plan assigns a minimum average residential density to each master plan area. Builders/developers may plan and construct a variety of housing types within each area, so long as the overall density meets the minimum threshold. The General Plan also specifies the amount and general location of other complementary uses, such as parks, schools, and shopping centers, as well as the appropriate locations for heavier commercial and industrial uses. The master plans must also provide major transportation infrastructure (collectors, arterials, and expressways) in accordance with the overall citywide circulation diagram, and appropriate utility infrastructure. Essentially, the General Plan provides standards and guidelines for the mix and location of land uses and supporting public facilities and infrastructure for each area, and the master plans may be designed with some flexibility as long as these standards are met and the plans are consistent with the overall citywide systems.

Phasing of Master Plans

Turlock's development is planned to proceed in two major phases. The first phase includes infill development,¹ development of projects in the pipeline, and master plan areas Southeast 1, Southeast 2, and Southeast 3. Buildout of master plans shall proceed in the numerical order according to their names. Accommodating some 11,800 new housing units and 33,200 new residents (104,300 total residents including those currently in Turlock), Phase I could proceed without triggering the need for a new Highway 99 interchange in the southeast. In addition, most of Phase I could be developed without the need for major new potable water infrastructure.

Phase II includes master plan areas Southeast 4, Southeast 5, and Northwest. Following Phase I development, the City may choose whether to go to the Northwest or whether to continue building in the southeast. If the southeast is chosen, development of SE 4 shall precede development of SE 5. Buildout of all of Phase II would add another 8,000 housing units and 22,500 people, bringing the citywide totals at full buildout to 55,700 housing units and 126,800 residents. Table 2.4-2 summarizes buildout for the proposed General Plan by population and housing units for each phase of development.

¹ Vacant and underutilized infill opportunity sites could accommodate approximately 4,200 housing units. Given the challenges and constraints often posed by infill development, the General Plan assumes that 70 percent of these sites will develop, equaling approximately 3,000 housing units. Development associated with the Montana-West (County Island) master plan is included in this estimate.

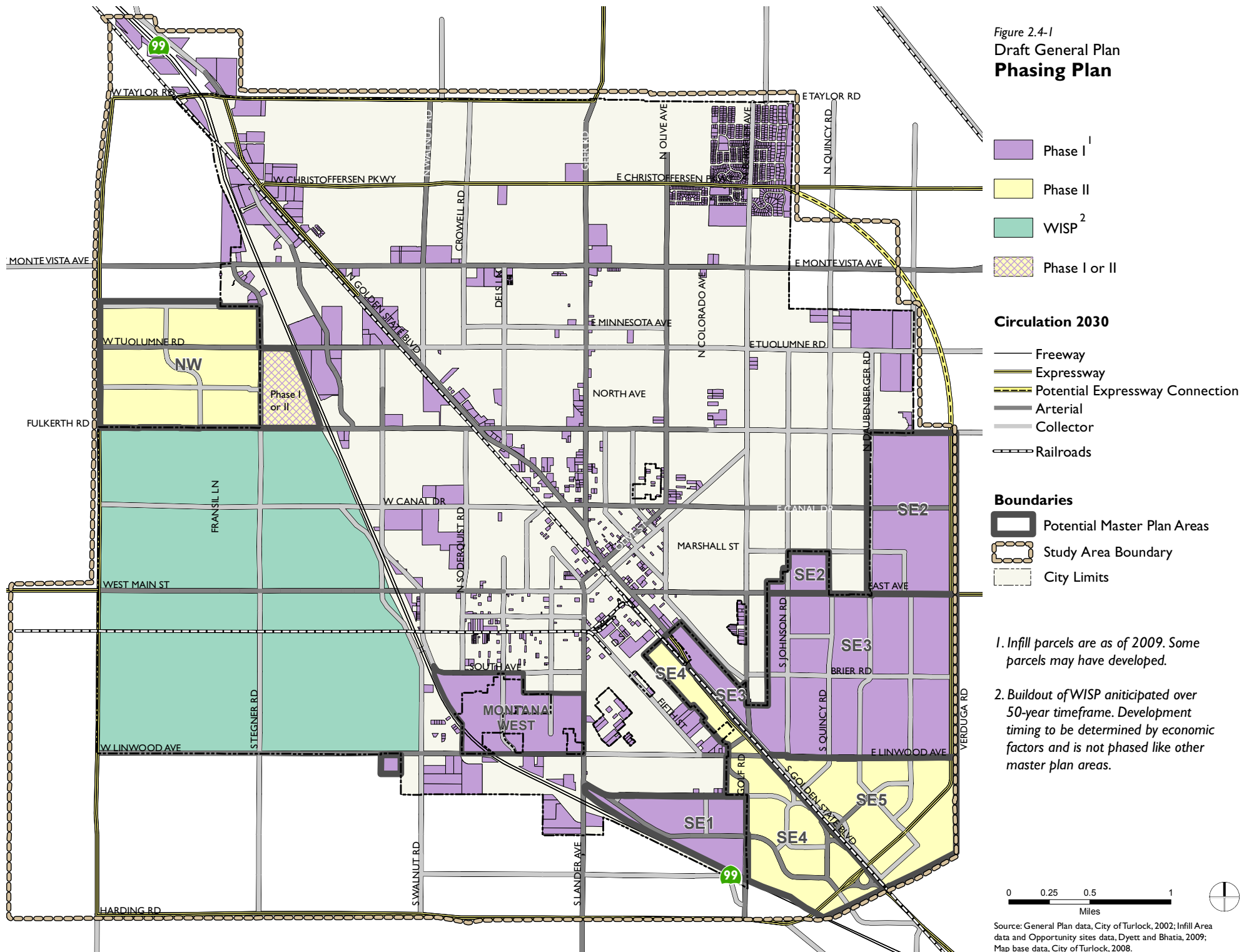
TABLE 2.4-2: RESIDENTIAL DEVELOPMENT POTENTIAL BY PHASE

<i>Phase</i>	<i>Housing Units by Phase</i>	<i>Cumulative Housing Units</i>	<i>Population by Phase</i>	<i>Cumulative Population</i>
Existing (2010)	24,400	24,400	71,100	71,100
Phase I				
Approved Projects	1,400	25,800	3,900	75,000
Infill	3,000	28,800	8,400	83,400
Southeast 1 (Morgan Ranch)	1,000	29,800	2,800	86,200
Southeast 2	2,400	32,200	6,800	93,000
Southeast 3	4,000	36,200	11,300	104,300
<i>Subtotal Phase I</i>	<i>11,800</i>	36,200	<i>33,200</i>	104,300
Phase II				
Southeast 4	1,700	37,900	4,800	109,000
Southeast 5	2,000	39,900	5,600	114,700
<i>Option 1 Subtotal: Southeast 4, Southeast 5 only</i>	<i>3,700</i>	39,900	<i>10,400</i>	114,700
Northwest	4,300	40,500	12,100	116,400
<i>Option 2 Subtotal: NW only</i>	<i>4,300</i>	40,500	<i>12,100</i>	116,100
<i>Subtotal Phase II (SE4, SE5, and NW)</i>	<i>8,000</i>	45,000	<i>22,500</i>	126,800
Minimum and Maximum Possible New Development (rounded to 1000)		11,800 – 20,000		33,200 – 55,700
Minimum and Maximum Possible Citywide Buildout, Including Existing (Phase I, SE4, SE5, and NW) (rounded to 1000)		36,200 – 45,000		104,300 – 126,800

Development of a subsequent master plan may not proceed until 70 percent of the building permits for the preceding area have been issued. This threshold does not apply to infill sites; in other words, development of the first master plan may proceed even if 70 percent of infill building permits have not been issued. Development of infill sites may proceed immediately and may continue throughout the timeframe of the General Plan.

Figure 2.4-1 is a phasing diagram, showing the order in which development is expected to occur.

Figure 2.4-1
Draft General Plan
Phasing Plan



JOBS

As shown in Table 2.4-3, Turlock will accommodate approximately 60,300 jobs at buildout, an increase of approximately 109 percent from the number of jobs in 2007 (28,258). The total additional number of jobs accommodated by the proposed General Plan is about 32,000. Over a 23-year period (2007-2030), this represents an average annual growth rate of about 4.7 percent. At buildout, the majority of jobs will be concentrated in five land use categories, which will account for 83 percent of all jobs in Turlock: Downtown Mixed Use (23 percent), Community Commercial (23 percent), Office (20 percent), Heavy Commercial (17 percent), and Industrial (11 percent).

TABLE 2.4-3: JOBS BY LAND USE DESIGNATION

<i>Land Use</i>	<i>Square Feet</i>	<i>Jobs</i>
Downtown Mixed Use ¹	5,479,740	13,700
Office	2,431,670	7,480
Office and/or High Density Residential ²	108,710	330
Community Commercial	6,413,770	12,830
Community Commercial and/or Office	198,950	500
Community Commercial and/or High Density Residential ³	93,460	190
Office and/or Medium Density Residential ⁴	47,380	150
Heavy Commercial	7,250,450	12,080
Highway Commercial	2,040,940	4,080
Industrial ⁵	6,695,380	6,700
Business Park ⁶	622,230	1,240
Neighborhood Center ⁷	391,430	980
Total	28,733,900	60,300

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

1. Assumes 75% buildout as non-residential. Actual buildout may vary.
2. Assumes 50% buildout as office. Actual buildout may vary.
3. Assumes 50% buildout as non-residential. Actual buildout may vary.
4. Assumes 50% buildout as non-residential. Actual buildout may vary.
5. Assumes 15% buildout of available land inventory, per employment projections and anticipated TRIP development.
6. Assumes 15% buildout of available land inventory, per employment projections and anticipated TIRP development.
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.

JOBS/EMPLOYMENT BALANCE

Jobs/employment balance is defined as the ratio of the number of jobs to the number of employed residents in a given area. Turlock's jobs to employed residents ratio would be 1:1 if the number of local jobs in the City equaled the number of employed residents. In theory, a perfect 1:1 ratio could result in no one commuting in or out of the City to find work. In reality, this balance is more of a planning technique than a regulatory tool, and successful plan implementation must ultimately recognize the myriad considerations that influence where people choose to live and work. As shown in Table 2.4-4, the jobs to employed residents ratio in Turlock was 1.06 as of 2007, which means that the City had more jobs than employees to fill those positions. At full buildout, Turlock could add more jobs than employed residents (32,000 jobs versus adding approximately

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22,200 new employed residents, assuming a labor force participation rate of 40 percent, the city's average), a net new jobs/employed residents ratio of 1.44. Cumulatively, the jobs/employed residents ratio in 2030 at full buildout would be 1.19, indicating that Turlock could support slightly more workers from outside the city than it currently does.

TABLE 2.4-4: JOBS TO EMPLOYEES RATIO

<i>County/City</i>	<i>1991</i>	<i>2001</i>	<i>2007</i>	<i>2030</i>
Stanislaus County				
Jobs	133,549	164,475	175,124	N/A
Employees	159,100	196,400	210,900	N/A
Jobs to Employees Ratio	0.84	0.84	0.83	N/A
City of Turlock				
Jobs	18,720	22,906	28,258	60,300
Employees	19,800	24,900	26,700	50,600 ¹
Jobs to Employees Ratio	0.95	0.92	1.06	1.19

1. Assumes a 40% labor force participation rate for the 2030 buildout population of 126,800.

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

2.5 Key Plan Guiding Policies

Important guiding policies for each of the proposed Turlock General Plan elements are reviewed in this section. Implementation policies are included in the Plan itself. All policies are incorporated by reference into this project description and analyzed in this EIR.

LAND USE AND ECONOMIC DEVELOPMENT ELEMENT

Land use and economic development guiding policies include:

Residential Neighborhoods

- **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 65 percent traditional single family, 35 percent medium and higher density housing types.
- **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.
- **Infill and existing neighborhoods.** Preserve the scale and character of existing neighborhoods while allowing and encouraging appropriate infill development.

Retail, Commercial and Mixed Use Areas

- **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.

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

Industrial Areas

- **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.
- **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.

Professional Office and Business Park Areas

- **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.
- **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.

Planning Area and City/County Relationships

- **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.
- **Urban land uses belong in incorporated areas.** Work with Stanislaus County to direct growth to incorporated areas and established unincorporated communities.
- **Encourage infill and more compact development to protect farmland.** Relieve pressures to convert valuable agricultural lands to urban uses by encouraging infill development.
- **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. 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 annexation should they express interest.

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- **Work with County on regional projects.** Cooperate with County agencies in planning for transportation improvements and other major projects affecting multiple agencies.
- **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.

Urban Reserve Areas

- **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.

Economic Development

- **Support Existing Businesses.** Retain, improve, and promote existing businesses in Turlock and foster local start-up businesses.
- **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.
- **Facilitate new development.** Define clear development standards and process development applications expeditiously.
- **Support and maintain Downtown Turlock.** Support and contribute to a clean, safe, pedestrian-friendly, and well-maintained Downtown.
- **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.
- **Sustain fiscal health.** Ensure the continued economic sustainability of the community and fiscal health of the City government.
- **Maintain the jobs-workers balance.** Maintain a balance between jobs and the number of employed residents.
- **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.

NEW GROWTH AREAS AND INFRASTRUCTURE ELEMENT

A summary of growth management and infrastructure key policies include:

Growth Strategy

- **Proactively manage growth.** Proactively manage and plan for growth in an orderly, sequential, and contiguous fashion.
- **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.

- **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.
- **Maintain fiscal stability.** Ensure that costs associated with new growth do not exceed revenues, and the City's fiscal stability is maintained.
- **Continue prezoning.** Continue to promote orderly expansion of the City's boundaries through prezoning territory prior to annexation.
- **Provide adequate public services.** Ensure the adequacy and quality of public services and facilities for all residents.
- **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.
- **Provide a range of housing types.** Ensure a balance of housing types affordable to the complete range of income and age groups.

Land Use and Design of New Growth Areas

- **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.
- **Rights of way within planning boundary.** Rights of way, utilities, and agricultural buffers shall all be included within the master plan boundary.
- **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.
- **Phase I (Southeast area) develops first.** The master planning, pre-zoning, and annexation of new development areas shall proceed in accordance with the phasing plan shown in Figure 3-2 and Table 3-2, beginning with Morgan Ranch (Southeast 1) and followed by Southeast 2 and 3.
- **New interchange as threshold for Phase II, and decision point.** The need for a new freeway interchange at State Route 99 in the southeast shall represent the threshold between Phase I and Phase II of development, with Phase I proceeding until the interchange is needed. At this point, the City may consider whether to continue building out the southeast (master plan areas Southeast 4 and 5), or to move to the Northwest. The City may choose to build out either the northwest or the remainder of the southeast, or both, depending on the pace of population and employment growth throughout the buildout period.
- **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.
- **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

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the minimum average density, every master plan must include a minimum of 15 percent multi-family units.

- **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
 - Personal services
 - Banks and financial institutions
 - Restaurants, coffee shops, and cafes
 - Upper level residential
 - Business and professional offices
 - Medical and dental offices
 - Day care centers
 - Community centers
 - Cultural institutions (libraries, museums, theaters)
 - Parks and schools
- **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.
 - **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.
 - **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.
 - **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.
 - **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.
- **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.
- **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.
- **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, and local streets.

Infrastructure

- **Protect Water Quality and Supply.** Continue efforts to safeguard the quality and availability of Turlock's water supply.
- **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.
- **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.
- **Ensure sustainable potable water supply.** Ensure that a new system for potable water provision, either through implementation of the Surface Water 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 2017.
- **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.
- **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.
- **Development Impact Fees.** Continue to equitably distribute costs associated with serving new development through the Development Impact Fee program.
- **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.

PARKS, SCHOOLS AND COMMUNITY FACILITIES ELEMENT

The proposed General Plan includes policies and programs that are designed to improve the recreational, educational and community needs of Turlock's residents. Key policies include:

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Parks and Recreational Open Space

- **High-Quality Park System.** Develop a high quality, diversified public park system that provides a variety of recreational opportunities for all City residents.
- **Park Standards and Priorities.** Review park standards and park improvement priorities periodically to ensure that needs are being met.
- **Cooperation with School District.** Continue cooperative efforts with the Turlock school district through joint use agreements for park and recreational facilities.
- **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.
- **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.

Community Facilities

- **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.
- **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.

Public Education Facilities

- **School Facility Planning.** Plan educational facilities with sufficient permanent capacity to meet the needs of current and projected future enrollment.
- **Coordination with School Districts.** Consult with the school districts on policies and projects that affect the provision of educational facilities and services.
- **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.

CIRCULATION

The proposed General Plan includes a number of roadway improvements and programs intended to ensure the continued safe and efficient operation of Turlock's circulation system in year 2030. A summary of guiding policies is as follows:

Roadway Network Standards and Improvements

- **A safe and efficient roadway system.** Promote a safe and efficient roadway system for the movement of both people and goods.
- **Implement planned roadway improvements.** Use [General Plan] 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 future development and roadway improvement plans against standards for the classifications as set forth in Tables 5-4, 5-5, and 5-6 [in the General Plan].

- **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.
- **Design for street improvements.** The roadway facility classifications indicated on the General Plan circulation diagram [Figure 5-2 in the General Plan] 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.
- **Use of existing facilities.** Make efficient use of existing transportation facilities, and improve these facilities as necessary in accordance with the circulation diagram.
- **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.
- **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.
- **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.
- **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.

Pedestrian and Bicycle Circulation

- **Promote walking and bicycling.** Promote walking and bike riding for transportation, recreation, and improvement of public and environmental health.
- **Meet the needs of all users.** Recognize and meet the mobility needs of persons using wheelchairs and those with other mobility limitations.
- **Develop a safe and efficient non-motorized circulation system.** Provide safe and direct pedestrian routes and bikeways between places.

Public Transportation

- **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.
- **Work with multiple agencies and jurisdictions.** Continue to cooperate with other agencies and jurisdictions to promote local and regional public transit serving Turlock.

Aviation, Rail and Goods Movement

- **Maintain the Turlock Municipal Airport.** Maintain existing facilities and operations at the Turlock Airport and seek to improve facilities as funding appropriations permit.

2 Project Description

- **Ensure compatible land uses with the Turlock Municipal Airport.** Maintain compatibility of Turlock Municipal Airport operations with development in the surrounding area.
- **Promote safe and efficient goods movement.** Promote the safe and efficient movement of goods via truck and rail with minimum disruptions to residential areas.
- **Promote railroad safety.** Minimize the safety problems associated with the Union Pacific Railroad and the divisive effect of the track alignment on the City.

Electricity, Oil, Gas, and Telecommunications Transmission and Distribution

- **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.
- **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.

CITY DESIGN

A summary of city design guiding policies includes:

Overall City Form and Edge Conditions

- **Maintain free-standing communities.** Continue to maintain Turlock, Keyes and Denair as free-standing communities by establishing definitive urban edges around Turlock.
- **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).
- **Promote compact growth.** Maintain a compact growth pattern to avoid sprawl and preserve agricultural land and open space.
- **Minimize conflict.** Minimize conflict between urban and agricultural uses.
- **Enable mixed use development.** Provide a mix of uses and activities in various parts of the City.

Neighborhood Form

- **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.
- **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.
- **Preserve existing neighborhoods.** Preserve the scale and character of established neighborhoods.
- **Encourage community orientation.** Improve the community orientation of new residential developments.

Street Design and Connectivity

- **Continue gridded street network.** Continue expansion of the present street network in an orthogonal grid for all arterial and collector streets.

- **Encourage public and pedestrian orientation.** Through circulation network and street design, reduce the perceived separation and introverted nature of projects.
- **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.
- **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.

Sustainable Site Planning

- **Protect existing resources.** To the extent possible, minimize disruption to or loss of natural resources in construction of new development.
- **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.
- **Conserve energy and water.** Reduce demand for and consumption of energy and water through site planning techniques.

Art in Public Spaces

- **Promote arts awareness.** Increase public access to works of art to promote understanding and awareness of the visual arts in the public environment.
- **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.
- **Generate arts appreciation.** Generate appreciation for the arts and promote involvement of community members through public art programs.

Historic Preservation

- **Recognize the value of historic preservation.** Integrate historic preservation into planning for Downtown and other areas with historic significance.

Urban Design

- **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.
- **Community orientation.** Provide a community and public orientation for all development to improve public safety.
- **Universal access.** Accommodate the needs of all pedestrians, bicyclists and mobility-challenged persons.
- **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.
- **Pedestrian scale and neighborhood character.** Require buildings and signs to be scaled to a neighborhood character and designed to encourage pedestrian activity and comfort.

2 Project Description

- **Support transit.** Ensure that neighborhoods are designed to support transit stops in proximity to neighborhood centers and/or clusters of higher density residences.
- **Safety through design.** Ensure that new development is designed in such a way that public safety is preserved and enhanced.
- **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.

CONSERVATION

The proposed General Plan includes policies and programs related to the conservation of natural resources in Turlock. Guiding policies include:

Open Space

- **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.

Agriculture and Soil Resources

- **Preserve Farmland.** Promote the preservation and economic viability of agricultural land adjacent to the City of Turlock.
- **Limit Urban Expansion.** Retain Turlock's agricultural setting by limiting urban expansion to designated areas and minimizing conflicts between agriculture and urban activities.
- **Protect Soil and Water.** Work to protect and restore natural resources essential for agricultural production.
- **Support Air Quality Improvements.** Support efforts to reduce air quality impacts created in part by agricultural operations.

Biological Resources

- **Increase Biological Diversity.** Make efforts to enhance the diversity of Turlock's flora and fauna, including street trees.

Cultural and Historic Resources

- **Protect Archaeological Resources.** Protect significant archaeological resources in the Study Area that may be identified during construction.
- **Preserve Historic Places.** Integrate historic preservation into planning for Downtown and other areas with historic significance.

Mineral Resources

- **Protect Significant Resources.** Cooperate with regional agencies to protect significant mineral resources in the Study Area that may be identified in the future.

AIR QUALITY AND GREENHOUSE GASES

The proposed General Plan includes policies and programs related to the improvement of air quality and the reduction of greenhouse gas emissions in Turlock. Guiding policies include:

Air Quality

- **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.
- **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.

Energy and Climate Change

- **Reduce Greenhouse Gas Emissions.** Reduce greenhouse gas emissions to support statewide GHG reduction goals under the California Global Warming Solutions Act (AB 32).
- **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 travelled.
- **Facilitate Energy-Efficient Buildings.** Encourage energy efficiency through good urban design and site-planning practices, as well as through building design, maintenance and retrofit.
- **Promote Energy Conservation.** Support understanding of the relationship between energy consumption, air quality, and greenhouse gases, and promote energy-saving practices.
- **Reduce Waste.** Reduce per capita landfill waste generation by promoting reuse, recycling, and composting.

NOISE

The proposed General Plan includes policies and programs related to noise. Guiding policies include:

Noise Exposure Standards

- **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.
- **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.
- **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.

SAFETY

The proposed General Plan includes policies and programs related to safety. Guiding policies include:

Hazardous Materials and Operations

- **Protect Lives and Property.** Prevent loss of lives, injury, illness, and property damage due to hazardous materials and wastes.
- **Protect Natural Resources.** Protect soils, surface water, and groundwater from contamination from hazardous materials.

2 Project Description

- **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.
- **Incorporate Safety Considerations Into Land Use Policies.** Coordinate land use policies with concerns about potential hazards.

Seismic and Geologic Hazards

- **Minimize Geologic and Seismic Risk.** Continue to use building codes as the primary tool for reducing seismic risk in structures.

Flooding and Drainage

- **Protect the Community from Flood Hazards.** Protect the community from risks to life and property damage posed by flooding.

Public Safety and Emergency Management

- **Protect from Hazards.** Continue to protect people and property from natural and manmade hazards.
- **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.
- **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.
- **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.
- **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.
- **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. Be Prepared for Emergencies. Continue to cooperate with Stanislaus County and other jurisdictions in preparing and implementing Emergency Preparedness Plans.
- **Strategic Planning.** Continue to develop strategic plans that identify high-priority community needs and organizational, staffing, and resource requirements to meet those needs.

2.6 Implementation of the Proposed General Plan

The proposed General Plan provides specific policy guidance for implementation of plan concepts. Implementing these policies will involve coordinated actions by the City Council, the Planning Commission, other City boards and commissions, and City departments. The City also will need to work with Stanislaus County and other public agencies to implement policies that involve cooperation or would affect the region. The principal responsibilities that City officials and staff have for Plan implementation are briefly summarized below; details on their powers and duties are provided in detail in the Turlock Municipal Code.

CITY COUNCIL

The City Council is responsible for the overall management of municipal affairs; it acts as the legislative body and is responsible for adoption of the General Plan and any amendments to the General Plan. The general public elects a mayor, who serves as presiding officer during all City Council meetings and study sessions, and four other City Council members. The position of Vice Mayor is rotated annually amongst the City Councilmembers. The City Council appoints the City Manager who is the chief administrator of the City and has overall responsibility for the day-to-day implementation of the General Plan. The City Council also appoints other boards and commissions established under the Municipal Code. The City Council's role in implementing the General Plan will be to set implementation priorities and approve zoning map and text amendments, consistent with the General Plan, and a Capital Improvement Program and budget to carry out the Plan. Council members serve four-year staggered terms and are elected in November of even-numbered years.

PLANNING COMMISSION

The Planning Commission is responsible for preparing and recommending adoption or amendment of the General Plan, zoning and subdivision ordinances, and other regulations, design guidelines, resource conservation plans, and programs and legislation needed to implement the General Plan. The Planning Commission also may prepare and recommend adoption of specific plans, neighborhood plans or special plans, as needed for Plan implementation.

DEVELOPMENT SERVICES DEPARTMENT

The Development Services Department houses the Planning, Housing, Building and Safety, Capital Projects/Engineering, and Traffic Engineering Divisions, which work together to provide overall administration and support for General Plan policies related to infrastructure. The Department provides guidance to the general public and developers in regard to requirements and regulations for public infrastructure planning, as well as engineering and construction management for street, sanitary sewer, storm drain, water, water wells, the sewer treatment plant, and public building projects. Development Services also oversees plan review and inspection services to enforce and protect the health and safety of the public through the effective administration of the state's model codes. Finally, the department designs and develops the City's transportation infrastructure to help facilitate safe and efficient travel. It also maintains traffic counts and speed studies on major arterial and collector streets throughout the city, and oversees the proper operation of the city-wide traffic signal system. To carry out the General Plan, the Department is tasked with preparing the Capital Improvement Program and the Capital Facilities Fee program. Other specific responsibilities are established in the Land Use and Economic Development, Circulation, Housing, and City Design elements of the proposed General Plan.

2 Project Description

Planning Division

The Planning Division, housed within the Development Services Department, is responsible for the general planning and development review functions undertaken by the City. Specific duties related to General Plan implementation include preparing zoning and subdivision ordinance amendments, design guidelines, reviewing development applications, providing advice to project applicants, conducting investigations and making reports and recommendations on planning and land use, zoning, subdivisions, development plans and projects. Among other responsibilities, the Division reviews projects for compliance with CEQA, the Zoning Ordinance, and the General Plan; and is responsible for preparing environmental documents such as Negative Declarations, Mitigated Negative Declarations and Environmental Impact Reports. Finally, the Division has the primary responsibility for preparing the annual report on the General Plan and conducting the five-year review. These reporting requirements are described in Chapter 1 of the General Plan.

MUNICIPAL SERVICES DEPARTMENT

The Municipal Services Department manages the planning, delivery, operation, and maintenance of city infrastructure. This includes Turlock's wastewater, potable water, stormwater, and recycled water utilities. The department's Regulatory Affairs Division is responsible for compliance with local, State and federal regulations, including but not limited to the Regional Water Quality Control Board, the San Joaquin Valley Air Pollution Control District, the U.S. Environmental Protection Agency, and California OSHA. The Municipal Services Department's responsibilities for implementation of the Turlock General Plan pertain primarily to the New Growth Areas & Infrastructure Element and the Safety Element.

PARKS, RECREATION AND FACILITIES DEPARTMENT

The Parks, Recreation and Facilities Division is responsible for managing the City's parks, street medians, storm basins, all government buildings, right-of-ways, and street trees within the City Limits. It also manages community health, sports, youth, and adult activities and services. Specific implementing responsibilities are established in the Parks, Schools and Community Facilities Element of the proposed General Plan.

REDEVELOPMENT AGENCY/SUCCESSOR AGENCY.

While the December 2011 California Supreme Court ruling abolished redevelopment agencies in the state of California, cities may be able to establish successor agencies that retain some of their traditional functionality. The future of redevelopment in Turlock is uncertain at the time of this EIR.

Until the end of 2011, the Turlock Redevelopment Agency (RDA) was comprised of the City Council with the City Manager acting as Executive Director. The RDA's mission was to assist in eliminating blight from specific designated areas of the city by redeveloping, reconstructing and rehabilitating areas which are negatively impacted by physical, environmental, and economic conditions and encouraging private enterprise investment.

In the context of implementing the General Plan, the a successor to the redevelopment agency will be responsible for ensuring opportunity sites in the General Plan Land Use Diagram and the Housing Land Inventory are made available for redevelopment, and maintaining and making available a list of available sites to interested developers.

POLICE DEPARTMENT

The Turlock Police Department is responsible for the protection of life and property within the City. The Department is tasked with the preservation of peace and order, suppression of crime, regulation and control

of traffic and enforcement of State laws and local codes intended to reduce public hazards. Its specific responsibilities in the General Plan are established in the Safety element of the General Plan.

OTHER COMMISSIONS, COMMITTEES AND BOARDS

The City of Turlock has a number of commissions, committees, and boards. Of particular relevance to the General Plan are:

Parks, Recreation and Community Commission

The seven member Parks, Recreation and Community Commission promotes enrichment programs for city residents and develops awareness in the business community, in local government and in the general public of the value and benefits of the constructive use of leisure time in Turlock. In particular, the Commission aims to develop interest in and awareness of recreation, neighborhoods, community policing, youth master planning and senior master planning.

Development Collaborative Advisory Committee

The Development Collaborative Advisory Committee consists of ten members from development-related industries and from the general public. Its purpose is to provide a forum that enables the public and city staff to introduce and discuss issues, comments, and concerns regarding the procedure and processes of the city's development services function. The Committee assists in the assessment of public education topics and methods of delivery, while also providing feedback and recommendations with regard to the process of developing and building in Turlock.

2 Project Description

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3.1 Agriculture and Soil Resources

This section discusses and evaluates the potential environmental impacts on agriculture and soil resources in the Study Area that may result from the buildout of the proposed Turlock General Plan update.

Environmental Setting

Agriculture is the historic basis of Turlock's economy. Farming began in the region in the mid 1800s, when ranchers saw a business opportunity in providing food to gold miners in the nearby Sierra foothills. The predominant agricultural activity switched from ranching to active cultivation in the 1860s, and it intensified with the formation of the Turlock Irrigation District in 1887 and the advent of refrigerated shipping. With these advances, farmers in the region were able to grow truck, orchard, and specialty crops in addition to grain and other field crops.

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. The City has maintained policies that preserve the belt of agricultural land around the city limits, maintaining Turlock as a stand-alone community within an agricultural region.

PHYSICAL SETTING

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.
- *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

3.1 Agriculture and Soil Resources

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.

Existing Farmland

As shown on Figure 3.1-1, the majority of land encircling the urbanized area of Turlock is categorized by the State’s Farmland Mapping and Monitoring Program (FMMP) 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. As shown in Table 3.1-1, lands designated as Prime Farmland account for an estimated 29 percent of the Study Area. The Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance designations are often referred to collectively as “Important Farmlands.” Important Farmlands account for the vast majority of farmland (7,112 acres or 94 percent of the total) within the Study Area. Farmland over all accounts for 43 percent of the Study Area.

TABLE 3.1-1: FARMLAND IN THE STUDY AREA

<i>Type</i>	<i>Existing Acres</i>	<i>Percent of Study Area</i>
Prime Farmland	4,998	29%
Farmland of Statewide Importance	1,740	10%
Unique Farmland	255	1%
Farmland of Local Importance	119	1%
Grazing Land	144	1%
Confined Animal Agriculture	286	2%
Total Farmland	7,541	43%
Study Area	17,460	100%

Source: Department of Conservation, Division of Land Resource Protection, 2011, City of Turlock, 2008, Dyett & Bhatia, 2011.

Most of the farmland within the Study Area produces almonds; truck and berry crops; and grain, hay, and field crops. (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.) 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 other predominant agricultural use around Turlock.

Williamson Act Land in the Study Area

As more fully described in the *Regulatory Setting* section, a Williamson Act contract represents an agreement to restrict land to agricultural or open space use in return for lower than normal property tax assessments. As of 2011, a total of 2,833 acres (40 percent of the total agricultural acreage in the Study Area) were under Williamson Act contracts. Of this land, 467 acres (5 percent of the Study Area's farmland) were in non-renewal, meaning that at the end of their 10-year period, they will not renew their contracts. Figure 3.1-1 indicates which parcels are under contract and which are not renewing. Williamson Act parcels are most prevalent in the Study Area's southwest. Expiring Williamson Act parcels are concentrated in the Turlock Regional Industrial Park and in the northwest.

Loss of Farmland in the Regional Context

As more fully described below under the *Regulatory Setting* section, the FMMP monitors the conversion of the State's farmland to and from agricultural use. Stanislaus County Prime Farmland acreage declined by 8,610 acres between 2004, when the FMMP completed its soil survey of the County, and 2010, the last date for which data are available. The amount of Important Farmland of all classes grew slightly over the same period, from 397,000 to 404,000 acres. This can be largely attributed to the use of more detailed digital imagery and the conversion or reclassification of grazing land to Important Farmland. Longer term trends show the amount of farmland has gradually declined in Stanislaus County (by 20,000 acres between 1984 and 2000 in the portion of the County that was surveyed at the time), while the amount of urban and "other" land has grown.¹

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.² This price differential, along with the uncertainty of farm income, explains why farmland is vulnerable to conversion to urban uses.

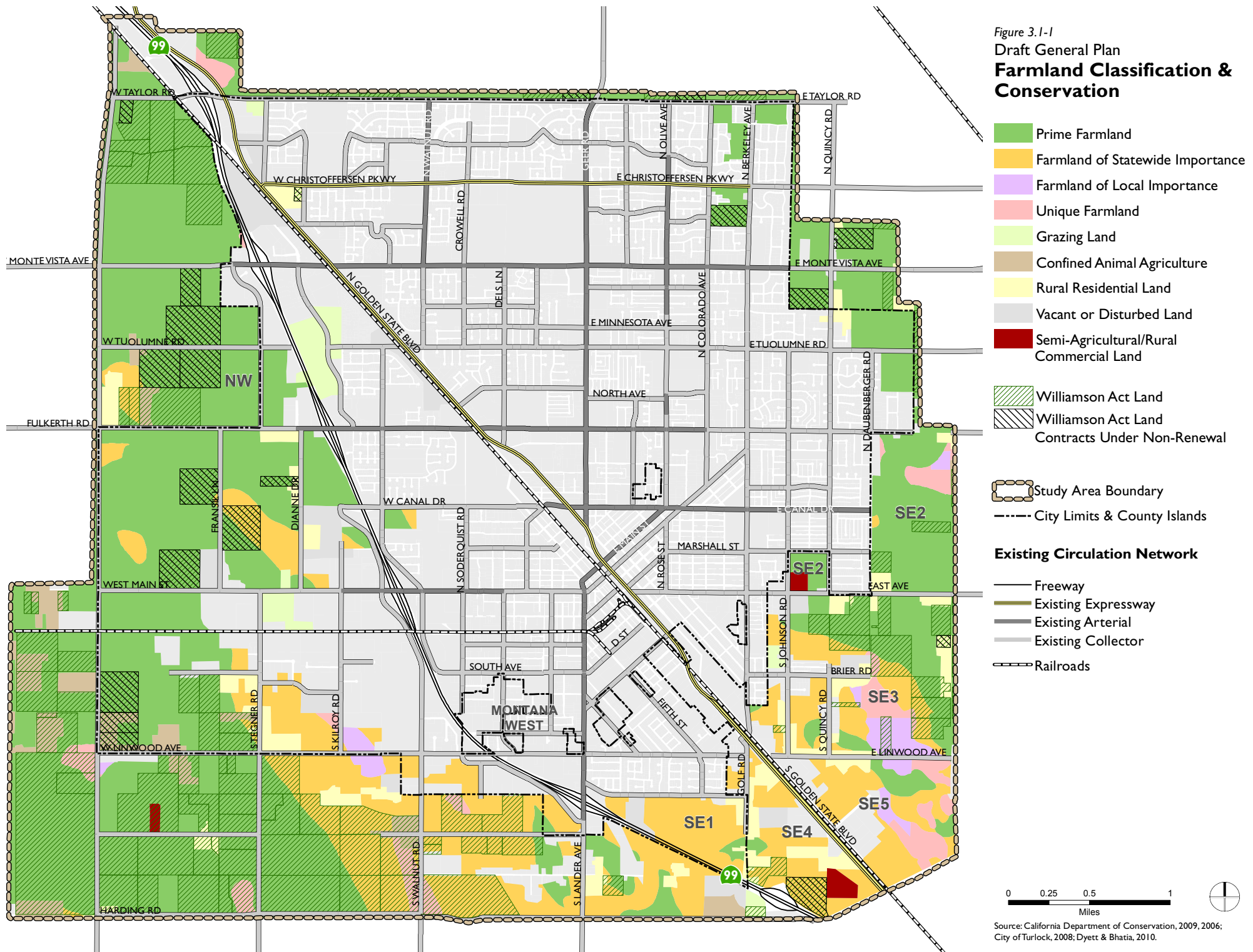
Agriculture employed 8.9 percent of the labor force in Stanislaus County in 2007, and 6.5 percent of the labor force in Turlock.³ Agriculture's overall share of employment is expected to decline over the coming years as non-farm employment in industries such as manufacturing, services, education, and 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.

¹ California Department of Conservation, Division of Land Resource Protection (2011) Farmland Monitoring and Mapping Program available at <http://www.conservation.ca.gov/dlrp/FMMP/Pages/Index.aspx>, accessed 2011.

² LoopNet Commercial Real Estate Listings, available at http://www.loopnet.com/?sourcecode=2ggkt041k54191&gclid=CK_A3Judy60CFQdjhwodwnaTiw, accessed 2011.

³ California Employment Development Department, 2008. California Employment Development Department (EDD) (2008) Quarterly Census of Employment and Wages, available at <http://www.labormarketinfo.edd.ca.gov/qcew/qcew-select.asp>, accessed 2008.

Figure 3.1-1
 Draft General Plan
Farmland Classification & Conservation



- Prime Farmland
- Farmland of Statewide Importance
- Farmland of Local Importance
- Unique Farmland
- Grazing Land
- Confined Animal Agriculture
- Rural Residential Land
- Vacant or Disturbed Land
- Semi-Agricultural/Rural Commercial Land

- Williamson Act Land
- Williamson Act Land Contracts Under Non-Renewal

- Study Area Boundary
- City Limits & County Islands

- Existing Circulation Network**
- Freeway
 - Existing Expressway
 - Existing Arterial
 - Existing Collector
 - Railroads

The average production value from agricultural land was approximately \$2,352 per acre in 2009.⁴ If secondary impacts were to be included, with a high multiplier⁵ 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 1,100 acres of agricultural land contiguous to Turlock's City limits, consistent with General Plan policies, will result in the loss of \$2.6 million annually, in current dollars, of direct agricultural income, and an estimated \$12.9 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.

REGULATORY SETTING

Federal Regulations

U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS)

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) maps soils and farmland uses to provide comprehensive information necessary for understanding, managing, conserving and sustaining the nation's limited soil resources. In addition to many other natural resource conservation programs, the NRCS manages the Farmland Protection Program, which provides funds to help purchase development rights to keep productive farmland in agricultural uses. Working through existing programs, USDA joins with state, tribal, or local governments to acquire conservation easements or other interests from landowners.

The NRCS also classifies soils according to their suitability for agricultural use. The categories of the NRCS Soil Capability Classification System are as follows:

- Class I Soils have few limitations that restrict their use.
- Class II Soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.
- Class III Soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.
- Class IV Soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.
- Class V Soils are not likely to erode but have other limitations, impractical to remove, that limit their use.
- Class VI Soils have severe limitations that make them generally unsuitable for cultivation.
- Class VII Soils have very severe limitations that make them unsuitable for cultivation.

⁴ Stanislaus County Department of Agriculture (2009) 2009 Annual Crop Report.

⁵ The ratio of primary plus secondary economic impacts to primary impacts is termed a "multiplier."

3.1 Agriculture and Soil Resources

Federal Farmland Protection Policy Act

The U.S. Department of Agriculture's (USDA's) Natural Resources Conservation Service (NRCS) oversees the Farmland Protection Policy Act (FPPA) (7 U.S. Code [USC] Section 4201 et seq.; see also 7 Code of Federal Regulations [CFR] 658). The FPPA (a subtitle of the 1981 Farm Bill) is national legislation designed to protect farmland. The FPPA states its purpose is to "minimize the extent to which federal programs contribute to the unnecessary conversion of farmland to nonagricultural uses." The FPPA applies to projects and programs that are sponsored or financed in whole or in part by the federal government. The FPPA does not apply to private construction projects subject to federal permitting and licensing, projects planned and completed without assistance from a federal agency, federal projects related to national defense during a national emergency, or projects proposed on land already committed to urban development. The FPPA spells out requirements to ensure federal programs to the extent practical are compatible with state, local, and private programs and policies to protect farmland and calls for the use of the Land Evaluation and Site Assessment (LESA) system to aid in analysis. Because the City of Turlock may ultimately seek some federal funding for transportation or other capital improvements, the FPPA is considered in this document.

State Regulations

California Farmland Conservancy Program

The California Farmland Conservancy Program (Public Resources Code Section 10200 et seq.) supports the voluntary granting of agricultural conservation easements from landowners to qualified nonprofit organizations, such as land trusts, as well as local governments. Conservation easements are voluntarily established restrictions that are permanently attached to property deeds, with the general purpose of retaining land in its natural, open-space, agricultural, or other condition while preventing uses that are deemed inconsistent with the specific conservation purposes expressed in the easements. Agricultural conservation easements define conservation purposes that are tied to keeping land available for continued use as farmland. Such farmlands remain in private ownership, and the landowner retains all farmland use authority, but the farmland is restricted in its ability to be subdivided or used for nonagricultural purposes, such as urban uses. Potential impacts on conservation easements would be addressed in subsequent project-level documents.

Williamson Act and Farmland Security Zone Contracts

The California Land Conservation Act (Government Code Section 51200 et seq.) of 1965, commonly known as the Williamson Act, provides a tax incentive for the voluntary enrollment of agricultural and open space lands in contracts between local government and landowners. The contract enforceably restricts the land to agricultural and open space uses and compatible uses defined in state law and local ordinances. An agricultural preserve, which is established by local government, defines the boundary of an area within which a city or county will enter into contracts with landowners. Local governments calculate the property tax assessment based on the actual use of the land instead of the potential land value assuming full development.

Williamson Act contracts are for 10 years and longer. The contract is automatically renewed each year, maintaining a constant, 10-year contract, unless the landowner or local government files to initiate nonrenewal. Should that occur, the Williamson Act would terminate 10 years after the filing of a notice of nonrenewal. Only a landowner can petition for a contract cancellation. Tentative contract cancellations can be approved only after a local government makes specific findings and determines the cancellation fee to be paid by the landowner.

The State of California has the following policies regarding public acquisition of and locating public improvements on lands in agricultural preserves and on lands under Williamson Act contracts (Government Code Section 51290–51295):

- Avoid locating federal, state, or local public improvements and improvements of public utilities, and the acquisition of land, in agricultural preserves.
- Locate public improvements that are in agricultural preserves on land other than land under Williamson Act contract.
- Any agency or entity proposing to locate such an improvement, in considering the relative costs of parcels of land and the development of improvements, give consideration to the value to the public of land, particularly prime agricultural land, in an agricultural preserve.

Since 1998, another option in the Williamson Act Program has been established with the creation of Farmland Security Zone contracts. A Farmland Security Zone is an area created within an agricultural preserve by a board of supervisors upon the request of a landowner or group of landowners. Farmland Security Zone contracts offer landowners greater property tax reduction and have a minimum initial term of 20 years. Like Williamson Act contracts, Farmland Security Zone contracts renew annually unless a notice of nonrenewal is filed. Potential cancellation of Williamson Act and Farmland Security Zone contracts would be addressed in subsequent project-level documents.

Under the Open Space Subvention Act of 1971, the State has provided annual subvention payments to counties for foregone property tax revenue due to Williamson Act contracts. The Budget Act of 2009 virtually eliminated these payments for the 2009-10 fiscal year. While partial funding was restored for the 2010-11 fiscal year, long-term State support to counties for agricultural land conservation is uncertain.

Farmland Mapping and Monitoring Program

The California Department of Conservation administers the Farmland Mapping and Monitoring Program (FMMP), under which it maintains an automated map and database system to record changes in the use of agricultural lands. Farmland under the FMMP is listed by category—Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance. The farmland categories listed under the FMMP are described above in the Physical Setting section.

Regional Regulations

Stanislaus County Code Agricultural Land Policies

Chapter 9.32 of the Stanislaus County Code contains the County's Agricultural Land policies. Recognizing the value of agricultural land and production, it is the County's stated purpose to reduce the loss of its agricultural resources by limiting the conditions under which agricultural operations can be considered a nuisance. Section 9.32.030 states:

No agricultural activity, operation, or facility, or appurtenances thereof, conducted or maintained on agricultural lands for commercial purposes, and in a manner consistent with proper and accepted customs and standards as established and followed by similar agricultural operations in the same locality, shall be or become a nuisance, private or public, after the same has been in operation for more than three years if it was not a nuisance at the time it began. (Ord. CS 456 §2 (part), 1991).

Stanislaus County General Plan Agricultural Element

Land outside of the Turlock city limits but inside the Study Area is subject to the policies and regulations of Stanislaus County. The Agricultural Element of the Stanislaus County General Plan outlines three goals: to strengthen the agricultural sector of the county's economy; to conserve agricultural land for agricultural uses; and to protect the natural resources that sustain agriculture in the county. Policies supporting the second goal

3.1 Agriculture and Soil Resources

include promoting participation in the Williamson Act, discouraging farmland conversion to urban uses, and mitigating the impacts of converting farmland.

Policy 2.5 directs development away from the County’s most productive agricultural land to the greatest extent possible, and Policy 2.8 states that the agricultural land shall not be converted to residential subdivision. Policy 2.14 states that the County will assess proposed conversion of agricultural land for its potential to result in a significant adverse environmental impact, and will require preparation of an EIR where needed to fully assess impacts. Under Policy 2.15, if a project, general plan or community plan amendment results in the conversion of agricultural land to residential uses, then County policy requires a 1:1 replacement of the land, of equal quality, elsewhere in Stanislaus County. Replacement can be in the form of purchasing agricultural conservation easements or contributing in-lieu fees, as detailed in the Farmland Mitigation Program Guidelines, Appendix B of the Stanislaus County General Plan.

The Stanislaus County General Plan’s Agriculture Element also recognizes the legitimate interests of cities to grow and prosper, and the County is committed to not oppose “reasonable requests” to expand, provided the resulting growth minimizes impacts to agricultural land, and to help manage development in Sphere of Influence (SOI) areas.

Local Regulations

Existing Turlock General Plan Open Space and Conservation Element (1992, updated 2002)

Section 6.1 of the Open Space and Conservation Element of the current Turlock General Plan outlines the City’s policies regarding agricultural land preservation. The following policies address the protection of farmland.

Agriculture Policies:

- 6.1-a Retain Turlock’s agricultural setting by limiting urban expansion to designated areas, providing additional industrial land suitable for agricultural industry, and minimizing conflicts between agriculture and urban activities.
- 6.1-b Require development at densities higher than typical in recent years in order to limit the amount of land needed for expansion while accommodating urban growth.
- 6.1-c Maintain a compact urban form to minimize the urban/agricultural interface; manage the interface by requiring buffers to reduce conflicts between uses.
- 6.1-d Annex residential land to the City only as it is needed, consistent with policies in Section 2.7 and in the City’s Residential Growth Management Program.
- 6.1-e Support the implementation of Stanislaus County’s Agricultural Element and Right-to-Farm ordinance.
- 6.1-f Work to protect and restore natural resources essential for agricultural production.
- 6.1-i Require a permanent buffer to be established between residential and agricultural activities along the long-term urban edge of Turlock.
- 6.1-j Support agricultural industry within the city but not in the unincorporated portions of the Study Area.

- 6.1-m Do not annex agricultural land unless urban development consistent with the General Plan has been approved, except when rezoning for industrial use, or when retention as agricultural land is desired to create a separation between communities consistent with the General Plan Diagram.
- 6.1-n Support participation in the Williamson Act program by Study Area landowners.
- 6.1-o In locations where agricultural activities may affect nearby residences, require that all deeds recorded include a Right-to-Farm Notice.

Impact Analysis

SIGNIFICANCE CRITERIA

A significant agricultural or soil resources impact would occur with full implementation of the proposed General Plan if it would do one or more of the following:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program (FMMP) of the California Department of Conservation, to non-agricultural use;
- Conflict with existing zoning for agricultural use, or a Williamson Act contract; or
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use.

METHODOLOGY AND ASSUMPTIONS

Farmland resource acreages were assessed based on the California Department of Conservation's FMMP, a biennial report and mapping resource on the conversion of farmland and grazing land. Williamson Act contract lands were identified by the Department of Conservation and by City of Turlock. Using these sources, the proposed General Plan was analyzed for potential conversion of important farmland, conflicts with zoning designations, conversion of Williamson Act contract lands, and other changes resulting from the General Plan that would remove farmlands from agricultural production.

To analyze the significance of each impact, the proposed General Plan goals and policies were considered to determine if significant physical impacts will still remain with development of the General Plan and full implementation of all policies.

SUMMARY OF IMPACTS

The General Plan is expected to produce an adverse environmental impact concerning the conversion of important farm land to urban or other uses, and the conversion of farm land currently zoned for agriculture or protected by Williamson Act contracts. Although there are policies in the proposed General Plan to reduce this impact, it will remain significant and unavoidable.

Buildout of the proposed General Plan is not expected to result in land use incompatibilities with sites designated for continued agriculture use. Proposed General Plan policies seek to ensure contiguity of urban development and avoid fragmentation of existing agricultural areas. Proposed General Plan policies establish requirements for compatible development, including buffering, screening, and performance standards.

IMPACTS AND MITIGATION MEASURES

Impact

3.1-1 Buildout of the proposed General Plan would convert substantial amounts of Important Farmland to non-agricultural use, and would conflict with existing zoning for agricultural use or Williamson Act contracts. *(Significant and Unavoidable)*

Agricultural lands produce commodities that generate local jobs and income; contribute to the aesthetic value of the area; and create foraging habitats for wildlife. In addition to the loss of these key benefits, the conversion of agricultural land has hydrological implications, as loss of open space may reduce groundwater recharge areas. According to data from the FMMP, Stanislaus County has been experiencing conversion of agricultural land to non-agricultural uses in recent years, as noted in the Physical Setting section of this chapter.

About 3,000 new housing units are projected to be developed on infill sites during the next 20 years, and this development will not impact agricultural land. Still, the population and jobs growth projected for Turlock will necessitate the conversion of agricultural land to urban use. If the proposed General Plan were developed to maximum capacity, 1,986 acres of farmland in the Study Area would be converted to urban uses (including parks and open spaces). Of this land, 1,127 acres or 56 percent is classified as Prime Farmland. About one-third of the urbanized farmland (645 acres) is classified as Farmland of Statewide Importance. Table 3.1-2 shows the Study Area's existing inventory of Important Farmland by category, and the projected losses resulting from General Plan buildout.

TABLE 3.1-2: FARMLAND CONVERSION IN STUDY AREA WITH PROPOSED GENERAL PLAN (ACRES)

<i>Classification</i>	<i>Existing in Study Area</i>	<i>Remaining in Study Area after General Plan Buildout</i>	<i>Net Loss</i>
Prime Farmland	4,988	3,871	1,127
Farmland of Statewide Importance	1,740	1,094	645
Farmland of Local Importance	119	37	82
Unique Farmland	255	133	122
Grazing Land	144	134	10
Total	7,246	5,269	1,986

Sources: Department of Conservation, 2011, City of Turlock, 2008, Dyett & Bhatia, 2011

The loss of nearly two thousand acres of farmland is significant. However, land classified as Prime Farmland accounts for 68 percent of existing farmland in the Study Area but only 56 percent of the farmland that would be urbanized. Multiple policies are identified in the proposed General Plan to prevent excessive agricultural land conversion, including prioritizing infill development within the existing city limits, clear phasing of growth, compact development in new growth areas, and the continuation of most agricultural activities in the Study Area.

Under California's Williamson Act, land owners may enter into 10-year contracts with the State whereby the land is restricted to agricultural or open space uses, in return for property tax assessment that does not account for urban development potential. Longer-term (20-year) property tax reduction can be ensured by the establishment of a Farmland Security Zone (FSZ) upon request of one or more land owners.

The proposed General Plan growth areas coincide with 485 acres of active Williamson Act contracts or just 20 percent of the active Williamson Act contracts in the Study Area. The new growth areas in the proposed General Plan aim to minimize impacts on active Williamson Act contracts. It is assumed that the proper procedures (including minimizing early termination of active contracts), contained within the Williamson Act itself, will be followed as development within the Study Area occurs under the proposed General Plan. At the same time, the General Plan provides long-term predictability to owners of agricultural land in the Study Area. Owners of land that is not designated for growth during the 20-year planning period may be more likely to enter or extend Williamson Act contracts.

Proposed General Plan Policies that Reduce the Impact

Conservation Element Policies

- 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.
- 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.
- 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 of the General Plan and with the City’s Annexation Policy. Do not annex agricultural land unless urban development consistent with the General Plan has been approved.
- 7.2-g **Allow Agricultural Uses to Continue.** Where agriculture exists within City limits, allow uses to continue until urban development occurs on these properties.
- 7.2-h **Support Participation in Williamson Act Program.** Support participation in the Williamson Act program by Study Area landowners.
- 7.2-k **Support Agricultural Industry.** Support agricultural industry within the city, while discouraging industrial uses in the unincorporated portions of the Study Area.

Growth Management and Infrastructure Element Policies

- 3.1-a **Proactively manage growth.** Proactively manage and plan for growth in an orderly, sequential, and contiguous fashion.
- 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-e **Continue rezoning.** Continue to promote orderly expansion of the City’s boundaries through rezoning territory prior to annexation.

3.1 Agriculture and Soil Resources

- 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.
- 3.2-f **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.

Mitigation Measures

CEQA defines mitigation as:

- a. Avoiding the impact altogether by not taking a certain action or parts of an action;
- b. Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
- c. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or
- d. Compensating for the impact by replacing or providing substitute resources or environments.

Development of the Turlock General Plan will result in the loss of 1,986 acres of farmland. Conversion of agricultural land to urban use is not directly mitigable, aside from preventing development altogether. Satisfying one of the first three criteria by avoiding, minimizing or reducing the impacts would result in only partial implementation of the General Plan as proposed. The City has identified alternatives to the project to satisfy these criteria (see Chapter 4).

A mitigation measure proposed by farmland preservation groups is intended to meet the fourth criteria—compensation—by purchasing agricultural easements on farmland outside or adjacent to the proposed General Plan area to replace or provide substitute farmland for that developed under the proposed General Plan. As the land within the General Plan area and the Study Area as well as that immediately adjacent to the Study Area is classified as farmland, establishing an agricultural easement outside the proposed General Plan buildout area would not create any new farmland. Therefore, the loss of farmland would not be replaced or substituted.

This General Plan reflects a policy determination to allow a certain amount of growth to occur in the Study Area, which necessitates conversion of farmland to urban uses. The proposed Plan includes growth management policies to prevent the premature conversion of farmland, by encouraging infill development, by requiring new development to be built at considerably higher densities than Turlock has traditionally seen, and by phasing of new master planned growth areas. These policies are intended to offset the impact to agricultural land conversion to the greatest degree possible. Beyond limiting the amount of total growth permitted, which is proposed in the alternatives presented in Chapter 4, there are no feasible mitigation measures to agricultural land conversion that would also fulfill the objectives of and implement the General Plan as proposed.

Impact

- 3.1-2** Buildout of the proposed General Plan would result in changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use. (*Less than Significant*)

Agricultural resources are directly threatened by urban development, but growth can have indirect, negative impacts on agricultural practices as well. Urban development has the potential to result in conflicts with adjacent agricultural practices, and lead to restrictions on the use of agricultural chemicals, complaints regarding noise, dust and odors; trespassing and vandalism. These conflicts may increase costs of agricultural operations, and together with other factors encourage the conversion of additional farmland to urban uses. In addition, urban growth may increasingly compete with agriculture for the use of water.

The proposed General Plan's Land Use Diagram and related policies seek to minimize these impacts. The areas identified for growth are contiguous to existing development and to each other, and policies clearly require sequencing of growth so that minimal fragmentation of agricultural land will occur. The proposed General Plan will reinforce Turlock's compact form, minimizing the interface between farming and urban uses. The Plan establishes greenbelt buffers along the urban edge in some places, while providing requirements for buffering and screening of private development elsewhere. The General Plan affirms Stanislaus County's Right-to-Farm ordinance, providing reasonable protection for farmers from nuisance claims.

Proposed General Plan Policies that Reduce the Impact

In addition to Policies 3.1-a, 3.1-c, 7.2-b, 7.2-c, 7.2-e, 7.2-f, 7.2-g, 7.2-h, 7.2-j, 7.2-k, and 7.2-l listed under Impact 3.1-1, the following policies will help to reduce this impact to a less than significant level.

New Growth Areas and Infrastructure Element Policies

- 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.

Conservation Element Policies

- 7.2-i** **Support Right to Farm.** Support the implementation of Stanislaus County's Agricultural Element and Right-to-Farm ordinance.
- 7.2-m** **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.

3.1 Agriculture and Soil Resources

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3.2 Land Use and Housing

This section presents the environmental setting and evaluates the potential impacts on land use and housing in the Turlock Study Area from implementation of the proposed General Plan. Information and analysis related to agricultural land uses is found in Section 3.1. Information related to population and employment projections and growth-inducing impacts is provided in Section 5.1 of this EIR.

Environmental Setting

PHYSICAL SETTING

Existing land uses were identified from information from the City, field work, and aerial photographs. Data was compiled and analyzed using Geographic Information Systems (GIS) software.

There are approximately 8,900 acres in the current city limits, and an additional 5,800 acres of land are contained within the Study Area outside of city limits. Agriculture makes up the largest existing land use in the Study Area, occupying 43 percent of the total land area. Virtually all of the agricultural land is outside city limits, concentrated in the northwest and southwest quadrants of the Study Area. Agriculture is also the predominant use in the southeast, with large lot residential properties interspersed.

Around 29 percent of the total land in the Study Area is residential (23 percent low and medium density, five percent residential estate, and less than two percent high density). Public, semi-public, and community facility uses, such as schools and city buildings, occupy just under five percent of the Study Area. Commercial and office uses constitute just over six percent of the Study Area, and include a mix of downtown, community, and highway-oriented commercial uses. Around eight percent of the land in the Study Area is developed as industrial, and another eight percent of land is vacant. Table 3.2-1 shows the breakdown of existing land uses in the Study Area, and Figure 3.2-1 maps the pattern of existing land uses.

3.2 Land Use and Housing

TABLE 3.2-1: EXISTING LAND USE IN THE STUDY AREA

<i>Land Use</i>	<i>Acres</i>	<i>Percent</i>
Agriculture	6,260	42.9%
Residential: Low and Medium Density (3-15 du/ac)	3,283	22.5%
Industrial	1,126	7.7%
Vacant	1,131	7.7%
Commercial and Mixed Use	811	5.6%
Residential Estate (Less than 3 du/ac)	734	5.0%
Public/Semi-Public/Community Facility	696	4.8%
Residential: High Density (15-30 du/ac)	229	1.6%
Park and Open Space	209	1.4%
Office	118	0.8%
Total	14,597	100.0%

Source: Dyett & Bhatia, City of Turlock; 2009

Land Use Pattern

Residential

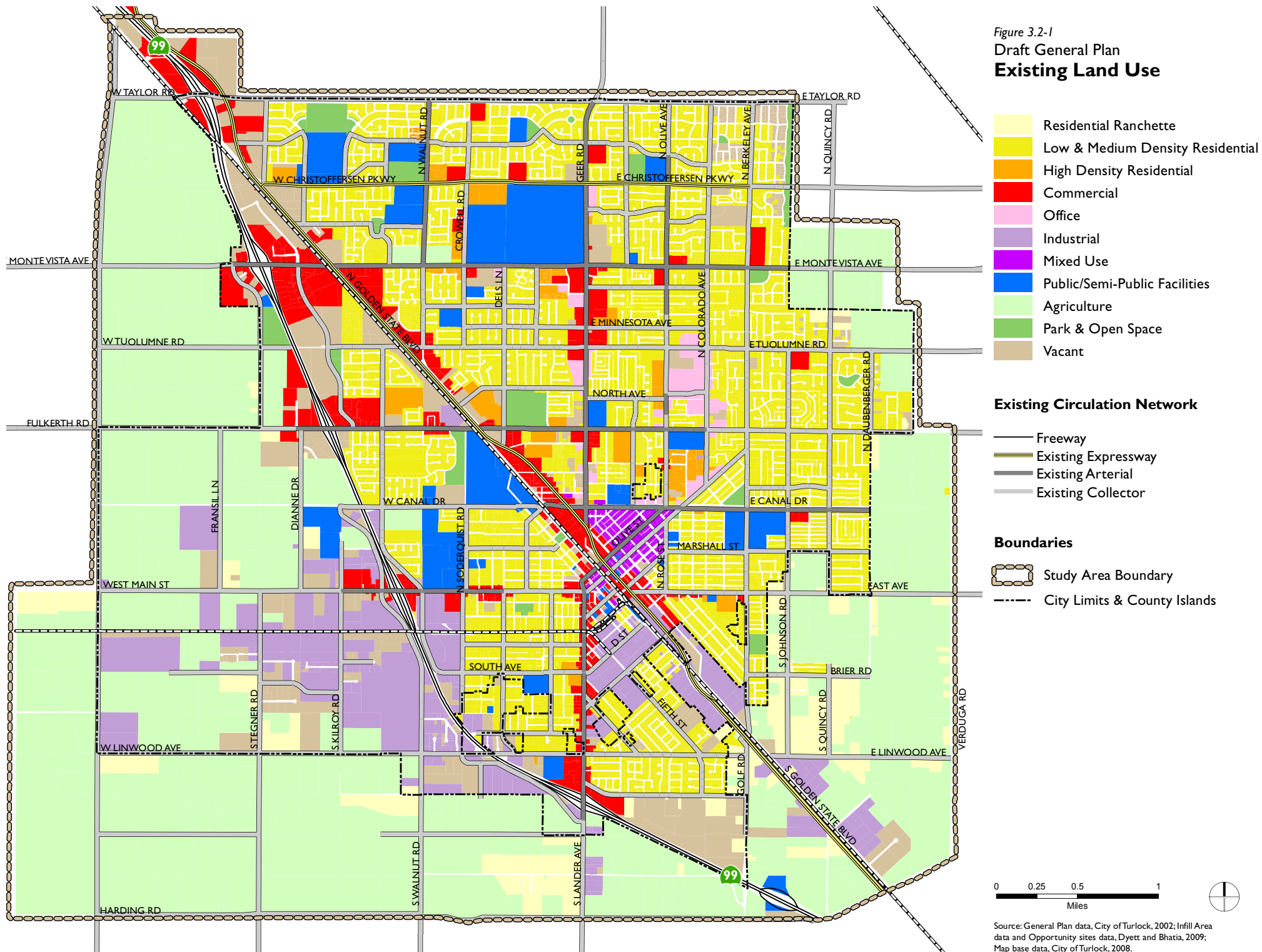
Altogether, residential land uses occupy 29 percent of the land in the Study Area. Existing residential development is concentrated on the east side of the railroad tracks, north of downtown. There are also several residential neighborhoods in southwest Turlock, between the railroad and Highway 99. About half of the residential development within the city limits is low density single family homes, ranging from three to seven dwelling units per acre. The older neighborhoods, those within about one mile of the downtown, also consist of predominantly single family homes, but of slightly higher densities than the more recently developed areas. Multifamily housing occupies less than two percent of the total land in the Study Area (seven percent of total residential acreage); however, 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 and Office

Commercial and office development in Turlock is comprised of several specific nodes in different locations, and makes up approximately six percent of the total land in the Study Area. The largest concentration of retail development is Monte Vista Crossings, a major “power center” located just east and south of the Monte Vista interchange of SR 99. Developed over the last five 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.

Figure 3.2-1
Draft General Plan
Existing Land Use



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.

3.2 Land Use and Housing

Community-oriented commercial uses, comprising both national chains and locally-owned businesses, dominate the downtown core and continue north along much of Geer Road up to CSU-Stanislaus. Much of the development in the 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 medical 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

Nearly eight percent of land (nearly 1,130 acres) in the Study Area is currently developed with industrial uses. The majority of existing industrial development is located immediately south of the downtown core, on both sides of the railroad tracks. Additional existing industry is located just west of the SR 99/Lander Avenue interchange. Of the land designated for industrial and industrial business park uses in the TRIP (approximately 1,500 acres, and an additional 535 acres in Industrial Reserve), approximately 450 acres has been developed as such. Most of Turlock's existing industrial users are in the food processing industry. Major users include Foster Farms, Sensient Flavors, Kozy Shack, and Valley Fresh.

Public, Semi-Public, and Community Facility

Public, semi-public, and community facility uses account for approximately five 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 tracks. The City of Turlock's 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.

Agriculture

Agriculture is the predominant existing land use in the Study Area, occupying 43 percent of the land area. While only four parcels remain actually zoned for agriculture within Turlock city limits, the majority of non-urbanized land within the Study Area boundary is currently used for agriculture. In the TRIP, there are over 1,000 acres of farmland, while the area is zoned for industrial uses. In the southeast quadrant of the Study Area, outside city boundaries, there are over 900 acres of farmland that have been designated for low density residential development in the existing General Plan.

Vacant Sites

Vacant land is scattered throughout the Study Area, concentrated within current city limits and in unincorporated county "islands" located within the contiguous city limits. 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 nearly eight percent of the land area within the Study Area, approximately 1,130 acres. Areas where vacant land is more concentrated include along SR 99, in the Turlock Regional Industrial Park (TRIP), along major corridors such as Geer and Golden State Boulevard, and near CSU-Stanislaus. The county islands in the southern part of town also contain vacant sites, though most are a quarter acre or less in size.

Population and Housing

Existing demographic data for the City of Turlock are shown in Table 3.2-2. According to the California Department of Finance, the city had a population of 71,181 in 2010 and a total of 24,415 housing units, of which 69 percent were single-family detached units, 4 percent were duplex units, 25 percent were multifamily units, and 2 percent were mobile homes.¹ The average household size was 2.9 persons per household.

TABLE 3.2-2 BASELINE DEMOGRAPHIC DATA

<i>Demographic</i>	<i>2008</i>	<i>2010</i>
Population		
Persons	69,650	71,181
Households	23,130	23,530
Persons per Household	2.9	2.9
Housing Units	23,993	24,415
Jobs	28,995	30,000 ¹

1. Estimate. Based on 2009 projections by Economic & Planning Systems and 2011 California Employment Development Department Labor Market Info.

Source: California Department of Finance, 2010

Population Projections

Table 3.2-3 summarizes Turlock’s projected growth. Future demographic projections for the city are based on forecasts provided at the county level from a variety of public and private data sources, as population projections are not available at the city level. Given the various demographic factors that could influence population growth in the city, this analysis (prepared by Economic & Planning Systems as part of the Turlock General Plan Update existing conditions research in 2009) relies on these countywide forecasts to provide a high and low range estimate for Turlock to bracket potential outcomes. The actual outcome will depend on a variety of demographic and policy considerations as well as differences between the city and county growth patterns.

Public and private entities that project population 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 the Stanislaus County since 2000.

According to the Stanislaus County of Governments (StanCOG), another factor driving population growth in the County is a significant growth in interregional commuters. Specifically, the County is expected to expand its role as a “bedroom community” for residents who commute to their jobs to areas such as the Bay Area.

¹ “E-5 Population and Housing Estimates for Cities, Counties, and the State, 2010-2011, with 2010 Census Benchmark.” California Department of Finance, accessed December 2010. <http://www.dof.ca.gov/research/demographic/reports/view.php>.

3.2 Land Use and Housing

Overall, StanCOG projects that about 60,000 jobs will be held by residents commuting outside of the region by 2030, compared to 14,000 in 2000. However, more localized data described previously suggest that this trend may be driven by Modesto, the County's largest city, given its closer proximity to employment centers outside the County. It is less applicable to Turlock. Economic & Planning Systems (EPS) considered multiple sources of forecast data at the County level in determining a range of potential population growth outcomes for the City of Turlock. 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 124,000 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. In both cases, County population growth is based on the average projection figures derived from StanCOG, California Department of Transportation (Caltrans), California Department of Finance, Claritas, and Woods & Poole Economics, Inc.

TABLE 3.2-3: SUMMARY OF HISTORICAL AND PROJECTED POPULATION (1990-2030)

City/County	Historical			Projected		
	1990	2000	2008	2010	2020	2030
Stanislaus County						
Caltrans	-	451,025	544,327	568,439	682,708	-
Claritas	370,522	446,997	528,525	550,755	-	-
Census	370,522	446,997	-	-	-	-
DOF	370,522	446,997	525,903	559,708	699,144	857,893
StanCOG	-	446,997	-	567,645	693,600	821,963
Woods & Poole	375,312	449,933	531,172	533,800	610,469	734,192
<i>County Average</i>	<i>371,720</i>	<i>448,158</i>	<i>532,482</i>	<i>556,069</i>	<i>671,480</i>	<i>804,683</i>
City of Turlock						
Census	42,198	55,810	-	-	-	-
Claritas	43,565	55,810	70,837	74,639	-	-
DOF	42,224	55,811	70,158	-	-	-
<i>City Average</i>	<i>42,662</i>	<i>55,810</i>	<i>70,498</i>	<i>74,639</i>	<i>-</i>	<i>-</i>
Turlock Population Projections¹						
Lower Range: Uniform County Growth				74,015	89,842	106,535
Higher Range: Turlock Centered-Growth				74,639	96,278	124,191
<i>City Average</i>				<i>74,237</i>	<i>93,060</i>	<i>115,363</i>

1. Projected by EPS.

Source: Economic & Planning Systems, 2009

Demographic Projections versus General Plan Buildout Capacity

The low and high end population projection for Turlock developed as part of this analysis is summarized in Table 3.2-3 above. As shown, the City is estimated to gain between 36,000 to 53,700 new residents by 2030. These projections were developed based on demographic trends alone and were not driven by any future land use decisions. Rather, the population projection analysis was completed in order to inform and guide the preparation of the General Plan Land Use Diagram. These projections were used to help develop the range of

population and households that the new General Plan could accommodate at buildout. Because population growth, employment growth, and future development are ultimately unpredictable and can only be approximated, they must be used as guidelines—general parameters—for land use planning. Thus, the land use plan (described in detail in Chapter 2, Project Description) could support between 32,900 and 55,400 new residents, which approximates what the demographic projections indicate the city could gain by 2030. Table 3.2-4 shows how the demographic trend-driven population projections correspond to buildout potential under the Proposed General Plan.

TABLE 3.2-4: COMPARISON OF DEMOGRAPHIC PROJECTIONS WITH GENERAL PLAN BUILDOUT POTENTIAL

	<i>Population Projections</i>	<i>General Plan Buildout Capacity (population)</i>	<i>Corresponding General Plan Phasing</i>
Low	106,535	104,000	Phase I only
Midpoint	115,363	114,400 – 116,100	Phase I plus half of Phase II - SE 4/5 or Northwest
High	124,191	126,800	Phase I plus all of Phase II – SE 4/5 and Northwest

Source: Economic & Planning Systems, 2008; Dyett & Bhatia, 2011

Effects of the Economic Recession on Growth

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. The Central Valley’s relatively high growth rates over the last twenty-five years is largely attributable to its role in providing low-cost housing and employment opportunities that are particularly attractive to immigrant populations, primarily related to agriculture and food processing. At this time, Central Valley towns are experiencing unemployment rates three to four times the national average; these rates are reflective of overall national conditions as well as more severe local conditions, including numerous cities with some of the highest foreclosure rates in the country. These conditions are exacerbated by drought issues—an ongoing lack of water continues to prevent farmers from planting crops and has created even high job losses.² Until these conditions stabilize, growth will likely occur at a substantially slower rate in the short-term. Assuming that water issues can be overcome, growth rates will probably increase in the medium and long term.

Nevertheless, current economic conditions suggest the possibility of relatively slow growth over the next three to five years, reducing the total growth that occurs by 2030. Thus, a relatively conservative “slow growth” scenario could result in buildout of only Phase I by 2030, for a total citywide population of 104,000, which represents about an 18 percent reduction from full buildout potential.

REGULATORY SETTING

The primary tool currently guiding land use decision-making within the City is the Turlock General Plan Land Use Element (adopted in 1993 and updated in 2003), with zoning regulations and citywide design guidelines providing additional detail. The City of Turlock has also adopted several master and specific plans that guide the buildout of smaller areas within the Study Area. Within the Downtown area, decisions on urban design and site specific land use also are guided by the 2003 Downtown Design Guidelines and Zoning District. Development of land outside of Turlock in unincorporated areas is guided by the Stanislaus County 1994 General Plan and County zoning. These plans and regulations are described briefly below.

² Jesse McKinley. “Drought Adds to Hardships in California” *New York Times*, February 22, 2009.

3.2 Land Use and Housing

State Regulations

State Planning Law

State law [California Government Code Section 65300 et seq.] requires each California municipality to prepare a general plan. A general plan is defined as “a comprehensive, long-term general plan for the physical development of the county or city, and any land outside its boundaries which in the planning agency's judgment bears relation to its planning.” State requirements call for general plans that “comprise an integrated, internally consistent and compatible statement of policies for the adopting agency.” While allowing considerable flexibility, State planning laws do establish some requirements for the issues that general plans must address. The California Government Code establishes both the content of general plans and rules for their adoption and subsequent amendment. Together, State law and judicial decisions establish three overall guidelines for general plans:

- **The General Plan Must Be Comprehensive.** This requirement has two aspects. First, the general plan must be geographically comprehensive. That is, it must apply throughout the entire incorporated area and it should include other areas that the City determines are relevant to its planning. Second, the general plan must address the full range of issues that affect the City's physical development.
- **The General Plan Must Be Internally Consistent.** This requirement means that the general plan must fully integrate its separate parts and relate them to each other without conflict. “Horizontal” consistency applies both to figures and diagrams as well as general plan text. It applies to data and analysis as well as policies. All adopted portions of the general plan, whether required by State law or not, have equal legal weight. None may supersede another, so the general plan must resolve conflicts among the provisions of each element.
- **The General Plan Must Be Long-Range.** Because anticipated development will affect the City and the people who live or work there for years to come, State law requires every general plan to take a long-term perspective.

LAFCO Municipal Service Review

State Government Code Sections 56425 and 56430 require that when updating a Sphere of Influence (SOI), a Municipal Service Review (MSR) must be prepared. The MSR must consider growth and population projections for the affected area; present and planned presence of public facilities and adequacy of public infrastructure in place to serve the new growth; financial ability of relevant agencies to provide services; accountability of community service needs, including governmental structure and operational efficiencies; and any other matter related to effective and efficient service delivery, as required by LAFCO policy.

Local Regulations

Turlock General Plan, 1992-2012

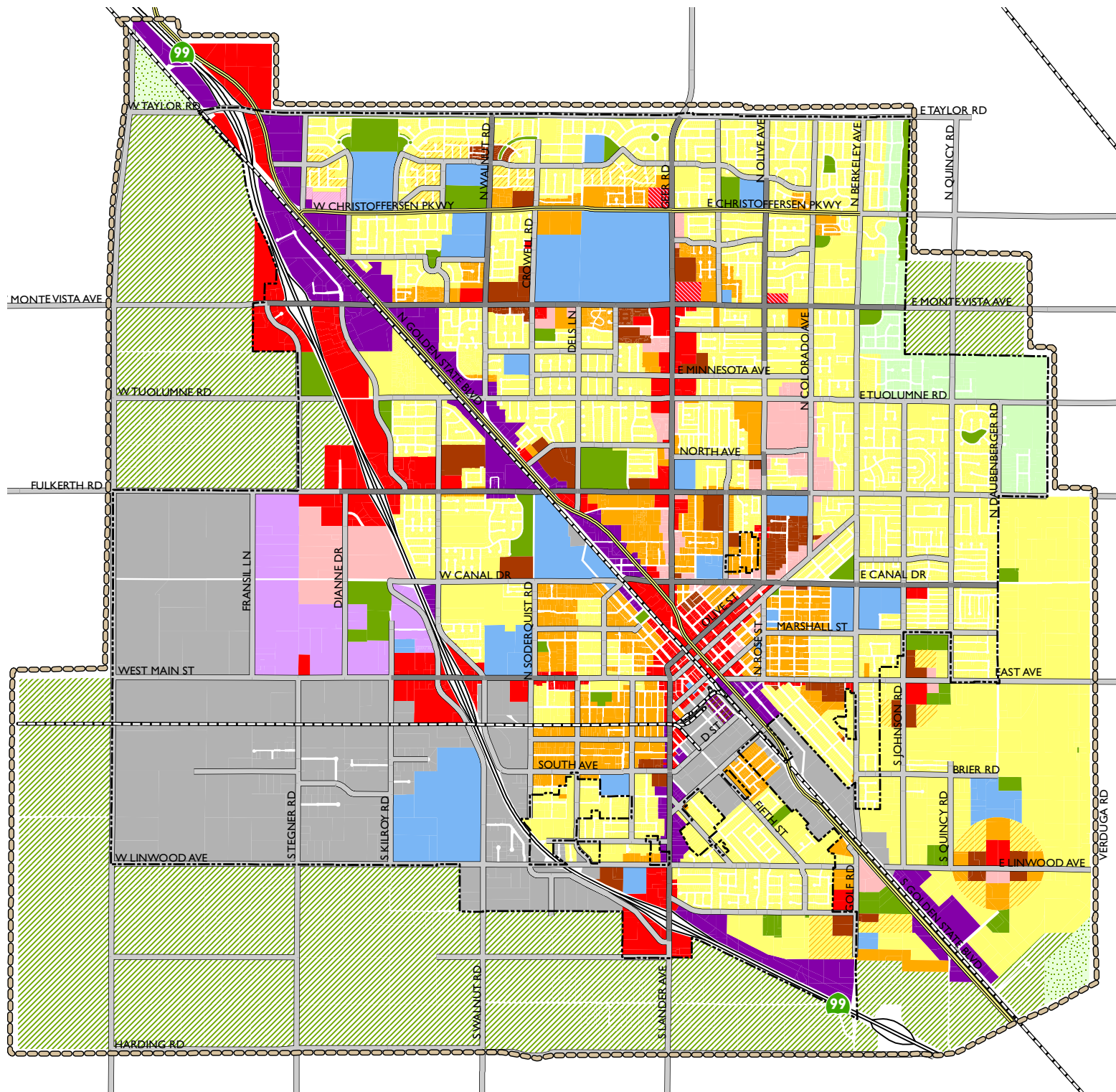
The City of Turlock's most recent General Plan, adopted in 1993 and updated in 2003, reflects six overall themes:

- Establishing limits to urban growth that will maintain Turlock as a freestanding city surrounded by productive agricultural land;
- Maintaining 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;
- Providing commercial and industrial sites consistent with Turlock's growth;
- Fostering development that offers alternatives to auto use, especially for non-commute trips;
- Creating an economic and social balance among different city sectors; and
- Using growth management to implement General Plan policies and quality of life objectives.

The General Plan includes the following elements: Land Use, Housing, Public Facilities, Transportation, Open Space and Conservation, City Design, Noise, Safety, Implementation, and Financial. Figure 3.2-2 shows Turlock's existing General Plan land use designations.

Turlock's current General Plan would accommodate a population of 85,190, and an additional 38,700 if development were to be permitted in the Urban Reserve. At the existing General Plan's projected annual growth rate of 3.38 percent, the city would reach its build-out population (not including the Urban Reserve) in 2012. The updated General Plan will update growth projections and consider how and where longer-term growth should be accommodated.

Figure 3.2-2
 Draft General Plan
Current (2002) General Plan



- Very Low Density Residential
- Low Density Residential
- Low-Medium Density Residential
- Medium Density Residential
- High Density Residential
- High Density Residential/Office
- High Density Residential/Heavy Commercial/Industrial
- Community Commercial
- Community Commercial/Office
- Heavy Commercial
- Office
- Business Park
- Industrial
- Public
- Park
- Agriculture
- Urban Reserve

Existing Circulation Network

- Freeway
- Existing Expressway
- Existing Arterial
- Existing Collector

Boundaries

- Study Area Boundary
- City Limits & County Islands



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.

Specific and Master Plans

Turlock has adopted a number of Specific Plans and Master Plans following the 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. Figure 3.2-3 outlines the areas where Master Plans, Specific Plans, and feasibility studies have been developed.

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:

- 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 improvements.

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 central area, along West Tuolumne Road. The Pedretti Park community ball fields are also in the plan area.

North Turlock Master Plan (2001)

The North Turlock Master Plan (NTMP), completed in 2001, continued to guide 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.

Downtown Master Plan (1992) and Design Guidelines (2003)

The Downtown Master Plan offers a comprehensive urban design, parking-landscape framework, and a funding mechanism for implementation. Circulation aspects of the Downtown Plan, however, need to be coordinated better with the General Plan. As the Downtown Master Plan is now almost 20 years old, the proposed General Plan calls for it to be updated. 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.

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 Christoffersen 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 Study Area remains largely agricultural with a few existing estate homes. A revised plan may be submitted in the future, which would include housing at somewhat higher densities.

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, now referred to as the Turlock Regional

3.2 Land Use and Housing

Industrial Park (TRIP) 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 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 TRIP, 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 TRIP aims to create a "bridge" for Turlock's current agriculture and manufacturing industries to transition to newer products and technologies.

Stanislaus County General Plan (1994)

The most recent Stanislaus County General Plan was adopted in 1994. The majority of the County's growth has occurred in its incorporated cities, due in part to a general shift towards urban lifestyles, and also due to the ongoing annexation of County lands by cities. In response to population growth and a changing economy, the General Plan addresses such issues as regional growth management; conversion of agricultural land; jobs/housing balance and housing affordability; expansion of infrastructure and public services; and air quality, water availability, and resource protection.

The primary relationship between the County's General Plan and the City of Turlock concerns the Urban Transition areas—property outside city limits but within the city's general Study Area boundary. As a matter of policy, the County General Plan refers preliminary project approval to the city in whose sphere of influence the project lies (with the exception of agricultural uses and churches). The city may also specify what the project must do to meet city standards to facilitate possible future annexation. However, the county retains ultimate authority to approve projects.

Additionally, as part of its own General Plan, Stanislaus County prepares Community Plans for most of the unincorporated towns in the County. Of particular importance to the County is the land use designation for the transition areas between the urbanized towns and the surrounding land, which is primarily agricultural. Two unincorporated towns are within two miles of Turlock's city limits: Denair, to the northeast, and Keyes, to the northwest.

Denair Community Plan

Denair is an unincorporated community in Stanislaus County, located just northeast of the City of Turlock. The Denair Community Plan area covers just over 1,000 acres between Taylor Road to the north and Tuolumne Road to the south. The eastern border is the Turlock Irrigation District's main canal, and the western border is Waring Road. The 2000 Census lists Denair's population as 3,446; the plan area contains enough land to support a population of approximately 8,000 residents.

The Denair community wishes to reinforce its small town atmosphere and maintain its status as a physically separated agricultural community. To that end, the plan specifies that medium- and medium high-density land uses shall move to the center of town, away from the periphery; the commercial area will be centralized and compacted; and the outskirts of town will be developed as low density estate residential areas, in order to form a distinct boundary between the community and the City of Turlock. The goals of the Denair Community Plan are as follows:

- Reinforce Denair's small rural town character;

- Provide a well-defined community edge between Denair and adjacent agricultural land, as well as between Denair and the City of Turlock;
- Provide for the non-motorized transportation needs of the Denair Community; and
- Provide for the recreational needs of the residents of the Denair Community.

Keyes Community Plan

Keyes is located just northwest of Turlock city limits, along the Highway 99 corridor. The community plan area encompasses 857 acres, bounded by the Turlock Irrigation District Lateral Number 2 ½ to the north, Washington Road to the east, Keyes Road to the south, and Faith Home Road to the west. According to the 2000 Census, Keyes has a population of 4,575; the community plan area can accommodate a population of approximately 9,300 residents.

Keyes consists of primarily low and medium density residential uses, as well as some industrial and highway-oriented commercial properties. Land in the area designated as Urban Transition is presently under Williamson Act contracts; however, if the contracts are not renewed in the future, the plan states that the land may be developed as low density residential. The goals of the Keyes Community Plan are as follows:

- Achieve a harmonious relationship between the urban environment and surrounding agricultural setting;
- Improve the visual appearance of the Keyes community;
- Encourage attractive and orderly development which preserves a small town atmosphere;
- Promote highway-oriented commercial development in the State Route 99 corridor;
- Provide an interconnected system of streets and roads to distribute traffic and meet the circulation needs of the community;
- Provide for the non-motorized transportation needs of the Keyes community; and
- Provide for the recreational needs of the Keyes community.

Impact Analysis

SIGNIFICANCE CRITERIA

A significant land use impact would occur with full implementation of the proposed General Plan if it would do one or more of the following:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect; or
- Displace substantial numbers of existing housing units or people, necessitating the construction of replacement housing elsewhere.

Changes in land use are not, in and of themselves, environmental impacts. Land use changes are impacts only relative to the prior use of the site (e.g., displacement of homes) or the surrounding usage and character (i.e., division of an established community).

METHODOLOGY AND ASSUMPTIONS

This analysis considered current and proposed General Plan policies and goals, existing and proposed land use conditions within Turlock, and applicable regulations and guidelines. It also compared the proposed General Plan land use diagram to existing land use conditions to determine whether implementation of the Plan would trigger any impacts. A discussion of impacts to farmland is found in Section 3-1.

The impact analysis considered the full buildout of the proposed General Plan, although it is uncertain when or if this full development would occur, especially within the timeframe of the General Plan (through 2030).

IMPACT SUMMARY

The intent of the General Plan is to create a city in which planned land uses exist and function without imposing a nuisance, hazard, or unhealthy condition upon an adjacent use. Uses within areas designated for mixed- or multi-use development are expected to be compatible with one another because General Plan policies establish requirements for compatible development. Implementation of the General Plan will create specific regulatory standards and review procedures to ensure compatible land uses.

The proposed General Plan does not physically divide any established community. Rather, by improving connectivity within and between existing and proposed neighborhoods, the Plan provides more linkages within the city and the surrounding area. Full buildout of the General Plan would result in a new residential neighborhood to be built west of State Route 99, where there is currently no residential development at a density greater than that typical of rural/agricultural uses. However, the new neighborhood in Northwest Turlock would support some 4,200 households, have a mixed use neighborhood center, and be in close proximity to jobs at the Turlock Regional Industrial Park, already in development west of State Route 99 and south of Fulkerth Road. In addition, the General Plan calls for several specific roadway improvements that increase connectivity across the freeway, including a new overcrossing at Tuolumne Road and interchange improvements at Fulkerth Road.

The proposed General Plan does not directly displace any housing units, businesses, or people. Redevelopment of existing uses will likely occur; however, such development will take place over time as the market allows and as the City pursues annexation. Overall, the proposed Plan designates 2,519 acres of new urban growth area. The majority of existing uses within this land area are agricultural, with some very low

density single-family residential uses. In addition to new growth areas, the Plan focuses infill development efforts on 1,250 acres (not including in the TRIP), in and around Downtown and along the city’s existing corridors, including Geer Road, Golden State Boulevard, Canal Drive, and Monte Vista Avenue. In total, the proposed Plan assumes that, of the 19,000 new housing units projected under the Plan, approximately 3,000 units (16 percent) could be constructed as infill development. Given that the proposed General Plan does not displace housing units, businesses, or people, there is no adverse impact on housing. Plan policies seek to preserve existing neighborhoods and retain and attract businesses.

The proposed General Plan will be the guiding document in Turlock. Adopted plans, regulations, and other implementing tools will be amended to conform to the General Plan. The proposed General Plan does not contain provisions that conflict with local district plans.

IMPACTS AND MITIGATION MEASURES

Impact

3.2-1 The proposed General Plan would not physically divide any established communities and would increase connectivity locally and regionally. **(Beneficial)**

The proposed General Plan does not physically divide any established community. Rather, by improving connectivity within and between existing and proposed neighborhoods, the Plan provides more linkages within the city and the region. Therefore, the potential impact is expected to be beneficial.

Proposed General Plan Policies that Increase Connectivity

The following proposed General Plan policies seek to increase connections in Turlock:

Land Use and Economic Development Element Policies

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.

New Growth Areas and Infrastructure Element Policies

3.2-1 **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-m **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-n **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 Land Use and Housing

- 3.2-o **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-p **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 [General Plan] Section 5.3), and local streets.

Circulation Element Policies

See also Section 3.3 of this EIR, Transportation, for additional policies pertaining to circulation and connectivity improvements.

- 5.2-b **Implement planned roadway improvements.** Use [General Plan] 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 future development and roadway improvement plans against standards for the classifications as set forth in Tables 5-4, 5-5, and 5-6 [of the General Plan].
- 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.
- 5.3-r **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-s **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.
- 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.

City Design Element Policies

- 6.1-f **Contiguous growth.** Continue present policies of requiring growth to be contiguous to existing urban development.

- 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.
- 6.2-d **Encourage community orientation.** Improve the community orientation of new residential developments.
- 6.3-a **Continue gridded street network.** Continue expansion of the present street network in an orthogonal grid for all arterial and collector streets.
- 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-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 commercial projects to conform to *maximum* spacing between through-streets (exclusive of alleys), as depicted in Figure 6-5 and Section 5.2 [of the General Plan], unless access conditions and standards prevent their attainment. Cul-de-sacs are generally discouraged.

See Figure 3.2-4.

- 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.
 - 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.

3.2 Land Use and Housing

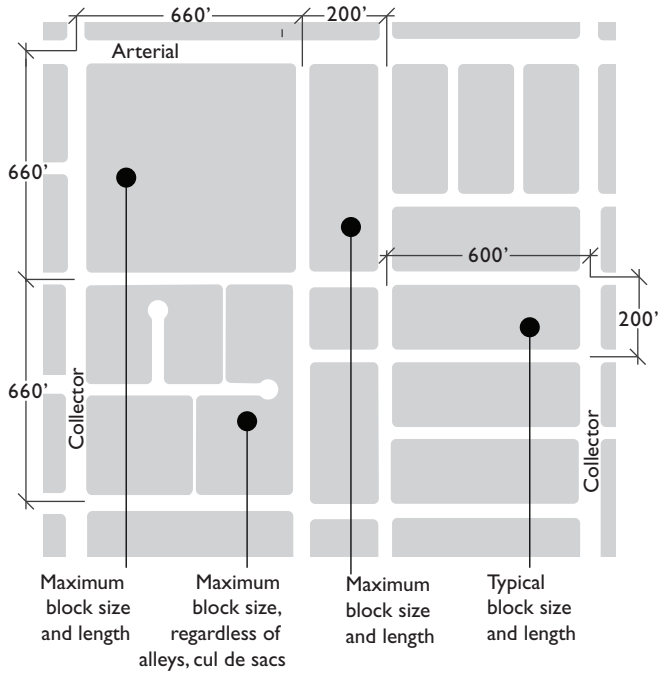
- Development may not be at intensities below the density ranges stipulated in the General Plan.
- Bikeways should be provided as designated in [General Plan] Figure 5-2.
- Pedestrian and bicycle connections to through-streets should be provided at the end of cul-de-sacs. (See [General Plan] Figure 6-7.)
- 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.

Mitigation Measures

None required.

Figure 3.2-4 Block Size and Street Connectivity for Residential Areas and Neighborhood Centers

Typical and Maximum Block Size



Non-Residential or High-Density Residential Land Use

Maximum block size:
435,600 sq. ft. (10 acres)

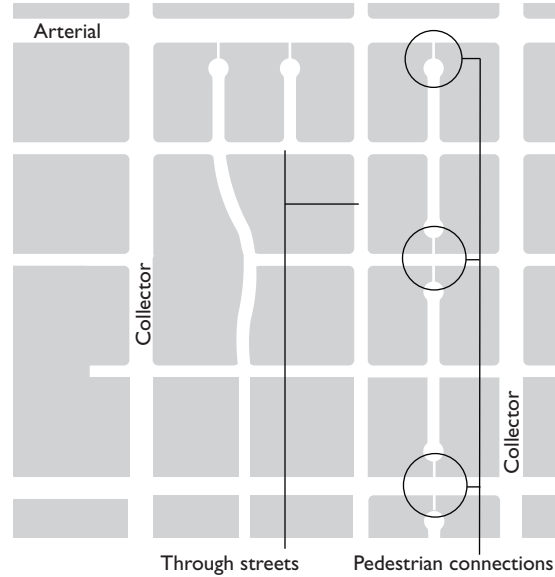
Maximum block length:
660 ft.

Low or Medium Density Residential Land Use

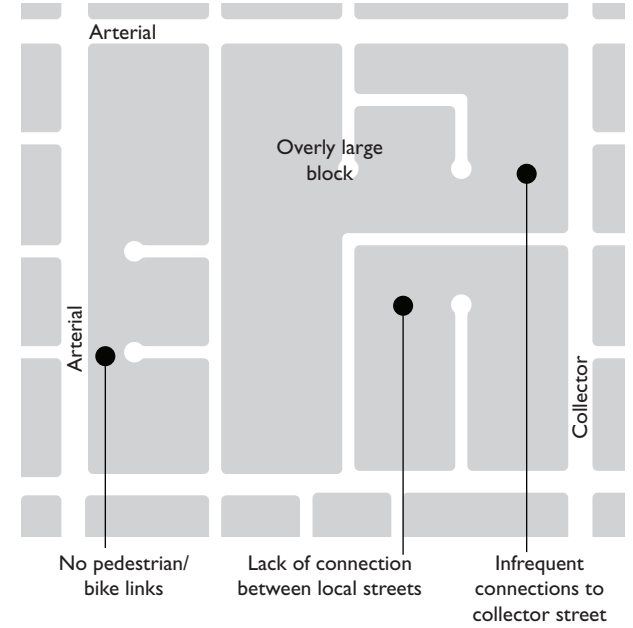
Maximum block size:
132,000 sq. ft. (3 acres)

Maximum block length:
600 ft.

Permitted: Through Streets, Pedestrian Connections at Cul-de-Sacs



Not Permitted: Overly Large Blocks, Lack of Street Connections



3.2 Land Use and Housing

Impact

3.2-2 The proposed General Plan would not conflict with an applicable land use plan, policy, or regulation. *(Less than Significant)*

Since a General Plan updates policies and land use designations for future development, by its nature it is often inconsistent with existing regulations. These existing regulations will need to be updated to effectively implement the new General Plan. Amendments may also be needed from time to time to conform to State or federal law passed since adoption, and to eliminate or modify policies that may become obsolete or unrealistic due to changed conditions. For example, the City's Zoning Ordinance will translate plan policies into specific use regulations, development standards and performance criteria that will govern development on individual properties. The Zoning Ordinance will ultimately prescribe standards, rules and procedures for development and the Zoning Map will provide more detail than the General Plan Diagram.

In addition to its General Plan, Turlock maintains specific and master plans for some areas within the city to tailor appropriate development standards and policies to individual neighborhoods. These plans are described in the regulatory setting. Although these plans do not necessarily address all of the topics required by State law for general or specific plans, they must be consistent with the General Plan. The proposed General Plan is generally consistent with these existing area plans.

The Planning Division of the Development Department has primary responsibility for administering the laws, regulations and requirements that pertain to the physical development of the city. Specific duties related to General Plan implementation would include preparing zoning and subdivision ordinance amendments, design guidelines, reviewing development applications, conducting investigations and making reports and recommendations on planning and land use, zoning, subdivisions, development plans and environmental controls.

In terms of regional plans, the proposed General Plan is generally consistent. The Stanislaus County General Plan designates the proposed Turlock General Plan's new urban areas as Agricultural. Through the master planning and annexation process, this discrepancy will be rectified.

Given that the proposed General Plan does not conflict with district plans, and that preparation of amendments where required is detailed in the proposed Plan, conflicts with existing local and regional plans and zoning ordinances are expected to have a less than significant impact.

Proposed General Plan Policies that Reduce the Impact

Land Use and Economic Development Element Policies

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

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.
- 2.9-c **Encourage infill development to protect farmland.** Relieve pressures to convert valuable agricultural lands to urban uses by encouraging infill development.
- 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 and annexations.** 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 one year of adoption of the General Plan). Annexations to the City should proceed according to the phasing plan described in Section 3-1. Growth Area 1, in the east and southeastern portions of the study area, will be the first to be annexed.
- 2.9-i **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.
- 2.8-k **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, etc.
- 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.

New Growth Areas and Infrastructure Element Policies

- 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.

3.2 Land Use and Housing

Mitigation Measures

None required.

3.3 Transportation

This section evaluates potential transportation impacts resulting from implementation of the proposed General Plan. This impact analysis examines the roadway, truck route, transit, bicycle/pedestrian, and rail components of the overall transportation system. Impacts are evaluated based upon a comparison between existing conditions and future conditions with buildout of the proposed General Plan.

Environmental Setting

PHYSICAL SETTING

The City of Turlock (City) is located in the heart of the Central Valley in Stanislaus County, California. The City belongs to a series of communities in the California Central Valley that are located adjacent to State Route 99 (SR 99). The City is also the northern terminus of State Route 165 that connects the City to State Route 152 and Interstate 5 to the south. Located on these regional corridors, Turlock serves as an important regional connection point for both passenger travel and agricultural/industrial goods movement. With Amtrak, Union Pacific Railroad (UPRR) and Burlington Northern Santa Fe (BNSF) either passing through or near the City, Turlock is located on a multi-modal corridor important to the City's future social and economic wellbeing.

Streets and Highway System

A hierarchy of variously sized streets provides access to and from residential, commercial, and industrial uses throughout the City and beyond. A route's design, including number of lanes needed, is determined both by its classification and its projected traffic levels. Not all streets are currently built to their assigned street classification; nor, in many cases, are further improvements possible due to right-of-way and/or adjacent development constraints.

Freeways

Freeways provide intra- and inter-regional mobility. Freeway access is restricted to primary arterials via interchanges. SR 99 is the only freeway in the Study Area.

SR 99 traverses the San Joaquin Valley and provides access to the Los Angeles metropolitan area, via Interstate 5 (I-5), and the Sacramento metropolitan area. Between Sacramento and Los Angeles, SR 99 connects the City with the Cities of Stockton, Modesto, Merced, Madera, Fresno, Visalia, and Bakersfield. The freeway is a major commuter and truck travel route. SR 99 has six total travel lanes within the City and forms interchanges with State Route 165/Lander Avenue, Main Street, Fulkerth Road, Monte Vista Avenue, and Taylor Road. South of the City, the freeway forms a unidirectional interchange with Golden State Boulevard that provides northbound off-ramp access and southbound on-ramp access.

3.3 Transportation

Expressways

Expressways are located and designed to provide primarily for extended or cross-town travel. Expressway access is limited to abutting properties but vary according to its respective sub-classification. Expressway right-of-way typically varies from 100 to 110 feet. The following expressways are identified within the Study Area in the City's existing General Plan circulation system:

- Golden State Boulevard is a four- to six-lane expressway that runs parallel to SR 99 and the Union Pacific Railroad. Golden State Boulevard represents a major route within the City and connects to SR 99 at both ends. Golden State Boulevard was the original alignment for US Highway 99 prior to the construction of the State Route 99 freeway bypass in the 1970s.
- Christofferson Parkway is a four-lane east-west expressway that extends from Golden State Boulevard to east of the City Limits. This roadway provides access to residential areas and the California State University, Stanislaus campus.
- Geer Road is designated as an expressway north of Christofferson Parkway, for approximately one-half mile. Geer Road is four-lane roadway that provides north-south access through the City, beginning in Downtown and connecting to regions outside the City, east of the City of Modesto and to the City of Oakdale.
- Harding Road and Washington Road are both designated as expressways but are currently built as two-lane collector streets.

Arterials

Arterials collect and distribute traffic from freeways and expressways to collector streets and vice versa. On arterials, the optimum distance between intersections is approximately a quarter-mile. Driveways to major traffic generators may be permitted within the quarter-mile spacing. Other intersections closer than ¼ mile should be restricted to right turn access. Major arterial right-of-way varies from 100 to 110 feet, featuring two to three lanes of traffic in each direction with a left-turn median. However, several roadways designated as arterials are currently one lane in each direction. The following arterials are identified in the City's existing General Plan circulation system:

- Monte Vista Avenue is a four-lane arterial from Tegner Road to east of the City Limits. This roadway provides access to major commercial areas near SR 99 and the California State University, Stanislaus campus farther east.
- Fulkerth Road/Hawkeye Avenue is a four-lane east-west arterial that provides access to major commercial areas near SR 99 and residential areas east of Golden State Boulevard. East of Colorado Avenue, Hawkeye Avenue reverts to a two-lane collector designation.
- Canal Drive is a four-lane east-west arterial between Front Street and Daubenberger Road that provides access to Golden State Boulevard for residential communities east of the expressway. Canal Drive is a divided roadway with a canal running between the eastbound and westbound travel lanes.
- Main Street is a four-lane east-west arterial from Washington Road to West Avenue that connects rural communities and agricultural uses west of SR 99 to the freeway and on to Downtown Turlock. East of West Avenue, Main Street reverts to a collector designation.
- East Avenue is designated as an east-west arterial from Golden State Boulevard to Verduga Road connecting residential communities east of Golden State Boulevard to the expressway. East Avenue is currently built as a two-lane collector street.

- Linwood Avenue is designated as an east-west arterial from Paulson Road to Verduga Road. Linwood Avenue is currently built as a two-lane collector street.
- Tegner Road is designated as a north-south arterial west of SR 99 that connects the Monte Vista Avenue interchange to the southern boundary of the City planning Area at Harding Road. Tegner Road is currently built as a two-lane collector street.
- Countryside Drive is a north-south roadway connecting newly developed commercial areas in the vicinities of Monte Vista Avenue and Fulkerth Road between SR 99 and Golden State Boulevard. Countryside is designated as an arterial just north of Fulkerth Road to about Shetland Way.
- Walnut Road is a four-lane north-south arterial from Monte Vista Avenue to Taylor Road providing mainly residential access to and from Monte Vista Avenue commercial destinations.
- Lander Avenue/State Route 165 (SR 165) is a two-lane arterial south of SR 99. SR 165 originates at Interstate 5 (I-5), south of Santa Nella in Merced County, and ends at SR-99 in the City of Turlock in Stanislaus County. SR 165 serves the communities of Los Banos, Stevinson, Hilmar, and Turlock and is widely used for commute traffic and agricultural traffic between these cities and communities, as well as offering a connection between I-5 and SR 99. Lander Avenue, north of SR 99, is a four-lane arterial providing north-south connectivity between SR 99 and Downtown Turlock.
- Geer Road is a four-lane north-south arterial between Golden State Boulevard and Christofferson Parkway providing connectivity between the two expressways.
- Olive Avenue is a four-lane arterial providing access from Lander Avenue and Main Street in Downtown Turlock to major east-west arterials such as Canal Drive, Hawkeye Avenue and Monte Vista Avenue. Between Canal Drive and Hawkeye Avenue, Olive Avenue is still built as a two-lane collector street.
- Berkeley Avenue is designated as a four-lane north-south arterial between Monte Vista Avenue and Taylor Road. Berkeley Avenue extends south from Monte Vista Avenue as a collector street to Golden State Boulevard.

Collectors

Collectors serve as connectors between local and arterial streets and provide direct access to parcels. At major intersections, driveways on collector streets should be no closer than 50 feet to the intersection. Non-residential driveways and/or intersecting streets or collector streets should be no closer than 300 to 400 feet apart. Major collectors carry four lanes of traffic within an 84-foot right-of-way and two bicycle lanes within an additional 10 feet of right-of-way. Minor collectors carry two lanes of traffic within 60-foot right-of-way and two bicycle lanes within an additional 10 feet of right-of-way. However, the Proposed Project eliminates the distinction between “major” and “minor” collectors and proposes only two-lane collectors with and without bike lanes. The following are some of the critical collectors designated in the City’s existing General Plan circulation system:

- East-west collector streets
 - Taylor Road
 - Tuolumne Road
 - Hawkeye Avenue, east of Colorado Avenue
 - Canal Drive, west of Front Street
 - Main Street, from West Avenue to Berkeley Avenue

3.3 Transportation

- Linwood Avenue, from Washington Road to Golf Road
- North-south collector streets
 - Kilroy Road
 - Countryside Drive
 - Walnut Road
 - Tully Road
 - Soderquist Road
 - Dels Lane
 - West Avenue
 - Colorado Avenue
 - Berkeley Avenue
 - Quincy Road
 - Daubenberger Road

Local Streets

Local streets provide access to parcels. Local streets represent the largest part of the City's circulation system. Access to local streets is unrestricted, and right-of-way widths vary between 50 and 54 feet. The new standard in the Proposed General Plan is a 56-foot right-of-way for all local streets, regardless of adjacent land uses. All roadways not identified in the General Plan circulation system map as freeways, expressways, arterials, or collectors are designated local streets.

Roadway Level of Service

To measure and describe the operational status of a local roadway network, transportation engineers and planners commonly use a grading system called level of service (LOS). LOS is a description of a facility's operation, ranging from LOS A (indicating free-flow traffic conditions with little or no delay) to LOS F (representing over-saturated conditions where traffic flows exceed design capacity resulting in long queues and delays).

The LOS thresholds used in this analysis are listed in Table 3.3-1. These thresholds are consistent with the Transportation Research Board's Highway Capacity Manual concepts and with general transportation planning practice in Turlock and neighboring jurisdictions.

TABLE 3.3-1: DAILY LEVEL OF SERVICE THRESHOLDS BY FACILITY

	LOS "A"	LOS "B"	LOS "C"	LOS "D"	LOS "E"	LOS "F"
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	>1.0
	<i>Average Daily Traffic (ADT) – Total of Both Directions</i>					
Roadway Type	A	B	C	D	E	F
Eight-Lane Freeway	96,000	112,000	128,000	144,000	160,000	>160,000
Six-Lane Freeway	72,000	84,000	96,000	108,000	120,000	>120,000
Four-Lane Freeway	48,000	56,000	64,000	72,000	80,000	>80,000
Six-Lane Expressway	35,000	40,000	46,000	52,000	57,000	>57,000
Four-Lane Expressway	23,000	27,000	31,000	35,000	38,000	>38,000
Two-Lane Expressway	12,000	14,000	16,000	18,000	19,000	>19,000
Six-Lane Arterial	29,000	34,000	39,000	44,000	48,000	>48,000
Four-Lane Arterial	20,000	23,000	26,000	29,000	32,000	>32,000
Two-Lane Arterial	10,000	12,000	13,000	15,000	16,000	>16,000
Four-Lane Collector	15,000	17,000	20,000	22,000	24,000	>24,000
Two-Lane Collector	8,000	9,000	10,000	11,000	12,000	>12,000

Source: Transportation Research Board Highway Capacity Manual, 2010

Public Transportation

The City of Turlock has a variety of public transportation options including fixed route systems and demand-responsive systems as well as local systems and regional systems. The following public transportation systems are available to City of Turlock residents. They are shown on Figure 3.3-1.

Bus Line Service of Turlock

Since 1998, the Bus Line Service of Turlock (BLST) has provided a local fixed route system for Turlock and Denair residents and visitors. BLST operates four separate routes, mostly on the east side of SR 99, from Olive Avenue to Countryside Drive and from Christofferson Parkway to Linwood Avenue. BLST operates on Saturdays from 9:20 AM to 4:20 PM and Mondays through Fridays 6:10 AM to 6:50 PM, holidays excluded.

Dial a Ride Turlock

Since 1975 the City has operated Dial A Ride Turlock (DART). DART was the only local public transportation until BLST 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 BLST 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.

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 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.

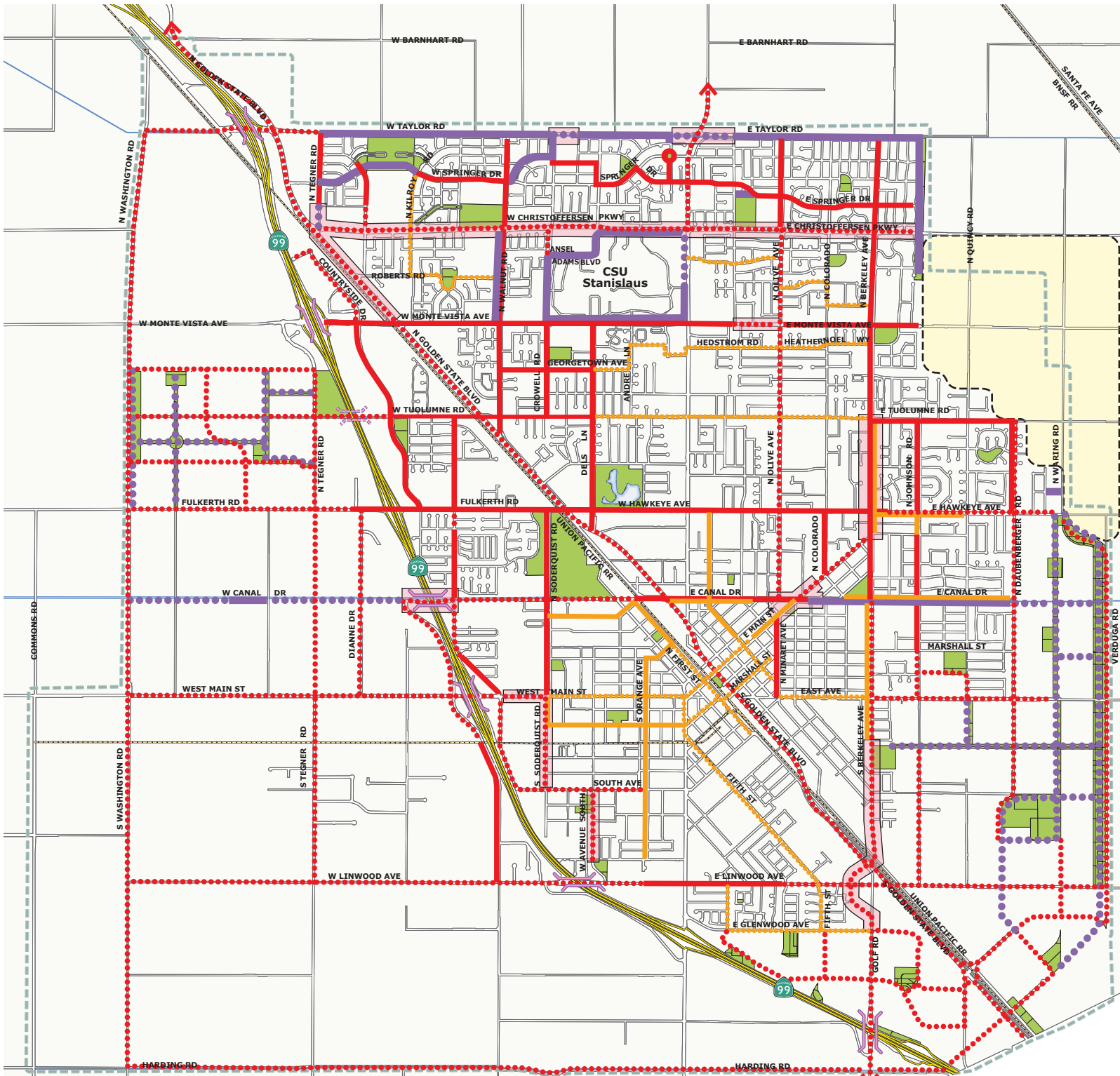
Merced County Transit

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 only with Merced County limits. THE BUS 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.

Non-Motorized Transportation

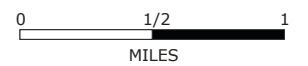
The City of Turlock's flat topography is ideal for bicycle and pedestrian use. However, the hot summer climate can be a deterrent to their travel modes. The current General Plan presents a bikeways and trails map that is partially built. Completion of this network would provide the City with a robust bicycle and pedestrian network. The City has yet to fully implement the network presented in the General Plan, but many Class II and Class III facilities exist and are included in the standard cross-section specifications for the various street classifications. The Proposed General Plan updates the bicycle network to complement the proposed new roads and complete missing connections; it also identifies priority areas for improvements. Figure 3.3-2 shows existing and proposed bikeways.

Figure 3.3-2
Draft General Plan
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



May 8, 2012

Rail, Air, and Truck Transportation System

Railroads

The City of Turlock is well positioned to be a multi-modal transportation hub with the available railroad facilities within and near the City. Both freight and passenger rail services are available within a few miles of Downtown Turlock. The City is serviced by two railroad lines, Union-Pacific and BNSF. Amtrak service is provided via the BNSF railroad line.

Union-Pacific

The railroads within the City limits are owned by Union-Pacific. 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.

BNSF

BNSF owns and operates a railroad line east of the City limits running through the census-designated place 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 four miles northeast of the Union-Pacific railroad.

Amtrak

Amtrak connectivity is provided via the host BNSF railroad in Denair, just east of Turlock. The Turlock/Denair station is on the “San Joaquin” Amtrak line between the Modesto and Merced station to the north and south respectively. Public transportation is available to and from the City of Turlock and the Turlock/Denair Amtrak platform. Annual ridership at this station, as of 2006, was 15,300. The unstaffed stop has an unattended passenger parking lot near the platform.

Airports

The City of Turlock has two general aviation airport facilities in its vicinity. The Turlock Airpark is located between SR 99 and Greenway Avenue, east of SR 165 (Lander Avenue). The Turlock Municipal Airport is located about 8 miles east of Downtown Turlock just south East Avenue, east of Newport Road.

Turlock Airpark

Turlock Airpark is a private air strip 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. Thirty-two 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.¹

¹ “Turlock Airpark Airport (9CL0) Information.” *Airport-Data*. 2008. Airport-Data. 2 Feb. 2009. <<http://www.airport-data.com/airport/9CL0/>>

3.3 Transportation

Turlock Municipal Airport

The City of Turlock owns and operates the Turlock Municipal Airport. The airport is eight miles east of the City, outside City limits, and is in fact located in adjacent Merced County. 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. Fifty-seven aircraft are based at the airfield, including 52 single-engine planes, three multi-engine planes, and two helicopters. 79 percent of traffic is local and 21 percent is itinerant.²

Truck Routes

Truck routes were 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.

Existing railroads, airports, and truck routes are shown on Figure 3.3-3.

² "Turlock Municipal Airport (O15) Information." [Airport-Data](http://www.airport-data.com/airport/O15/). 2008. Airport-Data. 2 Feb. 2009. <<http://www.airport-data.com/airport/O15/>>

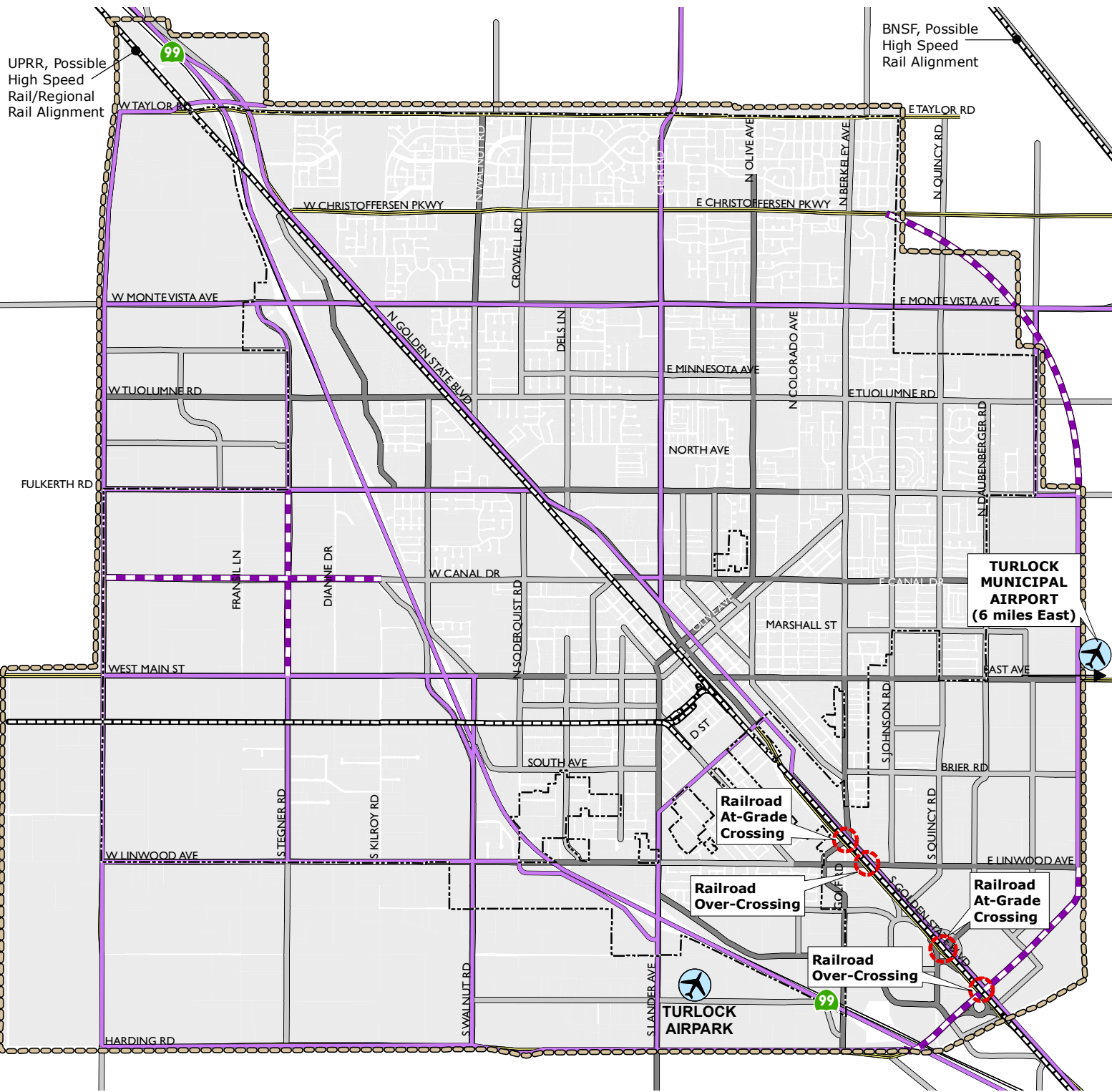













Figure 3.3-3
 Draft General Plan
**Railroads, Airport Facilities,
 and Truck Routes**

-  Airport Facility
 -  Truck Route
 -  Future Truck Route
 -  Railroads
- Boundaries**
-  Study Area Boundary
 -  City Limits & County Islands
- Circulation (2030)**
-  Freeway
 -  Expressway
 -  Potential Expressway Connection
 -  Arterial
 -  Collector

0 0.25 0.5 1
 Miles

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

REGULATORY SETTING

Federal Regulations

SAFETEA-LU

The Safe, Accountable, Efficient Transportation Equity Act: A Legacy for Users, or SAFETEA-LU, was approved by Congress in July 2005 and signed into law by the President in August 2005. This law provides \$244 billion in guaranteed funding for federal surface transportation programs for the next five years, an average annual increase of 35 percent from previous years. This law replaces the Transportation Equity Act for the 21st Century (TEA-21), which expired in September 2003. An updated federal transportation bill is currently under consideration by the United States Congress.

State Regulations

Caltrans

Caltrans is responsible for planning, design, construction, and maintenance of all State highways. Caltrans' jurisdictional interest extends to improvements to these roadways at the interchange ramps serving area freeways. Any federally funded transportation improvements are subject to review by Caltrans staff and the California Transportation Commission.

Caltrans does not have regulations regarding traffic LOS on state highway facilities. The agency does have guidelines for traffic operations on State Highway facilities. Caltrans recommends a target LOS at the threshold between LOS C and LOS D. If the location under existing conditions operates worse than the appropriate target LOS, then the existing LOS should be maintained. Within the City of Turlock the Caltrans concept LOS for the 20-year planning horizon (as identified in the 2002 District 10 SR 99 Route Concept Report) is LOS "C". The concept facility identified to meet the 20-year horizon concept LOS "C" for SR 99 within Stanislaus County is an 8-lane freeway.

Regional Regulations

Regional Transportation Plan 2011

The 2011 Regional Transportation Plan (RTP) for Stanislaus County was adopted in 2010. The plan sets priorities for funding and implementation of transportation-related projects throughout the County. This 2011 RTP update was prepared by the staff of the Stanislaus Council of Governments (StanCOG) with the assistance of its member jurisdictions. The RTP identifies performance measures and indicators for transportation projects and improvements, including transit trips, peak hour travel speed, cost of deferred street maintenance, and vehicle miles traveled (VMT).

The 2011 RTP identifies Tier 1 projects, which are short- and long-range projects fully fundable from anticipated revenue sources. They will likely be programmed during the time horizon of the RTP (2035). Tier 2 projects do not have identified funding sources, but are included as desired long-term projects for the region. Both tiers of projects include roadway, pedestrian, bicycle, transit, and aviation modes. Tier 1 roadway projects for Turlock amount to \$170,837,800 in improvements and include such major projects as the reconstruction of the Fulkerth, Main Street, Lander Avenue, and Taylor Road interchanges, and construction of the Tuolumne Road overcrossing.

StanCOG Congestion Management Process

The 2009 Congestion Management Process (CMP) for the Stanislaus County Region was adopted by StanCOG in January, 2010. The CMP is an essential component of StanCOG's metropolitan planning process and an important element of the development of the RTP in its functionality as a filter for project

selection, programming and performance monitoring. The CMP has been developed to improve multimodal mobility and avoid the creation of deficiencies. One means to this end is the evaluation of multimodal system performance for the movement of people and goods. The performance measures of the CMP support mobility, air quality, land use, and economic objectives, and are used to determine whether projects are to be included in the CMP Capital Improvement Program for consideration for inclusion in the RTP. The CMP is a performance-based program which is consistent with and assists in the implementation of the Regional Transportation Plan's goals, objectives, and policies. The CMP derives its objectives from the vision, goals and objectives of the StanCOG RTP.

Local Regulations

Current Turlock General Plan Transportation Element

The Transportation Element of Turlock's existing General Plan outlines the City's standards for traffic service. Relevant policies include:

- 5.1-c Strive to maintain LOS C for all freeways and expressways.
- 5.1-d Approve LOS D as an allowable standard for arterial and collector streets where existing conditions limit improvements.
- 5.1-e Recognize that the City's land use pattern, the limited number of continuous north-south streets, and the concentration of activity on the east side of the freeway will result in very poor service levels on a small number of streets where capacity cannot be increased because it would create unacceptable disruption.
- 5.1-f On streets where poor service levels are anticipated, investigate and implement improvement projects which will improve traffic operations. To reduce demand at congested intersections on Geer Road and Lander Avenue, new development projects will be required to provide auto access from side streets wherever possible.

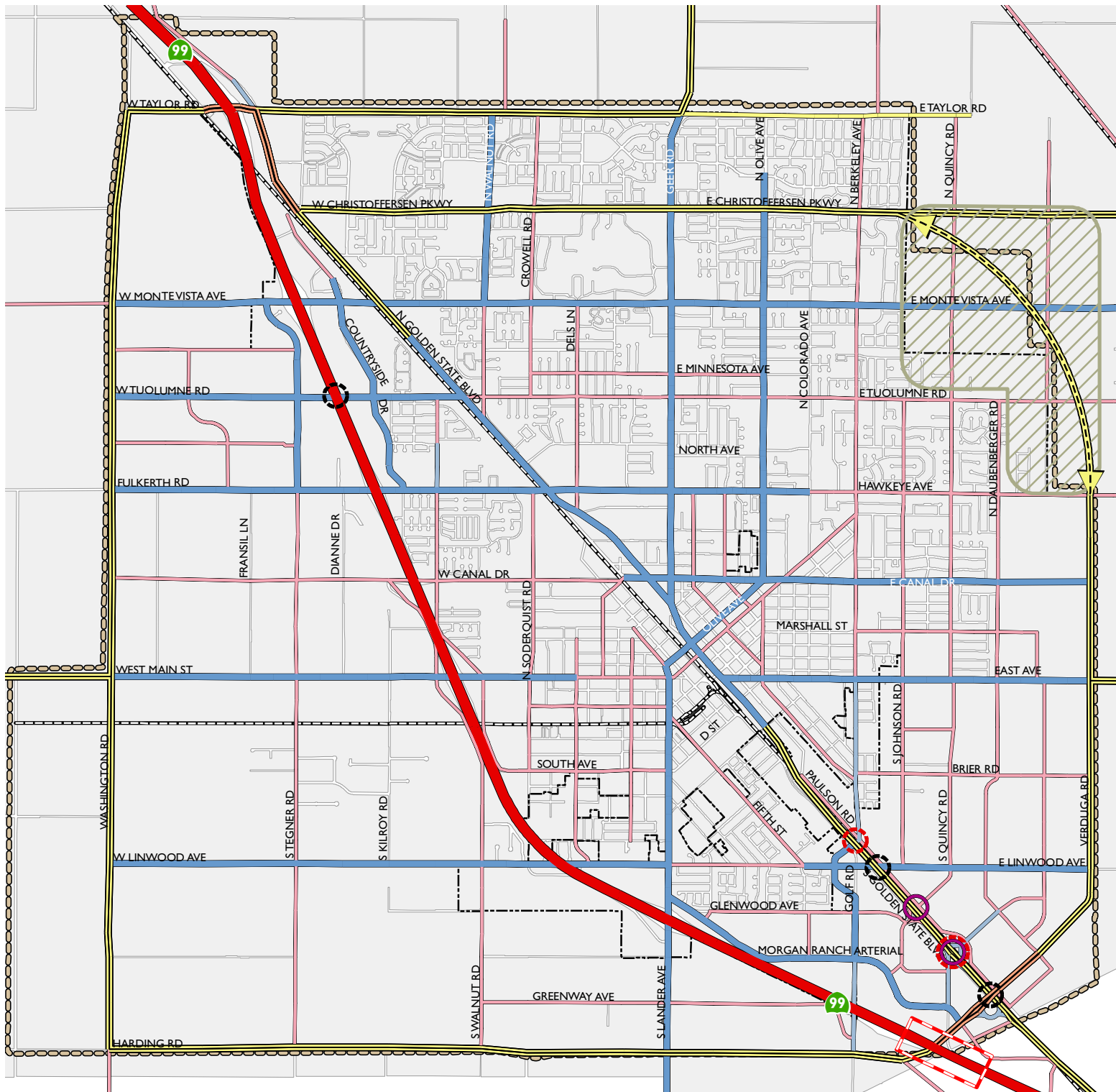
The Transportation Element also calls for consistency and coordination of local transportation actions with State and County agencies and plans.

Impact Analysis

PROPOSED IMPROVEMENTS

The buildout of the General Plan land uses will require improvements to be made to the circulation system to accommodate the long-term growth provided for in the land use plan, particularly in the southeast of the City. Improvements will be developed on a facility type basis, where intersection configurations will be determined by standard layouts prescribed by the intersection facility types. These standard intersections are provided in Table 5.6 of the Proposed General Plan.

Figure 3.3-4
 Draft General Plan
Roadway Network (2030)



- Freeway (6 Lanes)
- Expressway (6 Lanes)
- Expressway (4 lanes)
- Two-Lane Expressway
- Arterial (4 Lanes)
- Minor Arterial (2 Lanes)
- Collector (2 Lanes)
- Potential Expressway Connection (alignment TBD)
- Roadway Circulation Study Area (for establishing future expressway alignment)
- Study Area Boundary
- City Limits & County Islands
- Railroads
- Potential Interchange Location
- Railroad At-Grade Crossing
- New Railroad or Freeway Over-Crossing
- Roads do not cross Golden State Boulevard
- Roads crosses Railroad but not Golden State Boulevard

The proposed General Plan circulation system is presented in Figure 3.3-4. The buildout of this circulation system is consistent with General Plan policies and will generally maintain acceptable service levels through buildout of the General Plan land uses. Proposed roadway types were determined based on a combination of factors aimed at balancing vehicular traffic flow as well as circulation of other modes of travel, including bicycles, pedestrians, and transit, in keeping with “Complete Streets” legislation (Assembly Bill 1358). “Complete Streets” refers to the development of multimodal transportation networks that meet 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.³ 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.

While level of service will still be used as a “trigger” to determine when improvements are necessary, it will not be used to determine the standard to which roads shall be improved. Rather, the proposed General Plan Circulation Diagram and the accompanying tables describing roadway design and access (Tables 5-4 through 5-7 in the Circulation Element of the proposed Plan) represent the maximum extent to which new roadways shall be designed and existing roadways shall be improved, if possible. In some cases, even if LOS falls below level D (the trigger for commencing improvements), the City may determine that other factors, such as the presence of adjacent properties or the safety and comfort of those traveling on foot, bicycle, or transit, may outweigh the need to widen or otherwise improve a roadway that is performing poorly by vehicular traffic flow measures. In these cases, supporting the “Complete Streets” concept, proposed General Plan policy specifically does not require the improvement to be made. These segments, and the reasons for limiting future improvements, are described in Table 3.3-3 below.

SIGNIFICANCE CRITERIA

Implementation of the proposed General Plan would have a potentially significant transportation/traffic impact if it would:

- Conflict with an applicable plan, congestion management program, ordinance or policy establishing measures of effectiveness for the performance of the circulation system at the local or regional level, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.
 - *On local roadways in Turlock:* A significant impact would occur if level of service at buildout would fall below LOS D, measured on an average daily traffic (ADT) basis, which is the trigger for making roadway improvements identified in the Circulation Element of the proposed General Plan.
 - *On Stanislaus County and Caltrans facilities:* A significant impact would occur if level of service at buildout would fall below LOS C (ADT).
- Result in inadequate emergency access; or
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

³ California Government Code Section 65302(b)(2).

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METHODOLOGY

Average daily roadway volumes for General Plan buildout conditions were developed using the City of Turlock Travel Demand Model (TDM). The City TDM was originally developed by OMNI-MEANS in 2003, and has since been updated and recalibrated to reflect changing baseline traffic conditions. Regional traffic in the TDM is consistent with the neighboring StanCOG and MCAG TDMs. The future conditions analysis assumes buildout of the General Plan land uses and that the General Plan Circulation Element improvements are in place. The growth observed in the TDM is applied to current traffic counts to generate an estimated General Plan Buildout Average Daily Traffic (ADT).

Roadway segment Level-of-Service (LOS) has been determined based on volume/capacity (v/c) ratios where capacity is determined by facility type, as presented in Table 3.3-1, and volume is based on Average Daily Traffic (ADT). ADT is defined as the total volume passing a point or segment of a roadway facility, in both directions, during a 24-hour period. By using an ADT-based LOS measure, the intent is not to necessarily design roadway facilities to support traffic demand of only the peak hour or peak two hours of a day, if acceptable service is provided during the remaining hours of the day. ADT-based LOS is an industry-recognized performance measure that is often used in the preparation of General Plans in order to determine a system-level service level and allocate City resources efficiently.

ANALYSIS RESULTS

The analysis of the General Plan assumes full buildout of the proposed land uses, and full buildout of the proposed circulation system. Levels of service are estimated using the average daily traffic projections from the Citywide travel demand model on citywide facilities. Level of service thresholds as defined in Table 3.3-1 are used to estimate facility performance.

Tables 3.3-2 and 3.3-4 show projected average daily traffic and levels of service as they exist today, as well as upon buildout of the Proposed Plan. Table 3.3-2 shows local roadways, and roadway segments that are projected to perform below LOS D (the threshold for local facilities) at buildout are indicated in bold. Table 3.3-3 provides greater detail on the local roads projected to operate below the LOS D threshold at buildout, with a discussion of the physical or policy conditions that preclude further improvements. Table 3.3-4 shows roadways that are under the jurisdiction of the County or State (Caltrans). For these, segments that are projected to perform below LOS C (the County and State threshold) are indicated in bold.

TABLE 3.3-2: AVERAGE DAILY TRAFFIC (ADT) AND LEVELS OF SERVICE UNDER EXISTING CONDITIONS AND UPON GENERAL PLAN 2030 BUILDOUT: LOCAL ROADWAYS; LOS THRESHOLD = BELOW D

Roadway	Location	Existing Conditions				GP Buildout Conditions			
		Facility Type	Volume / Capacity	2007/2008 Daily Count	LOS	Facility Type	Volume / Capacity	GP Buildout ADT	LOS
Golden State Boulevard	s/o Berkeley Avenue	Four-Lane Expressway	31%	11,800	A	Four-Lane Expressway	52%	19,816	A
	s/o Geer Avenue	Four-Lane Arterial		NO CURRENT COUNT		Four-Lane Arterial	99%	31,817	E
	s/o Tuolumne Road	Four-Lane Arterial	44%	14,100	A	Six-Lane Arterial	77%	37,112	C
	s/o Monte Vista Avenue	Four-Lane Expressway	38%	14,430	A	Six-Lane Expressway	52%	29,474	A
	n/o Taylor Road	Two-Lane Arterial	29%	4,600	A	Four-Lane Arterial	53%	17,093	A
Washington Road	s/o Main Street	Two-Lane Arterial	13%	2,060	A	Two-Lane Collector	60%	7,152	A
Tegner Road	n/o Linwood Avenue	Two-Lane Collector	11%	1,300	A	Two-Lane Collector	37%	4,418	A
Countryside Drive	s/o Tuolumne Road	Four-Lane Arterial	35%	11,180	A	Four-Lane Arterial	65%	20,693	B
	s/o Monte Vista Avenue	Four-Lane Arterial	44%	14,120	A	Four-Lane Arterial	103%	32,873	F
Walnut Avenue	n/o Monte Vista Avenue	Four-Lane Arterial	23%	7,270	A	Four-Lane Arterial	62%	19,832	A
Dels Lane	s/o Monte Vista Avenue	Two-Lane Collector	43%	5,180	A	Two-Lane Collector	50%	5,996	A
Lander Avenue	s/o East Glenwood Avenue	Four-Lane Arterial		NO CURRENT COUNT		Four-Lane Arterial	108%	34,691	F
	s/o Main Street	Four-Lane Arterial	48%	15,400	A	Four-Lane Arterial	80%	25,559	C
Geer Road	n/o Canal Drive	Four-Lane Arterial	57%	18,320	A	Four-Lane Arterial	79%	25,338	C
	n/o Tuolumne Road	Four-Lane Arterial	74%	23,610	C	Four-Lane Arterial	70%	22,442	B
	s/o Christofferson Parkway	Four-Lane Arterial	51%	16,370	A	Four-Lane Arterial	55%	17,758	A
	s/o Taylor Road	Two-Lane Arterial		NO CURRENT COUNT		Four-Lane Arterial	55%	17,607	A
Olive Avenue	s/o Tuolumne Road	Two-Lane Arterial	55%	8,810	A	Four-Lane Arterial	60%	19,202	A

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TABLE 3.3-2: AVERAGE DAILY TRAFFIC (ADT) AND LEVELS OF SERVICE UNDER EXISTING CONDITIONS AND UPON GENERAL PLAN 2030 BUILDOUT: LOCAL ROADWAYS; LOS THRESHOLD = BELOW D

Roadway	Location	Existing Conditions				GP Buildout Conditions			
		Facility Type	Volume / Capacity	2007/2008 Daily Count	LOS	Facility Type	Volume / Capacity	GP Buildout ADT	LOS
Golf Road	s/o Clausen Road	Two-Lane Collector	18%	2,200	A	Two-Lane Collector	13%	1,508	A
	s/o Harding Avenue	Two-Lane Collector	19%	2,280	A	Two-Lane Collector	13%	1,506	A
	s/o Glenwood Avenue	Two-Lane Collector	24%	2,930	A	Four-Lane Arterial	47%	14,958	A
	s/o Linwood Avenue	Two-Lane Collector	36%	4,320	A	Four-Lane Arterial	102%	32,630	F
Berkeley Avenue	n/o Golden State Boulevard	Two-Lane Collector	51%	6,120	A	Two-Lane Arterial	84%	13,516	D
	s/o East Avenue	Two-Lane Collector	35%	4,250	A	Two-Lane Arterial	61%	9,716	A
	s/o Tuolumne Road	Two-Lane Collector	49%	5,830	A	Two-Lane Collector	40%	4,797	A
	s/o Monte Vista Avenue	Two-Lane Collector	58%	6,960	A	Two-Lane Collector	47%	5,591	A
	s/o Christofferson Parkway	Two-Lane Collector	32%	3,840	A	Two-Lane Collector	18%	2,210	A
	s/o Taylor Road	Two-Lane Collector	28%	3,310	A	Two-Lane Collector	71%	8,488	B
Daubenberger Road	s/o Canal Drive	Two-Lane Collector	12%	1,390	A	Two-Lane Collector	25%	2,966	A
Linwood Avenue	w/o Tegner Road	Two-Lane Collector	8%	1,008	A	Four-Lane Arterial	26%	8,216	A
	e/o Kilroy Road	Two-Lane Collector	18%	2,190	A	Four-Lane Arterial	27%	8,627	A
	w/o Golf Road	Two-Lane Collector	37%	4,400	A	Four-Lane Collector	77%	18,404	C
Main Street	e/o Washington Road	Two-Lane Collector	74%	8,900	B	Four-Lane Arterial	33%	10,513	A
	e/o Tegner Road	Two-Lane Arterial	70%	11,140	B	Four-Lane Arterial	52%	16,645	A
	w/o Tully Road	Four-Lane Arterial	55%	17,700	A	Four-Lane Arterial	92%	29,309	E
	w/o Soderquist Road	Four-Lane Arterial	50%	16,080	A	Four-Lane Arterial	87%	27,991	D
	w/o Lander Avenue	Two-Lane Arterial	81%	12,900	C	Two-Lane Collector	89%	10,634	D
East Avenue	w/o Verduga Road	Two-Lane Collector	28%	3,400	A	Four-Lane Collector	42%	9,994	A

**TABLE 3.3-2: AVERAGE DAILY TRAFFIC (ADT) AND LEVELS OF SERVICE UNDER EXISTING CONDITIONS AND UPON GENERAL PLAN 2030
BUILDOUT: LOCAL ROADWAYS; LOS THRESHOLD = BELOW D**

Roadway	Location	Existing Conditions				GP Buildout Conditions			
		Facility Type	Volume / Capacity	2007/2008 Daily Count	LOS	Facility Type	Volume / Capacity	GP Buildout ADT	LOS
Canal Drive	w/o Geer Road	Four-Lane Arterial	13%	4,030	A	Four-Lane Arterial	82%	26,150	D
	w/o Olive Avenue	Four-Lane Arterial	20%	6,480	A	Four-Lane Arterial	48%	15,479	A
	e/o Johnson Road	Four-Lane Arterial	5%	1,530	A	Four-Lane Arterial	47%	14,948	A
Fulkerth Road	w/o Washington Road	Two-Lane Collector	30%	3,600	A	Two-Lane Collector	60%	7,240	A
	w/o Tegner Road	Two-Lane Collector	33%	3,920	A	Four-Lane Arterial	54%	17,121	A
	w/o Countryside Drive	Four-Lane Arterial	73%	23,500	C	Four-Lane Arterial	99%	31,552	E
	w/o Golden State Boulevard	Four-Lane Arterial		NO CURRENT COUNT		Four-Lane Arterial	105%	33,641	F
Hawkeye Avenue	w/o Geer Road	Four-Lane Arterial	52%	16,600	A	Four-Lane Arterial	66%	21,024	B
	e/o Colorado Avenue	Two-Lane Collector	51%	6,150	A	Two-Lane Collector	70%	8,386	B
	e/o Johnson Road	Two-Lane Collector	33%	4,000	A	Two-Lane Collector	59%	7,042	A
	e/o Daubenger Road	Two-Lane Collector	23%	2,700	A	Two-Lane Collector	54%	6,492	A
Tuolumne Road	e/o Quincy Road	Two-Lane Collector	21%	2,500	A	Two-Lane Collector	14%	1,722	A
	w/o Countryside Drive	Two-Lane Collector		NO CURRENT COUNT		Four-Lane Arterial	82%	26,224	D
	w/o Golden State Boulevard	Two-Lane Collector		NO CURRENT COUNT		Four-Lane Arterial	109%	34,770	F
Monte Vista Avenue	w/o Countryside Drive	Four-Lane Arterial	102%	32,500	F	Six-Lane Arterial	94%	45,081	E
	e/o Countryside Drive	Four-Lane Arterial	104%	33,240	F	Four-Lane Arterial	130%	41,745	F
	w/o Walnut Avenue	Four-Lane Arterial		NO CURRENT COUNT		Four-Lane Arterial	97%	31,183	E
	w/o Geer Road	Four-Lane Arterial	68%	21,700	B	Four-Lane Arterial	83%	26,574	D
	e/o Berkeley Avenue	Two-Lane Arterial	41%	6,600	A	Four-Lane Arterial	43%	13,837	A
	e/o Waring Road	Two-Lane Arterial	43%	6,900	A	Two-Lane Arterial	85%	13,660	D

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TABLE 3.3-2: AVERAGE DAILY TRAFFIC (ADT) AND LEVELS OF SERVICE UNDER EXISTING CONDITIONS AND UPON GENERAL PLAN 2030 BUILDOUT: LOCAL ROADWAYS; LOS THRESHOLD = BELOW D

Roadway	Location	Existing Conditions				GP Buildout Conditions			
		Facility Type	Volume / Capacity	2007/2008 Daily Count	LOS	Facility Type	Volume / Capacity	GP Buildout ADT	LOS
Christofferson Parkway	w/o Walnut Avenue	Four-Lane Expressway	26%	9,960	A	Four-Lane Expressway	67%	25,647	B
	e/o Walnut Avenue	Four-Lane Expressway	30%	11,380	A	Four-Lane Expressway	82%	31,326	D
	w/o Geer Road	Four-Lane Expressway	31%	11,700	A	Four-Lane Expressway	77%	29,443	C
	e/o Geer Road	Four-Lane Expressway	24%	9,050	A	Four-Lane Expressway	65%	24,855	B
	w/o Berkeley Avenue	Four-Lane Expressway	12%	4,370	A	Four-Lane Expressway	76%	28,768	C
	e/o Berkeley Avenue	Four-Lane Expressway	5%	1,900	A	Four-Lane Expressway	56%	21,334	A
Taylor Road	e/o Washington Road	Two-Lane Collector	6%	740	A	Two-Lane Expressway	65%	12,335	B
	e/o Tegner Road	Two-Lane Collector	87%	10,390	D	Two-Lane Collector	61%	7,341	A
	e/o Walnut Avenue	Two-Lane Collector	58%	7,010	A	Two-Lane Collector	60%	7,183	A
	e/o Griffin Road	Two-Lane Collector	66%	7,900	A	Two-Lane Collector	35%	4,221	A
	w/o Berkeley Avenue	Two-Lane Collector	27%	3,260	A	Two-Lane Collector	77%	9,240	C

Source: Omni-Means, 2012

TABLE 3.3-3: UNMITIGATED LOCAL ROADWAYS OPERATING BELOW THRESHOLD AT BUILDOUT

<i>Roadway Segment</i>	<i>GP Buildout LOS</i>	<i>Reason for Not Widening</i>
Golden State Boulevard, south of Geer Avenue	E	Widening projects not planned in downtown area, consistent with General Plan Policy 5.2aa
Countryside Drive, south of Monte Vista Avenue	F	Widening beyond existing condition not feasible due to existing adjacent development. Unacceptable impacts to established commercial development would be required.
Lander Avenue, south of East Glenwood Avenue	F	Further widening beyond four lanes not feasible due to existing adjacent development. Unacceptable impacts to established commercial development would be required.
Golf Road, south of Linwood Avenue	F	Further widening beyond four lanes not planned due to residential nature of neighborhood. A six-lane cross section would create unacceptable impacts to existing and planned residential communities, including accessibility to and safety of alternative transportation modes.
Main Street, west of Tully Road	E	Widening beyond existing condition not feasible due to existing adjacent development. Unacceptable impacts to established commercial development would be required.
Fulkerth Road, west of Countryside Drive	E	Further widening beyond four lanes not feasible due to existing adjacent development. Unacceptable impacts to established commercial development would be required.
Fulkerth Road, west of Golden State Boulevard	F	Widening beyond existing condition not feasible due to existing adjacent development. Unacceptable impacts to established commercial development and residential development, with fronting driveway access, would be required.
Tuolumne Road, west of Golden State Boulevard	F	Further widening beyond four lanes is not feasible due to existing adjacent development. Unacceptable impacts to established residential development would be required.
Monte Vista Avenue, west of Countryside Drive	E	Widening beyond existing condition not feasible due to existing adjacent development. Unacceptable impacts to established commercial development would be required.
Monte Vista Avenue, east of Countryside Drive	F	Widening beyond existing condition not feasible due to existing adjacent development. Unacceptable impacts to established commercial development would be required.

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TABLE 3.3-3: UNMITIGATED LOCAL ROADWAYS OPERATING BELOW THRESHOLD AT BUILDOUT

<i>Roadway Segment</i>	<i>GP Buildout LOS</i>	<i>Reason for Not Widening</i>
Monte Vista Avenue, west of Walnut Avenue	E	Widening beyond existing condition not feasible due to existing adjacent development. Unacceptable impacts to established commercial and residential development would be required.

Source: Omni Means, 2012; City of Turlock, 2012

TABLE 3.3-4: AVERAGE DAILY TRAFFIC (ADT) AND LEVELS OF SERVICE UNDER EXISTING CONDITIONS AND UPON GENERAL PLAN 2030 BUILDOUT: REGIONAL ROADWAYS; LOS THRESHOLD = BELOW C

<i>Roadway</i>	<i>Location</i>	<i>Existing Conditions</i>				<i>GP Buildout Conditions</i>			
		<i>Facility Type</i>	<i>Volume / Capacity</i>	<i>2007/2008 Daily Count</i>	<i>LOS</i>	<i>Facility Type</i>	<i>Volume / Capacity</i>	<i>GP Buildout ADT</i>	<i>LOS</i>
State Route 99	s/o Golden State Boulevard	Six-Lane Freeway	57%	68,000	A	Six-Lane Freeway	117%	139,918	F
	s/o SR 165/Lander Avenue	Six-Lane Freeway	50%	60,000	A	Six-Lane Freeway	119%	142,205	F
	s/o Main Street	Six-Lane Freeway	62%	74,000	B	Six-Lane Freeway	126%	151,533	F
	s/o Fulkerth Road	Six-Lane Freeway	69%	83,000	B	Six-Lane Freeway	130%	155,528	F
	s/o Monte Vista Avenue	Six-Lane Freeway	64%	77,000	B	Six-Lane Freeway	116%	138,668	F
	s/o Taylor Road	Six-Lane Freeway	59%	71,000	A	Six-Lane Freeway	112%	133,822	F
	n/o Taylor Road	Six-Lane Freeway	68%	82,000	B	Six-Lane Freeway	97%	116,154	E
State Route 165	s/o Clausen Road	Two-Lane Arterial	119%	19,100	F	Four-Lane Arterial	28%	9,046	A
	s/o State Route 99	Two-Lane Arterial	125%	20,000	F	Four-Lane Arterial	68%	21,736	B

Source: Omni-Means, 2012

SUMMARY OF IMPACTS

Buildout of the General Plan will result in significant added traffic on local and regional transportation facilities. Certain facilities are already experiencing some congestion. Where reasonably feasible, improvements to these facilities have been proposed in the General Plan circulation system to improve levels of service. Rather than widen all City roadways to achieve an LOS target, the General Plan circulation map has been developed to provide vehicular mobility while balancing automotive needs with those of bicyclists, pedestrians, and transit users to create a transportation network consistent with the goals of “Complete Streets” legislation.

Where available right of way allows and where widening or other improvements to ameliorate vehicle congestion could be undertaken without compromising the safety and efficiency of other travel modes, the General Plan Circulation Diagram designates the facility for improvement. Furthermore, roadway widening projects were identified with consideration of available right of way so as to minimize impacts to existing neighborhoods. However, in some locations, widening roadways to accommodate traffic projections would conflict with competing General Plan policies to provide a balanced transportation system (see Table 3.3-3). Intersections and roadways along these segments will likely experience delays during peak periods. Other intersections not on these corridors may also experience moments of delays during peak commute periods. The proposed General Plan acknowledges some vehicular congestion in exchange for balanced improvement projects cognizant of all travel modes; however, the impact is considered significant and unavoidable relative to the defined threshold.

Full buildout of the General Plan would also result in a significant and unavoidable impact on roadways outside of Turlock’s jurisdiction; specifically, all segments of SR 99 within the Study Area are projected to operate below Caltrans’ defined LOS standard of C. This impact is considered unavoidable because there are no feasible mitigation measures that the City of Turlock can undertake independently. To mitigate the impact, SR 99 would have to be widened in each direction, a substantial undertaking involving planning, funding, and coordination at the state and regional level. StanCOG’s Regional Transportation Plan (RTP), the document that identifies and prioritizes roadway improvements in the county, does not identify widening SR 99 in the Study Area as a Tier I project (i.e., a high priority with funding identified). In the absence of this, the necessary improvement will not occur. The City of Turlock is neither responsible for nor capable of mitigating the impact on its own, so it is considered significant and unavoidable.

Development planned in the City would increase traffic volumes and could adversely affect access for emergency vehicles in Turlock. Planned improvements that would help mitigate this impact include roadway extensions, roadway widening, and the construction of new roadways, all of which would serve to enhance connectivity and local neighborhood circulation. Furthermore, implementation of traffic signal preemption devices on emergency vehicles, as well as use of emergency sirens, will improve emergency response times even in instances of intersection congestion during peak commute periods. Policies in the Safety Element also ensure that the police and fire departments will expand their facilities as growth occurs, in order to maintain the specified response times. This impact is considered less than significant.

Widening all City roadways to achieve vehicular LOS D could dissuade use of alternative transportation modes by promoting vehicular service above all. This General Plan, as explicitly stated in the General Plan policies and described previously in this section, will not plan for all local roadways to be widened to achieve a specific LOS. The policies of this General Plan are designed to balance improvement projects such that access to other travel modes including bicycles, pedestrian, and transit is improved. The City has identified new policies that encourage the development of new and improved facilities for alternative transportation modes, such as bicycle paths, sidewalks, new transit stops, and “Complete Streets” standards to integrate all modes safely and comfortably on a typical roadway. Increased vehicular congestion on roadways, and the

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provision of improved access to alternative modes, may encourage increased use of alternative transportation modes. This impact is considered less than significant.

Impact

3.3-1 The proposed General Plan would conflict with an applicable plan, congestion management program, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. Specifically, several local roadways would operate below LOS D (measured at the average daily traffic level) and all segments of SR 99 in the Study Area would operate below LOS C at General Plan buildout after all identified, feasible improvements were implemented. *(Significant and Unavoidable)*

Local Roadways

Several roadways are identified in Table 3.3-2 as operating at LOS E or F at General Plan buildout. The City acknowledges that congestion will occur in the vicinity of SR 99, notably between SR 99 and Golden State Boulevard. The General Plan contains policies that trigger construction of identified General Plan roadway improvements after reaching LOS D. However, even upon full construction of the General Plan circulation system improvements, the identified deficiencies in Table 3.3-2 will not necessarily achieve LOS D operations during peak commute periods. Specific exceptions to the LOS D improvement trigger policy are provided for the Downtown area, which includes segments of Golden State Boulevard that are projected to operate below LOS D at General Plan buildout.

The City has decided not to seek full mitigation of all impacts identified as significant in Table 3.3-2 because further improvements beyond those identified in the General Plan Circulation Diagram would be economically or technically infeasible, and would conflict with City policies that promote “Complete Street” concepts. These concepts include promoting alternative transportation modes, whereas widening all roadways strictly to achieve acceptable daily vehicular LOS would prove deleterious to non-vehicular roadway users such as bicyclists and pedestrians. The General Plan includes several policies that will reduce the impact of new traffic generated by buildout of the proposed General Plan. These are included below.

Regional Roadways

StanCOG and Caltrans both have policies indicating LOS C as the acceptable service level threshold for facilities under their jurisdiction. County roads outside the City’s sphere of influence and facilities under Caltrans purview (i.e. State Route 99) that will operate below LOS C upon General Plan buildout will constitute significant and unavoidable impacts per each agency’s significance criteria. Improvements to these facilities will require collaborative planning efforts and improvements financing, as they are regional facilities, with regional congestion contributions.

The General Plan includes several policies that aim to reduce the impact of new traffic generated by buildout of the City’s proposed General Plan, while fostering cooperation and collaboration between jurisdictional partner agencies in order to plan, finance, and construct improvements outside the City’s purview. These are included below.

Proposed General Plan Policies that Reduce the Impact

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 future development and roadway improvement plans against standards for the classifications as set forth in Tables 5-4, 5-5, and 5-6 [of the General Plan].
- 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 represent the maximum standards to which a road segment or intersection shall be improved to support traffic generated by General Plan 2030 land use buildout. 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-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-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.
- 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.** Work with Stanislaus County and other partner entities to implement a new interchange on State Route 99 at Youngstown Road.
- 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-tt)
- 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 region-wide 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.

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- 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.
- 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-r* **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 GP standards when LOS is projected to drop below LOS D (on an average daily trips basis).
- 5.2-s **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-t **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-u **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-v **Expressway access from private property.** In general, access from individual private properties onto expressways is not permitted. An exception may be granted by the 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-w **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.
- 5.2-x **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-aa **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-aa* **Downtown exempted from LOS standards.** Exempt Downtown from LOS trigger 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).
- 5.2-ag **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.

Mitigation Measures

There are no additional mitigation measures that would reduce or eliminate the significant impacts to local and regional roads in the Study Area. For local roads, in development of the proposed Circulation Diagram, every segment projected to operate below LOS D at buildout was examined individually to determine whether an improvement would be feasible. Where improvements were feasible, they have been incorporated into the proposed plan, and the roadways are no longer shown to operate below LOS D at buildout. Therefore, the roadways that remain below the threshold are those for which no mitigating improvement was determined feasible without contradicting other proposed General Plan policies (e.g. adding automobile lanes by removing bike lanes and sidewalks, which would not support Complete Streets that serve all modes) or by taking private property (see Table 3.3-3).

For regional roads, there are no feasible mitigation measures that the City of Turlock can perform independently. To mitigate the impact to SR 99, the freeway would have to be widened in each direction—a substantial undertaking involving planning, funding, and coordination at the state and regional level. StanCOG’s Regional Transportation Plan (RTP), the document that identifies and prioritizes roadway improvements in the county, does not identify widening SR 99 in the Study Area as a Tier I project (i.e., a high priority with funding identified). In the absence of this, the necessary improvement will not occur. While growth in the City of Turlock will contribute to the facility’s future congestion, it is not feasible for the City to mitigate this impact.

Impact

- 3.3-2 The proposed General Plan will not result in inadequate emergency access. (*Less Than Significant*).

Implementation of the proposed General Plan and increases in regional travel passing through Turlock would increase the amount of vehicular traffic in and around Turlock, and may therefore increase the number of potential emergency access conflicts. Previously described roadway LOS analysis shows that the proposed General Plan may result in some facilities experiencing some congestion during peak travel periods. However, improvements to the General Plan circulation system as identified in the Circulation Element, including the construction of new parallel facilities, will contribute to mitigating the impacts of additional traffic on emergency response times. Furthermore, implementation of traffic signal preemption devices on emergency

3.3 Transportation

vehicles, as well as use of emergency sirens, will improve emergency response times even in instances of intersection congestion during peak commute periods. Policies in the Safety Element also ensure that the police and fire departments will expand their facilities as growth occurs, in order to maintain the specified response times.

Proposed General Plan Policies that Reduce the Impact

The proposed General Plan policies that reduce Impact 3.3-1 will also reduce Impact 3.3-2. The construction of new roadways and connections in new development areas will increase emergency access citywide. The General Plan Safety Element also includes several policies to maintain and improve emergency access and response times in the City of Turlock. These include the following:

- 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-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-g **Strategic Planning.** Continue to develop strategic plans that identify high-priority community needs and organizational, staffing, and resource requirements to meet those needs.
- 10.4-h **Meet Response Time Standard Throughout Study Area.** Adequately distribute firefighting equipment and personnel throughout the Sphere of Influence to ensure quick response time (strive to achieve an average response time of six minutes to all calls within the primary service area of each fire station). Critical factors that affect response times are station locations and road circulation patterns.
- 10.4-i **Coordinate Facilities Planning With Urban Expansion.** Within two years of adoption of the General Plan, determine appropriate locations 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-j **Maintain Mutual Aid Agreements.** Maintain mutual aid agreements with other fire and emergency service departments in Stanislaus County.
- 10.4-l **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-p **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-t **Complete Public Safety Building Project.** Complete the construction of the new Public Safety Building.

- 10.4-v **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-y **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-z **Maintain Evacuation Routes.** Ensure that major access and evacuation corridors are available and unobstructed in case of major emergency or disaster.

Mitigation Measures

None required.

Impact

- 3.3-3** The proposed General Plan will not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. *(Less than Significant).*

The City of Turlock and Stanislaus County have a number of policies, plans, and programs in place to support alternative transportation modes, many of which were discussed in the Physical Setting section of this chapter. Examples include the StanCOG RTP, the City of Turlock Parks Master Plan, and the Stanislaus County Non-Motorized Transportation Plan. Collectively, these documents establish goals and objectives and prioritize improvements that will better facilitate transit, pedestrian, and bicycle use in Turlock and its surrounding areas. The proposed General Plan Circulation Element also includes substantial improvements to the bikeway and pedestrian network, designating substantial new bike lanes and Class I multi-use trails, and identifying Pedestrian Priority Zones and Priority Improvement Areas for the bikeway system. In addition, most new roadways above the local street level will be designed and built with bike lanes, and all streets will include sidewalks on both sides, substantially improving the bicycle and pedestrian environment. Increased residential density and a greater mix of uses both Downtown and in new residential neighborhoods will help create a more transit-supportive urban environment.

The proposed General Plan will not widen all City roadways indiscriminately to achieve vehicular LOS D, as it could dissuade use of alternative transportation modes by promoting vehicular service above all other

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modes in designing improvements. Increased congestion on roadways, and the provision of improved access to alternative modes, may encourage increased use of alternative transportation modes. The General Plan Circulation Element includes robust improvements for bicycle, pedestrian, and transit users. Roadway improvements will be designed to provide safe and efficient mobility for all travel modes by including improved sidewalk connectivity, separation between sidewalks and other modes, on-street bicycle lanes and off-street bicycle paths, and new transit stops. General Plan policies that will reduce the impact of new traffic on alternative transportation modes, and that will seek to improve mode share, are included below.

Proposed General Plan Policies that Reduce the Impact

- 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-tt **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-uu **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-vv **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.
- 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.
- 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. 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-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.
- 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.
- 5.4-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.
- 5.4-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 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.
- 5.4-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.
- 5.4-s **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.
- 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.
- 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 Process (CMP).

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The County Congestion Management Process 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 Turlock Regional Industrial Park 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.
- 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.

Mitigation Measures

None required.

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3.4 Air Quality

This section discusses the local and regional air quality implications of the proposed Turlock General Plan update. Greenhouse gases and climate change are addressed in Section 3.5: Greenhouse Gas Emissions and Energy.

Environmental Setting

PHYSICAL SETTING

Air quality is affected by the rate, amount, and location of pollutant emissions, and the associated meteorological conditions that influence pollutant movement and dispersal. Atmospheric conditions, including wind speed, wind direction, and air temperature, in combination with local surface topography, determine the effect of air pollutant emissions on local air quality.

Climate

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 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.

Atmospheric Conditions

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 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.

Marine air flows eastward into the San Joaquin Valley through gaps in the Coast Range at the Golden Gate and Carquinez Strait. The mountain ranges ringing the Valley restrict air movement through and out of the air basin, making the region highly susceptible to pollutant accumulation over time. Air quality in the Valley is

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compromised both by pollutants transported eastward from the urbanized Bay Area and by local emissions.¹

Wind speed and direction play an important role in dispersion and transport of air pollutants. During summer periods, winds usually originate from the north end of the San Joaquin Valley and flow in a south-southeasterly direction through the valley, through the Tehachapi Pass and into the neighboring Southeast Desert Air Basin. During winter months, winds occasionally originate from the south end of the valley and flow in a north-northwesterly direction. Also, during winter months, the valley experiences light, variable winds, less than 10 miles per hour. Low wind speeds, combined with low inversion layers in the winter, create a climate conducive to high concentrations of certain air pollutants.

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 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).

¹ San Joaquin Valley Air Pollution Control District (SJVAPCD) (2002) Guide for Assessing and Mitigating Air Quality Impacts. Adopted August 20, 1998; January 10, 2002 revision.

TABLE 3.4-1: SOURCES OF AIR POLLUTANTS IN STANISLAUS COUNTY

Category ¹	Percent of Total Air Pollutant, by Type					
	ROG	CO	NO _x	SO _x	PM10	PM2.5
Stationary Sources						
Fuel Combustion	0.6%	1.4%	7.7%	22%	1.3%	3.6%
Waste Disposal	0.8%	0.1%	0.1%	0.9%	0.1%	0.3%
Cleaning and Surface Coatings	5.4%	0.0%	0.0%	0.0%	0.1%	0.3%
Petroleum Production, Marketing	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Industrial Processes	3.1%	0.0%	0.9%	58%	7.0%	10%
Subtotal	12%	1.5%	8.6%	81%	8.4%	14%
Areawide Sources						
Solvent Evaporation	16%	0.0%	0.0%	0.0%	0.0%	0.0%
Residential Fuel Consumption	1.7%	8.7%	1.7%	3.4%	5.1%	14%
Farming	32%	0.0%	0.0%	0.0%	34%	25%
Other	2.2%	6.9%	1.7%	2.6%	46%	29%
Subtotal	52%	16%	3.4%	6.0%	84%	68%
Mobile Sources						
On-Road Motor Vehicles	23%	61%	60%	6.0%	4.2%	9.7%
Other Mobile Sources	14%	22%	28%	6.8%	2.9%	7.7%
Subtotal	36%	83%	88%	13%	7.1%	17%
Total	100%	100%	100%	100%	100%	100%

1. ROG: Reactive Organic Gases; CO: Carbon Monoxide; NO_x: Nitrogen Oxides; SO_x: Sulfides; PM10: Particulate Matter With Diameter < 10 Microns; PM2.5: Particulate Matter With Diameter < 2.5 Microns.

Source: California Air Resources Board, 2009.

As shown in Table 3.4-1, 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.

Criteria Air Pollutants

As required by the Federal Clean Air Act passed in 1977, EPA has identified six criteria air pollutants that are pervasive in urban environments and for which State and national health-based ambient air quality standards have been established. The EPA identifies these pollutants as criteria air pollutants because the agency has regulated them by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. Ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (PM-10 and PM-2.5), and lead are the six criteria air pollutants.

Ozone (O₃)

Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections, aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema. It can also cause substantial damage to vegetation and other materials. Ozone is not emitted directly into the atmosphere, but is a secondary air

3.4 Air Quality

pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and nitrogen oxides (NO_x). ROG and NO_x are known as precursor compounds for ozone. Significant ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight for approximately three hours. Ozone is a regional air pollutant because it is not emitted directly by sources, but is formed downwind of sources of ROG and NO_x under the influence of wind and sunlight. Ozone concentrations tend to be higher in the late spring, summer, and fall, when the long sunny days combine with regional subsidence inversions to create conditions conducive to the formation and accumulation of secondary photochemical compounds, like ozone. Ground level ozone in conjunction with suspended particulate matter in the atmosphere leads to hazy conditions generally termed as “smog.”

Carbon Monoxide (CO)

Carbon monoxide, a colorless and odorless gas, is a non-reactive pollutant that is a product of incomplete combustion and is mostly associated with motor vehicle traffic. High carbon monoxide concentrations develop primarily during winter when periods of light wind combine with the formation of ground level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased carbon monoxide emission rates at low air temperatures. When inhaled at high concentrations, carbon monoxide combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease or anemia, as well as for fetuses.

CO concentrations have declined dramatically in California due to existing controls and programs and most areas of the state including the project region now meet state and federal standards for carbon monoxide.

Nitrogen Dioxide (NO₂)

NO₂ is an air quality concern because it acts a respiratory irritant and is a precursor of ozone. NO₂ is a major component of the group of gaseous nitrogen compounds commonly referred to as nitrogen oxides (NO_x). Nitrogen oxides are produced by fuel combustion in motor vehicles, industrial stationary sources, ships, aircraft, and rail transit. Typically, nitrogen oxides emitted from fuel combustion are in the form of nitric oxide (NO) and nitrogen dioxide (NO₂). NO is often converted to NO₂ when it reacts with ozone or undergoes photochemical reactions in the atmosphere. Therefore, emissions of NO₂ from combustion sources are typically evaluated based on the amount of NO_x emitted from the source.

Sulfur Dioxide (SO₂)

Sulfur dioxide is a combustion product of sulfur or sulfur-containing fuels such as coal and diesel, which are restricted in the San Joaquin Valley. Its health effects include breathing problems and may cause permanent damage to lungs. SO₂ is also a precursor to the formation of atmospheric sulfate and the downwind precipitation of acid rain, which can damage trees, lakes and property, and can also reduce visibility.

Particulate Matter

PM10 and PM2.5 consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. (A micron is one-millionth of a meter). PM10 and PM2.5 represent fractions of particulate matter that can be inhaled into the air passages and the lungs and can cause adverse health effects. Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as wood burning in fireplaces, demolition and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. Very small particles (PM2.5) of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases

(e.g., chlorides or ammonium) that may be injurious to health. Particulates also can damage materials and reduce visibility.

Scientific studies have suggested links between fine particulate matter and numerous health problems including asthma, bronchitis, acute and chronic respiratory symptoms such as shortness of breath and painful breathing. Children are more susceptible to the health risks of PM10 and PM2.5 because their immune and respiratory systems are still developing. Mortality studies since the 1990s have shown a statistically significant direct association between mortality (premature deaths) and daily concentrations of particulate matter in the air. Despite important gaps in scientific knowledge and continued reasons for some skepticism, a comprehensive evaluation of the research findings provides persuasive evidence that exposure to fine particulate air pollution has adverse effects on cardiopulmonary health.² ARB has estimated that achieving the ambient air quality standards for PM10 could reduce premature mortality rates by 6,500 cases per year.³

Lead

Leaded gasoline (which is being phased out), paint (houses, cars), and manufacture of lead storage batteries have been the primary sources of lead released into the atmosphere. Lead has a range of adverse neuron-toxic health effects for which children are at special risk. Some lead-containing chemicals cause cancer in animals.

Attainment Status in the San Joaquin Valley Air Basin

Under amendments to the Federal Clean Air Act, EPA has classified air basins or portions thereof, as either “attainment” or “nonattainment” for each criteria air pollutant, based on whether or not the national standards have been achieved. The California Clean Air Act, patterned after the Federal Clean Air Act, also designates areas as “attainment” or “nonattainment” for State standards. Thus, California has two sets of attainment/nonattainment designations: one with respect to national standards and one with respect to State 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 (PM2.5). It has recently achieved federal attainment status for respirable particulate matter (PM10), but fails to attain California’s standards. Table 3.4-2 shows the Study Area’s attainment status with respect to the national and State ambient air quality standards for criteria pollutants. Air pollutant standards for which the Air Basin is in non-attainment are shown in bold.

² Dockery, D. W., and Pope, C.A., III (2006) Health Effects of Fine Particulate Air Pollution: Lines that Connect. Journal Air & Waste Management Association, pp. 709–742. June.

³ California Air Resources Board (ARB) (2002) Public Hearing to Consider Amendments to the Ambient Air Quality Standards for Particulate Matter and Sulfates. May 3, 2002.

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TABLE 3.4-2: SAN JOAQUIN VALLEY ATTAINMENT STATUS

<i>Pollutant</i>	<i>Attainment Status</i>	
	<i>Federal Standard</i>	<i>State Standard</i>
Ozone - One hour	NA	Nonattainment/Severe
Ozone - Eight hour	Nonattainment/Extreme	Nonattainment
PM 10	Attainment	Nonattainment
PM 2.5	Nonattainment	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead (Particulate)	No Designation/Classification	Attainment

Source: San Joaquin Valley Air Pollution Control District (SJVAPCD) (2011) Ambient Air Quality Standards and Valley Attainment Status, available at <http://www.valleyair.org/aqinfo/attainment.htm>; accessed December 2011.

Local Air Quality in the Planning Area

The Air District operates a regional monitoring network to measure ambient concentrations of the six criteria pollutants. One of these monitoring stations is located on South Minaret Avenue in Turlock, providing a good gauge for local air quality. Table 3.4-3 shows measured pollutant concentrations for ozone and PM10 (respirable particulate matter) from the Turlock monitoring station over five years, and ambient air quality standards for these criteria pollutants. PM2.5 (fine particulate matter) was not monitored in Turlock until 2007, so data from a monitoring station approximately 14 miles to the northwest in Modesto is used.

Ozone

As shown in Table 3.4-3, ozone levels in Turlock have exceeded state standards for both the one-hour and eight-hour periods in each of the five years between 2005 and 2009. Ozone is recorded at significantly higher levels elsewhere in the San Joaquin Valley Air Basin, by all measures and in all of the last five years. While Turlock's air violated state one-hour and eight-hour ozone standards an average of approximately nine and 28 days per year, respectively, the San Joaquin Valley Air Basin recorded averages of 89 and 144 days of ozone non-attainment.

According to the California Almanac of Emissions and Air Quality, on-road motor vehicles are the greatest source of ozone-producing pollutants in the air in Stanislaus County, producing 60 percent of the nitrogen oxides and 23 percent of reactive organic gases. Farming is also a major contributor, and represented the largest single source of reactive organic gases (32 percent).⁴

Carbon Monoxide and Nitrogen Dioxide

The San Joaquin Valley Air Basin is in attainment of Federal and State standards for both carbon monoxide and nitrogen dioxide. On-road vehicles are the predominant source of both air pollutants, accounting for 61 percent of carbon monoxide and 60 percent of nitrogen oxides in Stanislaus County air.⁵ Other mobile sources (off-road and farm equipment, primarily) were also significant contributors of these pollutants.

⁴ ARB (2009b) California Almanac of Emissions and Air Quality, available at <http://www.arb.ca.gov/aqd/almanac/almanac.htm>, accessed December 2010.

⁵ ARB (2009b)

Sulfur Dioxide

Sulfur dioxide is no longer considered a problem pollutant in California due to improved industrial source controls, the substitution of natural gas for fuel oil, and lower sulfur content in fuels. The state and the Air Basin have attained the sulfur dioxide standard for several years.

Particulate Matter

As Table 3.4-3 shows, Turlock's air violated State standards for respirable particulate matter (PM10) in each year since 2005, and surpassed State and Federal standards for fine particulate matter (PM2.5) in four out of the past five years. If the stricter national standard set in 2006 had been in effect earlier, all years would have had days of non-attainment. Areawide sources—primarily windblown dust from roads, and farming—account for 85 percent and 68 percent of respirable and fine particulate matter in Stanislaus County air, respectively.⁶

TABLE 3.4-3: AIR QUALITY DATA SUMMARY (2005-2009) FOR THE STUDY AREA

Pollutant	Standard ^b	Monitoring Data by Year ^a				
		2005	2006	2007	2008	2009
Ozone						
Highest 1 Hour Average (ppm) ^c	0.09 ^c	0.096	0.113	0.101	0.138	0.125
Days over State Standard ^b		1	15	1	21	8
Highest 8 Hour Average (ppm) ^c	0.07 ^c	0.082	0.095	0.088	0.13	0.103
Days over State Standard ^b		13	37	12	52	34
Respirable Particulate Matter (PM-10)						
Highest 24 Hour Average (mg/m ³) ^c	50 ^c	87	98	77	97.6	64.3
Days over State Standard ^b		49	*	55	*	72
Annual Average (mg/m ³) ^c	20 ^c	29.8	*	31.5	*	31
Fine Particulate Matter (PM-2.5)						
Highest 24 Hour Average (mg/m ³) ^{d,e}	35 ^d	80	71	64	88.3	61.5
Days over National '06 Standard ^b		27	27	49	39	25
State Annual Average (mg/m ³) ^c	12 ^c	14.4	15.8	16	15.9	13

Notes:

- Data for ozone and PM-10 are from the S. Minaret Avenue monitoring station in Turlock. Data for PM-2.5 are from the 14th Street station in Modesto.
- Generally, state standards are not to be exceeded and national standards are not to be exceeded more than once per year. ppm = parts per million; mg/m³ = micrograms per cubic meter.
- State measurement and standard
- National standard
- U.S. EPA lowered the 24-hour PM-2.5 standard from 65 mg/m³ to 35 mg/m³ in 2006; the averages for 2003 and 2004 did not exceed the standard that was in place at that time.

* No data.

Source: California Air Resources Board, Summaries of Air Quality Data, 2005, 2006, 2007, 2008, 2009, available at <http://www.arb.ca.gov/adam>, accessed December 2010; Dyett & Bhatia, 2011.

⁶ ARB (2009b)

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Toxic Air Contaminants

The California Health and Safety Code defines toxic air contaminants (TACs) as air pollutants that may cause or contribute to an increase in mortality or in serious illness, or that may pose a present or potential hazard to human health. TACs are less pervasive in the urban atmosphere than criteria air pollutants, but are linked to short-term (acute) or long-term (chronic and/or carcinogenic) adverse human health effects. There are many different types of TACs with varying degrees of toxicity. Sources of TACs include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust – particularly diesel-powered vehicles.

There is growing evidence that exposure to emissions from diesel-fired engines may result in cancer risks that exceed those attributed to the measured TACs. Diesel particulate matter (DPM) emissions are estimated to be responsible for about 70 percent of the total ambient air toxics risk. Most of the DPM risks are from exposure to diesel truck exhaust near freeways. A 2005 report by ARB summarized traffic-related studies which found the additional non-cancer health risk attributable to proximity of a freeway with 100,000 vehicles per day 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 (ARB, April 2005). The main source of DPM in the Planning Area is Highway 99. Since diesel particulate matter was identified as a toxic air contaminant with the potential to pose a significant cancer risk to the public, both the State and the SJVAPCD have established stricter emissions standards and controls. These have spurred replacement of diesel agricultural pump engines with electrical motors, and contributed to significant reductions in diesel particulate matter in the San Joaquin Valley, a trend that is expected to continue.⁷

According to SJVAPCD's 2007 *Annual Report on the District's Air Toxics Program*, diesel particulate matter (DPM) was most prevalent toxic air pollutant in the San Joaquin Valley, with 7,695 tons emitted per year. Diesel particles were followed by formaldehyde, benzene, and acetaldehyde (see Table 3.4-4.) Over 50 percent of toxic air emissions in the San Joaquin Valley are from mobile sources, primarily vehicles.

An estimated 19 percent of the Air Basin's toxic air pollutants, or 2,821 tons, are generated from stationary point sources. The State Air Toxics Hot Spots Information and Assessment Act, adopted in 1987, requires the Air District to compile an inventory of toxic emissions, assess possible health risks to the general public, and notify individuals who may be exposed to health risks. According to the 2007 *Annual Report*, the Act has had successful results: all sixteen Valley facilities which had been identified as posing significant health risks have reduced those risks to a level no longer considered significant.⁸

Sensitive Receptors

Some receptors are considered more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions source, or duration of exposure to air pollutants. Land uses such as schools, children's day care centers, hospitals, and convalescent homes are considered to be more sensitive than the general public to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress and other air quality-related health problems. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. Residential areas are considered more sensitive to air quality conditions than commercial and industrial areas, because people generally spend longer periods of time at their residences, resulting in greater exposure to ambient air quality conditions.

⁷ SJVAPCD (2007) Annual Report on the District's Air Toxics Program.

⁸ SJVAPCD (2007).

The location of land uses where sensitive receptors are present, such as day care centers, schools, nursing homes, and hospitals, should be carefully evaluated. State law restricts the siting of new schools within 500 feet of a freeway, urban roadways with 100,000 vehicles/day, or rural roadways with 50,000 vehicles with some exceptions. ARB has published advisory recommendations on siting new sensitive land uses, with the same guidelines as the State school limitation.⁹

TABLE 3.4-4: SUMMARY OF SAN JOAQUIN VALLEY HAZARDOUS AIR POLLUTANT EMISSIONS

<i>Toxic Pollutant</i>	<i>Emissions (tons per year)¹</i>	<i>Percent of Total</i>
Diesel Particulate Matter	7,695	51%
Formaldehyde	4,396	29%
Benzene	1,789	12%
Acetaldehyde	1,761	12%
1,3-Butadiene	503	3%
Perchloroethylene	588	4%
Acrolein	563	4%
Methylene Chloride	429	3%
Toxic Pollutant Sources		
Mobile Sources	7,909	52%
Area Sources	4,413	29%
Stationary Sources	2,821	19%
TOTAL	15,143	100%

Source: SJVAPCD, 2007a, ARB California Toxics Inventory (CTI), 2007.

Odors

Another air quality issue in the Planning Area is nuisance impacts from odors. Common sources of odors include agricultural activities, wastewater treatment plants, landfills, composting facilities, refineries and chemical plants. Odors rarely directly affect health, but they can be very unpleasant and lead to distress and concern over possible health effects among the public, generating citizen complaints to local governments. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors. In the Planning Area, concern over odors from the Regional Water Quality Control Facility (RWQCF) is the basis for an existing General Plan policy to prohibit residential uses within one-half mile. The San Joaquin Valley Air Pollution Control District received and responded to 14 odor complains in the Study Area between June 2009 and September 2011. Eight of the complaints concerned application of fertilizer or other agricultural processes; two had to do with industrial processes; and three concerned spray paint or diesel pumps in residential neighborhoods. No location was the result of multiple complaints.¹⁰

⁹ ARB (2005) Air Quality and Land Use Handbook: A Community Health Perspective.

¹⁰ SJVAPCD (2012).

REGULATORY SETTING

Regulation of air pollution is achieved through both national and State ambient air quality standards and emissions limits for individual sources of air pollutants. As required by the Federal Clean Air Act, US EPA has established National Ambient Air Quality Standards (national standards) 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). In addition, California has established State ambient air quality standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

Federal Regulations

Clean Air Act

The U.S. Environmental Protection Agency (EPA) is responsible for implementing the programs established under the Federal Clean Air Act. The Clean Air Act establishes the framework for federal air pollution control, including direction for the EPA to develop national emission standards for hazardous air. Table 3.4-4 provides the federal Ambient Air Quality Standards, as well as those established by the State of California (outlined below). This table also summarizes the related health effects and principal sources of each pollutant. If an area does not meet the federal standard for a pollutant, the state is required to prepare and adopt a State Implementation Plans (SIP) to show how the standards will be attained.

The federal Clean Air Act also outlines requirements for ensuring that federal transportation plans, programs, and projects conform to the SIP's purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards. As such, Regional Transportation Plans (RTPs) and Transportation Improvement Programs (TIPs) that require federal funding or approval must be included in the SIP emissions budget.

Toxic Air Contaminants have been regulated under federal air quality law since the 1977 federal Clean Air Act Amendments. The National Emission Standards for Hazardous Air Pollutants developed by US 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). The MACT standards vary depending on the type of emitting source. EPA has established MACT standards for over 20 facilities or activities, such as perchloroethylene dry cleaning and petroleum refineries.

State Regulations

California Air Resources Board

The California Air Resources Board (ARB) is responsible for establishing and reviewing California ambient air quality standards, developing and managing the California SIP, securing approval of this plan from US EPA, and identifying toxic air contaminants (TACs).

Ambient Air Quality Standards

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. Local and regional air districts are required to prepare and adopt air quality attainment plans if the district violates the state standards. In addition, California has established State ambient air quality standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Because of California's unique meteorological problems, there are considerable differences between State and federal standards currently in effect in California, as shown in Table 3.4-5.

TABLE 3.4-5: STATE AND NATIONAL CRITERIA AIR POLLUTANT STANDARDS, EFFECTS, AND SOURCES

<i>Pollutant</i>	<i>Averaging Time</i>	<i>California Standard</i>	<i>National Primary Standard</i>	<i>Major Pollutant Sources</i>	<i>Pollutant Health and Atmospheric Effects</i>
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 (PM-10)	24 hour	50 µg/m ³	150 µg/m ³	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 ³	---		
Fine Particulate Matter (PM-2.5)	24 hour	---	35 µg/m ³	Fuel combustion in motor vehicles, equipment and industrial sources; residential and agricultural burning. Also formed from photochemical reactions of other pollutants, including NO _x , 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 ³	15 µg/m ³		
Lead	Monthly Average	1.5 µg/m ³	---	Present source: lead smelters, battery manufacturing and recycling facilities. Past source: combustion of leaded gasoline.	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurologic dysfunction.
	Quarterly	---	1.5 µg/m ³		

1. ppm = parts per million; and µg/m³ = micrograms per cubic meter

Sources: California Air Resources Board (ARB) (2009a) ARB Fact Sheet: Air Pollution Sources, Effects and Control, available at www.arb.ca.gov/research/health/fs/fs2/fs2.htm, accessed December 2010, Dyett & Bhatia, 2011.

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Regulations for Toxic Air Contaminants

AB 1807 (Tanner Bill)

As directed by AB 1807, the Tanner Bill, the California Air Resources Board (ARB) 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. ARB 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)

Air toxics from stationary sources in California are also regulated under Assembly Bill 2588, the Air Toxics “Hot Spots” Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the regional air quality management district or county air pollution control district. High priority facilities are required to perform a health risk assessment, and if specific thresholds are violated, they are required to communicate the results to the public in the form of notices and public meetings. Depending on the risk level, emitting facilities can be required to implement varying levels of risk reduction measures.

Mobile Sources

Regulation of TACs from mobile sources has traditionally been implemented through emissions standards for on-road motor vehicles (imposed on vehicle manufacturers) and through specifications for gasoline and diesel fuel sold in California (imposed on fuel refineries and retailers).

In 2000, ARB adopted the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles*, with goals to reduce DTM by 75 percent by 2010. Since then, it is established strict emissions standards requiring all new diesel-powered engines and vehicles sold in California to meet stricter emissions standards. ARB has also adopted control measures to reduce diesel particulate emissions from off-road diesel vehicles (construction and industrial equipment) and on-road diesel vehicles (utility vehicles, heavy-duty commercial trucks,) and has required that diesel fuel include lower sulfur content to enable use of advanced emission control technologies.

Naturally-Occurring Asbestos

There are two State regulations for asbestos control that are enforceable by SJVAPCD, Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying and Surface Mining Operations (California Code of Regulations Title 17, Section 93105) and Asbestos Airborne Toxic Control Measure (ATCM) for Surfacing Applications (California Code of Regulations Title 17, Section 93106). SJVAPCD Rule 7050 Asbestos-Containing Material for Surfacing Applications (Adopted December 15, 1994, Amended March 21, 2002.) incorporates provisions of the California Code of Regulations Section 93106. This rule was created to ensure that any person who produces, sells, supplies, offers for sale or supply, applies, or transport asbestos-containing materials will control asbestos emissions of asbestos containing rock during surfacing applications.

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.

SJVAPCD has also compiled a guidance document for local jurisdictions to use as a resource in preparing general plans that help to achieve air quality goals, as required under AB 170. The Air Quality Guidelines for General Plans (2005) features background information on air quality issues and regulations, and an extensive set of goals, objectives, and model policies.

Regional Regulations

San Joaquin Valley Air Pollution Control District

The SJVAPCD is the regional agency with regulatory authority over emission sources in the San Joaquin Valley. Air quality management districts are primarily responsible for regulating stationary emissions sources at facilities within their geographic areas, and for preparing the air quality plans required under the Federal Clean Air Act and California Clean Air Act.

Air Quality Plans

The 1977 Clean Air Act Amendments require that regional planning and air pollution control agencies prepare a regional Air Quality Plan to outline the measures by which both stationary and mobile source of pollutants can be controlled in order to achieve all standards specified in the Clean Air Act. The 1988 California Clean Air Act also requires development of air quality plans and strategies to meet state air quality standards in areas designated as nonattainment (with the exception of areas designated as nonattainment for the state PM standards). Maintenance plans are required for attainment areas that had previously been designated nonattainment in order to ensure continued attainment of the standards. Air quality plans developed to meet federal requirements are referred to as State Implementation Plans (SIPs).

Carbon Monoxide

The 1996 *Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas* was developed by the air districts with jurisdiction over ten planning areas (including four urban areas in the SJVAPCD) to ensure attainment of the Federal carbon monoxide standard. In June 1998, the EPA approved this plan and designated the ten areas as attainment. The maintenance plan was revised most recently in 2004, and the Air Basin is in attainment of CO standards.

Ozone

2004 Extreme Ozone Attainment Demonstration Plan

The Air District, in collaboration with the ARB, EPA, and eight regional transportation planning agencies, prepared this plan to bring the San Joaquin Valley Air Basin into attainment with state and federal 1-hour ozone standards. Although the US EPA revoked the federal 1-hour ozone standard on June 15, 2005, the emission reduction commitments in the plan are still being carried out by the SJVAQMD. Clarifications were adopted in 2008, and the plan was approved by the EPA in October 2008.

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 ARB in June of 2007. It aims to reduce nitrogen oxides (NO_x), precursors

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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_x 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_x 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 PM10 Plan

The Air District has produced a series of plans to bring the Valley into attainment of federal standards for respirable particulate matter (PM10). In 2006 the District's monitoring data showed that the Valley had attained national standards for PM10, 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 PM10.

As part of the *2003 PM10 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 PM2.5 Plan

Also in 2008, the District adopted the 2008 PM2.5 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 PM2.5 exposure by 2014.

Air Quality Rules

The Air District's primary means of implementing the above air quality plans is by adopting and enforcing rules and regulations. Stationary sources within the jurisdiction are regulated by the SJVAPCD's permit authority over such sources and through its review and planning activities. In 2001, the SJVAPCD revised its Regulation VIII-Fugitive PM Prohibitions, in response to commitments made in the 1997 PM-10 Attainment Plan to incorporate best available control measures (BACM). The revision also includes new rules for open areas and agricultural operations. The provisions of the revised regulation took effect in May 2002. Regulation VIII consists of a series of dust control rules intended to implement the *PM-10 Attainment Demonstration Plan*. The *PM-10 Attainment Demonstration Plan* emphasizes reducing fugitive dust as a means of achieving attainment of the federal standards for PM-10.

District Rules that may apply to the proposed General Plan are as follows:

- District Rule 2201 (New and Modified Stationary Source Review Rule). This rule applies to all new stationary sources and all modifications of existing stationary sources that are subject to the SJVAPCD permit requirements and after construction emit or may emit one or more affected pollutants.
- District Rule 4002 (National Emission Standards for Hazardous Air Pollutants). Prior to any demolition activity, an asbestos survey of existing structures on the project site may be required to identify the presence of any asbestos-containing building materials (ACBM). Any identified ACBM having the potential for disturbance must be removed by a certified asbestos-contractor in accordance with CAL-OSHA requirements.
- District Regulation VIII (Fugitive PM-10 Prohibitions). Regulation VIII (Rules 8011-8081) is a series of rules designed to reduce PM-10 emissions (predominantly dust/dirt) generated by human activity, including construction, road construction, bulk materials storage, landfill operations, etc. Regulation VIII specifically addresses the following activities:
 - Rule 8011: General Requirements;
 - Rule 8021: Construction, Demolition, Excavation, Extraction and other Earthmoving Activities;
 - Rule 8031: Bulk Materials;
 - Rule 8041: Carryout and Trackout;
 - Rule 8051: Open Areas;
 - Rule 8061: Paved and Unpaved Roads; and
 - Rule 8071: Unpaved Vehicle/Equipment Traffic Areas.
- District Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). If asphalt paving will be used, then paving operations specific to a project will be subject to Rule 4841. This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt, and emulsified asphalt for paving and maintenance operations.
- District Rule 4102 (Nuisance). This rule applies to any source operation that emits or may emit air contaminants or other materials. In the event that a specific project or construction of a project creates a public nuisance, it could be in violation and subject to District enforcement action.
- District Rule 4901 (Wood Burning Fireplaces and Wood Burning Heaters). The purposes of this rule are to limit emissions of CO and particulate matter from wood burning fireplaces and wood burning heaters, and to establish a public education program to reduce wood burning emissions. This rule applies to: any person who manufactures, sells, offers for sale, or operates a wood burning fireplace or wood burning heater; any person who sells, offers for sale, or supplies wood intended for burning in a wood burning fireplace or wood burning heater; any person who transfers or receives a wood burning stove or wood burning heater as part of a real property sale or transfer; any person who installs a wood burning fireplace or wood burning heater in a new residential development.

Indirect Source Review (District Rule 9510)

In addition to these above-described rules, District Rule 9510 Indirect Source Review (ISR) was adopted December 15, 2005. ISR was adopted to fulfill the SJVAPCD's emission reduction commitments in the PM10 and Ozone Attainment Plans. ISR requires submittal of an Air Impact Assessment (AIA) as part of discretionary approval for development projects over certain size thresholds. The AIA will be the information necessary to calculate both construction and operational emissions of a development project. The Rule

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establishes District-approved mitigation measures to achieve emissions reductions from construction and operations. The Rule sets emissions reduction goals of 20 percent for NO_x emissions and 45 percent for PM10 exhaust emissions from construction; and 33.3 percent for NO_x emissions and 50 percent for PM10 emissions from operations.

Toxic Air Contaminants

Stationary Source Toxic Air Contaminants

The SJVAPCD is the regional agency responsible for rulemaking, permitting, and enforcing activities affecting stationary sources in the San Joaquin Valley. Specific rules and regulations adopted by the SJVAPCD limit the emissions that can be generated by various uses and/or activities, and identify specific pollution reduction measures that must be implemented in association with various uses and activities. Among these sources are industrial facilities, gasoline stations, auto body shops, municipal solid waste landfills and dry cleaners. Both federal and State ozone plans rely heavily upon stationary source control measures set forth in SJVAPCD's *Rules and Regulations*.

SJVAPCD also administers the state-mandated Air Toxics "Hot Spots" Program, which is intended to reduce public exposure to TACs from stationary sources, in the San Joaquin Valley. The District's Air Toxics program involves collecting emissions data for approximately 200 commercial and industrial sources of toxic air pollutants; conducting generalized emissions surveys of smaller commercial facility types; and assessing the risk to the public.

Diesel Particulate Matter

Diesel Particulate Matter is the most prevalent toxic air contaminant in the Air Basin. In 2005, the SJVAPCD adopted Rule 4702, with new emissions and operation requirements for diesel engines. While most Diesel Particulate Matter is emitted from mobile or area sources regulated by the State, the stricter standards have contributed to significant reductions in DPM emissions from stationary sources in the Air Basin, notably agricultural pump engines.

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 transportation system has an important influence on air quality because it impacts the vehicle miles traveled, a major source of air pollutants. 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 Chapter 3.5, Climate Change), the next RTP also must include a "Sustainable Communities Strategy" that would allow the region to meet its greenhouse gas emission reduction targets.

Transportation Control Measures

StanCOG, in coordination with the SJVAPCD and other transportation planning agencies in the Air Basin, is responsible for developing transportation control measures, and to recommend mitigation measures for new growth and development designed to reduce the number of vehicles on the road. TCMs include promotion of the use of cleaner fuels, and funding a number of public and private agency projects that provide innovative approaches to reducing air pollution from motor vehicles.

Local Regulations

Turlock Municipal Code

Air Quality Improvement Trust Fund

Section 3-9-700 *et seq.* of the Turlock Municipal Code establishes the Air Quality Improvement Trust Fund, which establishes a dedicated funding source to enable local projects to implement air quality improvement measures. Developer fees, exacted as mitigation for significant impacts on air quality from new development projects, form the revenue source for the Trust Fund.

Turlock General Plan - Existing

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.

Open Space and Conservation Element

- 6.1-g Support efforts to reduce air quality problems created in part by agricultural operations.
- 6.3-a Continue efforts to improve air quality in Turlock.
- 6.3-b Cooperate with regional and other agencies in conducting studies and developing and implementing air quality standards and regulations.
- 6.3-c Implement measures that promote alternatives to automobile use.
- 6.3-d Continue the present policy of not permitting any residential uses within a one-half mile radius of the Sewage Treatment Plan.
- 6.3-e Prevent residential development to the south or west of Highway 99.
- 6.3-f Require installation of clean-burning equipment that uses wood pellets for all residential projects that include fireplaces or wood-burning stoves.
- 6.3-g Cooperate with the San Joaquin Valley Unified Air Pollution Control District to implement indirect source review policies when the program is established.
- 6.3-h Update the Theme Streets, Subdivision Street Trees and Standards (Resolution 88-130 adopted by the City Council) to incorporate newly designated streets as well as criteria stipulated in Policy 6.3-i.
- 6.3-i Consider the effect of air pollutants on trees and the role trees can play in removing particulate matter and gaseous pollutants when updating the street tree requirements and standards.
- 6.3-j Establish tree-planting standards for the permanent agricultural buffer.

3.4 Air Quality

- 6.3-k In consultation with SJVUAPCD, promote public awareness about air pollution, and in conjunction with local media, urge voluntary restraint or postponement of use of fireplaces and wood stoves, charcoal lighter fluid, pesticides, aerosol products, oil-based paints, and automobiles and other gasoline engines on smoggy days.
- 6.3-l Consider carbon monoxide levels at intersection when evaluating the need for intersection improvements.

Impact Analysis

SIGNIFICANCE CRITERIA

The Turlock General Plan will establish policies, standards, and development guidelines against which future projects will be judged for consistency. Implementation of the proposed General Plan would result in a significant impact on air resources if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

These criteria also serve as a basis for the air quality thresholds of significance recommended by SJVAPCD in its 2002 *Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI)*. The *GAMAQI* includes significance thresholds for evaluating operational-phase emissions from direct and indirect sources associated with a *project*. Indirect sources include motor vehicle traffic resulting from the project and do not include stationary sources covered under permit with the SJVAPCD. Notably, these thresholds are quite strict for this *program-level* EIR. Following the *GAMAQI*, the proposed General Plan would be considered to have a significant effect on the environment if it would exceed the following thresholds:

- Cause a net increase in pollutant emissions of reactive organic gases (ROG) or NO_x exceeding 10 tons per year. ROG and NO_x are ozone precursors that contribute to the region's non-attainment of State and federal ozone standards;
- Cause a violation of state CO concentration standards of 20.0 parts per million (ppm) for one hour or 9.0 ppm averaged over 8 hours;
- Result in non-compliance with SJVAPCD Regulation VIII (PM-10 Fugitive Dust Rules) on any site by not implementing effective and comprehensive control measures;
- Place sensitive receptors at least as close to a source of odors as any site where there have been more than one confirmed complaint per year, or three unconfirmed complaints per year, averaged over a three-year period.

Although the SJVAPCD recognizes that PM₁₀ is a major air quality issue in the basin, it does not establish a quantitative threshold for potential impact significance. However, for the purposes of this analysis, a net increase in PM₁₀ emissions of 15 tons per year is used as a significance threshold. This is the threshold level

at which new stationary sources requiring SJVAPCD permits must provide emissions “offsets.” This threshold of significance for PM10 is consistent with the ROG and NO_x thresholds of 10 tons per year increase from existing conditions, which are also offset thresholds established in SJVAPCD Rule 2201. Also for the purposes of this analysis, a PM2.5 emission of 10 tons per year is used as a significance threshold. This threshold level would be equal to the NO_x and ROG thresholds of 10 tons per year, which would match the relative thresholds of the South Coast Air Quality Management District (SCAQMD) where the PM2.5, NO_x, and ROG thresholds are also equal.

In addition, the operation of any project with the potential to expose sensitive receptors to substantial levels of TACs would be deemed to have a potentially significant air quality impact. More specifically, proposed development projects that have the potential to expose the public to project-related TACs in excess of the following thresholds would be considered to have a significant air quality impact:

- Probability of contracting cancer for the Maximally Exposed Individual exceeds 10 in one million.
- Ground-level concentrations of non-carcinogenic TACs would result in a Hazard Index greater than 1.

Application of these standards would typically apply to the preparation of a more detailed project-specific health risk assessment (based on a detailed air dispersion modeling effort) that would occur for master plans or specific plans for new development areas (Southeast 1 through 5 and Northwest) and for new development in the Turlock Regional Industrial Park (TRIP) or elsewhere if such analysis is determined necessary under CEQA. For the proposed General Plan, the assessment of TACs is conducted at a qualitative level with specific policies provided to address the potential impacts associated with this issue.

METHODOLOGY AND ASSUMPTIONS

The proposed General Plan will allow planned development to occur within both developed (infill) and undeveloped portions of the Planning Area. While the pace and timing of development will ultimately be market driven, for modeling purposes this analysis is based on the assumption that most uses will be developed by the year 2030 and emissions are estimated for this planning horizon.

Operational Emissions

Mobile sources and roadways (an areawide source of particulate matter) make the greatest contribution to air quality issues in the Study Area and therefore serve as the primary input into the calculation of air quality impacts. The California Air Resources Board’s EMFAC 2011 Motor Vehicle Emission Factor Model was used to calculate emission rates from motor vehicles, such as passenger cars to heavy-duty trucks, operating on highways, freeways and local roads in California. The model is designed to meet CCAA requirements. Vehicle miles traveled (VMT) is one of the key inputs into the model, along with speed, vehicle mix, and climate/temperature factors. To obtain rough estimates of the amount of particulate matter generated by autos from roads (called “entrained dust”), VMT are multiplied by the following factors: 0.400 grams per mile for PM10 and 0.060 grams per mile for PM2.5.

Construction Emissions

This analysis does not separately quantify construction-related emissions. It is recognized that construction activities are intrinsic to development of the proposed General Plan and substantial over the course of the planning period, but the timing and other characteristics of specific construction projects is not known at this

3.4 Air Quality

time. The General Plan reinforces the Air District's emphasis on implementation of all feasible PM10 control measures. Construction vehicles will also contribute to ROG and NOx emissions.

SUMMARY OF IMPACTS

Air quality impacts resulting from the implementation of the proposed Turlock General Plan fall into two categories: impacts due to construction, and impacts due to traffic and the operation of other mobile and stationary sources.

Construction activities would affect local particulate concentrations primarily due to fugitive dust sources, and increase other criteria pollutant emissions from equipment exhaust. The Plan commits the City to use Best Management Practices to reduce these emissions consistent with SJVAPCD guidelines, resulting in less than significant impacts.

Over the long term, the full implementation of the proposed Turlock General Plan would result in an increase in certain criteria pollutant emissions primarily due to an increase in vehicle-miles traveled. Overall, implementation of the proposed General Plan would result in a significant net increase of particulate matter which would exceed the annual SJVAPCD thresholds for PM10 and PM2.5, primarily as a result of increased entrained dust raised from roadways. Emissions of other ozone precursors—reactive organic gases (ROG) and nitrogen oxides (NOx)—are expected to decrease by 2030, primarily as a result of increasingly stringent emission control measures ARB has adopted for new vehicle engines, particularly diesel engines. The proposed Plan also commits the City to support federal, State and Air District efforts to reduce emissions through its trip reduction and other air quality policies. Proposed General Plan policies intend to support the SJVAPCD's efforts to achieve and maintain air quality standards.

Air quality problems in the Valley are regional in nature, and this impact is considered a significant cumulative impact. The proposed Plan's contribution to this cumulative impact is considerable, because it would result in a greater increase in PM10 and PM2.5 compared to current conditions than would the No Project scenario in which growth occurs according to current land use regulations.

Stationary sources and diesel-fueled mobile sources would also generate emissions of TACs including diesel particulate matter that could pose a health risk. This impact is also expected to be potentially significant under the proposed Plan.

Implementation of the proposed Turlock General Plan in itself would not create objectionable odors affecting a substantial number of people. In addition, the proposed General Plan would not conflict with or obstruct implementation of regional air quality plans.

IMPACTS AND MITIGATION MEASURES

Impact

3.4-1 Implementation of the proposed Turlock General Plan would not conflict with or obstruct implementation of the goals and Control Measures in regional air quality plans. (*Less than Significant*)

The San Joaquin Valley Air Pollution Control District (SJVAPCD) has adopted plans aimed to bring the Air Basin into attainment with State and federal standards for criteria pollutants. These plans, as described above, are the 2004 Extreme Ozone Attainment Demonstration Plan, the 2007 Ozone Plan, the 2007 PM10 Plan, and the 2008 PM2.5 Plan. The federal 1-hour ozone standard has been revoked, and US EPA has reclassified the Air Basin as in attainment with federal PM10 standards. Therefore, the 2007 Ozone Plan, aimed at

achieving 8-hour standards for ozone, and the 2008 PM_{2.5} Plan, to bring the Valley into attainment of national air quality standards for respirable particulate matter, are the key considerations. While the Air District itself has jurisdiction over many strategies in the plans, local, state, and federal measures are also necessary to reach attainment.

The proposed General Plan supports the attainment of air quality standards by establishing implementing policies that will serve to reduce air pollution emissions generated in the Study Area. Many of the Plan's policies are intended to follow Air District guidance provided in its Air Quality Guidelines for General Plans (2005), which focuses on the role that local governments can play in helping to accomplish regional air quality goals. In addition, the Plan seeks to support the Air District's innovative strategies and programs and efforts to reduce vehicle-miles travelled, as outlined in the 2007 Ozone Plan and the 2008 PM_{2.5} Plan.

The air quality plans contain control measures aimed at reducing air pollution in the San Joaquin Valley. Many of these measures address stationary sources and will be implemented by SJVAPCD using its permit authority and are therefore not suited to implementation through local planning efforts. Other measures rely on Air District funding sources to provide incentives for fleet and equipment replacement and similar actions. Other measures refer to State actions. Measures from the two plans that apply to local government action and thus for the proposed General Plan are identified in Table 3.4-6. The table correlates each of these strategies with policies of the proposed General Plan, or presents justification for why the Strategy does not apply to the proposed Plan. As demonstrated, the proposed General Plan provides many policies that further the strategies contained in the Air District's plans for attaining air quality standards for ozone and PM_{2.5}.

Proposed General Plan Policies that Reduce the Impact**TABLE 3.4-6: STRATEGIES OF APPLICABLE AIR QUALITY PLANS**

<i>Air Quality Plan Strategy</i>	<i>Elements of the Proposed Project Consistent with the Strategy or Justification for Non-applicability</i>
2007 OZONE PLAN	
INNOVATIVE STRATEGIES AND PROGRAMS	
Green Contracting	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.
8.2.2 Expanded Spare-the-Air Efforts	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.
8.2.3 Employer-Based Trip Reduction	8.1-n 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-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.
8.2.4 Heat Island Mitigation	6.4-g Heat island reduction. Require new commercial development of more than 25,000 square feet, new industrial development of more than 100,000 square feet, or 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: <ul style="list-style-type: none"> • Providing tree canopy and vegetation to shade 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.

TABLE 3.4-6: STRATEGIES OF APPLICABLE AIR QUALITY PLANS

<i>Air Quality Plan Strategy</i>	<i>Elements of the Proposed Project Consistent with the Strategy or Justification for Non-applicability</i>
8.2.5 Alternative Energy	<p>8.2-q Encourage Solar Power Generation.</p> <p>8.2-r Encourage Other Onsite Renewable Energy Systems.</p> <p>8.2-r* Methane Capture.</p> <p>Policy language is provided under Impact 3.4-2.</p>
8.2.6 Energy Conservation	<p>8.2-m Improve Energy Efficiency in Public Buildings.</p> <p>8.2-m* Wastewater and Water System Efficiency.</p> <p>8.2-m** Outdoor Lighting.</p> <p>8.2-n Promote Energy Conservation Programs.</p> <p>8.2-o Encourage Greater Energy Efficiency in New Development.</p> <p>8.2-p Require Energy Efficiency for Projects Receiving Public Assistance.</p> <p>Policy language is provided under Impact 3.4-2.</p>
8.2.7 Enhanced Indirect Source Review	<p>8.1-j Support Indirect Source Review Program. Implement the San Joaquin Valley Air Pollution Control District to implement 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.</p> <p>City Staff reviews new development projects for air quality impacts and refers projects to the San Joaquin Valley Air Pollution Control District for comments.</p>
8.2.8 Episodic and Regionally-focused Control Measures	See Promote Public Awareness and Expand Spare-the-Air Days policies above.
8.2.9 Advanced Emission Reduction Options (AERO)	Not applicable. Air District effort to provide flexible options for stationary sources in making additional emissions reductions through Reasonably Available Control Technology (RACT) and Best Available Retrofit Control Technology (BARCT).

TABLE 3.4-6: STRATEGIES OF APPLICABLE AIR QUALITY PLANS

<i>Air Quality Plan Strategy</i>	<i>Elements of the Proposed Project Consistent with the Strategy or Justification for Non-applicability</i>
LOCAL COMPONENT: MEASURES TO REDUCE EMISSIONS BY IMPROVING VEHICLE USE	
LOCAL REASONABLY AVAILABLE CONTROL MEASURE (RACM) STRATEGY: TRANSPORTATION CONTROL MEASURES (TCMS).	
NOTE: SINCE THE EMISSION REDUCTION ANALYSIS CONCLUDES THAT THE TCM CATEGORIES WILL NOT ADVANCE ATTAINMENT BY A YEAR, THE AIR DISTRICT HAS NOT MADE EFFORTS TO ADOPT LOCAL COMMITMENTS FOR THESE ADDITIONAL MEASURES. NEVERTHELESS, THEY ARE CONSIDERED IN THIS ANALYSIS.	
9.2(i) Improved Public Transit	<p>The following proposed Plan policies call for the City to support improvements to public transit:</p> <ul style="list-style-type: none"> 5.4-a Promote safe, efficient, and convenient public transportation. 5.4-b Work with multiple agencies and jurisdictions. 5.4-c Improve local transit operations. 5.4-d Improvements to demand-responsive transit. 5.4-e Consistency with Stanislaus Congestion Management System. 5.4-f Transit stop spacing. 5.4-g New transit center location. 5.4-h Funding for transit services. 5.4-i Transit usability. 5.4-j Transit services marketing. 5.4-k Transit for seniors. 5.4-l Development that supports transit. <p>Policy language is provided under Impact 3.4-2 below or in Chapter 3.3, Transportation.</p>
9.2(ii) High-Occupancy Vehicle (HOV) Lanes	The proposed Plan does not contain policies for HOV lanes on Highway 99, since it is managed by Caltrans.
9.2(iii) Employer-Based Plans and Incentives	<p>8.1-n Reduce Trips by City Government</p> <p>8.1-u Support Employer-Based Trip Reduction.</p> <p style="text-align: center;">Policy language is provided under Impact 3.4-2.</p>
9.2(iv) Trip-Reduction Ordinances	<p>8.1-u Support Employer-Based Trip Reduction.</p> <p>Policy language is provided above.</p>

TABLE 3.4-6: STRATEGIES OF APPLICABLE AIR QUALITY PLANS

<i>Air Quality Plan Strategy</i>	<i>Elements of the Proposed Project Consistent with the Strategy or Justification for Non-applicability</i>
9.2(v) Traffic Flow Improvements	<p>Policies 5.2-a through 5.2-ad concern design and performance of the circulation network under the proposed General Plan. Policies include the following:</p> <ul style="list-style-type: none"> 5.2-b Implement planned roadway improvements. 5.2-h Circulation System Enhancements. 5.2-j Work with Caltrans on freeway improvements. 5.2-m Amend Regional Expressway Study. 5.2-n Use of Congestion Management Process. <p>Policy language is provided under Impact 3.4-2 below or in Chapter 3.3, Transportation.</p>
9.2(vi) Fringe and Transportation Corridor Parking Facilities for Carpool/Vanpool and Transit	<p>5.4-g New transit center location. Continue to pursue the development of the city's new Transit Center at Dels Lane and Golden State Boulevard. At the same time, the update of the Downtown Master Plan should consider locations for a transit station Downtown, situated along the existing railroad.</p>
9.2(vii) Limit or Restrict Vehicle Use in Downtown Areas	<p>The proposed Plan does not contain policies restricting vehicle use downtown. The plan supports higher-density and pedestrian-oriented development downtown through a variety of policies.</p>
9.2(viii) HOV and Ride-Sharing Programs	<ul style="list-style-type: none"> 8.1-n Reduce Trips by City Government 8.1-u Support Employer-Based Trip Reduction. <p>Policy language is provided under Impact 3.4-2.</p>
9.2(ix) Limit Access to Roads/Sections of Metro Area to Non-Vehicular and Pedestrian Use	<p>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.</p>

3.4 Air Quality

TABLE 3.4-6: STRATEGIES OF APPLICABLE AIR QUALITY PLANS

<i>Air Quality Plan Strategy</i>	<i>Elements of the Proposed Project Consistent with the Strategy or Justification for Non-applicability</i>
9.2(x) Bicycle Facilities	<p>Bicycle facilities are covered extensively in the proposed Plan and are the subject of the following policies:</p> <p>5.3-a Promote walking and bicycling.</p> <p>5.3-e Provision of bicycle facilities.</p> <p>5.3-i Air quality funding for bikeways plan.</p> <p>5.4-j Funding for bikeways through street construction funds.</p> <p>5.3-k Bicycle Master Plan.</p> <p>5.4-n Bicycle use by City employees.</p> <p>5.4-o Bicycling access to parks.</p> <p>5.3-p Bicycle safety.</p> <p>5.3-q Demarcation of Class III Bikeways.</p> <p>5.3-r Improved bikeway visibility.</p> <p>5.3-u Bikeway improvements in infill areas.</p> <p>Policy language is provided under Impact 3.4-2 below or in Chapter 3.3 Transportation.</p>
9.2(xi) Control Extended Idling of Vehicles	The proposed Plan does not contain policies for vehicle idling.
9.2(xii) Reduce Extreme Cold Start Emissions	The climate in Turlock is not cold enough to warrant policies for cold start emissions.
9.2(xiii) Employer-Sponsored Flexible Work Schedules	<p>8.1-n Reduce Trips by City Government</p> <p>8.1-u Support Employer-Based Trip Reduction.</p> <p>Policy language is provided under Impact 3.4-2.</p>
9.2(xiv) Planning and Development Efforts that Reduce Single-Occupancy Vehicle Travel	<p>8.1-n Reduce Trips by City Government</p> <p>8.1-t Implement REMOVE II Program.</p> <p>8.1-u Support Employer-Based Trip Reduction.</p> <p>Policy language is provided under Impact 3.4-2.</p>

TABLE 3.4-6: STRATEGIES OF APPLICABLE AIR QUALITY PLANS

<i>Air Quality Plan Strategy</i>	<i>Elements of the Proposed Project Consistent with the Strategy or Justification for Non-applicability</i>
9.2(xv) Construction/Re-construction of Paths, Tracks or Areas for Non-Motorized Transportation or Pedestrian Use	4.1-k Recreation Corridors and Greenways.
	5.3-a Promote walking and bicycling.
	5.3-e Provision of bicycle facilities.
	5.3-g Children’s access to schools.
	5.3-i Air quality funding for bikeways plan.
	5.4-j Funding for bikeways through street construction funds.
	5.3-k Bicycle Master Plan.
	5.4-n Bicycle use by City employees.
	5.4-o Bicycling access to parks.
	5.3-p Bicycle safety.
	5.3-q Demarcation of Class III Bikeways.
	5.3-r Improved bikeway visibility.
	5.3-s Pedestrian access to shopping centers.
	5.3-t Pedestrian connections at employment centers.
	5.3-u Bikeway improvements in infill areas.
Policy language is provided under Impact 3.4-2 below or in Chapter 3.3 Transportation.	
9.2(xvi) Pre-1980 Model Year Light-Duty Vehicle Scrappage	The proposed Plan does not contain policies for cold start emissions.
2008 PM2.5 PLAN	
LOCAL COMPONENT: MEASURES TO REDUCE EMISSIONS BY IMPROVING VEHICLE USE	
NO NEW ADDITIONAL MEASURES WERE IDENTIFIED FROM THOSE CONSIDERED FOR THE 8-HOUR OZONE PLAN RACM ANALYSIS IN THE PM2.5 EVALUATION.	

Sources: SJVAPCD, 2007; SJVAPCD, 2008; Dyett & Bhatia, 2012.

3.4 Air Quality

Mitigation Measures

None required.

Cumulative Impact

3.4-2 Implementation of the proposed Turlock General Plan would result in a cumulatively considerable net increase of criteria pollutants which may conflict with or violate an applicable air quality standard or contribute substantially to an existing or projected air quality violation. (*Significant and Unavoidable, Contribution Cumulatively Considerable*)

As described above, the SJVAPCD has developed and the State and EPA have reviewed and/or adopted a series of air quality plans for ozone and particulate matter. The plans feature strict rules for stationary sources, and rely on State and federal actions concerning vehicle tailpipe standards, inspections, and other Reasonably Available Control Measures (RACM) to reduce emissions from mobile sources. The proposed General Plan would not conflict with the policies in these plans or the ability of relevant agencies to carry them out. However, new development under the Plan is projected to result in emissions that exceed significance thresholds for certain criteria pollutants, as discussed below.

Ozone Precursors and Particulate Matter

Construction-Related Emissions

Construction activity that would occur in accordance with the proposed General Plan would cause emissions of various air pollutants that will be short-term on a project-by-project basis but ongoing over the planning period. ROG and NO_x, which are ozone precursors, as well as particulate matter (PM10 and PM2.5) would be emitted by construction equipment during various activities, such as grading and excavation, infrastructure construction, building demolition, and a variety of construction activities. Information regarding specific development projects, soil conditions, and the location of sensitive receptors in relation to the various projects would be needed in order to quantify the level of impact associated with construction activity. However, given the amount of development associated with implementation of the proposed General Plan, some large-scale construction activity may exceed SJVAPCD adopted project thresholds over the duration of the proposed General Plan development. Actual significance would be determined as part of environmental review for new master plan or specific plan areas, or for proposed development that is not consistent with earlier EIRs covering specific plan areas such as the TRIP. Construction activities will be required to comply with all State and Air District rules meant to reduce emissions of criteria pollutants for which the Air Basin is in non-attainment. These rules are augmented by proposed Plan policies designed to address construction-related air quality impacts including requiring contractors to implement appropriate dust suppression measures.

Operations-Related Emissions

Operational impacts would primarily result from local and regional vehicle emissions and vehicle travel generated by future population growth associated with buildout of the proposed General Plan. The annual emissions of ROG, NO_x, CO, PM10, and PM2.5 associated with General Plan traffic for the analysis years 2008 (baseline) and 2030 (buildout) were estimated using the EMFAC2011 model and traffic information provided by the traffic consultant. Particulate matter is also generated by entrained dust on paved roadways, in proportion to VMT; this is accounted for by applying factors for PM10 and PM2.5. These operational emissions are provided below in Table 3.4-7. As shown in the table, total annual emissions of ROG, NO_x, and CO from mobile sources (vehicles) are projected to exceed the Air District's project-based thresholds in both 2008 and 2030 under both the No Project and proposed Plan. Despite increased VMT, emissions are expected to be lower in 2030 than in 2008, as a result of stringent emission control measures adopted by ARB

and SJVAPCD, so that on a net basis the General Plan would not have a significant impact concerning these pollutants.

However, net annual mobile source emissions in 2030 compared to existing conditions would exceed the significance thresholds for PM10 and PM2.5 as a result of increased dust raised from paved roadways with increased traffic, resulting in a significant impact. Further, this impact would be greater under the proposed Plan than under the No Project scenario, because the proposed Plan would accommodate a larger population and more VMT. The proposed Plan establishes a compact land use pattern and numerous policies intended to promote walking, biking, and transit use, and policies supporting the application of dust suppression rules. Nevertheless, the impact is cumulatively considerable.

Although traffic would be the primary contributor to operational emissions, an increase in stationary source emissions is also anticipated with buildout of the proposed General Plan. Emissions will be generated from a variety of stationary sources including the natural gas systems, landscape maintenance equipment, and wood-burning fireplaces. Information regarding specific development projects would be needed in order to quantify the area and indirect source emissions. A variety of industrial and commercial processes (e.g., dry cleaning, etc.) allowed under the proposed General Plan would also be expected to release emissions; some of which could be of a hazardous nature. These emissions are controlled at the local and regional level through permitting and would be subject to further study and a health risk assessment as part of environmental review for new master plan or specific plan areas, or for proposed development that is not consistent with earlier EIRs covering specific plan areas such as the TRIP.

3.4 Air Quality

TABLE 3.4-7: OPERATIONAL EMISSIONS FROM ON-ROAD VEHICLES (TONS PER YEAR)

<i>Emissions Source</i>	<i>Unmitigated Operational Criteria Pollutant Emissions (Tons/Year)</i>				
	<i>ROG</i>	<i>NO_x</i>	<i>CO</i>	<i>PM10</i>	<i>PM2.5</i>
City of Turlock On-road Vehicle Emissions¹					
Baseline (Year 2009)	398	485	3,369	229	37
Proposed General Plan					
Buildout (Year 2030)	56	230	1,559	454	68
Incremental Change from Existing ²	(142)	(256)	(1,810)	224	30
No Project					
Buildout (Year 2030)	204	208	1,409	422	66
Incremental Change from Existing ²	(193)	(277)	(1,960)	192	29
SJVAPCD Significance Criteria ³	10	10	NA	15	10
Significant? (Yes or No)	No	No	NA	Yes	Yes

Notes:

1. Onroad vehicle emissions were estimated with CARB's EMFAC2011 model and US EPA's AP 42 emission factor for PM10 and PM2.5 from paved roadways, using traffic information provided by Omni-Means. Please see Section 3.3 for additional information about traffic volumes.
2. Values in (parentheses) represent calculated reductions in future year emissions versus existing conditions. ROG, NO_x, and CO were estimated to decrease in the future scenario due to decreased emission factors in the future year. These emission factors generated by EMFAC2011 assume a cleaner mix of vehicles as older, more polluting vehicles are retired. PM10 and PM2.5 are projected to increase as a result of increased roadway dust caused by increased VMT and more roadways.
3. The SJVAPCD established thresholds for ROG and NO_x are 10 tons per year, and the assumed PM10 and PM2.5 thresholds are 15 tons per year and 10 tons per year, respectively. CO does not have an established emissions threshold of significance.

Sources: California Air Resources Board, 2011; US EPA, 2011; Stanislaus LAFCO, 2006; Dyett & Bhatia, 2012; Omni-Means, 2012.

Proposed General Plan Policies that Reduce the Impact

The proposed General Plan features a wide range of policies that will help reduce potential air quality impacts associated with criteria air pollutant emissions. Policies address the need for the City to support Air District programs and Best Management Practices; and to develop a transportation network and a land use and development pattern that support shorter trips and a greater share of trips being made by other modes. Continued enforcement of State and federal programs are critical to minimize carbon monoxide concentrations and ozone and particulate matter; policies that support lower vehicle-miles travelled are also vitally important, as are policies for planting and maintaining street trees, which have local air quality benefits.

Air Quality and Greenhouse Gases Element

Air Quality

- 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.

- 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.
- 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.
- 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-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 NO_x 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.
- 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.
- 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-m* **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;

3.4 Air Quality

- Suspension of grading activities during high wind periods (typically winds greater than 25 miles per hour); and
 - Revegetation of graded areas.
- 8.1-n **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-o **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.
- 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.

Energy and Climate Change

- 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 travelled.
- 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-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 **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-l **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.
- 8.2-m **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-m* **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-m** **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.

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New outdoor lighting standards should apply to municipal operations, including traffic signals, as well as to new private development.

- 8.2-n **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.
- 8.2-o **Encourage Greater Energy Efficiency in New Development.** For new Master Plan Areas, seek to expedite permit processing for new buildings to meet or exceed the Tier 1 optional standards in the 2010 California Green Building Standards Code.
- 8.2-p **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.
- 8.2-q **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-r **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-r* **Methane Capture.** Continue to produce energy through methane capture from waste using the fuel cell system at the Regional Water Quality Control Facility, in partnership with Turlock Irrigation District. Explore opportunities to enhance waste-to-energy generation if feasible.

Circulation Element

Roadway Network, Standards, and Improvements

- 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-as **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.

Pedestrian and Bicycle Circulation

5.3-a **Promote walking and bicycling.** Promote walking and bike riding for transportation, recreation, and improvement of public and environmental health.

5.3-c **Develop a safe and efficient non-motorized circulation system.** Provide safe and direct pedestrian routes and bikeways between places.

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. 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 and City Hall. Detailed measures relating to street trees are prescribed in policies in Section 6-8, 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-i **Air quality funding for bikeways plan.** Continue using the Air Quality Trust Fund (and other grants and outside funding sources) to assist in the funding of implementation of the Bikeways plan depicted in Figure 5-3. Update the CFF to expand this program citywide to fund these improvements.

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.

5.3-m **Street trees in Capital Improvement Program.** Include street trees as part of Capital Improvement Program programming and implementation.

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- 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 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.

- 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.

- 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 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.

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.

Public Transportation

- 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.
- 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-h **Funding for transit services.** Continue to pursue federal funds to cover capital and operating costs associated with Turlock’s transit operation. (Currently, federal 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;

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- 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.
- 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-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.

Other Elements

Policies in the Land Use, Infrastructure and New Growth Areas, and City Design Elements will also contribute to an overall land use and development pattern that supports decreasing vehicle-miles-travelled per capita and more trips being made by walking, biking, and transit.

Mitigation Measures

As stated above, the City will implement a variety of policies designed to address air quality issues. Future compliance with SJVAPCD permitting as part of environmental review for new master plan or specific plan areas, or for proposed development that is not consistent with earlier EIRs covering specific plan areas such as the TRIP will also help to reduce air quality emissions associated with individual projects. However, total emissions associated with development of the proposed General Plan would still exceed SJVAPCD thresholds for PM10 and PM2.5. No additional feasible mitigation measures are currently available to reduce this impact to a less-than-significant level. Consequently, the impact remains significant and unavoidable.

Cumulative Impact

3.4-3 Implementation of the proposed Turlock General Plan would expose sensitive receptors to substantial pollutant concentrations. (*Significant and Unavoidable, Contribution Cumulatively Considerable*)

Development of the proposed General Plan could place sensitive land uses near local intersections or roadways associated with air pollutant emissions that exceed State or federal ambient air quality standards. Similarly, existing sensitive land uses near local roadways that experience increased levels of traffic resulting from development of the proposed General Plan could be exposed to air pollutant emissions that exceed State and/or federal ambient air quality standards.

Carbon Monoxide

Vehicle emissions are the primary source of carbon monoxide in the air. Unlike ozone and particulate matter, the most relevant impacts for CO occur locally. CO concentrations have declined dramatically in California due to existing controls and programs and most areas of the state including the project region now meet state and federal standards for carbon monoxide. The Air Basin is in attainment of State and federal standards for

CO. In the Study Area, CO emissions are projected to decline by more than 50 percent from current conditions, as shown in Table 3.4-7 above.

High concentrations of carbon monoxide are most likely to develop where there is significant congestion. For the purpose of this analysis, localized CO concentrations that exceed significance thresholds may reasonably be expected to occur around roadway segments that are projected to experience Level of Service (LOS) E or F under the proposed General Plan. These roadways are identified in Table 3.4-8. It should be noted that considerable development may occur before these levels of congestion are reached on certain roadways.

TABLE 3.4-8: POTENTIAL CO HOT SPOTS AT GENERAL PLAN BUILDOUT

<i>Roadway</i>	<i>Location</i>	<i>Facility Type</i>	<i>LOS</i>
State Route 99	South of Main St.	8-lane Freeway	E
State Route 99	South of Fulkerth Rd.	8-lane Freeway	E
Golden State Boulevard	South of Geer Ave.	4-lane Arterial	E
Golden State Boulevard	South of Hawkeye Ave.	4-lane Arterial	E
Golden State Boulevard	South of Walnut	4-lane Arterial	E
Countryside Drive	South of Monte Vista Ave.	4-lane Arterial	F
Lander Avenue	South of E. Glenwood Ave.	4-lane Arterial	F
Berkeley Avenue	South of Paulson Rd.	2-lane Arterial	F
Fulkerth Road	West of Countryside Dr.	4-lane Arterial	E
Fulkerth Road	West of Golden State Blvd.	4-lane Arterial	F
Tuolumne Road	West of Golden State Blvd.	4-lane Arterial	E
Monte Vista Avenue	West of Countryside Dr.	6-lane Arterial	E
Monte Vista Avenue	West of Golden State Blvd.	4-lane Arterial	F
Monte Vista Avenue	West of Walnut Ave.	4-lane Arterial	E

Source: Omni-Means, 2011; Dyett & Bhatia, 2011.

Toxic Air Contaminants (TACs)

In addition, a variety of TAC emissions could also be released from various construction and operations (i.e., industrial processes, diesel equipment and vehicles) associated with the proposed General Plan. The ARB has declared that DPM particulate matter from diesel engine exhaust is a TAC. Additionally, the California Office of Environmental Health Hazard Assessment has determined that chronic exposure to DPM can cause carcinogenic and non-carcinogenic health effects. State and Air District regulations have made significant progress in reducing hazards associated with diesel and other TACs, as described in the Environmental Setting section. CEQA documentation prepared as part of environmental review for new master plan or specific plan areas, or for proposed development that is not consistent with earlier EIRs covering specific plan areas such as the TRIP will be required to address, and to the extent feasible, mitigate any significant or potentially significant air quality impacts. Additionally, a variety of policies are designed to address air pollutant emissions and potential exposure.

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Proposed General Plan Policies that Reduce the Impact

Policies listed under Impact 3.4-1 also help to reduce this impact. The following policies are most relevant:

New Growth Areas and Infrastructure Policies

- 3.3-ae **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.

Air Quality and Greenhouse Gases Policies

- 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-h **Protect Sensitive Receptors from Toxic Air Emissions.** For all new development, maintain a minimum 300-foot overlay zone with an overall goal of 500 feet on either side of Highway 99 within the Study Area to protect sensitive receptors from toxic air emissions. 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.

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.

Mitigation Measures

As stated above, the City will implement a variety of policies and implementation measures designed to address air quality issues. Importantly, the proposed General Plan helps to create a clear separation between industrial uses and the great majority of residential areas. In addition, the City will ensure that future CEQA documentation be prepared as part of environmental review for new master plan or specific plan areas, or for proposed development that is not consistent with earlier EIRs covering specific plan areas such as the TRIP that will (if technically possible) mitigate any potential air quality impacts to a less-than-significant level. However, given the uncertainty as to whether future air quality impacts associated with the potential exposure of sensitive receptors to substantial pollutant concentrations could be adequately mitigated, this impact remains significant and unavoidable. No additional feasible mitigation is currently available.

Impact

3.4-4 Implementation of the proposed Turlock General Plan would create objectionable odors affecting a substantial number of people. *(Less Than Significant)*

The proposed General Plan involves the future development of new residential areas to both the Southeast and Northwest of the existing City, and to involve infill development in existing neighborhoods. The proposed General Plan aims to maintain a separation between sensitive receptors and sources of potential odors. The General Plan continues the existing policy of concentrating new industrial development in the Turlock Regional Industrial Park (TRIP), separate from residential areas, and maintaining a separation between residential areas and the Regional Water Quality Control Facility (RWQCF). Nevertheless, some new development will occur in proximity to new or existing industrial uses. In particular, new residential development in the Northwest, as part of the second phase of General Plan implementation, could occur near existing or new industrial development in the TRIP.

Agriculture has been the primary source of odor complaints in Turlock over the past three years, as discussed above. While odors are likely to remain an occasional problem at the urban/agricultural edge, implementation of the proposed General Plan would create an extensive perimeter greenbelt, helping to buffer existing and new residential areas from agricultural processes. Agricultural odors in residential areas may be expected to become less significant as the proposed Plan's greenway system is developed.

Proposed General Plan Policies that Reduce the Impact

Land Use and Economic Development Policies

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).

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 WISP, where land use conflicts will be minimized.

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-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.

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New Growth Areas and Infrastructure Policies

- 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.

Parks, Schools and Community Facilities Policies

- 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.

City Design Policies

- 6.1-k **Agricultural Buffer Design.** Implement an “agricultural – urban buffer design” to minimize the impact of urban development near active agricultural operations. 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 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.
 - Design and size utility infrastructure to discourage future extensions beyond the definitive urban edge.

Conservation Policies

- 7.2-j **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.

Air Quality Policies

- 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 in the Turlock Regional Industrial Park (TRIP) within project screening distance, as established by the SJVAPCD, of sensitive receptors or new residential uses in the Northwest master plan area to undertake a detailed odor analysis.

3.5 Climate Change

This section of the EIR analyzes the effects of the proposed Turlock General Plan on global climate change through greenhouse gas emissions related to transportation, electricity usage, and other activities. The analysis also describes the potential impacts of climate change on future residents, workers, and visitors, and the Planning Area's natural resources.

Environmental Setting

PHYSICAL SETTING

Global Climate Change

Global Climate Change (GCC) refers to a change in the average air temperature 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 global industrial revolution.

Although GCC is now generally accepted by the public, the extent and speed of change to be expected, and the exact contribution from human sources, remains in debate. Nonetheless, the Intergovernmental Panel on Climate Change (IPCC)¹—made up of the world's leading climate scientists—have reached consensus that global climate change is “very likely” caused by humans, and that hotter temperatures and rising sea levels will continue for centuries to come. In particular, human influences have:

- *very likely* contributed to sea level rise and increased storm surge during the latter half of the 20th century;
- *likely* contributed to changes in wind patterns, affecting extra-tropical storm tracks and temperature patterns;
- *likely* increased temperatures of extreme hot nights, cold nights and cold days; and

¹ The Intergovernmental Panel on Climate Change (IPCC) is a scientific intergovernmental body set up by the World Meteorological Organization (WMO) and by the United Nations Environment Programme (UNEP). Its role is to assess on a comprehensive, objective, open and transparent basis the latest scientific, technical and socio-economic literature produced worldwide relevant to the understanding of the risk of human-induced climate change, its observed and projected impacts, and options for adaptation and mitigation.

3.5 Climate Change

- *more likely than not* increased risk of heat waves, area affected by drought since the 1970s, and frequency of heavy precipitation events.²

The IPCC predicts that global mean temperature increase from 1990-2100 could range from 2.0 to 11.5 degrees Fahrenheit. It projects a global sea level rise of seven to 23 inches by the end of this century, with a greater rise possible depending on the rate of polar ice sheet melting.

Regional and Local Impacts

According to the California Climate Action Team (CCAT), accelerating GCC has the potential to cause adverse impacts in California, including but not limited to: 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; increased wildfire risk; and increased electricity demand.³

Increased Temperatures and Extreme Heat Events

Climate change is expected to lead to an increase in ambient (i.e., outdoor) average air temperature, with greater increases expected in summer than in winter months. Larger temperature increases are anticipated in inland communities as compared to the California coast. Climate models predict a 4°F temperature increase in the next 20 to 40 years, with an increase in the number of long dry spells.

The potential health impacts from sustained and significantly higher than average temperatures include heat stroke, heat exhaustion, and the exacerbation of existing medical conditions such as cardiovascular and respiratory diseases, diabetes, nervous system disorders, emphysema, and epilepsy. Over the past 15 years, heat waves have claimed more lives in the state than all other declared disaster events combined. According to the IPCC (2004), the summer mortality rates will double by half by 2050 due to hot weather episodes.

Increased temperatures also pose a risk to human health when coupled with high concentrations of ground-level ozone and other air pollutants, which may lead to increased rates of asthma and other pulmonary diseases. The incidence of bad air days in California's urban areas has increased, mostly in the summer. On long, hot, stagnant days, ground level ozone can build up to levels that violate federal and state health-based standards. Recent studies indicate that hot days correlate with poor air quality days, and air pollution is contributing to more annual deaths and cases of respiratory illness and asthma.⁴ Other impacts related to increased temperatures and heat waves include:

- **Increased urban heat island effect:** urban heat islands are especially dangerous because they are both hotter during the day and do not cool down at night, increasing the risk of heat-related illness;
- **Reduced freezing events:** too few freezes could lead to increased incidence of disease as vectors and pathogens do not die off. In addition, certain agricultural crops depend on freezing as part of the

² Intergovernmental Panel on Climate Change (IPCC) (2007) "Summary for Policymakers," Climate Change 2007: Synthesis Report. Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

³ California Climate Action Team (CCAT) (2006) Report to Governor Schwarzenegger and the California Legislature, April.

⁴ Jacobson, Mark Z (2008) "On the Causal Link Between Carbon Dioxide and Air Pollution Mortality," Geophysical Research Letters 35, L03809.

life-cycle, so fewer such events would impact California's food production and indirectly the food supply in San Pablo;

- **Increased energy demand:** it is expected that energy, particularly electricity, demand will increase in order to meet increasing demands for air conditioning and refrigeration.

Changes in Precipitation and Extreme Events

Climate change is anticipated to cause a 20 to 30 percent increase in precipitation in the spring and fall in California. More frequent and heavier precipitation events cause flooding and mudslides, which would incur considerable costs in damages to property, infrastructure and even human life. Such events also are associated with drinking water contamination outbreaks; contamination of shellfish and other food-borne illnesses; and overloading of wastewater and stormwater systems.

With warmer average temperatures, more winter precipitation will fall in the form of rain instead of snow, shortening the winter snowfall season and accelerating the rate at which the snowpack melts in the spring. Not only does such snow melt increase the threat for spring flooding, it will decrease the Sierras' capacity as a natural water tower, resulting in decreased water availability for agricultural irrigation, hydro-electric generation and the general needs of a growing population. The decrease in snow-pack is particularly relevant in California, as the Sierra snow-pack provides approximately 80 percent of California's annual water supply. A decreased snowpack would result in increased drought conditions; water supply and quality impacts; and food production impacts.

Impacts on Plants and Vegetation

Native plants and animals are also at risk as temperatures rise. Scientists are reporting more species moving to higher elevations or more northerly latitudes in response. Increased temperatures also provide a foothold for invasive species of weeds, insects and other threats to native species. The increased flow and salinity of water resources could also seriously affect the food web and mating conditions for fish that are of both of economic and recreational interest to residents. In addition, the natural cycle of plant's flowering and pollination, as well as the temperature conditions necessary for a thriving locally adapted agriculture could be affected, with perennial crops such as grapes taking years to recover. In California, the impacts of climate change on agriculture are estimated by the Farm Bureau to be \$30 billion, mostly due to changes in chill hours required per year for cash crops.

Greenhouse Gases

Gases that trap heat in the Earth's atmosphere are called greenhouse gases. These gases play a critical role in determining the Earth's surface temperature. Part of the solar radiation that enters Earth's atmosphere from space is absorbed by the Earth's surface. The Earth reflects this radiation back toward space, but GHGs absorb some of the radiation. As a result, radiation that otherwise would have escaped back into space is retained, resulting in a warming of the atmosphere. Without natural GHGs, the Earth's surface would be about 61°F cooler.⁵ This phenomenon is known as the greenhouse effect. However, many scientists believe that emissions from human activities—such as electricity generation, vehicle emissions, and even farming and forestry practices—have elevated the concentration of GHGs in the atmosphere beyond naturally-occurring concentrations, contributing to the larger process of GCC. The six primary GHGs are:

⁵ CCAT (2006).

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Carbon Dioxide (CO₂), emitted when solid waste, fossil fuels (oil, natural gas, and coal), and wood and wood products are burned;

Methane (CH₄), 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 (N₂O), 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 (SF₆), primarily used in electrical transmission and distribution.

Though there are other gases that can contribute to global warming,⁶ these six are identified explicitly in California legislation and litigation as being of primary concern. GHGs have varying potentials to trap heat in the atmosphere, known as global warming potential (GWP), and atmospheric lifetimes. GWP ranges from one (CO₂) to 23,900 (SF₆). GHG emissions with a higher GWP have a greater global warming effect on a molecule-by-molecule basis. For example, one ton of CH₄ has the same contribution to the greenhouse effect as approximately 21 tons of CO₂.⁷ GWP is alternatively described as “carbon dioxide equivalents”, or CO₂e. The parameter “atmospheric lifetime” describes how long it takes to restore the system to equilibrium following an increase in the concentration of a GHG in the atmosphere. Atmospheric lifetimes of GHGs range from tens to thousands of years.

California GHG Emissions

The State of California alone produces about 2 percent of the world’s GHG emissions. Major emission sources in California include transportation (37 percent), electric power (23 percent), commercial and residential buildings (9 percent), industrial (19 percent), recycling and waste (1 percent), and agricultural (6 percent). Forestry is expected to have a net reduction on total emissions by about 1 percent. The State of California has taken steps to greatly reduce GHG emissions with the aim of delaying, mitigating, or preventing at least some of the anticipated impacts of GCC on California communities.⁸

The Global Warming Solutions Act of 2006 (AB 32) required that the California Air Resources Board (ARB) determine the statewide greenhouse gas emissions level in 1990, and set that level as the goal for total emissions in 2020. Based on its 1990-2004 inventory work, ARB staff estimated that 427 million metric tons

⁶ Diesel particulate matter, which is also referred to as black carbon, is a strong absorber of solar radiation; scientists have known for many years that when black carbon particles combine with dust and chemicals in air they become more efficient in absorbing solar radiation, and black carbon mixtures may be the second biggest contributor to global warming. See California Air Resources Board, Health Effects of Diesel Particulate Matter pages 4-5, available at http://www.arb.ca.gov/research/diesel/dpm_draft_3-01-06.pdf [as of October 14, 2008].

⁷ California Climate Action Registry (CCAR) (2009) General Reporting Protocol Version 3.1.

⁸ California Air Resources Board (ARB) (2009) Greenhouse Gas Inventory Data 2000-2008, available at <http://www.arb.ca.gov/cc/inventory/data/data.htm>, accessed January 2012.

of carbon dioxide equivalent (CO₂e) emissions were released in California in 1990, and established this as the 2020 emissions limit.⁹ AB 32 is further discussed in the *Regulatory Setting* section below.

Greenhouse Gas Emissions in the Planning Area

The City has prepared a baseline inventory of GHG emissions, as shown in Table 3.5-1. This emissions inventory is based on vehicle-miles-traveled, as estimated by the traffic model created for the General Plan update, and data from electricity, natural gas, and waste service providers for 2008. Greenhouse gas emissions factors are based on IPCC's *Guidelines for National Greenhouse Gas Inventories* (2009) and the California Climate Action Registry (CCAR) General Reporting Protocol (version 1.) Waste-related emissions are calculated using the EPA's LandGem model.

TABLE 3.5-1: COMMUNITYWIDE GREENHOUSE GAS EMISSION IN TURLOCK, 2008

<i>Source</i>	<i>Total CO₂e Emissions (metric tons)</i>	<i>Share of Total</i>	<i>Per Service Population¹</i>
Electricity and Natural Gas ²	376,200	50%	3.8
Residential	124,400	17%	
Commercial	29,200	4%	
Industrial	179,200	24%	
Agriculture ³	24,400	3%	
Municipal	17,900	2%	
Transportation (on-road)	263,800	35%	2.7
Solid Waste	108,400	14%	1.1
Total GHG Emissions, Top 3 Sources	748,400	100%	7.5

¹ Service population is residents plus jobs. The Study Area's 2008 service population is 99,360.

² TID provided electricity usage by sector for 2004 for City of Turlock, and total electricity usage in the Study Area for 2008. The relative proportions by sector within the City are extrapolated to 2008 levels for the Planning Area.

³ Agriculture's proportion of total emissions is adjusted to account for farmland outside City limits but within Study Area.

Sources: Dyett & Bhatia, 2012; Omni-Means, 2009; California Department of Finance, 2012; Turlock Irrigation District, 2012; Stanislaus County Department of Environmental Resources, 2010; PG&E, 2010; California Climate Action Registry (CCAR), 2009; EPA, 2005, Intergovernmental Panel on Climate Change (IPCC), 2006, 1996.

Electricity and natural gas, primarily for building energy, is the largest source of emissions in the Planning Area, accounting for an estimated 50 percent of emissions from the sources analyzed. Within this broad category, nearly half (48 percent) of the electricity is used by industrial customers and one-third by residential customers. On-road transportation accounted for 35 percent of communitywide greenhouse gas emissions

⁹ ARB, (2008) Climate Change Proposed Scoping Plan, October 2008.

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from major sources, and solid waste generated an estimated 14 percent. Smaller sources of GHG emissions include stationary industrial sources and off-road vehicles such as construction and agricultural equipment.

REGULATORY SETTING

The regulation of greenhouse gases is changing constantly as nations, and the U.S. federal, state, and local governments work to determine strategies that will work to systematically reduce GHG emissions and the impacts of climate change. GHG regulation is also intertwined with regulation of energy production and distribution. The regulations listed below reflect a tailored list of relevant actions the federal and state governments have taken to address energy, greenhouse gases, and global climate change.

Federal Regulations

Section 202 GHG Regulation of Cars and Light Duty Trucks

This rule was proposed jointly by EPA and the National Highway Traffic Safety Administration (NHTSA) to create a National Program of GHG emission standards and Corporate Average Fuel Economy (CAFE) standards. The standards apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards are designed to achieve a national vehicle fleet whose emissions and fuel economy performance improves year over year. The goal is to reduce CO₂ emissions by 960 million metric tons and save 1.8 billion barrels of oil over the lifetime of the vehicles sold in model years 2012 through 2016. The final rule was signed on April 1, 2010 and will become effective 60 days after its publication in the Federal Register.

Renewable Fuel Standard Program

Finalized on February 3, 2010, this rule makes changes to the Renewable Fuel Standard (RFS) program, as required by the Energy Independence and Security Act of 2007. The original RFS program was designed to implement the provisions of the Energy Policy Act of 2005 (EPAct, described later). The revised statutory requirements establish new specific volume standards for cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel that must be used in transportation fuel each year. The revised statutory requirements also include new definitions and criteria for both renewable fuels and the feedstocks used to produce them, including new greenhouse gas emission thresholds for renewable fuels.

Greenhouse Gas Findings (2009)

In the U.S. Supreme Court case *Massachusetts v EPA* (2007), 12 states, three cities, and 13 environmental groups filed suit that the EPA should be required to regulate carbon dioxide and other greenhouse gases as pollutants under the federal Clean Air Act. In April 2007, the U.S. Supreme Court found that the EPA has a statutory authority to formulate standards and regulations to address greenhouse gases, which it historically has not done. On December 7, 2009, the Environmental Protection Agency Administrator finalized two findings to be effective January 14, 2010. The findings are related to greenhouse gases under section 202(a) of the Clean Air Act. These findings do not themselves impose any requirements on industry or other entities.

- **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases—carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆)—in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

Executive Order 13154 Federal Leadership in Environmental, Energy, and Economic Performance

On October 5, 2009, President Obama issued Executive Order 13154, which instructs federal agencies to set or achieve various emissions reduction and energy and environmental benchmarks by 2015, 2020, and 2030. The order requires agencies to set GHG emissions reduction targets for 2020 within 90 days, and requires OMB to set a federal government target for 2020 within 120 days. The order also sets out required reductions in vehicle fleet petroleum use and requires increases in water and energy efficiency and in recycling and waste diversion rates. The order also mandates adoption of certain contract and procurement practices designed to promote energy and water efficiency and environmentally-preferable products.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 was designed to improve vehicle fuel economy and help reduce U.S. dependence on oil. The Act establishes several key standards:

- Increases the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) requiring fuel producers to use at least 36 billion gallons of biofuel in 2022, which represents a nearly five-fold increase over current levels; and
- Reduces U.S. demand for oil by setting a National Fuel Economy Standard of 35 miles per gallon by 2020—an increase in fuel economy of 40 percent.

Energy Policy and Conservation Act, and CAFE Standards

The Energy Policy and Conservation Act (EPCA) of 1975 declared it to be U.S. policy to establish a reserve of up to 1 billion barrels of petroleum, and established nationwide fuel economy standards in order to conserve oil. Pursuant to this Act, the National Highway Traffic and Safety Administration, part of the U.S. Department of Transportation, is responsible for revising existing fuel economy standards and establishing new vehicle fuel economy standards.

The Corporate Average Fuel Economy (CAFE) program was established to determine vehicle manufacturer compliance with the government's fuel economy standards. Compliance with CAFE standards is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the United States. The EPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. The CAFE values are a weighted harmonic average of the EPA city and highway fuel economy test results. Based on information generated under the CAFE program, the U.S. Department of Transportation is authorized to assess penalties for noncompliance.

CAFE rules require the average fuel economy of all vehicles of a given class that a manufacturer sells in each model year to be equal or greater than the standard. CAFE standards apply to passenger cars and light trucks (gross vehicle weight of 8,500 pounds or less). Heavy-duty vehicles (i.e. gross vehicle weight over 8,500 pounds) are not currently subject to fuel economy standards. The EPCA was reauthorized in 2000 (49 CFR 533). The Energy Independence and Security Act of 2007 revised CAFE standards for the first time in 30 years, followed quickly by Section 202 GHG Regulation of Cars and Light Duty Trucks, which calls for further revision of the CAFE standards. Both of those regulations are described above.

Energy Policy Acts of 1992, 2005, etc. (EPAAct)

The Energy Policy Act of 1992 (EPAAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAAct requires certain federal, state,

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and local government and private fleets to purchase a percentage of light duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are also included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. The Act also requires states to consider a variety of incentive programs to help promote AFVs. The Energy Policy Act of 2005 includes updated provisions for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Tax Credit for Wind-Generated Electricity

Beginning in the late 1990s, Congress introduced a tax subsidy on the production of renewable wind-generated electricity. The availability, expiration, and potential extension of the Production Tax Credit cause the boom and bust production of energy that typifies wind development in the United States. The Production Tax Credit's limitations have determined the role of the wind energy industry in the United States and contributed to the dominance of electric utility subsidies.

Energy Star Program

Energy Star is a joint program of the United States Environmental Protection Agency and the Department of Energy. The program establishes criteria for energy efficiency for household products and labels energy efficient products with the Energy Star seal. Homes can be qualified as "Energy Star homes" if they meet efficiency standards. In California, Energy Star homes must use at least 15 percent less energy than standards set by Title 24, pass the California Energy Star Homes Quality Insulation Installation Thermal Bypass Checklist Procedures, have Energy Star windows, and have minimal duct leakage.

Global Change Research Act (1990)

The purpose of the legislation was: "...to require the establishment of a United States Global Change Research Program aimed at understanding and responding to global change, including the cumulative effects of human activities and natural processes on the environment, to promote discussions towards international protocols in global change research, and for other purposes." To that end, the Global Change Research Information Office (GCRIO) was established in 1991 (it began formal operation in 1993) to serve as a clearinghouse of information. The Act requires a report to Congress every four years on the environmental, economic, health and safety consequences of climate change; however, the first and only one of these reports to-date, the National Assessment on Climate Change, was not published until 2000. In February 2004, operational responsibility for GCRIO shifted to the U.S. Climate Change Science Program.

State Regulations

California Attorney General Actions

The California Attorney General's office has taken several actions to ensure that California meets its greenhouse gas reduction targets.¹⁰ Examples of the Office of Attorney General's efforts since 2006 include taking companies in the power industry and the auto industry to task for their contributions to global warming and writing letters or submitting oral testimony in over 50 CEQA environmental review processes

¹⁰ The Attorney General's web portal for global warming may be found at <http://ag.ca.gov/globalwarming>. The portal contains information on global warming generally, impacts in California, and documentation of the comments, speeches, op-eds, testimony, and litigation actions the office has taken to support AB 32 goals.

involving city general plans, county general plans, regional transportation plans, and specific projects throughout California.

Senate Bill 97 and Amendments to CEQA Guidelines

Senate Bill (SB) 97 directed the Office of Planning and Research (OPR) to develop guidelines for feasible mitigation of GHG emissions or the effects of GHG emissions and submit these to the Natural Resources Agency. The Natural Resources Agency, in turn, was required to certify and adopt amendments to the Guidelines implementing the California Environmental Quality Act (“CEQA Guidelines”) on or before January 1, 2010. In keeping with SB 97, OPR proposed amendments to the CEQA Guidelines in April 2009, and the Resources Agency adopted the amendments on December 30, 2009. The amendments became effective on March 18, 2010.

The amended CEQA Guidelines include new sections on determining the significance of impacts from GHG emissions (15064.4) and tiering and streamlining the analysis of GHG emissions (15183.5). New significance criteria are also proposed for GHG emissions in Appendix G. The updated Guidelines state that Lead Agencies should strive to calculate or estimate emissions from a project. The significance of those emissions should consider the extent to which emissions increase or decrease existing emissions levels; whether emissions exceed thresholds defined for the project; and the extent to which the project complies with regulations or requirements adopted to implement statewide, regional, or local plans for the reduction or mitigation of greenhouse gas emissions.

Section 15183.5 sets forth the elements that a programmatic or plan-level analysis should contain in order to reduce or avoid further analysis at the project level. According to CEQA Guidelines, such plans should quantify GHG emissions and project future emissions for the plan period; establish a level below which GHG emissions from activities covered by the plan would not be cumulatively considerable; specify measures that would collectively achieve the specified emissions level when implemented on a project-by-project basis; and establish a mechanism to monitor the plan’s progress toward achieving the reductions and to amend the plan if needed.

CEQA Guidelines Appendix F: Energy Conservation

Appendix F of the CEQA Guidelines describes the types of information and analyses related to energy conservation that are to be included in Environmental Impact Reports (EIRs). Energy conservation is described in terms of decreasing per capita energy consumption; decreasing reliance on fossil fuels such as coal, natural gas, and oil; and increasing reliance on renewable energy sources. To assure that energy implications are considered in project decisions, EIRs must include a discussion of the potentially significant energy impacts of proposed projects (to the extent relevant and applicable to the proposed Project), with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy.

Executive Order S-13-08 (Gov. Schwarzenegger, November 2008)

This Order directs state agencies to plan for sea level rise and climate change impacts. There are four key actions in the Order, including: (1) initiate California's first statewide climate change adaptation strategy that will assess the state's expected climate change impacts, identify where California is most vulnerable and recommend climate adaptation policies by early 2009; (2) request the National Academy of Science establish an expert panel to report on sea level rise impacts in California to inform state planning and development efforts; (3) issue interim guidance to state agencies for how to plan for sea level rise in designated coastal and floodplain areas for new projects; and (4) initiate a report on critical existing and planned infrastructure projects vulnerable to sea level rise.

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Sustainable Communities and Climate Protection Act of 2008 (Chapter 728, Statutes of 2008)

The Sustainable Communities and Climate Protection Act of 2008, otherwise known as Senate Bill (SB) 375, establishes a process for ARB to implement the state's global warming legislation (AB 32) for the transportation sector by requiring ARB to adopt regional GHG targets for emissions associated with the automobile and light truck sector. SB 375 requires MPOs such as StanCOG to develop a Sustainable Communities Strategy (SCS)—a new element of the regional transportation plan (RTP)—to strive to reach these GHG reduction targets.

In September 2010, ARB adopted targets for each of the State's MPOs. According to these targets, StanCOG and other San Joaquin Valley MPOs are expected to achieve a 5 percent reduction in per capita CO₂ emissions due to passenger vehicles by 2020, and a 10 percent reduction by 2035.

SB 375 ties the regional housing needs assessment (RHNA) process to the RTP process, requires local governments to make their general plans consistent with the updated housing element within three years of adoption, and provides that RHNA allocations must be consistent with the development pattern in the SCS. It moves the RHNA process to an eight-year cycle from the current five-year one. Also, SB 375 provides a California Environmental Quality Act (CEQA) exemption or a streamlined process for housing and mixed-use projects that meet specified criteria, such as proximity to transit.

California Building Code

Title 24, Part 6, of the California Code of Regulations is the California Building Code, governs all aspects of building construction. Included in Part 6 of the Code are standards mandating energy efficiency measures in new construction. Since its establishment in 1977, the building efficiency standards (along with standards for energy efficiency in appliances) have contributed to a reduction in electricity and natural gas costs in California. The standards are updated every three years to allow new energy efficiency technologies to be considered. The latest update to Title 24 standards became effective in January 2007. The standards regulate energy consumed in buildings for heating, cooling, ventilation, water heating, and lighting. Title 24 is implemented through the local plan check and permit process.

CalGreen, the nation's first Green Building Standards Code, became effective in August 2009 for voluntary compliance and local adoption, and became effective for mandatory compliance on January 1, 2011. This Code establishes minimum standards for new construction that are intended to help the State achieve the AB 32 goal of reducing GHG emissions to 1990 levels by 2020. In addition to energy efficiency standards, CalGreen includes mandatory measures for water conservation, storm water drainage and retention, material conservation, and construction waste reduction. The requirements for nonresidential construction also include parking, landscaping, and other standards. Local jurisdictions have the option of adopting procedures by ordinance to improve the level of construction beyond the CalGreen minimum standard.

Executive Order S-01-07 (Gov. Schwarzenegger, January 2007)

This Order calls for a statewide goal to be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 ("2020 Target"), and that a Low Carbon Fuel Standard ("LCFS") for transportation fuels be established for California. Further, it directs ARB to determine if an LCFS can be adopted as a discrete early action measure pursuant to AB 32, and if so, consider the adoption of a LCFS by June 30, 2007, pursuant to Health and Safety Code Section 38560.5. The LCFS applies to all refiners, blenders, producers or importers ("Providers") of transportation fuels in California, will be measured on a full fuels cycle basis, and may be met through market-based methods by which Providers exceeding the performance required by a LCFS shall receive credits that may be applied to future obligations or traded to Providers not meeting the LCFS.

In June 2007, ARB approved the LCFS as a Discrete Early Action item under AB 32. The Office of Administrative Law (OAL) approved the LCFS rulemaking and filed with the Secretary of State on January 12, 2010.

Implementation of the Alternative and Renewable Fuel and Vehicle Technology Program

AB 118 (Chapter 750, Statutes of 2007) directs the California Energy Commission to develop the Alternative and Renewable Fuel and Vehicle Technology Program. Crucial to implementing the Program is the development and adoption of an Investment Plan. The Investment Plan will establish priorities and opportunities for the Program, and describe how funding will complement existing public and private investments, including existing state programs. The Investment Plan will be updated annually.

California Global Warming Solutions Act of 2006 (AB 32)

This Act (Health and Safety Code Section 38500 et. seq.) requires the reduction of statewide total GHG emissions to 1990 levels by the year 2020. This change, which is estimated to be an approximately 15 percent reduction from current emission levels or a 29 percent reduction from “business-as-usual” levels, will be accomplished through an enforceable statewide cap on GHG emissions that will be phased-in starting in 2012. The Act also directs ARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources and address GHG emissions from vehicles. ARB has stated that the regulatory requirements for stationary sources will be first applied to electricity power generation and utilities, petrochemical refining, cement manufacturing, and industrial/commercial combustion. The second group of target industries will include oil and gas production/distribution, transportation, landfills and other GHG-intensive industrial processes. In 2010, the Natural Resources Agency adopted updated CEQA Guidelines providing direction to local jurisdictions and other Lead Agencies in analyzing potential effects on greenhouse gas emissions at the project or programmatic level.

Executive Order S-20-06 (Gov. Schwarzenegger, October 2006)

This Order establishes the authority and roles of various departments and leadership roles in implementing AB 32.

Executive Order S-06-06 (Gov. Schwarzenegger, April 2006)

This Order was to establish biomass production and use targets for California. Biomass is a large but primarily unused resource including residues from forestry, urban, and agricultural wastes and can be used to create electricity, transportation fuels, and biogas. Use of biomass could not only increase energy production but also reduce the waste stream. The Order states that biomass should comprise 20 percent of the State’s Renewables Portfolio Standard for 2010 and 2020, and California shall produce a minimum of 20 percent of its biofuels within the state by 2010, 40 percent by 2020, and 75 percent by 2050. Additional funding and research will go to further developing these technologies and integrating them into use.

Senate Bill 1368 (Chapter 598, Statutes of 2006)

Senate Bill (SB) 1368 requires the California Public Utilities Commission (PUC) to establish a GHG emissions performance standard for “baseload” generation from investor-owned utilities by February 1, 2007. The California Energy Commission (CEC) was required to establish a similar standard for local publicly-owned utilities by June 30, 2007. The legislation further required that all electricity provided to California, including imported electricity, must be generated from plants that meet or exceed the standards set by the PUC and the CEC. In January 2007, the PUC adopted an interim performance standard for new long-term commitments (1,100 pounds of CO₂ per megawatt-hour), and in May 2007, the CEC approved regulations that match the PUC standard.

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State Alternative Fuels Plan (Chapter 371, Statutes of 2005)

Assembly Bill (AB) 1007, the State Alternative Fuels Plan, required the CEC to prepare a state plan to increase the use of alternative fuels in the transportation sector in California. The CEC prepared the State Alternative Fuels Plan (Plan) in partnership with the California Air Resources Board and in consultation with the other state, federal, and local agencies. The Plan was adopted in October 2007. The Plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. Specific strategies include combining private capital investment, financial investment, technology advancement, investment in infrastructure, and others. The Plan also assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce greenhouse gas emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Executive Order S-3-05 (Gov. Schwarzenegger, June 2005)

This Order recognizes California's vulnerability to climate change, noting that increasing temperatures could potentially reduce snow pack in the Sierra Nevada, which is a primary source of the State's water supply. Additionally, according to this Order, climate change could influence human health, coastal habitats, microclimates, and agricultural yield. The Order set the greenhouse gas reduction targets for California: By 2010, reduce GHG emissions to 2000 levels; by 2020 reduce GHG emissions to 1990 levels; by 2050 reduce GHG emissions to 80 percent below 1990 levels. This corresponds to an approximate 27 percent reduction by 2030 to 1990 levels, or 55 CO_{2e} in total emissions which correlates to 41 percent reduction over today's levels by 2030.

Executive Order S-20-04 (Gov. Schwarzenegger, July 2004)

This Order requires that the State commit to aggressive action to reduce state building electricity use, and more specifically, State agencies, departments, and other entities, take measures to reduce energy use by 20 percent by 2015. In addition, the Order requires that the CEC increase energy efficiency standards by 20 percent by 2015, compared to the 2003 Titles 20 and 24 standards.

State of California Energy Action Plans

The CEC is responsible for preparing the State Energy Action Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. At the beginning of 2008, the Energy Commission and CPUC determined that an Update to the 2005 California Energy Action Plan would be more appropriate than a new plan given the passage of Assembly Bill 32 and the critical role it will play in energy policy in coming years. The 2008 Update shifts focus to climate change. The nine major action areas, as described in previous Energy Action Plans include: energy efficiency; demand response; renewable energy; electricity adequacy, reliability, and infrastructure; electricity market structure; natural gas supply, demand, and infrastructure; transportation fuels supply, demand, and infrastructure; research, development, and demonstration; and climate change. The report emphasizes the importance of improving fuel standards in order to reduce energy use and greenhouse gas emissions, and notes the importance of also incorporating smart growth and land use policies.

Integrated Energy Policy Reports

Senate Bill 1389 (Chapter 568, Statutes of 2002) requires that the CEC prepare a biennial integrated energy policy report that contains an integrated assessment of major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's

economy; and protect public health and safety (Public Resources Code Section 25301[a]). The 2009 Integrated Energy Policy Report is the most current report to fulfill the requirement of SB 1389. According to the 2009 report: “as California pursues its goal to address climate change by reducing greenhouse gas emissions, the driving force for the state’s energy policies continues to be maintaining a reliable, efficient, and affordable energy system that minimizes the environmental impacts of energy production and use. Although the economic downturn has reduced energy demand in the short-term, demand is expected to grow over time as the economy recovers. It is essential that the state’s energy sectors be flexible enough to respond to future fluctuations in the economy and that the state continue to develop and adopt the “green” technologies that are critical for long-term reliability and economic growth.”

California Renewables Portfolio Standard Program (2002)

Senate Bill (SB) 1078 (Chapter 516, Statutes of 2002) establishes a renewable portfolio standard (RPS) for electricity supply. The RPS requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide 20 percent of their supply from renewable sources by 2017. This target date was moved forward by SB 1078 to require compliance by 2010. In addition, electricity providers subject to the RPS must increase their renewable share by at least one percent each year. The outcomes of this legislation will impact regional transportation powered by electricity.

Assembly Bill 1493 (Chapter 200, Statutes of 2002)

Assembly Bill (AB) 1493 (Pavley) amends Health and Safety Code sections 42823 and 43018.5 requiring the California Air Resources Board (ARB) to develop and adopt regulations that achieve maximum feasible and cost-effective reduction of GHG emissions from passenger vehicles, light-duty trucks, and other vehicles used for noncommercial personal transportation in California. The regulations prescribed by AB 1493 may not take effect prior to January 1, 2006, and they apply only to 2009 and later model years.

In September 2004, pursuant to AB 1493, the ARB approved regulations to reduce greenhouse gas emissions from new motor vehicles. Under the regulation, one manufacturer fleet average emission standard is established for passenger cars and the lightest trucks, and a separate manufacturer fleet average emission standard is established for heavier trucks. The regulation took effect on January 1, 2006 and set near-term emission standards, phased in from 2009 through 2012, and mid-term emission standards, phased in from 2013 through 2016 (referred to as the Pavley Phase 1 rules). The ARB intends to extend the existing requirements to obtain further reductions in the 2017 to 2020 timeframe (referred to as Pavley Phase 2 rules). EPA at first refused to grant a waiver that would allow California to implement these standards, and California has challenged this action in federal court. On January 26, 2009, President Obama directed that EPA assess whether the denial of the waiver was appropriate. On June 30, 2009, EPA granted the waiver request, which begins with motor vehicles in the 2009 model year. The ARB calculates that in calendar year 2016, the Pavley Phase 1 rules will reduce California’s GHG emissions by 16.4 million metric tons of carbon dioxide equivalents, and by 2020, Pavley Phase 2 would reduce emissions by 31.7 million metric tons of carbon dioxide equivalents. The AB 1493 vehicle requirements would cumulatively produce 45 percent more GHG reductions by 2020 compared to the federal CAFE standard in the Energy Independence and Security Act of 2007,¹¹ but roughly equivalent reductions to the latest national agreement resulting in even more stringent CAFE standards (Section 202 GHG Regulation of Cars and Light Duty Trucks, described under federal regulations, above).

¹¹ ARB (2008)

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Senate Bill 1771 (Chapter 1018, Statutes of 2000)

Senate Bill (SB) 1771 requires the CEC to prepare an inventory of the State's greenhouse gas emissions, to study data on global climate change, and to provide government agencies and businesses with information on the costs and methods for reducing greenhouse gases. It also established the California Climate Action Registry to serve as a certifying agency for companies and local governments to quantify and register their greenhouse gas emissions for possible future trading systems.

Reducing Dependence on Petroleum Assembly Bill 2076 (Chapter 936, Statutes of 2000)

In response to Assembly Bill (AB) 2076, the CEC and the California Air Resources Board prepared and adopted a joint agency report, "Reducing California's Petroleum Dependence." Included in this report are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030, significantly increase the efficiency of motor vehicles, and reduce per capita vehicles miles traveled.¹² Further, in response to the CEC's 2003 and 2005 Integrated Energy Policy Reports, the Governor directed the CEC to take the lead in developing a long-term plan to increase alternative fuel use. A performance-based goal is to reduce petroleum demand to 15 percent below 2003 demand.

Warren-Alquist State Energy Resources Conservation and Development Act (1974)

The 1974 Warren-Alquist Act (Public Resources Code Section 25000 et seq.) establishes the California Energy Resources Conservation and Development Commission, now known as the California Energy Commission (CEC). The Act establishes a State policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures.

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates Investor-Owned Utilities (IOUs) including those that offer electric, natural gas, steam, and petroleum service to consumers. The CPUC regulates both electric and natural gas rates and services provided by these utilities including in-state transportation over the utilities' transmission and distribution pipeline systems, storage, procurement, metering and billing. Natural gas regulations are found in General Orders 58, 94, 96, and 112, while electrical distribution regulations are found in General Orders 95, 128, 131, 165, and 166.

Regional Regulations

San Joaquin Valley Air Pollution Control District (SJVAPCD)

The San Joaquin Valley Air Pollution Control District is the regional agency responsible for implementing State and federal air quality requirements in the eight Central Valley counties including San Joaquin County. The district has permit authority over stationary sources, acts as the primary reviewing agency for environmental documents and develops regulations consistent with State and federal air quality agencies. It does not presently regulate or monitor the emission of carbon dioxide or significant greenhouse gases.

San Joaquin Valley Air Pollution Control District Climate Change Action Plan

In August 2008 the District's Governing Board adopted the Climate Change Action Plan (CCAP) (SJVAPCD, 2009). The CCAP authorized the Air Pollution Control Officer (APCO) to develop guidance

¹² California Energy Commission (CEC) and California Air Resources Board (ARB) (2003) "Reducing California's Petroleum Dependence," August 2003.

documents to assist land use agencies and other permitting agencies in addressing GHG emissions as part of the CEQA process, investigate the development of a greenhouse gas banking program, enhance the existing emissions inventory process to include greenhouse gas emissions reporting consistent with new state requirements, and administer voluntary greenhouse gas emission reduction agreements. Details on mandated documents follow.

Greenhouse Gas Guidance for CEQA: The CCAP authorizes the APCO to develop guidance and procedures for assessing the significance of project-related GHG emissions in order to reduce some of the uncertainty of characterizing the impacts on GCC during the CEQA process. Also, for projects that are determined to have significant GHG emissions, or otherwise require GHG mitigation to reduce or offset the GHG emissions, sources of potential and approvable GHG mitigation must be clearly identified.

Carbon Exchange Program: The CCAP authorizes the APCO to develop regulations and procedures for a greenhouse gas emission reduction banking system. This voluntary banking system, the San Joaquin Valley Carbon Exchange, would provide a mechanism for the voluntary banking of GHG emission in the San Joaquin Valley.

Voluntary Greenhouse Gas Mitigation Agreements: The CCAP authorizes the APCO to develop guidance and procedures for implementing a program by which project proponents can voluntarily enter into contractual arrangements with the District to fund projects, mitigating their projects cumulative impact on GCC.

SJVAPCD Guidance for Valley Land Use Agencies in Addressing GHG Emission Impacts

In December 2009 SJVAPCD followed through with the first goal of the CAP, releasing its “Final Staff Report – Climate Change Action Plan: Addressing GHG Emissions Impacts Under CEQA and its Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects Under CEQA.” As defined in these reports, the Air District has chosen to use a “Best Performance Standards” approach to defining impact significance at the project level. Best Performance Standards (BPS) are identified for stationary source projects and development projects that result in GHG emissions from operational and transportation related activities. Development project BPS include bicycle/pedestrian/transit, parking measures, site design, mixed-use, building component, transportation demand, and other miscellaneous measures. An emissions reduction value is assigned to each BPS. The Air District recommends that projects that employ BPS that would cumulatively reduce GHG emissions by 29 percent from “business-as-usual” by 2020 be considered to have a less than significant climate change impact, consistent with the target set by AB 32. Projects not using BPS would require quantification of projected emissions to determine whether they meet the same significance threshold. The Air District has not provided guidance to jurisdictions in assessing the plan-level impacts.¹³

¹³ San Joaquin Valley Air Pollution Control District (SJVAPCD) (2009) “Final Staff Report: Addressing Greenhouse Gas Emissions Impacts Under the California Environmental Quality Act,” December 17, 2009.

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Local Regulations

Existing Turlock General Plan Conservation Element Policies

The current Turlock General Plan does not directly address global climate change, it does contain policies that support greenhouse gas reduction. These policies are focused on air quality improvement, and energy conservation.

- 6.3-c Implement measures that promote alternatives to automobile use.
- 6.3-f Require installation of clean-burning equipment that uses wood pellets for all residential projects that include fireplaces or wood-burning stoves.
- 6.3-g Cooperate with the San Joaquin Valley Unified Air Pollution Control District to implement indirect source review policies when the program is established.
- 6.4-a Promote a broad range of measures that result in a decrease in the number of automobile trips and vehicle-miles travelled.
- 6.4-b Encourage energy efficiency through good urban design and site-planning practices, as well as through building design, maintenance and retrofit.
- 6.4-c Maintain a compact form and a land-use pattern that offers alternatives to automobile use and reduces trip-lengths.
- 6.4-d As part of the residential design review process, review all development pursuant to Energy Conservation Guidelines (Appendix B of the General Plan).
- 6.4-e Adopt a comprehensive tree-planting and maintenance program.
- 6.4-f Continue to support TID and Pacific Gas and Electric programs to encourage retrofit measures such as weather-stripping and insulation for decreasing energy use in existing residential structures.
- 6.4-g Prepare and implement a plan to promote energy savings in public buildings and streets.
- 6.4-h Consider conversion of City fleet vehicles to ones that use methane generated from the wastewater treatment plant.

Impact Analysis

SIGNIFICANCE CRITERIA

A significant impact would occur with implementation of the proposed General Plan if it would:

- Result in the generation greenhouse gas emissions, either directly or indirectly, in an amount greater than 6.6 metric tons of CO₂-equivalent (MTCO_{2e}) GHGs per service population in the year 2020, or 3.8 MTCO_{2e} per service population in the year 2030. These targets match the level of per service population emissions needed statewide to meet the goal of reducing total greenhouse gas emissions to 1990 levels by 2020 under the California Global Warming Solutions Act of 2006 (AB 32) and to 80 percent below 1990 levels by 2050 under Executive Order S-3-05.

- Result in the generation of greenhouse gas emissions from passenger vehicles in an amount greater than 3.53 metric tons per capita by 2020 or 3.47 metric tons per capita by 2030, not accounting for State-mandated improvements to fuel efficiency. These amounts correspond to a 5 percent reduction per capita from 2005 levels by 2020 and an 8 percent reduction per capita by 2030, matching targets set for StanCOG and other San Joaquin Valley metropolitan planning organizations under the Sustainable Communities and Climate Protection Act of 2008 (SB 375). These reductions must be attributable to local or regional land use, housing and transportation policies.

METHODOLOGY AND ASSUMPTIONS

The climate change analysis is conducted in response to the most recent recommendations and guidance materials from the OPR, ARB, the Attorney General, CAPCOA, and other responsible agencies. The GHG analysis focuses on CO₂, CH₄, and N₂O emissions, which make up the overwhelming majority of GHG emissions. For purposes of comparison, all three gases are described in carbon dioxide equivalents (CO₂e). The California Climate Action Registry General Reporting Protocol (CCAR GRP) Version 3.1 is the primary reference used for conversion factors and methodology for transportation and building energy use. The US EPA's Landfill Gas Emissions Model (LandGEM) Version 3.02 is used to estimate GHG emissions from solid waste. Existing conditions data for electricity and natural gas use and solid waste are from 2008; transportation emissions are based on traffic analysis conducted in October 2009.

Service Population

For the first significance criterion, this analysis employs the concept of “service population” to account for growth in both residential population and jobs. Distributing GHG emissions across a whole service population allows the analysis to more accurately project the climate impacts of future development in the Planning Area, and the relative role that residential and non-residential activities will play. The second criterion is evaluated on a per capita basis, to match the units (per capita GHG emissions reduction) of the targets set for StanCOG under SB 375.

Application of Regulatory Framework

The analysis of GHG emissions takes into consideration emissions reductions that would result from effective implementation of State legislation, including Assembly Bill 1493: Pavley; Senate Bill 1078 Sher and Executive Order S-14-08: Renewables Portfolio Standard; and Executive Order S-01-07: Low Carbon Fuel Standard. These mandates, described above in the Regulatory Setting section, are included in ARB's Climate Change Scoping Plan, which outlines the State's strategy to achieve the 2020 GHG emissions limit established by AB 32.¹⁴ Application of State mandates, detailed below by emission sector and in summarized in Table 3.5-2, result in an overall emissions reduction of 16 percent compared to Business as Usual (BAU) in the Study Area for 2020, and 24 percent for 2030.

The analysis also estimates emissions reductions resulting from changes to the land use pattern under the proposed General Plan. With full buildout of the General Plan, attached single-family and multi-family units will make up larger proportions of the City's housing stock than they do currently, which will result in lower per-unit energy use. The proposed compact development pattern, with higher-density housing types in close

¹⁴ ARB (2008).

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proximity to neighborhood services and schools, is expected to result in a per capita reduction in vehicle miles travelled. Methodology for estimating these reductions is further outlined below.

Emissions from Electricity Use

Indirect emissions associated with the use of electricity are estimated based on electricity delivery data for 2008 provided by Turlock Irrigation District (TID). Total kilowatt-hours (kWh) are translated into CO_{2e} using emission factors developed for the State by the California Climate Action Registry (CCAR), and based on energy characteristics of the subregional electricity grid defined in the CCAR model. Forecast emissions for residential electricity use are based on population growth between 2008 and 2030, assuming that per capita electricity use remains constant for each type of housing (detached and attached single-family and multi-family). Relative energy use by housing type is based on a 2010 study by Jonathan Rose Companies with support from US EPA. Forecast emissions for commercial/industrial electricity use are based on job growth between 2008 and 2030, assuming that electricity use per job would remain constant. These are conservative estimates given policies in the proposed General Plan that will reduce energy use in both residential and commercial settings, as described in Impact 3.5-1.

Electricity Mandates

Based on Governor Schwarzenegger's call for a Renewables Portfolio Standard (RPS) in Executive Order S-14-08, the AB 32 Scoping Plan anticipated that California will have 33 percent of its electricity provided by renewable resources by 2020, up from 10 percent in 2008. The Climate Change Proposed Scoping Plan estimates that the RPS will result in a reduction of 21.3 million metric tons of CO_{2e} (MMT_{CO2e}) statewide by 2020. This analysis assumes a 4.8 percent reduction in emissions compared to BAU in the Study Area in 2020 and 3.8 percent reduction compared to BAU in 2030, applying the Statewide reduction-to-BAU proportion for the energy sector, and sensitizing it to Turlock's faster rate of growth. The declining relative reduction rate in 2030 compared to 2020 is due to the fact that the regulation should be in full effect by 2020, and no additional gains are projected between 2020 and 2030 while emissions are projected to continue to grow.

The Scoping Plan estimates emissions reductions resulting from statewide energy efficiency measures to result in emissions reductions of 15.2 and 4.3 MMT_{CO2e} for electricity and natural gas, respectively, by 2020. As with the RPS, this analysis assumes that emissions reductions will apply proportionately in the Study Area, taking Turlock's faster population growth into account, resulting in a combined 4.4 percent emission reduction compared to BAU in 2020, falling to 3.5 percent reduction compared to BAU in 2030. Also included in the model is a small (0.5 percent in 2020 and 0.4 percent in 2030) reduction to account for the State program supporting solar roof installation. These reductions, summarized in Table 3.5-2, account for statewide energy efficiency measures identified in the AB 32 Scoping Plan.

Transportation Emissions

The transportation model developed by Omni-Means was used to estimate VMT for existing conditions (2009), the proposed project, and the No Project and alternative scenarios. VMT projections were then used to calculate fuel use and resultant CO_{2e} emissions from transportation, based on factors defined by CCAR. The transportation model aims to realistically account for changes in transportation behavior resulting from changes in the land use pattern under the proposed General Plan and the alternatives.

Transportation Mandates

US EPA granted California a waiver in June 2009 that allows the state to implement stricter fuel efficiency standards than federal regulations. ARB has indicated that it will be able to enforce AB 1493 (Pavley), the state legislation that mandates greater fuel efficiency. Therefore, this EIR incorporates Pavley Phases 1 and 2

in the GHG analysis. The Scoping Plan estimates that implementation of the Pavley standards will result in a reduction of 31.7 MMTCO_{2e} statewide by 2020; translated to the Study Area, a 4.1 percent reduction compared to BAU is assumed for 2020. Since fuel efficiency gains may be expected to continue beyond 2020 as older vehicles are replaced, the 2030 projections account for Pavley using estimated fleetwide fuel efficiency as estimated by the Metropolitan Transportation Commission (MTC) model (2008). This model projects that adjusted fuel economy will rise from 17.5 miles per gallon (mpg) in 2006 to 27.3 mpg by 2035. Total emissions are projected to be reduced by 14.5 percent compared to BAU in 2030 as a result of Pavley.

In addition, the Scoping Plan estimates that Executive Order S-01-07 Low Carbon Fuel Standard (LCFS) would result in a reduction of 15 million metric tons of CO_{2e} in 2020, which would represent a reduction of approximately 1.9 percent in GHG emissions compared to BAU in the Planning Area in 2020, and 1.6 percent of BAU in 2030. See Table 3.5-2.

Waste

Solid waste is generated from households, offices, shops, markets, restaurants, public institutions, industrial installations, water works and sewage facilities, construction and demolition sites, and agricultural activities. The starting point for the estimation of greenhouse gas emissions from solid waste disposal is the compilation of activity data on waste generation, composition, and management.

This analysis follows the LandGem model for calculating GHG emissions from solid waste, taking into account only Turlock's current share of waste accepted annually at the Fink Landfill. It is assumed that the per-service-population waste generation rate remains constant over the planning period. This is likely to be a conservative estimate, since waste reduction measures are included in proposed General Plan policies but are not accounted for in the modeling.

Cumulative Impact Analysis

A cumulative impact analysis considers the possible effects of the proposed General Plan together with projected regional growth and anticipated increases in regional travel that are not a result of the proposed General Plan. Greenhouse gas and global climate change impacts are the result of many interrelated regional changes, and thus the significance of the proposed Plan's impact must be considered in conjunction with these wider development patterns.

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TABLE 3.5-2: ESTIMATED EMISSIONS REDUCTIONS BASED ON STATE MANDATES

<i>Scoping Plan Measure</i>	<i>Affected Emissions Sector¹</i>	<i>Projected Reduction as % of Total Sector Emissions Under Scoping Plan, 2020</i>	<i>Sector as Proportion of Estimated Study Area Emissions</i>	<i>Projected Reduction as % of Total Sector Emissions in the Study Area, 2020²</i>	<i>Reduction as % of Overall Business-as-Usual Emissions in the Study Area, 2020</i>	<i>Reduction as % of Total Sector Emissions in the Study Area, 2030³</i>	<i>Reduction as % of Overall Business-as-Usual Emissions in the Study Area, 2030</i>
Pavley Standards	Transportation	14.1%	35%	11.7%	4.1%	53.9%	14.5%
Low Carbon Fuel Standard	Transportation	6.7%	35%	5.5%	1.9%	5.5%	1.6%
Energy Efficiency - Natural Gas	Building Energy	2.3%	50%	1.9%	1.0%	1.9%	0.8%
Energy Efficiency - Electricity	Building Energy	8.2%	50%	6.8%	3.4%	6.7%	2.7%
Renewable Portfolio Standard (Electricity)	Building Energy	11.5%	50%	9.5%	4.8%	9.4%	3.8%
Solar Roofs (Electricity)	Building Energy	1.1%	50%	0.9%	0.5%	0.9%	0.4%
Total				36.4%	15.7%	78.2%	23.7%

Notes:

1. The Scoping Plan identifies four sectors: Transportation; Electricity; Commercial and Residential; and Industry, which combine for a total of 512 MMTCO₂e in 2020. For this analysis, the Electricity and Commercial and Residential sectors are combined.
2. Emissions are calculated by sector. For the Study Area, the statewide reductions per sector are modified to account for Turlock's faster projected growth rate compared to the State as a whole.
3. For 2030, Pavley standards are calculated based on additional estimated fleetwide fuel economy. Other State mandates produce fewer reductions compared to Business-as-Usual in 2030 compared to 2020 because total emissions are estimated to grow while mandates remain constant.

Sources: Dyett & Bhatia, 2012; Omni Means, 2012; CARB, 2008.

SUMMARY OF IMPACTS

Under the proposed General Plan, future emissions from the primary three sources (electricity and natural gas; transportation; and solid waste) are estimated to increase to 948,200 metric tons CO₂e in 2020 and 1,174,800 metric tons CO₂e in 2030 with State mandates, an overall increase of approximately 57 percent over existing conditions. *Per service population* emissions are projected to decline by 17 percent over the planning period under the proposed General Plan when compared to existing conditions, as emissions decline relative to population and employment growth.

The proposed General Plan would not meet the significance threshold for overall GHG emissions reduction to meet State goals under AB 32 and EO-S-05. In 2020, emissions are projected to drop from 7.5 to 6.8 MTCO₂e per SP, not quite meeting the target 6.6 MTCO₂e per SP rate. It should be noted that the General Plan features a great number of policies that together seek to reduce per capita energy consumption, establish a balanced and mixed-use land use pattern, promote sustainable development practices, reduce sprawl, promote walkability, and reduce vehicle miles travelled (VMT). Many of these policies are representative of measures included in the Scoping Plan as well as the Attorney General's and CAPCOA's recommended measures and policies to offset or reduce global warming impacts. The effects of these policies, listed in Table 3.5-5, are not fully quantified. The proposed Plan would not meet the significance threshold for 2030, which is set in line with the State's goal of reducing GHG emissions by 80 percent from current levels by 2050. Under the proposed Plan, GHG emissions would occur at a rate of 6.3 MTCO₂e per service population in 2030, compared to the target rate of 3.8 MTCO₂e per SP. See Table 3.5-3.

The EIR also establishes a significance criterion based on achieving regional GHG reduction targets as a result of land use and transportation patterns, as established under SB 375. When other State-mandated fuel efficiency and low-carbon fuel measures are not counted, transportation emissions in the Study Area are projected to rise from approximately 264,000 MTCO₂e today to 382,000 in 2020 and 526,500 in 2030, as shown in Table 3.5-6. This translates to a gradual increase in transportation-related emissions of 6 percent per capita by 2020 and 12 percent per capita by 2030, in line with projected increased vehicle-miles travelled (VMT). Following SB 375, ARB set targets for GHG emissions reductions from vehicles for StanCOG of 5 percent by 2020 and 8 percent by 2030. While the proposed General Plan would not meet these targets, it contains numerous policies whose positive impacts on travel behavior are not quantified. It is expected that these policies will help support a regional Sustainable Communities Strategy (SCS) that is fully quantified and meets the regional target under SB 375.

Because greenhouse gas emissions contribute to a problem that is global in scale, the proposed Plan's impacts are cumulatively considerable. At the same time, the proposed Plan is found to result in lower emissions on a per capita and per service population basis than would result under baseline growth conditions as represented by the No Project scenario.

In short, the proposed General Plan would result in a significant and unavoidable impact with regard to greenhouse gas emissions. However, the Plan contains a great number of policies, consistent with guidance from regional and State agencies, which seek to reduce the impact but are not readily quantified.

Phasing

Climate change impacts summarized here were determined based on an analysis of the full development potential of the General Plan, consistent with CEQA requirements. As described in Chapter 2: Project Description, it is anticipated that new development in Turlock would follow a phased approach. If the full development potential of the proposed General Plan is not realized, then it would be expected that GHG emissions would be lower than projected in the impact analysis below. For example, development through

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Phase 1 of the proposed General Plan—involving the buildout of the Southeast 1, 2, and 3 Master Plan areas as well as infill development—is projected to result in a total of approximately 104,000 residents and 54,000 jobs. Therefore, Phase 1 would result in lower VMT, less energy demand, and lower GHG emissions. However, it would still not reach the per-service-population and per-capita emissions efficiency thresholds for the year 2030, or the vehicle emissions thresholds for 2020 or 2030, and would thus still result in a considerable contribution to the significant cumulative impact of emissions. Full development of Phase 1 is identified as Alternative 1, and is further discussed in Chapter 4, Alternatives.

IMPACTS AND MITIGATION MEASURES

Cumulative Impact

3.5-1 Implementation of the proposed General Plan, combined with regional growth, would result in annual greenhouse gas emissions in the Study Area in an amount greater than 6.6 metric tons of carbon dioxide equivalent (MTCO_{2e}) gases per service population in 2020, or greater than 3.8 MTCO_{2e} in 2030. (*Significant Cumulative Impact, Project Contribution Cumulatively Considerable*)

Implementation of the proposed General Plan would result in development of new housing and non-residential land uses supporting a larger population and more jobs. This development is projected to result in increased GHG emissions, thereby contributing to global climate change, including regional climate impacts. These regional impacts could include 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; increased wildfire risk; and increased electricity demand. The scientific community has acknowledged the detrimental effects of global climate change on ecosystems and human communities, and that it is caused by the cumulative GHG emissions from human activities across the globe and over many decades. For the purposes of the EIR, this analysis needs to make a determination about whether the proposed General Plan would increase GHG emissions compared to the present, or cause emissions greater than thresholds that would allow the State to meet its targets.

The California Attorney General has determined that GHG impact analysis for General Plan updates must include making a significance determination, which may reasonably be based on targets based on statewide goals set forth in Executive Order S-3-05 and AB 32.¹⁵ Following this approach, the EIR establishes targets for the Turlock Study Area that would meet State targets on a per-service-population basis. Under AB 32, the State must reduce GHG emissions to 1990 levels by 2020, an overall reduction of approximately 15 percent. When projected population and job growth are taken into account, this goal translates to a per service population reduction of about 27 percent from “business as usual.” Therefore the 2020 threshold for this EIR represents a 27 percent reduction from current per-service-population emissions in California, or 6.6 MTCO_{2e} for the three major GHG emissions sources. Executive Order S-3-05 sets a long-range goal for the State to reduce GHG emissions to 80 percent below 1990 levels by the year 2050. Charting an even annual growth rate between existing conditions (2008) and 2050 in terms of service population and GHG emissions,

¹⁵ California Attorney General's Office, “Climate Change, the California Environmental Quality Act, and General Plan Updates: Straightforward Answers to Some Frequently Asked Questions,” January 2010. Accessed at http://ag.ca.gov/globalwarming/pdf/CEQA_GP_FAQs.pdf, December 2011.

this target requires a per service population reduction to 3.8 MTCO_{2e} annually at the State level. This threshold is thus set as the target for the Turlock Study Area for 2030.

As shown in Table 3.5-3, the Study Area currently produces an estimated 748,000 MTCO_{2e} annually from the three major sources, translating to approximately 7.5 metric tons per resident and worker. The 88 percent growth in service population projected under the proposed General Plan is projected to result in a 57 percent increase in total GHG emissions. Per service population, this amounts to 6.8 and 6.3 MTCO_{2e} per service population in 2020 and 2030, respectively, a 10 and 17 percent decline from current levels. This decline is not sufficient to put the Study Area in line with statewide emissions reduction goal for 2020 under AB 32, or on a trajectory to meet the statewide reduction goal for 2050, and thus implementation of the proposed Plan would have a significant impact with regard to both the 2020 and 2030 thresholds. As described more fully in the sections that follow, the General Plan includes a wide array of policies intended to foster walking and biking, enable shorter vehicle trips, and result in building energy improvements. These policies are not fully quantified in this analysis.

This analysis also determines that the proposed General Plan makes a cumulatively considerable contribution to the overall cumulative impact, due to the manner in which greenhouse gas emissions act interact cumulatively to produce global climate change. The analysis also finds that the proposed Project would have a less negative impact, on a per capita or per service population basis, than would the No Project scenario which represents development under existing land use regulations. Nevertheless, the proposed project's contribution to the cumulative impact of development is cumulatively considerable.

TABLE 3.5-3: PROJECTED GHG EMISSIONS AND TARGET EMISSIONS THRESHOLDS

<i>Year</i>	<i>2008</i>	<i>2020</i>	<i>2030</i>	<i>2008-2020 Change</i>	<i>2008-2030 Change</i>
Significance Thresholds for GHG Emissions					
Emissions per Service Population ¹	7.5	6.6	3.8	-12%	-49%
Actual and Projected GHG Emissions					
<i>Proposed Project</i>					
Service Population	99,360	140,180	187,030	41%	88%
GHG Emissions (metric tons/year)	748,400	948,200	1,174,700	27%	57%
Emissions per Service Population	7.5	6.8	6.3	-10%	-17%
Meets Targets?		No	No		
<i>No Project</i>					
Service Population	99,360	124,610	150,760	25%	52%
GHG Emissions (metric tons/year)	748,370	867,300	992,300	16%	33%
Emissions per Service Population	7.5	7.0	6.6	-8%	-13%
Meets Targets?		No	No		

1. Thresholds are established that would match the statewide GHG emissions reduction goals under SB 32 and EO S-3-05 on a per service population basis. For example, when population and job growth are taken into account, State goals for a 15% overall emissions reduction by 2020 translate to 27% per service population.

Sources: California DOF, 2008; California EDD, 2008; CARB, 2008; Dyett & Bhatia, 2012; Omni Means, 2012.

GHG Emissions by Sector

Electricity and Natural Gas

Electricity and natural gas use today account for half of all emissions from the major three sources, and are projected to account for a slightly higher proportion (53 percent) in 2030 under the proposed General Plan. As shown in Table 3.5-4, GHG emissions related to this sector—primarily related to energy used in buildings—are projected to grow by 64 percent under the proposed Plan. This growth is slower than the growth of population and jobs under the proposed Plan (88 percent), largely due to the impact of State energy efficiency and renewable energy mandates. The greater proportion of attached and multi-family housing under the proposed Plan compared to existing conditions also helps to reduce projected emissions in this sector. Projected emissions under the General Plan are likely to be conservative in that they do not account for the range of proposed Plan policies that support increased energy efficiency and clean energy sources.

Transportation

As shown in Table 3.5-4, transportation-related GHG emissions are projected to grow from approximately 264,000 MTCO₂e in 2008 to 324,000 MTCO₂e in 2030, an increase of 23 percent. This increase in emissions is the result of increased demand on the transportation system from population and job growth. The transportation sector's share of total projected emissions would decline from 35 to 28 percent. The slower growth of transportation-related emissions compared to overall growth may be attributed primarily to increased fuel efficiency (Pavley I and II) and the Low Carbon Fuel Standard mandated by the State. The more compact and higher-density land use pattern and the connective street network that characterize the proposed General Plan also help to reduce projected GHG emissions in this sector. Again, projected emissions under the proposed Plan are likely to be overstated in that they do not account for policies that ensure pedestrian-oriented development and support alternative modes of transportation.

Solid Waste

In estimating solid waste-related GHG emissions, it is assumed that current per-service-population waste generation rates for Turlock remain the same through the planning period as population and jobs grow. Waste-related emissions are projected to outpace growth in the service population, as shown in Table 3.5-4, based on EPA's LandGem model, causing this sector's share of the top three sources to grow from 14 to 20 percent over the planning period. This is likely a conservative accounting, as Turlock has reduced per capita solid waste in recent years.

TABLE 3.5-4: SUMMARY OF GREENHOUSE GAS EMISSIONS SOURCES UNDER THE PROPOSED GENERAL PLAN

	2008	2020	2030	Change (%)
Population				
Residents	71,100	97,470	126,770	78%
Jobs	28,260	42,710	60,260	113%
Service Population (Residents + Jobs)	99,360	140,180	187,030	88%
Actual and Projected Greenhouse Gas Emissions (metric tons/year)				
<i>Sources</i>	<i>Total CO₂-Equivalent Emissions (metric tons/year)</i>			
Electricity and Natural Gas	376,200	464,500	618,600	64%
Transportation	263,800	316,300	323,500	23%
Solid Waste	108,400	167,400	232,700	115%
Estimated Emissions from Three Top Sources	748,400	948,200	1,174,800	57%
Per Service Population Emissions	7.5	6.8	6.3	-17%

Sources: Dyett & Bhatia, 2012; Omni Means, 2012; Stanislaus County Department of Environmental Resources, 2010; PG&E, 2010; Turlock Irrigation District, 2010 California Climate Action Registry (CCAR), 2007; Intergovernmental Panel on Climate Change (IPCC), 2006, 1996; EPA, 2004.

Proposed General Plan Policies that Reduce the Impact

The analysis of projected GHG emissions provided above seeks to account for the role of State mandates in reducing future emissions. The analytical model for the building energy sector was “post-processed” to account for proposed changes in the housing mix under the General Plan (and each alternative), and the transportation model seeks to realistically build in changes resulting from a more compact land use pattern with a more connective and “complete” (e.g., supportive of all modes of travel) transportation network. Even so, the estimated emission levels above are likely to be higher than actual future emissions because they do not account for a great number of policies in the proposed General Plan that would contribute to lowering emissions but that are difficult to quantify. For example, transit-oriented and walkable development has been found to shift transit mode share—which would result in reduced VMT—in a wide range from 5 to nearly 50 percent (Arrington and Cervero, 2008). Plan policies seeks to reduce per capita energy consumption, establish a balanced and mixed use land use pattern, restrict sprawl, promote sustainable development practices, promote walkability, and reduce VMT. If these policies are effectively implemented, emission levels in 2030 would be lower than those reflected above.

Several documents have been prepared by regional and State agencies that provide guidance on developing policies to reduce GHG emissions. In June 2009, the California Air Pollution Control Officers Association (CAPCOA) published its “Model Policies for Greenhouse Gases in General Plans,” which includes over 350 policy suggestions, and provides a list of ten over-arching strategies that are recommended to be the core focus for local government action on climate change. This list is also referred to in the Attorney General’s most recent guidance documents regarding sustainability and general plans (Attorney General, 2010). Tables 3.5-5, 3.5-6, and 3.5-7 identify the top ten strategies identified by CAPCOA and corresponding proposed General Plan policies.

TABLE 3.5-5: CAPCOA TOP TEN ACTIONS BY LOCAL GOVERNMENTS AND COMMUNITIES AND CORRESPONDING PROPOSED GENERAL PLAN POLICIES

1. Promotion of smart growth, jobs/housing balance, transit oriented development, and infill development through land use designations, zoning, and public private partnerships

Chapter 2: Land Use Policies

Downtown

- 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.
- 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-h **Facilitate mixed use.** Facilitate and encourage development of mixed-use projects in Downtown through the development review, permitting, and fee process.
- 2.4-i **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.

Residential Areas

- 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 65 percent traditional single family, 35 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 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.
- 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

TABLE 3.5-5: CAPCOA TOP TEN ACTIONS BY LOCAL GOVERNMENTS AND COMMUNITIES AND CORRESPONDING PROPOSED GENERAL PLAN POLICIES

<p><i>1. Promotion of smart growth, jobs/housing balance, transit oriented development, and infill development through land use designations, zoning, and public private partnerships</i></p>	
	<p>one master plan area is completed (building permits issued) before another starts. See Chapter 3: New Growth Areas.</p>
2.5-g	<p>Locations for high density development. Maintain the highest residential development intensities Downtown, along transit corridors, near transit stops, and in new neighborhood centers.</p>
2.5-h	<p>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.</p>
2.5-i	<p>Housing downtown. Create incentives to increase residential development Downtown, on infill sites and in existing buildings. Examples include:</p> <ul style="list-style-type: none"> • 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	<p>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.</p>
2.5-k	<p>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.</p>
2.5-l	<p>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.</p>
<p><i>Retail, Commercial, and Mixed Use Areas</i></p>	
2.6-b	<p>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.</p>
2.6-c	<p>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.</p>
2.6-d	<p>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.</p>
2.6-g	<p>Local-serving shopping in new neighborhoods. In new master-planned residential neighborhoods,</p>

TABLE 3.5-5: CAPCOA TOP TEN ACTIONS BY LOCAL GOVERNMENTS AND COMMUNITIES AND CORRESPONDING PROPOSED GENERAL PLAN POLICIES**1. Promotion of smart growth, jobs/housing balance, transit oriented development, and infill development through land use designations, zoning, and public private partnerships**

ensure development of neighborhood-oriented mixed-use centers that provide convenience shopping for nearby residents. Local shopping centers 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-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.

Professional Office and Business Park Areas

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.

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.

The Planning Area and City/County Relationships

2.9-c **Encourage infill development to protect farmland.** Relieve pressures to convert valuable agricultural lands to urban uses by encouraging infill development.

Economic Development

2.11-g **Maintain the jobs-workers balance.** Maintain a balance between jobs and the number of employed residents.

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.

*Chapter 3: New Growth Areas and Infrastructure Policies**Land Use and Design of New Growth Areas*

3.2-f **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 Initial Study 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.

TABLE 3.5-5: CAPCOA TOP TEN ACTIONS BY LOCAL GOVERNMENTS AND COMMUNITIES AND CORRESPONDING PROPOSED GENERAL PLAN POLICIES

<i>1. Promotion of smart growth, jobs/housing balance, transit oriented development, and infill development through land use designations, zoning, and public private partnerships</i>	
3.2-g	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.
3.2-h	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. Appropriate non-residential land uses for neighborhood centers in residential areas include: <ul style="list-style-type: none"> • Retail sales • Personal services • Banks and financial institutions • Restaurants, coffee shops, and cafes • Upper level residential • Business and professional offices • Medical and dental offices • Day care centers • Community centers • Cultural institutions (libraries, museums, theaters) • Parks and schools Additional uses may also be permitted, subject to approval by the Planning Commission and a finding that the proposed uses are consistent with the General Plan and will appropriately serve the surrounding residential neighborhood.

Chapter 6: City Design Policies

Overall City Form and Edge Conditions

- 6.1-c **Promote compact growth.** Maintain a compact growth pattern to avoid sprawl and preserve agricultural land and open space.
- 6.1-e **Enable mixed use development.** Provide a mix of uses and activities in various parts of the City.
- 6.1-h **Promote infill.** Encourage infill development on vacant parcels through incentives and streamlined approval process for projects.

Neighborhood Form

- 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-e **Master plans for mixed use neighborhoods.** Through the process of master planning and project

TABLE 3.5-5: CAPCOA TOP TEN ACTIONS BY LOCAL GOVERNMENTS AND COMMUNITIES AND CORRESPONDING PROPOSED GENERAL PLAN POLICIES

1. Promotion of smart growth, jobs/housing balance, transit oriented development, and infill development through land use designations, zoning, and public private partnerships

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).

Urban Design

- 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 to be scaled to a neighborhood character and designed to encourage pedestrian activity and comfort.
- 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-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.
 - 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 General Plan Figure 5-2.
 - 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

TABLE 3.5-5: CAPCOA TOP TEN ACTIONS BY LOCAL GOVERNMENTS AND COMMUNITIES AND CORRESPONDING PROPOSED GENERAL PLAN POLICIES*1. Promotion of smart growth, jobs/housing balance, transit oriented development, and infill development through land use designations, zoning, and public private partnerships*

- 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-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 curb-cuts 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.
- 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 two 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.
- 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, and located only on one side of the other principal street.
 - 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.
- 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

TABLE 3.5-5: CAPCOA TOP TEN ACTIONS BY LOCAL GOVERNMENTS AND COMMUNITIES AND CORRESPONDING PROPOSED GENERAL PLAN POLICIES

<p><i>1. Promotion of smart growth, jobs/housing balance, transit oriented development, and infill development through land use designations, zoning, and public private partnerships</i></p>	
	<p>should be avoided. Store interiors should be visible from the outside.</p> <ul style="list-style-type: none"> • 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- feet 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.
6.7-p	<p>Neighborhood center uses. Ensure that uses in the 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:</p> <ul style="list-style-type: none"> • Mixed-use (horizontal or 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.
6.7-t	<p>Pedestrian linkages. Develop clear pedestrian linkages between and within neighborhoods.</p>
6.7-u	<p>Sidewalks and the pedestrian environment. Provide sidewalks consistent with intended use, and trees to shade streets and pedestrians.</p> <ul style="list-style-type: none"> • 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 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 between 20 and 30 feet apart. Trees along local streets should be appropriately selected and planted between 20 and 30 feet apart.
6.7-x	<p>Public orientation of medium and high density development. Development should be oriented to streets, sidewalks and public spaces; introverted projects are discouraged.</p> <ul style="list-style-type: none"> • 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. • 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.

TABLE 3.5-5: CAPCOA TOP TEN ACTIONS BY LOCAL GOVERNMENTS AND COMMUNITIES AND CORRESPONDING PROPOSED GENERAL PLAN POLICIES

1. Promotion of smart growth, jobs/housing balance, transit oriented development, and infill development through land use designations, zoning, and public private partnerships

Chapter 8: Air Quality and Greenhouse Gases Policies

Energy and Climate Change

- 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 travelled.
- 8.2-k **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-l **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.

TABLE 3.5-5: CAPCOA TOP TEN ACTIONS BY LOCAL GOVERNMENTS AND COMMUNITIES AND CORRESPONDING PROPOSED GENERAL PLAN POLICIES

2. Support for and funding of transit, bicycle, and pedestrian connections through transit and trail planning and regional cooperation

Chapter 3: New Growth Areas and Infrastructure Policies

Land Use and Design of New Growth Areas

- 3.2-m **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-n **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-o **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-p **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.

Chapter 5: Circulation Policies

Roadway Network, Standards, and Improvements

- 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-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-as **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-at **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.

Pedestrian and Bicycle Circulation

- 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.

TABLE 3.5-5: CAPCOA TOP TEN ACTIONS BY LOCAL GOVERNMENTS AND COMMUNITIES AND CORRESPONDING PROPOSED GENERAL PLAN POLICIES

<i>2. Support for and funding of transit, bicycle, and pedestrian connections through transit and trail planning and regional cooperation</i>	
5.3-d	<p>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.</p> <p>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.</p>
5.3-e	<p>Provision of bicycle facilities. Facilities for bicycle travel (Class I bike/multiuse paths; Class II bike lanes; Class III bike routes) shall be provided as shown on Figure 5-3.</p> <p>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.</p>
5.3-f	<p>Street trees for shade and comfort. Ensure that planting plans for street trees take into consideration shade and comfort for pedestrians and bicyclists.</p> <p>Particular attention should be paid to places frequented by pedestrians, such as Main Street and other areas in Downtown and City Hall. Detailed measures relating to street trees are prescribed in policies in Section 6-8, Urban Design.</p>
5.3-g	<p>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.</p>
5.3-h	<p>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.</p>
5.3-i	<p>Air quality funding for bikeways plan. Continue using the Air Quality Trust Fund (and other grants and outside funding sources) to assist in the funding of implementation of the Bikeways plan depicted in Figure 5-3. Update the CFF to expand this program citywide to fund these improvements.</p>
5.3-j	<p>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.</p>
5.3-k	<p>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.</p>
5.3-l	<p>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.</p>
5.3-m	<p>Street trees in Capital Improvement Program. Include street trees as part of Capital Improvement Program programming and implementation.</p>
5.3-n	<p>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.</p>
5.3-o	<p>Bicycling access to parks. Provide safe bicycle access to and parking facilities at all community parks.</p>
5.3-p	<p>Bicycle safety. Increase the safety of those traveling by bicycle by:</p> <ul style="list-style-type: none"> • 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;

TABLE 3.5-5: CAPCOA TOP TEN ACTIONS BY LOCAL GOVERNMENTS AND COMMUNITIES AND CORRESPONDING PROPOSED GENERAL PLAN POLICIES

2. Support for and funding of transit, bicycle, and pedestrian connections through transit and trail planning and regional cooperation

	<ul style="list-style-type: none"> • 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	<p>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 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.</p>
5.3-r	<p>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.</p>
5.3-s	<p>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.</p>
5.3-t	<p>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.</p>
5.3-u	<p>Bikeway improvements in infill areas. To address the Priority Infill Bikeway Improvement Areas indicated on Figure 5-3, complete a feasibility study 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.</p> <p>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:</p> <ul style="list-style-type: none"> • 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.
	<p><i>Public Transportation</i></p>
5.4-a	<p>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.</p>
5.4-b	<p>Work with multiple agencies and jurisdictions. Continue to cooperate with other agencies and</p>

TABLE 3.5-5: CAPCOA TOP TEN ACTIONS BY LOCAL GOVERNMENTS AND COMMUNITIES AND CORRESPONDING PROPOSED GENERAL PLAN POLICIES

<i>2. Support for and funding of transit, bicycle, and pedestrian connections through transit and trail planning and regional cooperation</i>	
	jurisdictions to promote local and regional public transit serving Turlock.
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-h	Funding for transit services. Continue to pursue federal funds to cover capital and operating costs associated with Turlock’s transit operation. (Currently, federal 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: <ul style="list-style-type: none"> • 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.
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.

TABLE 3.5-5: CAPCOA TOP TEN ACTIONS BY LOCAL GOVERNMENTS AND COMMUNITIES AND CORRESPONDING PROPOSED GENERAL PLAN POLICIES

2. Support for and funding of transit, bicycle, and pedestrian connections through transit and trail planning and regional cooperation

Chapter 6: City Design

Street Design and Connectivity

- 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-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 commercial projects 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.
- 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.** 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

Chapter 8: Air Quality and Greenhouse Gases Policies

Air Quality

- 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.

TABLE 3.5-5: CAPCOA TOP TEN ACTIONS BY LOCAL GOVERNMENTS AND COMMUNITIES AND CORRESPONDING PROPOSED GENERAL PLAN POLICIES

<i>2. Support for and funding of transit, bicycle, and pedestrian connections through transit and trail planning and regional cooperation</i>	
	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.
8.1-t	<p>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:</p> <ul style="list-style-type: none"> • 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	<p>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.</p>
<i>Energy and Climate Change</i>	
8.2-g	<p>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. <i>See Chapter 5, Circulation.</i></p>
8.2-h	<p>Establish Connective Street Network to Minimize Trip Length. Minimize vehicle-miles travelled by establishing a connective circulation network providing multiple, direct paths. <i>See Chapter 5, Circulation.</i></p>
8.2-i	<p>Provide Bicycle Facilities. Require minimum bike parking for multi-family residential and commercial development, and encourage provision of additional end-of-trip facilities.</p>
8.2-j	<p>Minimize Parking. Encourage the provision of minimum parking required to support uses.</p>

TABLE 3.5-5: CAPCOA TOP TEN ACTIONS BY LOCAL GOVERNMENTS AND COMMUNITIES AND CORRESPONDING PROPOSED GENERAL PLAN POLICIES

3. Promotion of energy- and water- efficient buildings (e.g., LEED buildings) through green building ordinances, project timing prioritization, and other implementing tools

Chapter 3: New Growth Areas and Infrastructure

Infrastructure

- 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.

Chapter 6: City Design

Sustainable Site Planning

- 6.4-c **Conserve energy and water.** Reduce demand for and consumption of energy and water through site planning techniques.
- 6.4-g **Heat island reduction.** Require new commercial development of more than 25,000 square feet, new industrial development of more than 100,000 square feet, or 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 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-j **Bicycle and pedestrian network.** Design sites to facilitate access to parks and other community facilities via non-automobile transportation (walking and biking).

Chapter 4: Parks, Schools and Community Facilities

Parks and Recreational Open Space

- 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.

Chapter 8: Air Quality and Greenhouse Gases

Energy and Climate Change

- 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.

TABLE 3.5-5: CAPCOA TOP TEN ACTIONS BY LOCAL GOVERNMENTS AND COMMUNITIES AND CORRESPONDING PROPOSED GENERAL PLAN POLICIES

3. Promotion of energy- and water- efficient buildings (e.g., LEED buildings) through green building ordinances, project timing prioritization, and other implementing tools

8.2-m	<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:</p> <ul style="list-style-type: none"> • 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-m*	<p>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.</p>
8.2-m**	<p>Outdoor Lighting. Establish outdoor lighting standards to minimize energy use while ensuring appropriate light levels. Standards could include:</p> <ul style="list-style-type: none"> • 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-n	<p>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.</p> <ul style="list-style-type: none"> • 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. <p>A sizeable portion of the residential structures in Turlock were constructed before energy efficiency standards were established, and should be improved.</p>
8.2-o	<p>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 2010 California Green Building Standards Code.</p> <p>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.</p> <p>See Section 6.4 for policies on solar orientation and other aspects of sustainable site planning.</p>
8.2-p	<p>Require Energy Efficiency for Projects Receiving Public Assistance. Require that projects receiving assistance from the Redevelopment Agency, including but not limited to infrastructure projects and affordable housing, include energy efficiency measures beyond the minimum standards of Title 24.</p>

TABLE 3.5-5: CAPCOA TOP TEN ACTIONS BY LOCAL GOVERNMENTS AND COMMUNITIES AND CORRESPONDING PROPOSED GENERAL PLAN POLICIES*4. Promotion of green procurement and alternative fuel vehicle use through municipal mandates and voluntary bid incentives**Chapter 8: Air Quality and Greenhouse Gases Policies*

- 8.1-n **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-o **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.

*5. Support for alternative fuel facilities and infrastructure through land use designations, zoning, and public-private partnerships**Chapter 8: Air Quality and Greenhouse Gases Policies*

- 8.2-j* **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.

*6. Support for renewable energy generation (utility and residential) through feasibility evaluations, land use designations, and zoning**Chapter 8: Air Quality and Greenhouse Gases*

- 8.2-q **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-r **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-r* **Methane Capture.** Continue to produce energy through methane capture from waste using the fuel cell system at the Regional Water Quality Control Facility, in partnership with Turlock Irrigation District. Explore opportunities to enhance waste-to-energy generation if feasible.

*7. Promotion of waste diversion, recycling, energy efficiency and energy recovery in cooperation with public services districts and private entities**Chapter 3: New Growth Areas and Infrastructure*

- 3.3-ai **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-aj **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-am **Green Waste.** Study the feasibility of adding organic food waste to the City's curbside compost pickup program.

TABLE 3.5-5: CAPCOA TOP TEN ACTIONS BY LOCAL GOVERNMENTS AND COMMUNITIES AND CORRESPONDING PROPOSED GENERAL PLAN POLICIES

7. Promotion of waste diversion, recycling, energy efficiency and energy recovery in cooperation with public services districts and private entities

Chapter 8: Air Quality and Greenhouse Gases

- 8.2-e **Reduce Waste.** Reduce per capita landfill waste generation by promoting reuse, recycling, and composting.
- 8.2-s **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.

8. Support for urban and rural forestry through tree planting requirements and programs

Chapter 8: Air Quality and Greenhouse Gases Policies

- 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.

9. Community outreach and education to foster community involvement, input, and support for GHG reduction planning and implementation.

Chapter 8: Air Quality and Greenhouses Gases Policies

- 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.

TABLE 3.5-5: CAPCOA TOP TEN ACTIONS BY LOCAL GOVERNMENTS AND COMMUNITIES AND CORRESPONDING PROPOSED GENERAL PLAN POLICIES

10. Regional cooperation to find cross-regional efficiencies in GHG reduction investments and to plan for regional transit, energy generation, and waste recovery facilities

Chapter 8: Air Quality and Greenhouses Gases Policies

- 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.
- 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.
- 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.

Sources: Dyett & Bhatia, 2012; CAPCOA Model Policies for Greenhouse Gases in General Plans, Appendix E, June 2009.

Other Policies That Reduce the Potential Impact

Two important policies that do not fit neatly into Table 3.5-5 would reinforce the City's intention to help the State meet the AB 32 GHG reduction goal, and to undertake a strategic plan for GHG emissions reductions, focusing on implementation measures that can be taken by the City. This Plan would be conducted in sync with regional transportation planning under SB 375.

Chapter 8: Air Quality and Greenhouse Gases

Energy and Climate Change Policies

- 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-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.

Mitigation Measures

A wide range of policies recommended by State agencies are included in the proposed General Plan. In addition, specific implementation strategies for these policies, identified as part of the City's strategic plan process under policy 8.2-f, would be adopted within three years. Policies included in the proposed General Plan are expected to substantially reduce GHG emissions. In order to be on track to reach the State's emissions reduction goal for 2050, and still accommodate growth, it is likely that additional action at the regional or State level will be necessary. Despite policies in the proposed General Plan, the proposed General Plan would result in a significant and unavoidable impact.

Cumulative Impact

3.5-2 Buildout of the proposed General Plan, combined with regional growth, could result in the generation of GHG emissions from passenger vehicles in an amount greater than 3.53 metric tons per capita by 2020 or 3.47 metric tons per capita by 2030, not accounting for State mandates. *(Significant Cumulative Impact, Contribution Cumulatively Considerable)*

As described under Impact 3.5-1, implementation of the proposed General Plan and forecast development of residential and employment land uses in the region could contribute to global climate change, including regional climate impacts. This analysis needs to make a determination about whether implementation of the proposed General Plan would cause a significant impact according to thresholds based on achieving State goals. In addition, because of the nature of global climate change, a significant impact at the project level is determined to result in a cumulative impact.

The California Attorney General has determined that GHG impact analysis for General Plan updates must include making a significance determination, which may reasonably be based on targets based on statewide goals. This impact consideration concerns the targets set forth in SB 375, the Sustainable Communities and Climate Protection Act of 2008. Under SB 375, ARB established GHG emissions reduction targets that each transportation planning agency must demonstrate may be achieved under a Sustainable Communities Strategy developed as part of a regional transportation plan. Stanislaus Council of Governments (StanCOG), which does transportation planning for Turlock and the rest of Stanislaus County, is charged with achieving a 5 percent reduction of GHG emissions per capita from passenger vehicles by 2020 and an 8 percent reduction per capita by 2035, from 2005 levels. These reductions must be attributable to local or regional land use, housing and transportation policies. Thus the significance thresholds set for this EIR represent the target reductions from current estimated per capita GHG emissions attributable to vehicles. Since the planning period for the proposed General Plan is through 2030, the regional emissions reduction target for 2035 is adjusted from 8 percent to 6.6 percent.

As shown in Table 3.5-6, vehicles in the Study Area currently generate an estimated 264,000 MTCO_{2e} annually, translating to approximately 3.71 metric tons per capita. The 78 percent growth in population projected under the proposed General Plan is estimated to result in a 100 percent increase in VMT over existing conditions, the faster growth rate for VMT being attributable to slightly faster projected job growth under the proposed Plan as well as an expanded urbanized area. As shown in Table 3.5-6 shows, when expected emissions reductions due to implementation of the Pavley regulations and the Low Carbon Fuel Standard are accounted for, GHG emissions from vehicles are projected to grow much more slowly than VMT over the planning period, and vehicle emissions per capita will decrease substantially. However, when the effects of these other State measures are screened out, GHG emissions from vehicles are projected to grow in parallel with VMT over the planning period. Similarly, VMT and GHG emissions growth are projected to mirror service population growth in the Study Area, resulting in a 6 percent increase in per capita GHG emissions from passenger vehicles by 2020 and 12 percent by 2030. By these estimates, the proposed Plan would not achieve the thresholds set for StanCOG under SB 375, resulting in a significant impact. As discussed below, the General Plan contains numerous policies whose beneficial effects are not fully accounted for in this analysis.

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TABLE 3.5-6: VEHICLE EMISSION REDUCTION GOALS THAT MEET SB375 TARGETS FOR THE SAN JOAQUIN VALLEY

<i>Year</i>	<i>2008</i>	<i>2020</i>	<i>2030</i>
Emissions Targets			
Vehicle emissions per capita ¹	3.71	3.53	3.47
Actual and Projected GHG Emissions from Vehicles			
<i>Proposed General Plan</i>			
Residents	71,100	97,470	126,770
Annual Vehicle Miles Travelled (VMT) (1000s)	511,219	740,298	1,020,285
GHG Emissions from Vehicles (metric tons CO ₂ e/year)	263,830	316,320	323,500
Vehicle Emissions per Capita	3.71	3.25	2.55
Meets Targets?		Yes	Yes
GHG Emissions if Other State Mandates Were Not in Effect (metric tons CO ₂ e/year) ²	263,830	382,050	526,540
Vehicle Emissions per Capita	3.71	3.92	4.15
Meets Targets?		No	No
<i>No Project</i>			
Residents	71,100	86,400	101,630
Annual Vehicle Miles Travelled (VMT)	511,219	707,678	947,796
GHG Emissions from Vehicles (metric tons CO ₂ e/year) ²	263,830	302,380	300,520
Vehicle Emissions per Capita	3.71	3.10	2.37
Meets Targets?		Yes	Yes
GHG Emissions if Other State Mandates Were Not in Effect (metric tons CO ₂ e/year) ²	263,830	365,220	489,130
Vehicle Emissions per Capita	3.71	4.23	4.81
Meets Targets?		No	No

Notes:

1. Emissions reduction targets set per SB 375 for Stanislaus County are 5% from 2005 levels by 2020 and 8% by 2030.
2. For this purpose, State-mandated reductions are not counted. SB 375 targets are meant to be achieved through land use and transportation actions.

Sources: California Department of Finance, 2008; California EDD, 2008; CARB, 2008; Dyett & Bhatia, 2012; Omni Means, 2012.

Because greenhouse gases emitted throughout the area and beyond interact in the atmosphere to produce the effects of climate change, a significant impact in this area is considered to be a cumulative impact. Again, this analysis also compares the projected impact under the proposed Plan to that under the No Project condition, which represents development under existing land use regulations. The No Project scenario would result in a 43 percent increase in population compared to today, considerably less than the proposed General Plan's 78 percent increase. This means that there would be fewer total vehicle miles travelled under the No Project scenario compared to the proposed General Plan. However, using the "efficiency metric" that is used for significance thresholds in this analysis, growth under existing regulations (the No Project case) would result in higher per capita increases in GHG emissions from passenger vehicles, rising 14 percent by 2020 and 30 percent by 2030. Thus buildout under the proposed General Plan would have a less negative impact on GHG

emissions from vehicles than development under existing regulations on a per capita basis. Still, the proposed project's contribution to the cumulative impact on global climate change cumulatively considerable.

Proposed General Plan Policies that Reduce the Impact

The transportation model underlying this analysis seeks to realistically account for characteristics in the land use pattern and transportation system that influence travel behavior. Specifically, the more compact (higher-density) development provided for under the proposed Plan favors shorter trips and a greater share of trips by transit, by bike, and on foot. This is reflected in the lower per capita VMT projections under the proposed Plan compared to the existing General Plan (No Project).

In addition, the Plan contains a variety of policies that are not readily quantified but that may be expected to reduce the impact. For example, the connective street pattern, the requirements for streets to be built to accommodate all modes, and the specific commitments to invest in a bicycle network and pedestrian improvements should also favor a reduction in per capita VMT as the proposed Plan is implemented. These policies are enumerated under Impact 3.5-1.

Mitigation Measures

A wide range of policies recommended by State agencies are included in the proposed General Plan. In addition, new measures identified as part of the City's strategic plan process under policy 8.2-f would be adopted within three years, building on the above measures. Policies included in the proposed General Plan are expected to substantially reduce GHG emissions. These General Plan policies will help to support a Sustainable Communities Strategy (SCS) that demonstrates achievement of SB 375 thresholds at the regional level. This will be completed with the next update of the Regional Transportation Plan for Stanislaus County, including the Study Area.

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 four to five years. CARB is required to review each SCS to determine whether it would achieve the necessary GHG emission reduction for each region.

3.5 Climate Change

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3.6 Noise

This section discusses the noise impacts associated with the implementation of the proposed General Plan. It covers both construction impacts and long-term operational impacts of the Plan. The section also provides background information to help understand noise and its impacts, the regulation of noise by different agencies, and a description of the existing noise environment in the Planning Area.

Environmental Setting

This section presents the environmental setting and evaluates the potential noise impacts in the Turlock Planning Area from implementation of the proposed General Plan.

PHYSICAL SETTING

Noise is commonly defined as undesirable or unwanted sound. Noises vary widely in their scope, source, and volume, ranging from individual occurrences such as leaf blowers, to the intermittent disturbances of overhead aircraft, to the fairly constant noise generated by traffic on freeways. Noise can have real effects on human health, including hearing loss and the psychological effects or irritability from lack of sleep. Noise is primarily a concern with regard to noise-sensitive uses such as residences, schools, churches, and hospitals.

Measuring Sound

Airborne sound is perceived as a result of rapid fluctuation of air pressure. These fluctuations are characterized as a sound pressure level commonly expressed in decibels (dB), with 0 dB corresponding to roughly the threshold of hearing. In general, people can perceive a 3 dB to 5 dB change in noise levels; a difference of 10 dB is perceived as a doubling or halving of loudness. Environmental noise is usually measured in A-weighted decibels; a metric corrected for the variation in frequency response of the

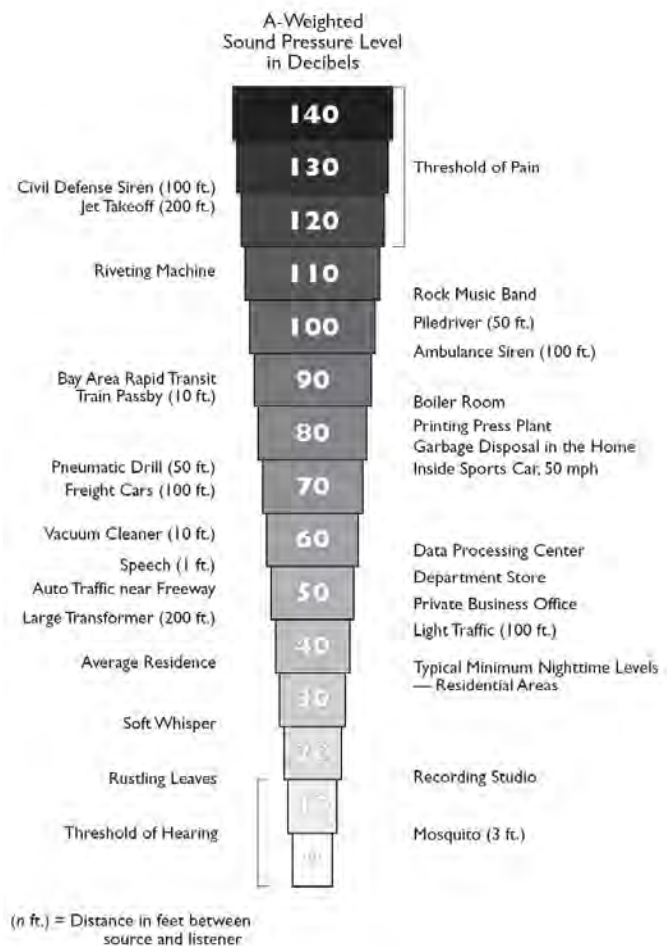


Figure 3.6-1: Typical Sound Levels

3.6 Noise

human ear. The A-weighted scale is used to describe all noise levels (db) discussed in this section.

Three aspects of community noise are used in assessing the noise environment:

- *Level* (e.g., magnitude or loudness) of sound. Sound levels are measured and expressed in decibels (dB) with 10 dB roughly equal to the threshold of hearing. Figure 3.11-1 shows the decibel levels associated with different common sounds.
- *Frequency* composition or spectrum of the sound. Frequency is a measure of the pressure fluctuations per second, measured in units of hertz (Hz). The characterization of sound level magnitude with respect to frequency is the sound spectrum, often described in octave bands, which divide the audible human frequency range (e.g., from 20 to 20,000 Hz) into 10 segments.
- *Variation* in sound level with time, measured as noise exposure. Most community noise is produced by many distant noise sources that change gradually throughout the day and produce a relatively steady background noise having 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 or L_{eq} describes the average noise exposure level over a period of time.

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 factor in human sensitivity to nighttime noise when background noise levels are generally lower than in the daytime and outside noise intrusions are more noticeable. Common descriptors include the Community Noise Equivalent Level (CNEL) and the Day-Night Average Level (DNL, symbol (L_{dn})). Both reflect noise exposure over an average day with weighting to reflect the increased sensitivity to noise during the evening and night. The two descriptors are roughly equivalent. The CNEL descriptor is used in relation to major continuous noise sources, such as aircraft or traffic, and is the reference level for the proposed 2030 General Plan Noise Element.

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.

Typical sound levels are depicted in Figure 3.6-1.

Noise Attenuation

Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate between 6 dBA for hard sites and 7.5 dBA for soft sites for each doubling of distance from the reference measurement. Hard sites are those with a reflective surface between the source and the receiver such as parking lots or smooth bodies of water. No excess ground attenuation is assumed for hard sites and the changes in noise levels with distance (drop-off rate) is simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface such as soft dirt, grass or scattered bushes and trees.

In addition to geometric spreading, an excess ground attenuation value of 1.5 dBA (per doubling distance) is normally assumed for soft sites. Line sources (such as traffic noise from vehicles) attenuate at a rate between 3 dBA for hard sites and 4.5 dBA for soft sites for each doubling of distance from the reference measurement.¹

Noise Contours

The interpretation of noise contours is a generalization, not an exact science. The measurements by sophisticated instruments are affected by many variables in a particular area. However, these individual effects are generalized so that noise contours describe the impact that can generally be expected. Noise contour lines themselves are not specific boundaries of noise tolerance. A contour line denoting a 65 dBA limit, for example, does not imply that residents on one side of the line are seriously affected, while on the other side of the line tolerable conditions exist. Rather, the area between 75 dBA and 65 dBA indicates that residents within this vicinity may experience a high level of noise and potential interference with daily functions.

Effects of Noise

High noise levels can interfere with a broad range of human activities in a way which degrades public health and welfare. Such activities may include speech and telephone communication; listening to television and radio or music; concentration; relaxation; and sleep.

Hearing loss, total or partial, is a well established effect of noise on human health. The primary measure of hearing loss is the hearing threshold level - the level of a tone that can just be detected by an individual. As a person is exposed to increased noise levels, that person may experience a shift in the threshold at which sound can be detected. Exposure to very high noise levels for lengthy periods of time can generate threshold shifts, which can be temporary or permanent. In general, A-weighted sound levels must exceed 60-80 decibels before a person will experience temporary threshold shifts. The greater the intensity level above 60-80 decibels and the longer the exposure, the greater length of the temporary threshold shift.

Noise Sources 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 3.6-2 maps existing noise contours. 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 Noise

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

¹ California Department of Transportation (1998) Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects.

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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 on 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 Noise

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 of Turlock's industrial activity occurs in the Turlock Regional Industrial Park, far removed from housing. Some existing industrial uses are in relatively close proximity to older neighborhoods directly south of downtown and in the Golden State Boulevard corridor.

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.

REGULATORY SETTING

Federal, state, and local agencies regulate different aspects of environmental noise. Federal and state agencies generally set noise standards for mobile sources such as aircraft and motor vehicles, while regulation of stationary sources associated with industrial, commercial and construction activities is left to local agencies. Local regulation of noise involves implementation of general plan policies and noise ordinance standards. Local general plans identify general principles intended to guide and influence development plans; local noise ordinances establish standards and procedures for addressing specific noise sources and activities.

Federal Regulations

Code of Federal Regulations

Federal regulations establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 CFR, Part 205, Subpart B. The federal truck passby noise standard is 80 dB at 15 meters from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers.

Federal regulations for railroad noise are contained in 40 CFR [Code of Federal Regulations], Part 201 and 49 CFR, Part 210. Noise limits for locomotives manufactured during or after 1980 are as follows: stationary locomotives (at idle throttle setting) are not to exceed 70 dB at 15 meters (approximately 50 feet) from the track pathway centerline. Stationary locomotives (at all other throttle settings) are not to exceed 87 dB at 15 meters; and moving locomotives are not to exceed 90 dB at 15 meters. These noise limits are implemented through regulatory controls on locomotive manufacturers.

Federal Highway Administration

In addition to noise standards for individual vehicles, under regulations established by the U.S. Department of Transportation's Federal Highway Administration, noise abatement must be considered for certain federal or federally-funded projects. Abatement is an issue for new highways or significant modification of an existing freeway. The agency must determine if the project would create a substantial increase in noise or if the predicted noise levels approach or exceed the Noise Abatement Criteria. Under the regulations, a substantial increase is defined as an increase in L_{eq} 12 dB during the peak hour of traffic noise. The Noise Abatement Criteria differ among various activity categories. For sensitive uses, such as residences, schools, churches, parks, and playgrounds, the Noise Abatement Criteria is L_{eq} 57 (interior) and 67 dB (exterior) during the peak hour of traffic noise.

Swift Rail Development Act

The sounding of locomotive horns or whistles in advance of highway rail grade crossings has been used as a safety precaution by railroads since the late 1880s. The manner in which horns have been sounded (two longs, one short and one long) was standardized in 1938. In response to a growing national trend towards

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restrictions on the use of locomotive horns under local ordinances and a related increase in collisions, Congress passed the Swift Rail Development Act, which directs the Federal Railroad Administration (FRA) to develop rules addressing this issue. In January 2000, the FRA published a proposed rule requiring use of the horns or whistles on approaches to every public road / rail grade crossing. An exception is made in approved quiet zones, where supplementary safety measures have been installed or adopted by the state or locality. The proposed rule would also establish an upper limit for the loudness of train horns. Quiet zones are adopted by local governments, and approved by the FRA.

National Environmental Policy Act

The National Environmental Policy Act (NEPA), signed into law on January 1, 1970, directs federal agencies to carry out their regulations, policies and programs in accordance with NEPA's environmental protection policies. Although NEPA does not establish specific noise standards, the noise impacts of projects are routinely considered as one of the potential environmental consequences of federal actions subject to NEPA (such as certain federally funded highway or rail projects).

State Regulations

California Department of Transportation

The State establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the State passby standard is consistent with the federal limit of 80 dB. The State passby standard for light trucks and passenger cars (less than 4.5 tons, gross vehicle rating) is also 80 dB at 15 meters from the centerline. These standards are implemented through controls on vehicle manufacturers and by state and local laws enforced against vehicle operators. For new roadway projects, the California Department of Transportation (Caltrans) employs the Noise Abatement Criteria, discussed above in connection with the Federal Highway Administration.

California Code of Regulations, California Building Code.

The State has established noise insulation standards for new multi-family residential units, hotels, and motels that would be subject to relatively high levels of transportation-related noise. These requirements are collectively known as the California Noise Insulation Standards. The noise insulation standards set forth an interior standard of DNL 45 dB for any habitable room. They also 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 DNL 60 dB. If windows must be in the closed position to meet the interior noise level standard, the project design must include a ventilation or air-conditioning system to provide fresh air to the habitable interior environment. Title 24 standards are typically enforced by local jurisdictions through the building permit application process.

Local Regulations

Turlock General Plan Noise Element

The Noise Element of the existing General Plan contains the City's policies and standards relating to permissible noise levels, land use compatibility, and development requirements. Policies include:

- 8.4-a Continue to use potential noise exposure as a criterion in land use planning.
- 8.4-b 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.

- 8.4-c Require site planning and architecture to incorporate noise-attenuating features.
- 8.4-e Evaluate all projects located within the Turlock Municipal Airport environs based upon the criteria established by the Merced County Airport Land Use Commission.
- 8.4-f Require all major development projects and noise-sensitive receptors (major residential developments, schools, hospitals, nursing homes, parks, and playgrounds) to comply with the land use compatibility guidelines indicated by Figure 8-2. Compliance shall be based upon projected noise exposure levels at General Plan buildout shown on Figure 8-1. A noise analysis complying with Policy 8.4-h will be required when noise levels are projected to be conditionally acceptable or unacceptable, as these terms are defined in Figure 8-2 for different land uses.

Figure 8-2 in the existing General Plan identifies “Acceptable” and “Conditionally Acceptable” levels of Community Noise Exposure, by land use category, as summarized in Table 3.6-1. Where Community Noise Level is “conditionally acceptable,” the “use should be permitted only after careful study and inclusion of protective measures as needed to satisfy the policies of the Noise Element.” Development in exposure areas above the conditionally acceptable range is “usually not feasible in accordance with the goals of the Noise Element.”

TABLE 3.6-1 EXISTING GENERAL PLAN LAND USE COMPATIBILITY GUIDELINES FOR DEVELOPMENT (FIGURE 8-2 IN EXISTING GENERAL PLAN)

<i>Land Use Category</i>	<i>Acceptable Community Noise Exposure (L_{dnr} or CNEL dB)</i>	<i>Conditionally Acceptable Noise Exposure Level (L_{dnr} or CNEL dB)</i>
Residential, Theaters, Auditoriums, Music Halls, Churches	55	65
Transient Lodging- Motels, Hotels	55	70
Schools, Libraries, Museums, Hospitals, Nursing Homes	55	70
Playgrounds, Neighborhood Parks	65	70
Office Buildings	65	70

Source: City of Turlock General Plan, 2002.

- 8.4-g 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 L_{dn}.
- 8.4-h A required noise analysis (see Policy 8.4-f, above) should:
 - Be prepared by a certified noise consultant under contract to the City;
 - 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 (L_{dn}) within the proposed development site; and
 - Include a description of adequate and appropriate noise abatement measures where sound measurements exceed Table 8.4-A standards for the proposed use.

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- 8.4-i 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 8.4-A, 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.
- 8.4-j Require mitigation of noise created by new proposed non-transportation noise sources so that it does not exceed the noise level standards of Table 8.4-A as measured immediately within the property line of lands designated for noise-sensitive uses. This policy does not apply to noise sources associated with agricultural operations on lands zoned for agricultural uses.
- 8.4-k Continue to enforce the City Noise Control Ordinance.
- 8.4-l Establish specific truck routes where noise impacts on frontage land uses are least likely to occur.
- 8.4-m Where possible (site conditions permitting), require noise buffers along arterial streets and railroad alignments if proposed new land uses along the routes will be subject to unacceptable noise levels as specified in Table 8.4-B. Noise buffers could involve some combination of special setback, earth berms, solid noise walls, special placement of non-occupancy accessory structures, placement of windowless building sites towards the noise source, building insulation techniques, etc.
- 8.4-n Require mitigation of noise created by new transportation noise sources, including roadway improvement projects, so that noise does not exceed the levels specified in Table 8.4-B in outdoor activity areas or interior spaces of existing noise-sensitive land uses.

Noise Control Ordinance

Section 9-2-307 of the Turlock Municipal Code defines the allowable exterior ambient noise limits for different land uses above which a noise is considered to be an intrusion. Noise limits are delimited by land use, time period, and noise zone classification (rural, suburban, and urban). The noise ordinance also limits the days and times in which construction activity is permitted. The ordinance also defines the maximum permissible sound levels for churches and other organizations using amplified bells, chimes, or similar devices, as well as maximum permissible indoor noise levels for multifamily residential uses.

Impact Analysis

SIGNIFICANCE CRITERIA

Implementation of the proposed General Plan would have a potentially significant impact if it would:

- Result in a substantial permanent increase in ambient noise levels above levels existing without the project;
- Result in a substantial temporary or periodic increase in ambient noise levels above levels existing without the project;
- Cause the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels; or
- Expose persons to or generate outdoor noise levels in excess of existing standards (found in the current Turlock General Plan Noise Element).

METHODOLOGY AND ASSUMPTIONS

Future traffic noise levels were computed using the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108). The model uses traffic volume, vehicle mix, vehicle speed, and roadway geometry to compute the L_{eq} . The L_{eq} values were converted into CNEL using FHWA methodology. The traffic volumes are based on traffic data more fully described in Section 3.3: Transportation.

The methods used to assess noise are described throughout this section. A summary of noise standards was provided based on a review of all applicable federal, State, and local noise regulations. A discussion of other noise sources was based on collected noise measurements.

The noise analysis included in this section evaluates the future development scenario as a whole, with the proposed General Plan development applied to projected future growth in the region. Therefore, analysis of noise from implementation of the proposed General Plan represents both the project impacts and cumulative effects. The noise associated with build-out of the proposed Plan is considered identical to the cumulative condition for CEQA purposes.

SUMMARY OF IMPACTS

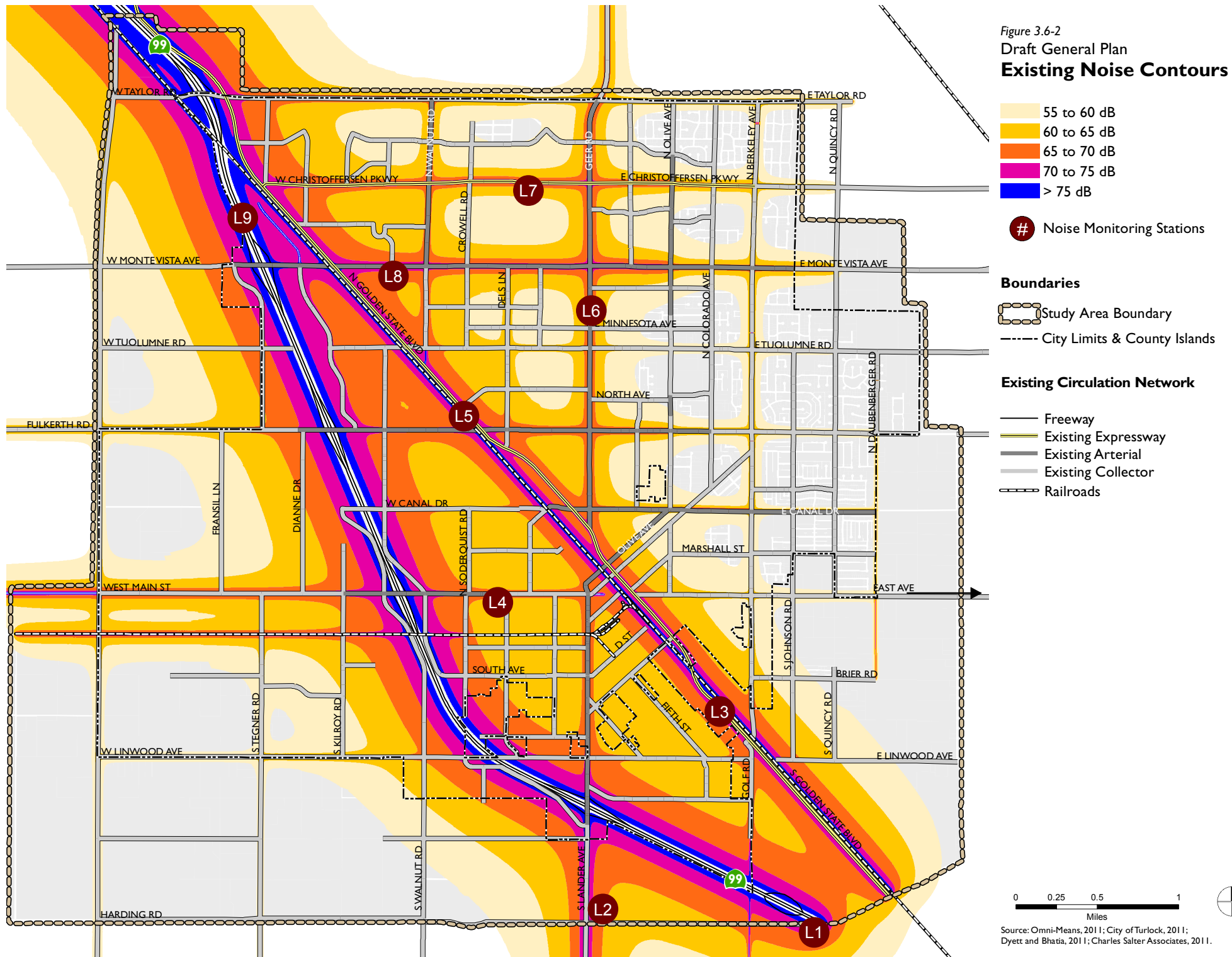
Implementation of the proposed General Plan will result in higher traffic volumes, more industrial and commercial noise sources, and a larger population, all of which will contribute to the noise environment in Turlock. The General Plan anticipates these trends and presents a set of policies to reduce noise impacts on noise-sensitive receptors. The potential for a permanent overall increase in ambient noise related to traffic, railroads, and stationary sources would remain a significant and unavoidable impact, given the uncertainty as to whether they could be adequately mitigated for each individual project.

Development according to the proposed General Plan could also expose more people to noise in excess of compatibility thresholds for specific land uses. An increased number of housing units, churches, nursing homes, and other uses may be located in areas where the Community Noise Level is higher than acceptable under existing General Plan standards. General Plan policies would minimize these impacts to a less than significant level, in particular, by updating noise standards based on the most recent State guidance.

Ambient noise levels near areas of new development may temporarily increase due to construction activities. Development would be required to comply with the limitations on construction activity and associated noise standards identified in the Noise Ordinance, as required by the proposed General Plan. Compliance is mandatory and will ensure that construction noise impacts, while potentially a temporary nuisance, are less than significant.

Development of the proposed General Plan could expose more people to the impacts of excess groundborne vibration, as new development occurs in the vicinity of sources of vibration (in particular railroad lines and construction equipment) in the Study Area. Policies included as part of the proposed General Plan would minimize the impact to a less than significant level.

Figure 3.6-2
 Draft General Plan
Existing Noise Contours



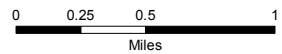
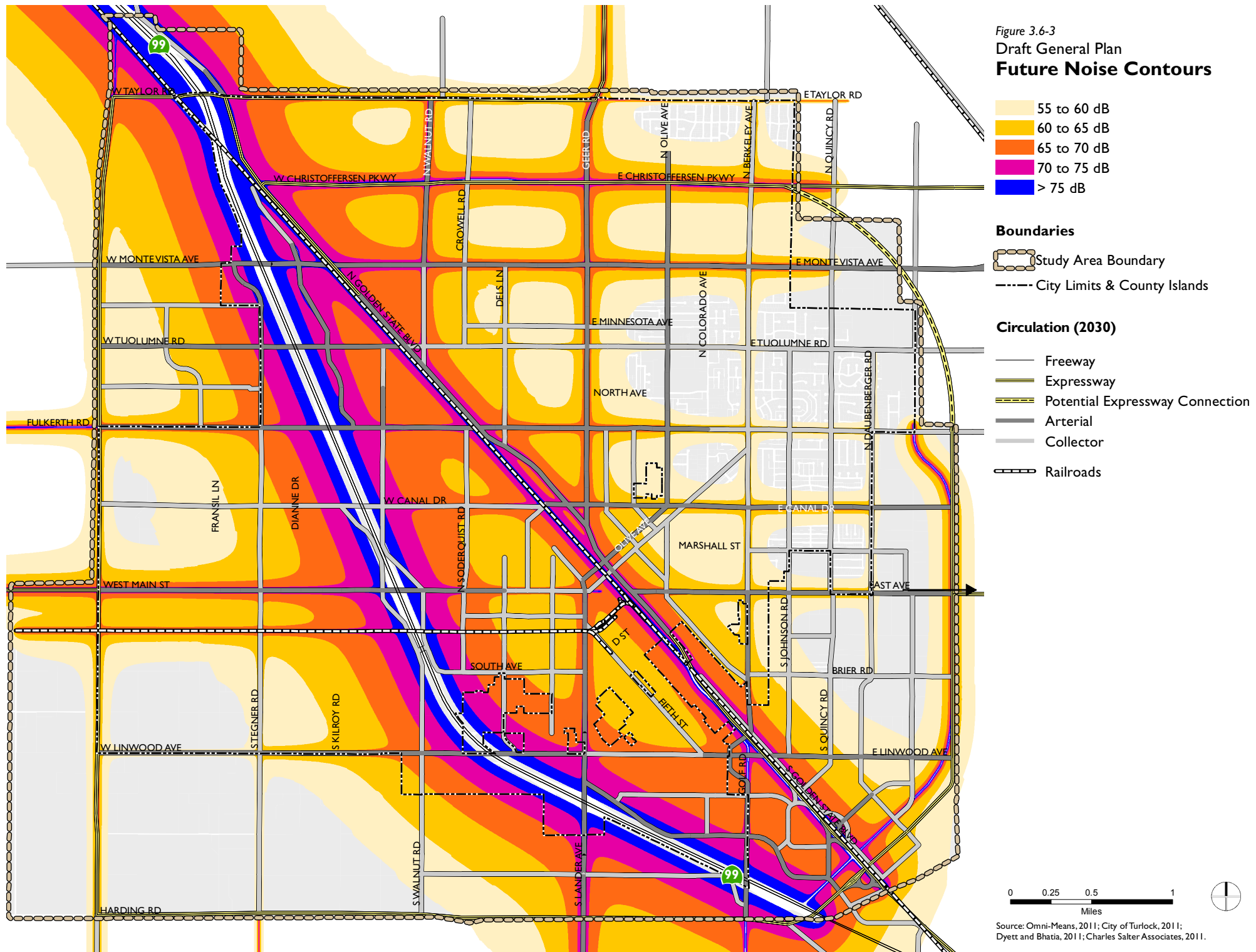
- 55 to 60 dB
- 60 to 65 dB
- 65 to 70 dB
- 70 to 75 dB
- > 75 dB

Noise Monitoring Stations

- Boundaries**
- Study Area Boundary
 - City Limits & County Islands

- Existing Circulation Network**
- Freeway
 - Existing Expressway
 - Existing Arterial
 - Existing Collector
 - Railroads

Figure 3.6-3
Draft General Plan
Future Noise Contours



Source: Omni-Means, 2011; City of Turlock, 2011; Dyett and Bhatia, 2011; Charles Salter Associates, 2011.

IMPACTS AND MITIGATION MEASURES

Impact

3.6-1 New development under the proposed General Plan could result in a substantial permanent increase in ambient noise levels. (*Significant and Unavoidable*)

Noise resulting from vehicles, trains, and stationary operations are expected to increase as a result of the proposed General Plan. Increases are expected to occur both along existing roadways in developed areas and along new roadways in future growth areas, and in the vicinity of new stationary operations. Given the uncertainty as to whether future noise impacts could be adequately mitigated for all individual projects, potential impacts related to substantial permanent increases in ambient noise related to traffic, railroads, and stationary sources are considered significant and unavoidable.

Traffic Noise

Potential impacts on existing and future land uses will primarily be the result of additional vehicles traveling along local 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. While an increase of 3 or more dBA is considered potentially significant, it is only significant if it affects sensitive land uses. 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;
- 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.

Railroad Noise

Railroad noise primarily occurs from existing operations along the main UPRR line, which runs northwest-southeast through the City, and to a lesser extent along the spur line that runs east-west between West Main

Street and South Avenue. Because of the uncertainties associated with future operational details, no comprehensive noise predictions are included in this analysis. However, development of the proposed General Plan could locate residential land uses in the vicinity of the railroad corridors, which could result in the exposure of sensitive receptors to elevated noise exposure. The actual level of impact would depend on the presence and location of any existing or proposed sensitive land uses in relation to the noise source.

Industrial Noise Sources

The proposed General Plan designates land for industrial and heavy commercial areas in the Southeast. New industrial or certain types of commercial uses may increase noise levels in their proximity. This could occur due to the continual presence of heavy trucks used for the distribution of goods and supplies, or from the use of equipment used in the manufacturing process or on the site to transport goods. Potential areas of land use-noise conflict could occur where these industrial areas border sensitive land uses like housing and schools.

Policies included as part of the proposed General Plan that would minimize these impacts are summarized below. Policies have been developed to provide guidance on the analysis and mitigation of future project-related noise issues. Additional policies promote compatible development that minimizes a variety of nuisance related impacts (i.e., visual, noise, etc.). However, even with implementation of these policies, this impact is considered potentially significant.

Proposed General Plan Policies that Reduce the Impact

The following proposed policies would reduce Impact 3.6-1:

- 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.
 - 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:

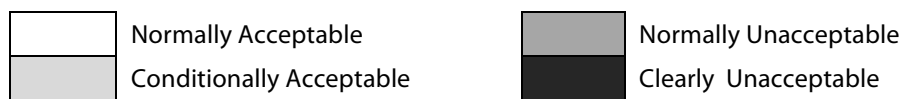
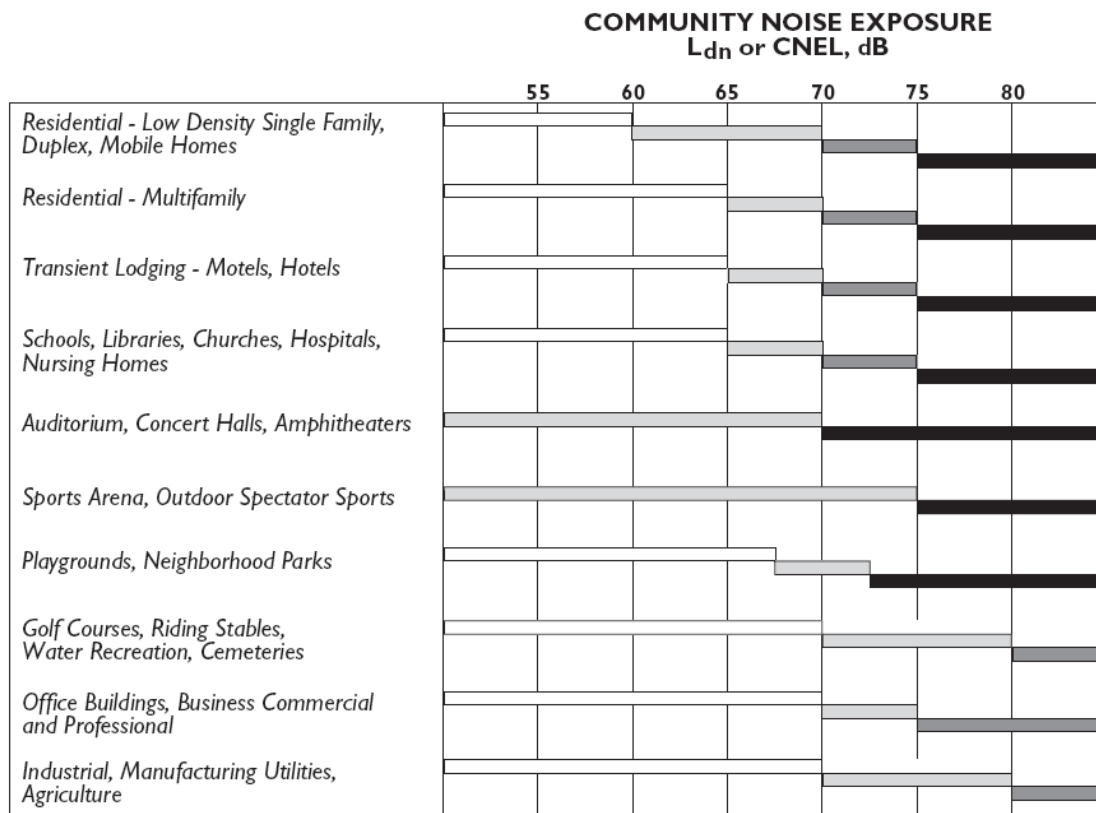
- Be prepared by a certified noise consultant or acoustical engineer;
- Be funded by the applicant;
- Include a representative, on-site day and night sound level measurement;
- Include a delineation of current (measured) and projected (10 years) noise contours with and without the proposed project, ranging from 55 to 75 dBA (L_{dn}) within the proposed development site; and

3.6 Noise

- Include a description of adequate and appropriate noise abatement measures where sound measurements exceed Table 9-1 standards for the proposed use.

A list of accredited noise consultants is available from the National Council of Acoustical Consultants.

TABLE 3.6-2: LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS (TABLE 9-1 IN PROPOSED GENERAL PLAN)



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 L_{dn}.

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:

- Façades 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-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,

3.6 Noise

properly landscaped berms or walls shielded with climbing vines can, over time, become visual assets. The use of noise barriers should be minimized.

Mitigation Measures

The City will continue to implement its Noise Ordinance. In addition, the City will ensure that noise analysis and mitigation be conducted for individual projects (with project-specific data) that will, if possible, mitigate potential noise impacts to a less-than-significant level. The ability to mitigate potential impacts is contingent upon a variety of factors including the severity of the noise impact, existing land use conditions and the technical feasibility of implementing proposed mitigation measures. Given the uncertainty as to whether future noise impacts could be adequately mitigated for all individual projects that will be developed under the updated General Plan, this impact remains significant and unavoidable. No additional feasible mitigation is currently available.

Impact

3.6-2 New development under the proposed General Plan would not cause the exposure of an increased number of persons to noise levels in excess of existing standards as defined in the current General Plan. (*Less than Significant*)

As discussed above, noise resulting from vehicles, trains, and stationary operations is expected to increase as a result of the proposed General Plan. This is expected to translate to a related but separate impact: the exposure of more persons to noise in excess of noise exposure thresholds established under the General Plan.

Turlock's existing General Plan features Land Use Compatibility Guidelines for Development, reproduced above in the discussion of local regulations. These guidelines establish thresholds of acceptable noise exposure by land use. Residential uses, along with theaters, auditoriums, meeting halls, churches, transient lodging, schools, libraries, museums, hospitals and nursing homes, should have Community Noise Exposure of less than 55 dB. Playgrounds, parks and office buildings may have acceptable noise exposure up to 65 dB.

Existing and future noise contours are illustrated in Figures 3.6-2 and 3.6-3, respectively, based on measured noise levels along roadways and projected traffic conditions under the General Plan. Table 3.6-3 lists the estimated acreage exposed to community noise levels above current General Plan standards, by land use. In 2030, approximately 4,540 acres of residential uses are expected to be in areas with noises levels above 55 dB, compared to 3,579 acres today. There are 724 acres of land in the Public/Institutional land use category, which covers schools, libraries, and hospitals, in areas with noise levels above 55 dB today, projected to grow to 974 acres in 2030. The amount of land where offices could be developed in community noise environments of over 65 dB is also expected to grow, from 245 acres today to 301 acres in 2030. Only park land acreage exposed to noise in excess of existing General Plan standards is expected to decline, due to the new General Plan's exclusion of dual use storm basins from the park land category.

TABLE 3.6-3: EXISTING AND PROPOSED LAND USE IN AREAS WHERE EXPOSURE WOULD EXCEED EXISTING GENERAL PLAN STANDARDS

Land Use	Acceptable Noise Exposure (dB), Existing General Plan	Acres Over Existing Standard		
		Existing GP	Proposed GP	Change
Residential, Churches (Residential Districts)	55	3,579	4,540	962
Schools, Libraries, Museums, Hospitals, Nursing Homes (Public/Institutional District)	55	724	974	250
Playgrounds, Neighborhood Parks	65	103	90	(13)
Office Buildings (Downtown, Office, and Business Park Districts)	65	245	301	56

Notes:

Existing noise standards apply to specific land uses, while this analysis surveys acreage by General Plan land use designation. For the purpose of this analysis, residential development and churches are assumed to occur in residential land use designations. Schools, libraries, hospitals, nursing homes, and similar uses are assumed to occur in the Public land use designation. Office buildings are assumed to occur in the Downtown, Office, and Business Park designations. Playgrounds and neighborhood parks are specifically mapped. Transient lodging is governed by existing noise standards, but is not considered here because lodging is expected to make up only a small fraction of commercial land uses and because it is not considered a sensitive use.

Source: Dyett & Bhatia, 2011, City of Turlock 2002.

Proposed General Plan Policies that Reduce the Impact

Policies listed under Impact 3.6-1 help to reduce this impact to a less than significant level. Of particular importance, the proposed General Plan updates the community noise exposure standards, based on the most recent state recommendations. These standards account for more land uses and distinguish between single-family and multi-family development. “Acceptable” and “conditionally acceptable” noise levels are higher than under the existing General Plan for most land uses. Residential land uses subject to an acceptable limit of 55 dB are proposed to be considered acceptable in areas up to 60 dB for low-density and 65 dB for multi-family housing. Both types would be conditionally acceptable at 70 dB, raised from 65 dB under the current Plan. See Table 3.6-2 for the proposed new General Plan land use compatibility noise standards. The new standards would have the effect of limiting the extent to which new development would raise noise levels above thresholds now considered by the State to be appropriate.

Proposed policies would also ensure analysis and mitigation of future project-related noise issues and promote compatible development. The proposed policies, including the updated noise standards following State guidance, reduce this impact to less than significant.

Mitigation Measures

None proposed.

Impact

3.6-3 New development under the proposed General Plan would not result in a substantial temporary or periodic increase in ambient noise levels. (*Less than Significant*)

Construction-related noise is considered a short-term noise impact associated with demolition, site preparation, grading, and other construction-related activities. Two types of short-term noise impacts could

3.6 Noise

occur during these construction-related activities. First, the transport of workers and the movement of materials to and from the construction site could incrementally increase noise levels along local access roads. The second source of noise would result from the physical activities (e.g., grading, etc.) associated with construction-related activities. Implementation of the proposed General Plan would result in additional land use developments that have the potential to result in construction-related noise at varying times and intensities throughout the planning period. Table 3.6-4 shows typical exterior noise levels associated with various types of construction-related machinery.

TABLE 3.6-4: TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

<i>Construction Equipment</i>	<i>Noise Level (dB, L_{eq} at 50 feet)</i>
Truck	88
Concrete Mixer (Truck)	85
Scraper	89
Jack Hammer	88
Dozer	85
Paver	89
Generator	81
Pile Driver (Impact)	101
Loader	85
Grader	85
Backhoe	80

Source: Federal Transit Administration, 2006. Transit Noise and Vibration Impact Assessment, May 2006.

Since construction activities could substantially increase ambient noise levels at noise-sensitive locations, construction noise could result in potentially significant, albeit temporary, impacts to sensitive receptors. Compliance with the proposed General Plan policy to regulate construction noise through the City's Noise Ordinance will ensure that temporary noise impacts resulting from construction are less than significant.

Proposed General Plan Policies that Reduce the Impact

9.4-i Noise Ordinance. Continue to enforce the City Noise Control Ordinance and update as necessary.

Compliance with existing City regulations and proposed General Plan policies would ensure that construction noise impacts would be less than significant.

Mitigation Measures

None required.

Impact

3.6-4 New development in the proposed General Plan would not cause the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. *(Less than Significant)*

Development of the proposed General Plan could potentially expose more people to the impacts of excess groundborne vibration. Vibration created through construction and industrial activities or through the operation of motor vehicles and railways could result in potentially significant impacts on local residents. As

with noise, groundborne vibration impacts associated with construction activities are temporary, but depending on the type of construction related machinery used may result in a high degree of vibration. Activities such as pile-driving, blasting, drilling, and excavation have the highest potential for creating groundborne vibration impacts. The potential construction-related noise and vibration impacts depend on the proximity of construction activities to sensitive receptors, the presence of intervening barriers, the number, types and duration of construction equipment used.

While it is difficult to quantify and describe the nature and extent of vibration impacts at the programmatic level, subsequent environmental analysis and documentation for individual projects will be required to mitigate any potential construction/operations-related vibration and noise impacts to a less-than-significant level, as feasible.

Proposed General Plan Policies that Reduce the Impact

Policies listed under Impacts 3.6-1 and 3.6-3 are expected to contribute to reducing this impact; in particular, the City must continue to enforce and update the Noise Control Ordinance (Policy 9.4-i). In addition, the following policy is provided:

9.4-f **Vibration Impacts.** Require that new development near railroad tracks is limited as follows to avoid impact from excessive 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 uses 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.

Mitigation Measures

None required.

3.6 Noise

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3.7 Aesthetics and Visual Resources

This section presents the environmental setting and impact analysis for visual resources and aesthetic character. It evaluates to what extent implementation of the proposed Plan will affect the visual quality of the Study Area.

Environmental Setting

PHYSICAL SETTING

The Study Area's topography is almost completely level, providing no natural raised vistas of its surroundings. Brief panoramic views of surrounding farmland are visible from highway overpasses. Because the City has maintained its status as a stand-alone urban area surrounded by agricultural uses, farms with row crops and orchards are visible from ground level around the circumference of the urbanized Study Area. The City's fairly regular gridded street pattern and lack of tall structures means that several roads—especially those running east-west—can function as view corridors. On clear days, the Sierra Nevada mountain range is visible to the east, and Mount Diablo and the surrounding foothills are visible to the west.

The central portion of the Study Area is characteristic of an older central business district, incorporating a main street, a mixture of commercial uses, and older residential neighborhoods. Larger commercial developments and newer residential neighborhoods are located further from the center. The Study Area also includes areas with a rural residential character to the southeast, and agricultural fields and orchards to the west, south and east.

Highway 99 is the principal north-south route in the San Joaquin Valley and traverses the Study Area. For many years, the highway formed the edge of Turlock's urbanized area, providing a distinct boundary, visible to motorists, between the city and its agricultural surroundings. This has begun to change with development in the Turlock Regional Industrial Park.

REGULATORY SETTING

State Regulations

California Scenic Highways Program

Recognizing the value of scenic areas and the value of views from roads in such areas, the State Legislature established the California Scenic Highway Program in 1963. This legislation sees scenic highways as "a vital part of the all-encompassing effort...to protect and enhance California's beauty, amenity and quality of life." Under this program, a number of State highways have been designated as eligible for inclusion as scenic routes. Once the local jurisdictions through which the roadway passes have established a corridor protection program and the Departmental Transportation Advisory Committee recommends designation of the roadway, the State may officially designate roadways as scenic routes. Interstate highways, state highways, and county roads may be designated as scenic under the program. The Master Plan of State Highways Eligible for

3.7 Aesthetics and Visual Resources

Official Scenic Highway Designation maps show designated highway segments, as well as those that are eligible for designation. Changes to the map require an act of the legislature.

As noted, a corridor protection program must be adopted by the local governments with land use jurisdiction through which the roadway passes as the first step in moving a road from “eligible” to “designated” status. Each designated corridor is monitored by the State and designation may be revoked if a local government fails to enforce the provisions of the corridor protection program. At a minimum, each corridor protection program must include:

- Regulation of land use and density of development;
- Detailed land and site planning;
- Control of outdoor advertising devices;
- Control of earthmoving and landscaping; and
- Regulation of the design and appearance of structures and equipment.

The Master Plan of State Highways Eligible for Official Scenic Highway Designation requires that proposed projects be evaluated for their impact on the scenic qualities of the corridor.

There are currently no highways in the Study Area that are eligible or officially designated as Scenic Highways.

Regional Regulations

Route 99 Corridor Enhancement Plan

Caltrans has adopted a policy of “Context Sensitive Solutions,” with the goal of harmonizing environmental and aesthetic values with safety and mobility goals. In 2004, the agency adopted the Route 99 Corridor Enhancement Master Plan. The Plan reviews current roadway conditions and planned improvements, and promotes the realization of these improvements in a way that creates a unified aesthetic experience and enhances regional identity. The Plan proposes a guiding theme for the highway: “Route 99 – the Mainstreet of California’s Heartland, Linking Heritage to Innovation.” This theme would be carried out by Caltrans in its landscaping and structural projects, and by local jurisdictions in their land use, development, and signage regulations. In Stanislaus County, the Route 99 Image Enhancement Plan Implementation Project (PIP) has sought to move these ideas forward.

Local Regulations

Turlock General Plan City Design Element

Street Design and Connectivity Policies: Gateway Zones

7.4-f Designate the principal access points to Turlock which warrant special treatment and development review considerations as “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.

City Design Guidelines

The City’s Design Guidelines complement the development regulations in the zoning code. Through graphics and written descriptions, the Design Guidelines provide additional reference for designers to understand the City’s goals and objectives for high quality development. They apply generally to residential, commercial, and

industrial property in all zoning districts and planned development zones, as well as to landscaping and signs. The Guidelines attempt to foster variety and interest along city streets while still maintaining the character of existing neighborhoods. The Guidelines also emphasize screening and landscaping of utilities and parking to create a more pleasant environment.

Downtown Design Guidelines and Zoning District

Adopted in 2003, the Downtown Design Guidelines and Zoning Regulations build on the vision for Downtown Turlock outlined in the General Plan and in an earlier Downtown Master Plan. Recent public and private investment has increased interest in the Downtown Core, with future investment in Downtown Turlock anticipated. 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. The focus of the City's General Plan and this document is to emphasize 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.

Turlock Beautification Master Plan

The Turlock Beautification Master Plan aims to provide guidance for creating a unified visual image and identify for the City. Unlike the Design Guidelines, which focus primarily on standards for individual property developments, the Beautification Master Plan takes a more holistic perspective on Turlock and focuses on the city's "gateways" and corridors (the primary entrances to and paths through Turlock), which have the highest potential for imparting a unified visual impact. The Plan addresses signage, streetscape, landscaping, and public art along State Route 99, numerous Gateway Zones, and along secondary corridors through the city. Efforts are currently underway on an implementation plan that will identify funding sources for the projects proposed in the Beautification Master Plan.

Impact Analysis

SIGNIFICANCE CRITERIA

The Turlock General Plan would have a significant adverse effect on visual resources if it would:

- Have a substantial adverse effect on a scenic vista;
- Substantially degrade the existing visual character or quality of the Study Area and its surroundings; or
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Generally, the greater the change from existing conditions, the more substantial the impact. For example, the construction of a new development on open rural land usually has a greater visual impact than redevelopment on infill land. Likewise, the construction of a new roadway generally has a greater visual impact than the widening of an existing one. New development and redevelopment can have significant local impacts where they would require the removal of trees and other important landscape buffers or other contrasting visual elements.

METHODOLOGY AND ASSUMPTIONS

Aesthetics and visual resources are generally subjective by nature, and therefore the level of the proposed General Plan's visual impact is difficult to quantify. In addition, it is difficult to estimate the impact future development would have on scenic resources, since individual development projects can enhance the aesthetic quality of an area. As such, this analysis was conducted qualitatively, assessing potential implications of growth following the General Plan Land Use Diagram on the existing visual character of the Study Area.

SUMMARY OF IMPACTS

Impacts on scenic vistas are expected to be less than significant given that views to the agricultural edge will improve in some cases through the expansion of the street grid, and that while some views may be obstructed by new buildings, new views are expected to compensate for any lost views.

Buildout of the General Plan would slightly increase the overall density of Turlock, promote infill development, strategically extend the urban edge, introduce a greater mix of uses, revitalize commercial corridors, and create walkable neighborhoods, all of which would have physical impacts on the scale and character of the City. The General Plan would create a more unified, pedestrian-friendly, and aesthetically pleasing streetscape. Growth in rural and agricultural areas would cause a change in visual character, though the agricultural edge would be maintained (see Figure 3.7-1, Urban/Agricultural Edge Conditions). It is expected that the proposed General Plan will have a beneficial impact on the visual character in many parts of Turlock, and that any adverse impacts on visual character would be less than significant.

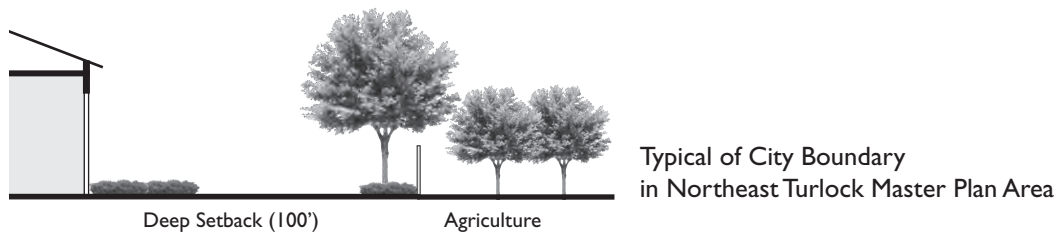
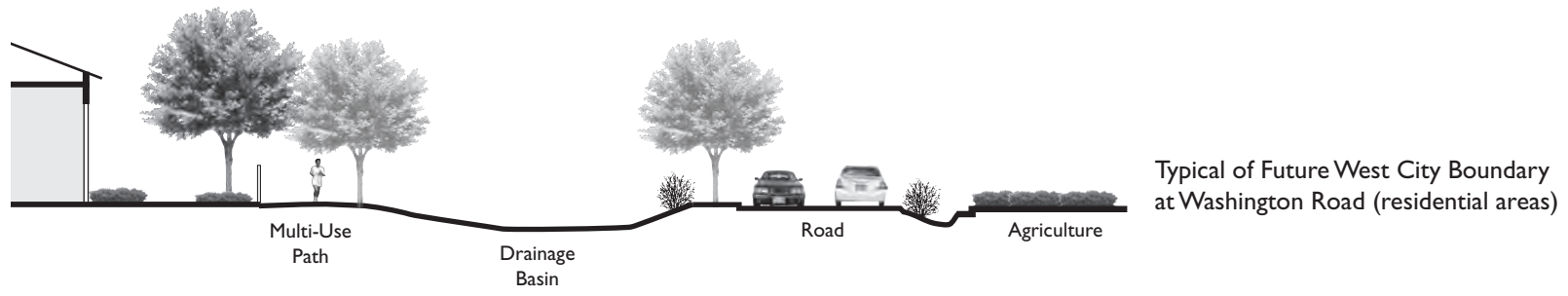
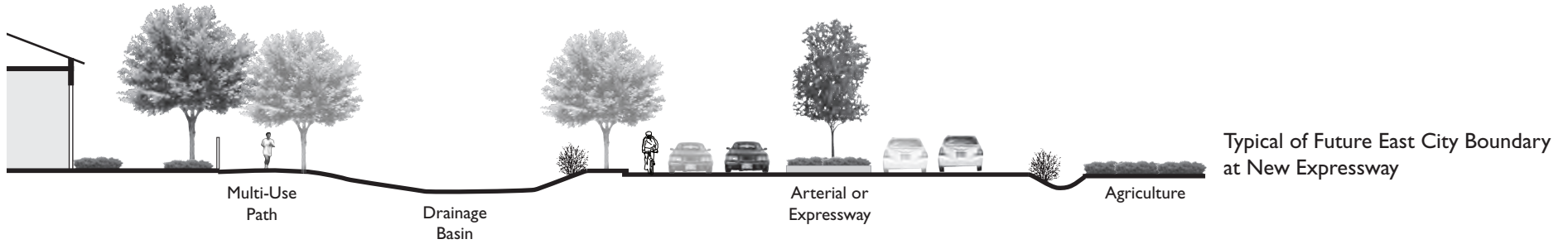
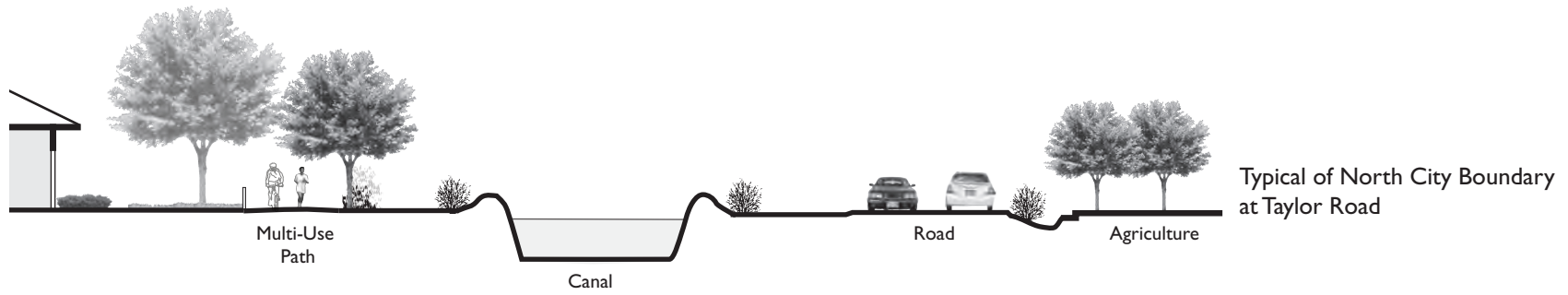
Within most of the existing urbanized area, infill development and redevelopment would not have a significant effect on the visual quality of the city, because new development would likely be similar in scale and character to existing development. This infill development likewise would not be expected to have a substantial adverse impact on panoramic views or create incongruous visual elements because the height and massing of new development would be similar to existing development.

Infill and redevelopment in the Downtown area may occur at a higher density than currently exists in Turlock. Here, new development may contrast in scale with existing buildings, and the visual character of the

area could change substantially. However, this impact is projected to be less than significant, because zoning designations and design guidelines Downtown will sensitively govern formal characteristics of new development.

New development under the proposed General Plan is not expected to create new sources of light or glare that could substantially affect day or nighttime views in the area. This impact is expected to be less than significant.

Figure 3.7-1 Typical Urban/Agricultural Edge Conditions



IMPACTS AND MITIGATION MEASURES

Impact

- 3.7-1** Implementation of the proposed Turlock General Plan would not block views of significant landscape features as seen from public areas. (*Less than Significant*)

As noted in the settings section, Turlock's relatively flat topography results in few scenic vistas; views consist mainly of adjacent development or adjacent farmland, orchards, or fields. In general, views to surrounding agricultural areas exist primarily at the urban edge. Cul-de-sacs, walls, and T-intersections restrict views to agricultural areas. On clear days, there are distant views to hills of the eastern Bay Area to the west, and even more distant and indistinct views to the Sierra Nevada foothills to the east.

Development consistent with the proposed Land Use Element has the potential to obstruct views currently available to the public, specifically views of farmland from developed areas currently at the edge of urban development. These views would be partially or completely blocked in some public areas by new construction beyond the current edge of development. Overall, however, public views would not be significantly altered or blocked. Although views may be obstructed in localized areas due to proposed new development, views would not be impacted on an area-wide basis. Proposed new development may limit some existing views, though it is expected that overall, new views will compensate for any lost views.

Street connectivity required in the proposed General Plan, as well as limitations on cul-de-sacs and sound walls, will result in longer views along roadways and fewer disruptions to views, ensuring that views to agricultural lands are maintained. In places where the street grid is extended, visual connections will be enhanced.

Proposed General Plan Policies that Reduce the Impact

New Growth Areas and Infrastructure Element Policies

- 3.2-1 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-n 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-o 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.

City Design Element Policies

- 6.1-k Agricultural Buffer Design.** Implement an "agricultural – urban buffer design" to minimize the impact of urban development near active agricultural operations. 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.

3.7 Aesthetics and Visual Resources

- 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 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.
- Design and size utility infrastructure to discourage future extensions beyond the definitive urban edge.

6.3-a **Continue gridded street network.** Continue expansion of the present street network in an orthogonal grid for all arterial and collector streets.

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 commercial projects to conform to maximum spacing between through-streets (exclusive of alleys), as depicted in Figure 6-5 and Section 5.2 [of the proposed General Plan], unless access conditions and standards prevent their attainment. Cul-de-sacs are generally 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 General Plan Figure 5-2.
- Pedestrian and bicycle connections to through-streets should be provided at the end of cul-de-sacs. (See [General Plan] 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-aa **Use of sound walls [single family gated communities].** 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-ee **Use of walls [multifamily gated communities].** Solid perimeter walls are prohibited unless specifically required as a condition of approval for the proposed project. 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.

Impact

- 3.7-2** Implementation of the proposed Turlock General Plan would not create significant contrasts with the scale, form, line, color and /or overall visual character of the existing landscape in areas with sensitive visual resources or high visual quality, or add a modern element to a historic area. (*Less than Significant*)

For most neighborhoods within the existing urbanized area of Turlock, the proposed General Plan calls for no substantive changes to land use or building design, and thus will create no contrasts with the scale, form, line, color, or overall visual character of these existing neighborhoods or landscape areas. New development on infill sites will be required to conform to the city's zoning ordinance and Design Guidelines to ensure visual compatibility with the surrounding built environment.

The proposed General Plan may result in changes in land use and physical design in Downtown Turlock, the city's historic core, where a more unified and sensitive aesthetic is in place. However, several arguments suggest that this impact is less than significant: 1) the Plan expressly calls for the update and continued implementation of the Downtown Master Plan, which includes design guidelines aimed at enhancing Downtown's visual character; and 2) any proposed changes in land use and physical design are intended to increase the visual quality of Downtown, create a more unified visual experience, and fill in vacant visual areas with attractive and economically vibrant new development.

While the character of new growth areas would change significantly, the proposed General Plan would ensure that development in new growth areas is high quality and consistent with Lodi's existing character. High quality visual character would be ensured by requiring that new development includes a well-connected street network, street trees, other streetscape improvements, and architectural variation.

The proposed General Plan contains several policies that would specifically improve the visual character throughout the city and that are designed to minimize any negative impacts on visual character. While the proposed General Plan would have a beneficial impact in some areas, it is expected that any adverse impacts on visual character would be less than significant.

Proposed General Plan Policies that Reduce the Impact

Land Use and Economic Development Element Policies

- 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, but minimize conversion of established residences to offices.
- 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-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.
- 2.5-j **Redevelopment in existing neighborhoods.** Preserve and enhance existing pedestrian-oriented neighborhoods and commercial districts by pursuing redevelopment that reinforces activity, making

3.7 Aesthetics and Visual Resources

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-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.

City Design Element Policies

- 6.2-c **Preserve existing neighborhoods.** Preserve the scale and character of established neighborhoods.
- 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 **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 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-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.
- 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.
- 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.
- 6.6-a **Recognize the value of historic preservation.** Integrate historic preservation into planning for Downtown and other areas with historic significance.

- 6.6-b **Formalize historic preservation planning.** Identify and adopt 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.
- 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-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-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 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.

Conservation Element Policies

- 7.5-b **Preserve Historic Places.** Integrate historic preservation into planning for Downtown and other areas with historic significance.
- 7.5-f **State Historic Building Code.** For State-designated historic buildings, use the State’s historic building code to ease adaptive reuse.

Impact

- 3.7-3 Implementation of the proposed Turlock General Plan would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. *(Less than Significant)*

As in most typical residential areas, homes emit some light and glare during the day and evening hours. Development under the proposed General Plan would include indoor lighting and outdoor lighting for safety purposes, but would generally not be out of character with the existing urban environment, and would not rise to a level of being significant.

In addition, the proposed General Plan includes policies related to buffering between urbanized and agricultural areas, further reducing the impact of light and glare associated with urbanization on neighboring rural areas.

Proposed General Plan Policies that Reduce the Impact

City Design Element Policies

- 6.1-d **Minimize conflict.** Minimize conflict between urban and agricultural uses.
- 6.1-j **Minimize urban-agricultural conflicts.** Continue urban expansion in a form that minimizes the potential for urban-agricultural conflicts.
- 6.1-k **Agricultural Buffer Design.** Implement an “agricultural – urban buffer design” to minimize the impact of urban development near active agricultural operations. Some general characteristics for the

3.7 Aesthetics and Visual Resources

“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 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.
- Design and size utility infrastructure to discourage future extensions beyond the definitive urban edge.

3.8 Cultural Resources

This section presents the environmental setting and assesses the impacts on cultural resources in the Turlock Study Area from implementation of the proposed General Plan. Cultural resources include sites, buildings, structures, or objects that may have archaeological, historical, cultural, or scientific significance. The existence of historic sites in Turlock necessitates plan policies that preserve these aspects of the City's heritage.

Environmental Setting

Cultural resources are defined as prehistoric and historic sites, structures, and districts, or any other physical evidence associated with human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious, or any other reason. For analysis purposes, cultural resources may be categorized into three groups: archaeological resources, historic resources, and contemporary Native American resources. Paleontological resources, while not generally considered a "cultural resource," are afforded protection under CEQA,¹ and as such are evaluated in this section of the EIR. The following cultural, historical, and ethnographic information is extracted from a variety of sources including the City of Turlock General Plan, a study prepared by Ric Windmiller, Consulting Archaeologist and Donald S. Napoli, Historian, for the Westside Industrial Specific Plan EIR, and an overview document prepared by the Central California Information Center (CCIC) at California State University, Stanislaus. Known and recorded cultural resources within the Study Area were identified through a records search of pertinent survey and site data by staff at the CCIC in 2008.

DEFINITIONS

Archaeological Resources

Archaeological resources are places where human activity has measurably altered the earth or left deposits of physical remains. Archaeological resources may be either prehistoric (before the introduction of writing in a particular area) or historic (after the introduction of writing). The majority of such places in this region are associated with either Native American or Euroamerican occupation of the area. The most frequently encountered prehistoric and early historic Native American archaeological sites are village settlements with residential areas and sometimes cemeteries; temporary camps where food and raw materials were collected; smaller, briefly occupied sites where tools were manufactured or repaired; and special-use areas like caves, rock shelters, and sites of rock art. Historic archaeological sites may include foundations or features such as privies, corrals, and trash dumps.

¹ Public Resources Code (PRC) Section 5097.5 provides for the protection of cultural and paleontological resources. PRC section 5097.5 prohibits the removal, destruction, injury, or defacement of archaeological and paleontological features on any lands under the jurisdiction of state or local authorities.

3.8 Cultural Resources

Historic Resources

Historic resources are standing structures of historic or aesthetic significance. Architectural sites dating from the Spanish Period (1529-1822) through the early years of the Depression (1929-1930) are generally considered for protection if they are determined to be historically or architecturally significant. Post-depression sites may also be considered for protection if they could gain significance in the future. Historic resources are often associated with archaeological deposits of the same age.

Ethnographic Resources

Contemporary Native American resources, also called ethnographic resources, can include archaeological resources, rock art, and the prominent topographical areas, features, habitats, plants, animals, and minerals that contemporary Native Americans value and consider essential for the preservation of their traditional values.

Paleontological Resources

Paleontological resources are the mineralized (fossilized) remains of prehistoric plant and animal life exclusive of human remains or artifacts. Fossil remains such as bones, teeth, shells, and leaves are found in geologic deposits (rock formations) where they were originally buried.

PHYSICAL SETTING

Prehistoric Context

California is believed to have been inhabited primarily by Hokan speaking peoples between 10,000 and 6000 B.C. Utian speaking peoples (including proto-Mikwokan speakers and, later, Yokutsan speaking people) entered the Lower Sacramento Valley probably from the northwest Great Basin/Columbian Plateau region around 2500 B.C. Between 1000 and 500 B.C., Yokutsan groups moved into the San Joaquin Valley and Central Sierra Nevada foothills from the Sacramento Delta region.

After about A.D. 400, Yokuts-speaking people began to consolidate in locations along delta waterways and principal tributaries. The archaeological evidence indicates a concentration of population along the San Joaquin River and its main tributaries around this time. At the time of first contact with European settlers, the Northern Yokuts territory was centered around the San Joaquin River, and supported by the abundant natural resources of the marshlands and adjacent plains.²

Prehistoric Archaeological Resources

Archaeological sites such as village mounds have been found along the San Joaquin River and its tributaries, and near springs in the San Joaquin Valley. A review of the Turlock Study Area by the Central California Information Center at California State University, Stanislaus revealed no recorded prehistoric resources. This may be due to the lack of such sites in the area, to the relatively few archaeological surveys conducted there, or a combination. The sensitivity of the Study Area for prehistoric archaeological resources is considered relatively low, as previous research suggests most sites in the San Joaquin Valley are located along rivers.³

² City of Turlock (2004) Westside Industrial Specific Plan Draft EIR, August 2004, based on a cultural resources report authored by Ric Windmiller, Consulting Archaeologist, and Donald S. Napoli, Historian (2004) "City of Turlock Westside Industrial Specific Plan Background Reports: Archaeological Resources, Historical Resources, Records Search Results, Existing Conditions, January, 2004."

³ City of Turlock (2004).

Historic Context

The first contact with Europeans came in the early 1800s, when Spanish expeditions began to actively explore the Delta region and the San Joaquin Valley. After years of conflict, in 1833, an epidemic, probably malaria, decimated an estimated 75 percent of California's native population. The annexation of California to the Union in 1846 and the Gold Rush in 1849 proved disastrous to the remaining Yokuts people, as settlers drove native people from their hunting and food-gathering lands.

The first settlements in what became Stanislaus County were established along the Tuolumne and Merced Rivers, and supported miners in gold fields. By the 1860s, however, ranching had been established in the area, and spread rapidly in advance of the Central Pacific Railway line. The city of Turlock was founded in 1871 by John W. Mitchell, on a small portion of his 100,000-acre land holding.

Wheat was the mainstay of local ranching in the early decades, but a crash in the price of wheat stimulated efforts to diversify agriculture by bringing irrigation, and the passage of the Wright Act in 1887 facilitated the formation of the Turlock Irrigation District. The canal system became operational in 1900. Subsequently, ranchers began subdividing their land into small plots for farming, which attracted a new wave of arrivals. Turlock was incorporated in 1908, and began its long growth curve.

Historic Resources

Sites Listed on the National and State Register

The Study Area contains three properties listed on the National Register of Historic Places and the California Register of Historic Places. 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 but has since been rehabilitated as the Carnegie Arts Center. Also on the National and State Register is the Turlock High School Auditorium and Gymnasium, an 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. While many of the Fairgrounds buildings from that time remain, there is no evidence of Assembly Center structures.

Other Sites in the State Historic Property Data File

A records search conducted by the Central California Information Center (CCIC) of the California Historic Resources Information System at Stanislaus State University identified 36 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). In addition to the three properties discussed above, two properties on the list, Iwata Store, 2305 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 3.8-1 maps Turlock's historic properties. Table 3.8-1 lists all of the properties and their status.

In 2000, a basic survey along East Main Street between North Palm and Lander Avenues was conducted as part of the Downtown Main Street revitalization project. The survey concluded that fewer than 30 percent of the existing structures would be considered historically significant under the state or federal significance criteria and there was virtually no potential for disturbing historic resources.

TABLE 3.8-1: HISTORIC RESOURCES IN THE STUDY AREA

<i>Map ID</i>	<i>Address (Name)</i>	<i>Year Constructed</i>
California Historical Landmarks, and Listed on National Register of Historic Places and California Register of Historic Places		
1	Turlock Assembly Center	1942 ^a
National Register of Historic Places and California Register of Historic Places		
2	250 N Broadway (Turlock Carnegie Library; burned in 2006)	1916
3	1574 E Canal Drive (Turlock High School Auditorium and Gymnasium)	1925
Properties Identified in Historic Property Data File and Not Evaluated for National Register or California Register		
4	326 S Center Street (Turlock Social Hall)	1913
5	2305 S Golden State Boulevard (Iwata Store)	1921

Notes:

a. Year of historic occupancy.

Other sites shown on Figure 3.8-1 are on the Historic Property Data File but have been determined ineligible for listing on the National Register

Source: Central California Information Center, 2008.

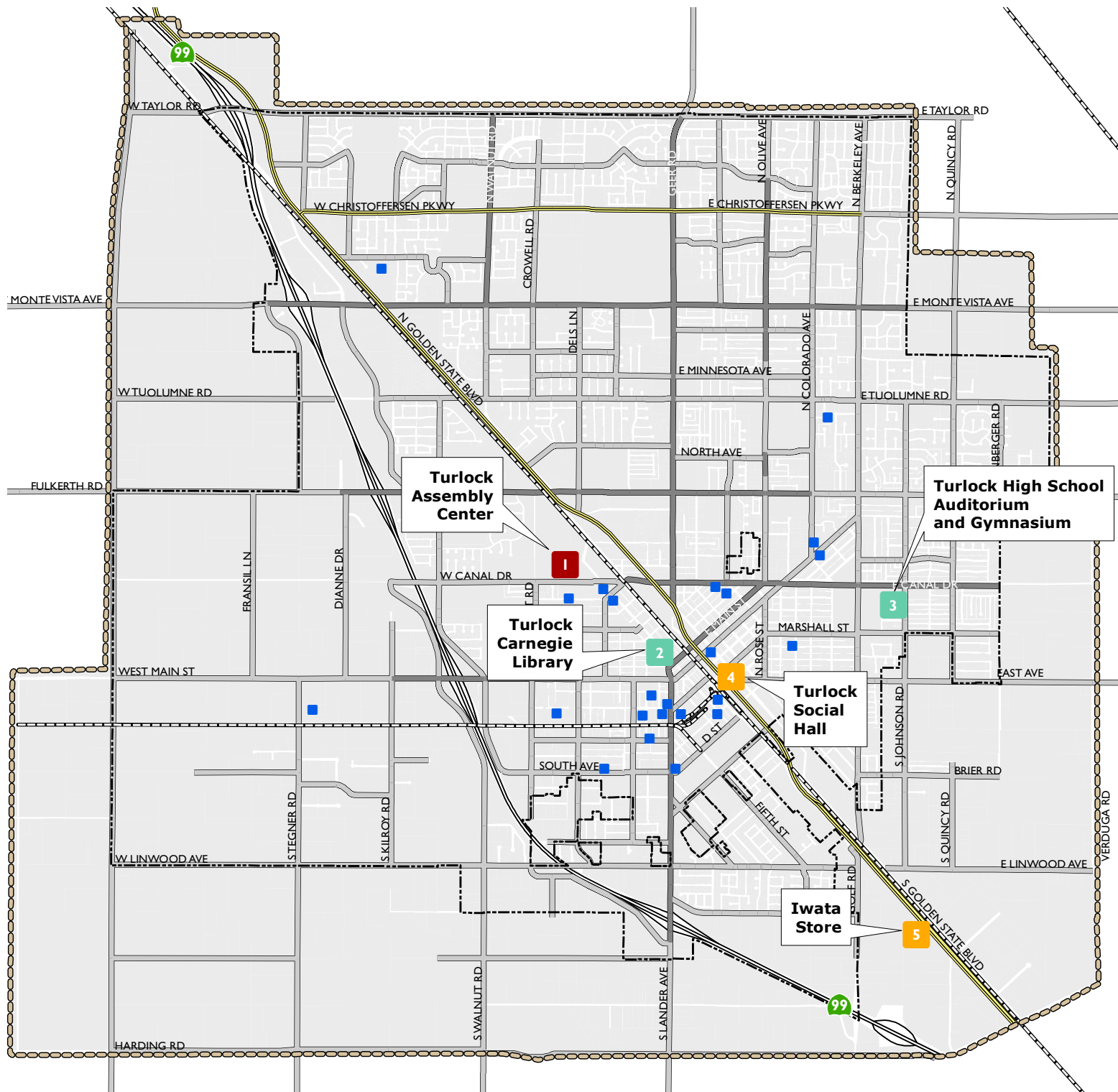
Contemporary Native American Resources

In December 2008, a letter to the Native American Heritage Commission (NAHC) 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. Letters of inquiry were also sent to the six tribal representatives listed in the NAHC response, according to the tribal consultation requirements of Senate Bill 18, discussed in the Regulatory Setting section.

Paleontological Resources

Fossil remains are considered to be important as they provide indicators of the earth’s chronology and history. These resources are afforded protection under CEQA and are considered to be limited and nonrenewable, and they provide invaluable scientific and educational data. No research into paleontological resources has been conducted for the Turlock General Plan.

Figure 3.8-1
Draft General Plan
Historic Resources

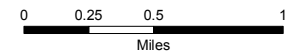


- # California Historical Landmarks, and Listed on National Register of Historic Places and California Register of Historic Places
- # National Register of Historic Places and California Register of Historic Places
- # Properties Identified in Historic Property Data File and Not Evaluated for National Register or California Register
- Properties Identified on Historic Property Data File but determined ineligible for listing on the National Register or California Register

- Study Area Boundary
- City Limits & County Islands

Existing Circulation Network

- Freeway
- Existing Expressway
- Existing Arterial
- Existing Collector
- Railroads



Source: California historical resources information system data, 2008; Central California Information Center, 2008; Dyett & Bhatia, 2010; City of Turlock, 2008.

REGULATORY SETTING

Federal Regulations

National Historic Preservation Act

The National Historic Preservation Act (NHPA) is the most prominent federal law dealing with historic preservation. The NHPA established guidelines to “preserve important historic, cultural, and natural aspects of our national heritage, and to maintain, wherever possible, an environment that supports diversity and a variety of individual choice.” The NHPA includes regulations specifically for federal land-holding agencies, but also includes regulations (Section 106) which pertain to all projects that are funded, permitted, or approved by any federal agency and which have the potential to affect cultural resources. All projects that are subject to the National Environmental Policy Act (NEPA) are also subject to compliance with Section 106 of the NHPA. At the federal level, the Office of Historic Preservation (OHP) carries out reviews under Section 106 of the NHPA.

National Register of Historic Places

NHPA authorizes the Secretary of the Interior to establish a National Register of Historic Places (National Register), an inventory of districts, sites, buildings, structures, and objects significant on a national, State, or local level in American history, architecture, archeology, engineering, and culture. The National Register is maintained by the National Park Service, the Advisory Council on Historic Preservation, State Historic Preservation Office, and grants-in-aid programs.

To be potentially eligible for listing on the National Register of Historic Places (NRHP), a building must usually be over 50 years old and must have historic significance and must retain its physical integrity. More detailed eligibility criteria are described in the Code of Federal Regulations, Title 36, Part 60. Historical Resources achieving significance with less than 50 years may be considered for listing if they are of “exceptional importance,” or if they are integral parts of districts that are eligible for listing in the National Register.

American Indian Religious Freedom Act and Native American Graves and Repatriation Act

The American Indian Religious Freedom Act recognizes that Native American religious practices, sacred sites, and sacred objects have not been properly protected under other statutes. It establishes as national policy that traditional practices and beliefs, sites (including right of access), and the use of sacred objects shall be protected and preserved. Additionally, Native American remains are protected by the Native American Graves and Repatriation Act of 1990.

Other Federal Legislation

Historic preservation legislation was initiated by the Antiquities Act of 1966, which aimed to protect important historic and archaeological sites. It established a system of permits for conducting archaeological studies on federal land, as well as setting penalties for noncompliance. This permit process controls the disturbance of archaeological sites on federal land. New permits are currently issued under the Archeological Resources Protection Act (ARPA) of 1979. The purpose of ARPA is to enhance preservation and protection of archaeological resources on public and Native American lands. The Historic Sites Act of 1935 declared that it is national policy to "Preserve for public use historic sites, buildings, and objects of national significance."

State Regulations

Office of Historic Preservation

California Public Resources Code 5024 requires consultation with the State Historic Preservation Office (SHPO) when a project may impact historical resources located on State-owned land.

California Register of Historic Resources

The SHPO also maintains the California Register of Historic Resources (California Register). Historic properties listed, or formally designated for eligibility to be listed, on the National Register are automatically listed on the California Register (Public Resources Code, Section 5024.1). State Landmarks and Points of Interest are also automatically listed. The California Register can also include properties designated under local preservation ordinances or identified through local historic resource surveys.

For a historic resource to be eligible for listing on the California Register, it must be significant at the local, state, or national level under one or more of the following four criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;
2. It is associated with the lives of persons important to local, California, or national history;
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or
4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation (California Public Resources Code, Section 5024.1).

Additional criteria are listed in California Code of Regulations, Title 14, Chapter 11.5. A building must usually be over 50 years old, must have historic significance, and must retain its physical integrity. Historical resources achieving significance within less than 50 years may be considered for listing in the California Register if it can be demonstrated that sufficient time has passed to understand its historical importance.

California Environmental Quality Act (CEQA)

CEQA requires that public agencies consider the effects of their actions on historical resources. Specifically, the Act directs the lead agency on any project undertaken, assisted, or permitted by the State to include in its environmental impact report for the project a determination of the project's effect on unique archeological and historical resources. It enables a lead agency to require an applicant to make reasonable effort to preserve or mitigate impacts to any affected unique archeological resource. CEQA also establishes that adverse effects on an historical resource qualify as a significant effect on the environment.

CEQA Guidelines

Historic Resources. CEQA guidelines define three ways that a property can qualify as a significant historical resource, if:

1. The resource is listed in or determined eligible for listing in the California Register of Historical Resources (CRHR);
2. The resource is included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code, or is identified as significant in a historical resource survey meeting the

3.8 Cultural Resources

requirements of section 5024.1(g) of the Public Resources Code unless a preponderance of evidence demonstrates that it is not historically or culturally significant; or,

3. If the lead agency determines the resource to be significant as supported by substantial evidence in light of the whole record (California Code of Regulations, Title 14, Division 6, Chapter 3, section 15064.5).

In addition to determining the significance and eligibility of any identified historical resource under CEQA and the California Register, historic properties must be evaluated under the criteria for the National Register should federal funding or permitting become involved in any undertaking subject to this document.

Archeological Resources. CEQA Guidelines Section 15126.4 states that “public agencies should, whenever feasible, seek to avoid damaging effects on any historical resources of an archeological nature.” The Guidelines further state that preservation-in-place is the preferred approach to mitigate impacts on archaeological resources. However, if data recovery through excavation is “the only feasible mitigation,” then a “data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resources, shall be prepared and adopted prior to any excavation being undertaken.” Data recovery is not required for a resource of an archaeological nature if “the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource.” The section further states that its provisions apply to those archaeological resources that also qualify as historic resources.

Native American Heritage Act

Also relevant to the evaluation and mitigation of impacts to cultural resources, the Native American Heritage Act (NAHA) of 1976 established the Native American Heritage Commission (NAHC) and protects Native American religious values on state property (see California Public Resources Code 5097.9). PRC 5097.98 defines the steps that need to be taken if human remains are identified on a site, including the notification of descendants and the disposition of remains and grave goods.

Public Notice to California Native American Indian Tribes

Government Code, Section 65092 includes California Native American tribes that are on the contact list maintained by the Native American Heritage Commission in the definition of “person” to whom notice of public hearings shall be sent by local governments.

Tribal Consultation Guidelines

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 and Specific Plan processes. The SB 18 process mirrors the federal 106 Review process used by archaeologists as part of the environmental review conducted under NEPA. While tribal consultation is 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.

Disposition of Human Remains

Health and Safety Code Section 7050.5 states that when an initial study identifies the existence, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the NAHC. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials.

Native American Graves Protection and Repatriation Act

Health and Safety Code Section 8010-8011 establishes a state repatriation policy intent that is consistent with and facilitates implementation of the federal Native American Graves Protection and Repatriation Act. The Act strives to ensure that all California Indian human remains and cultural items are treated with dignity and respect. It encourages voluntary disclosure and return of remains and cultural items by publicly funded agencies and museums in California. It also states the intent for the state to provide mechanisms for aiding California Indian tribes, including non-federally recognized tribes, in filing repatriation claims and getting responses to those claims.

California Historical Resources Information System

The California Historical Resources Information System (CHRIS) is a statewide system for managing information on the full range of historical resources identified in California. CHRIS is a cooperative partnership between the citizens of California, historic preservation professionals, twelve Information Centers, and various agencies. This system bears the following responsibilities: integrate newly recorded sites and information on known resources into the California Historical Resources Inventory; furnish information on known resources and surveys to governments, institutions, and individuals who have a justifiable need to know; and supply a list of consultants who are qualified to do work within their area. The Central California Information Center, located at CSU, Stanislaus, is the regional resource for Turlock.

Typically, the initial step in addressing cultural resources in the project review process involves contacting the appropriate Information Center to conduct a record search. A record search should identify any previously recorded historical resources and previous archaeological studies within the project area, as well as provide recommendations for further work, if necessary. Depending on the nature and location of the project, the project proponent or lead agency may be required to contact appropriate Native American representatives to aid in the identification of traditional cultural properties.

If known cultural resources are present within the proposed project area, or if the area has not been previously investigated for the presence of such resources, the Information Center may recommend a survey for historical, archaeological and paleontological sites. Cultural resources that may be adversely affected by an undertaking should be evaluated for significance. For archaeological sites, a significance evaluation typically involves conducting test excavations. For historical sites or standing structures, historical research should be conducted and an architectural evaluation may be warranted. If significant, the resource should be protected from adverse impacts. Data recovery excavations may be warranted in the case of unavoidable damage to archaeological sites. If human burials are present, the appropriate Coroner's office should be contacted. A professional archaeologist and appropriate Native American representatives should also be consulted (Sections 21083.2 and 21084.1 of the PRC).

When an initial study identifies the existence, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code 5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the Native American Heritage Commission.

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Local Regulations

Existing Turlock General Plan Open Space and Conservation Element (1992, updated 2002)

Archaeological Resources Policies:

- 6.8-a Protect significant archaeological resources in the Study Area that may be identified during construction.
- 6.8-b 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.

Existing Turlock General Plan City Design Element (1992, updated 2002)

Historic Preservation Policies:

- 7.6-a Integrate historic preservation into planning for Downtown and other areas with historic significance.
- 7.6-b Identify and adopt a Historic Preservation District as part of the next phase of the Downtown Master Plan.
- 7.6-c Form a historic preservation committee in accordance with State Certified Local Government guidelines which would review structures of historic merit as well as various collections and seek methods to preserve them.

Existing Stanislaus County General Plan Conservation/Open Space Element (1994)

The Stanislaus County General Plan sets a goal to “preserve areas of national, state, regional, and local historical importance,” supported by the following policies:

Policy 24. The County will support the preservation of Stanislaus County’s cultural legacy of historical and archaeological resources for future generations.

Policy 25. “Qualified Historical Buildings” as defined by the State Building Code shall be preserved.

Impact Analysis

SIGNIFICANCE CRITERIA

A significant impact on cultural resources would occur with full implementation of the proposed General Plan if the plan would:

- Cause substantial changes to the significance of a historical resource, defined as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historic resource would be materially impaired (Guidelines Section 15064.5);
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- Disturb any human remains, including those interred outside of formal cemeteries.

For purposes of this EIR, a significant effect would occur if the integrity of a cultural resource that is eligible for listing on any one of the following lists would be compromised through demolition or alteration: National Register of Historic Places, California Historical Landmarks, California Inventory of Historical Resources, or Points of Historical Interest.

METHODOLOGY AND ASSUMPTIONS

A complete records search was conducted by the Central California Information Center at California State University, Stanislaus, in December 2008. The search reviewed State of California Office of Historic Preservation records, base maps, historic maps, and literature on file. The Native American Heritage Commission was contacted in December 2008, and tribal representatives identified by the NAHC were contacted in January 2009.

Because this EIR is a Program EIR on a general plan, site-specific analysis of potential impacts on cultural, historical, and paleontological resources is not appropriate. Instead, this analysis identifies the type and magnitude of impacts that may result from the proposed General Plan as a whole.

SUMMARY OF IMPACTS

The primary impact that could occur would be disturbance of cultural resources during development of property, subsequent to adoption of the General Plan. Specific projects implied through General Plan policy may require supplemental environmental analysis to comply with CEQA requirements if currently unknown cultural resources are discovered prior to or during construction.

According to the Central California Information Center, the Turlock Study Area appears to have a low sensitivity for the possible discovery of prehistoric archaeological resources. At the same time, only a small percentage of the Study Area has been subject to investigations, and there may be archaeological resources not yet realized. Existing national, state and local laws as well as policies in the proposed General Plan reduce these potential impacts on historic and archaeological resources to less than significant levels.

The Information Center has no data on file pertaining to paleontological resources in the Study Area. There is the potential to encounter unidentified fossils during construction of new development. Since fossils are considered to be nonrenewable resources, such impacts would be considered significant. In order to mitigate any potential impacts to cultural resources, proposed General Plan policies seek to provide incentives to

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owners of historic property and to evaluate zoning and building codes to facilitate adaptive reuse when cultural resources are identified.

IMPACTS AND MITIGATION MEASURES

Impact

- 3.8-1** Implementation of the proposed General Plan would not cause a substantial adverse change to the significance of a historical resource, defined as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historic resource would be materially impaired (Guidelines Section 15064.5) (*Less than Significant*)

Most of the properties listed on the State's *Historic Property Data File* are located in Turlock's oldest neighborhoods adjacent to downtown, yet all but five have been deemed ineligible for listing on the State or National Register. As a result, downtown intensification would pose little, if any, significant threat to the City's historic resources. Proposed General Plan policies encourage the preservation, maintenance, and adaptive reuse of existing historic buildings, and will reduce impacts to sites of local historical importance to a less than significant level.

Proposed General Plan Policies That Reduce the Impact

Conservation Element Policies

- 7.5-b **Preserve Historic Places.** Integrate historic preservation into planning for Downtown and other areas with historic significance.
- 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.

City Design Element Policies

- 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.
- 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.

Mitigation Measures

None required.

Impact

3.8-2 Implementation of the proposed General Plan would not cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5. (*Less than Significant*)

A review by the Central California Information Center found that no prehistoric resources have been formally recorded in the Study Area, and concludes that the Study Area appears to have a low sensitivity for the discovery of prehistoric archaeological resources. However, only four percent of the Study Area had been inventoried as part of environmental impact-related studies as of December 2008, and previous studies have mainly been done in the developed portions of the City and any structures occupying these areas. Future development related to the updated General Plan, such as construction of new infrastructure, housing, and commercial space in Master Plan areas, might result in the disturbance of previously unknown archaeological or paleontological resources or human remains.

Project-specific studies may be necessary to determine the actual potential for significant impacts on archaeological or paleontological resources resulting from construction related to new development identified in the proposed General Plan. Based on knowledge of environments where prehistoric resources are most likely to be found—in the vicinity of ridgelines, midslope terraces, alluvial flats, and sources of water—areas newly designated for development in the proposed General Plan have a low likelihood for adversely affecting archaeological or paleontological resources.

Pursuant to CEQA Guidelines 15064.5(f), if potentially significant cultural resources are discovered during ground-disturbing activities associated with project preparation, construction, or completion, work shall halt in that area until a qualified archaeologist can assess the significance of the find, and, if necessary, develop appropriate treatment measures in consultation with Stanislaus County and other appropriate agencies and interested parties. For example, a qualified archaeologist shall follow accepted professional standards in recording any find including submittal of the standard Department of Parks and Recreation (DPR) Primary Record forms (Form DPR 523) and locational information to the California Historical Resources Information System Information Office. The consulting archaeologist shall also evaluate such resources for significance per California Register of Historical Resources eligibility criteria (Public Resources Code Section 5024.1; Title 14 CCR Section 4852). If the archaeologist determines that the find does not meet the CEQA standards of significance, construction shall proceed. If the archaeologist determines that further information is needed to evaluate significance, the Planning Department staff shall be notified and a data recovery plan shall be prepared.

All future development in the Study Area will be in accordance with State laws pertaining to the discovery of human remains. Accordingly, if human remains of Native American origin are discovered during project construction, the developer and/or the Planning Department would be required to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (PRC Sec. 5097). If any human remains are discovered or recognized in any location on the project site, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

- a. The Stanislaus County Coroner/Sheriff has been informed and has determined that no investigation of the cause of death is required; and
- b. If the remains are of Native American origin,
 - The descendants of the deceased Native Americans have made a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing

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of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98; or

- The Native American Heritage Commission was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the commission.

Proposed General Plan Policies That Reduce the Impact

- 7.5-a **Protect Archaeological Resources.** Protect significant archaeological resources in the Study Area that may be identified during construction.
- 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.

Mitigation Measures

None required.

Impact

- 3.8-3** Implementation of the proposed General Plan would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. (*Less than Significant*)

The Central California Information Center had no data on file pertaining to paleontological resources in the Study Area as of December 2008. While no known significant paleontological resources occur, there is the potential to encounter unidentified fossils during construction of new development. Since fossils are considered to be nonrenewable resources, such impacts would be considered significant. Adverse impacts on paleontological resources could occur when earthwork activities such as mass excavation cut into geological formations, or depths below the soil layer, which is generally six feet deep. These impacts are in the form of physical destruction of fossil remains.

Proposed General Plan Policies that Reduce the Impact

Current federal, state and local laws as well as policies summarized above under Impact 3.8-2 would reduce these impacts to less than significant levels.

Impact

- 3.8-4** Implementation of the proposed General Plan would not disturb any human remains, including those interred outside of formal cemeteries. (*Less than Significant*)

A review by the Central California Information Center found that no prehistoric resources have been formally recorded in the Study Area, and a record search by the Native American Heritage Commission of the sacred lands file failed to indicate the presence of Native American cultural resources in the immediate project area. However, this does not mean that cultural resources may not be present in any specific project area. Future development related to the updated General Plan could result in the disturbance of previously unknown cultural resources, including human remains.

All future development in the Study Area will be in accordance with State laws pertaining to the discovery of human remains. Accordingly, if human remains of Native American origin are discovered during project construction, the developer and/or the Planning Department would be required to comply with state laws

relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (PRC Sec. 5097). If any human remains are discovered or recognized in any location on the project site, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains and statutory procedures as stated in Section 3.8-2 shall be followed.

Proposed General Plan Policies that Reduce the Impact

Overall, current federal, state and local laws as well as policies summarized above under Impact 3.8-2 would reduce these impacts to less than significant levels.

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3.9 Biological Resources

This section addresses the potential direct and indirect effects of implementation of the proposed General Plan on biological resources in the Turlock Study Area. The setting descriptions and impact analyses presented in this section are based on a review of existing documentation and biological databases.

Environmental Setting

PHYSICAL SETTING

Habitat

A wildlife habitat is an area that offers feeding, roosting, breeding, nesting, and refuge areas for a variety of bird and mammal species native to the region. Habitats are classified in broad terms with an emphasis on vegetation structure, and include other elements such as vegetation species composition, soil structure, and water availability. Some wildlife species are generalists and may use a variety of habitats, while other species may be adapted to very specific habitats. Species that are limited to a single habitat type are more vulnerable to habitat loss and disturbance than are generalists, and therefore may be more at risk to experience population declines.

As Table 3.9-1 and Figure 3.9-1 show, the Study Area contains mostly human-modified habitats, with almost all the land being urban (52 percent) or under agricultural production (46 percent). Smaller areas of herbaceous vegetation (typically grassland) are also present. There are also small ponds and wetland areas. These habitats, as classified in *California Wildlife Habitats* (Mayer and Laudenslayer 1988), are listed and briefly described below.

TABLE 3.9-1: VEGETATION IN THE STUDY AREA

<i>Habitat Type</i>	<i>Acres</i>	<i>Percent of Total</i>
Agriculture	9,110	52%
Herbaceous	280	2%
Freshwater Pond	56	<0.5%
Freshwater Emergent Wetland	5	<0.5%
Urban	8,008	46%
Total	17,460	100%

Source: California Spatial Information Library, 2008; Dyett & Bhatia, 2011.

Agriculture

Agricultural land covers the largest portion of the Study Area at approximately 9,110 acres. Vegetation composition and structure in agricultural habitats are variable, depending on the type of crops grown and the time of year. For these reasons, habitat value for wildlife is also variable. In addition, the types and timing of

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operational activities of agricultural lands affects habitat suitability for wildlife. Agricultural crops are either annual (e.g., lettuce) or perennial (e.g., strawberries), and may be grown in rows. Annual crops are usually planted in spring and harvested in summer or fall; however, they may be planted in rotation with other irrigated crops. Tall and maintained crops such as vineyards will provide different habitat value and likely support different wildlife species than short crops, with a lot of exposed bare ground between rows, or pasture land.

Typical wildlife species that may use agricultural habitat include a variety of rodents – such as California ground squirrel (*Spermophilus beecheyi*) and California vole (*Microtus californicus*) – and birds – such as red-winged blackbird (*Agelaius phoeniceus*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), and yellow-billed magpie (*Pica nuttali*). Croplands provide food and water for these species, but do not generally provide long-term shelter due to the frequency of disturbance.

Urban

Land classified as urban encompasses 8,008 acres of the Study Area. Wildlife species that use urban habitat depend on the density of development, the surrounding land use, and the types of vegetation and other habitat features available for foraging, nesting, and cover. In general, wildlife habitat in urban areas consists of landscaped areas with a mix of both native and exotic ornamental plant species. Species using these areas are conditioned to a greater level of human activity than those in natural and less developed areas. Generally, the more developed an urban area is, the less diversity of species will occur. Wildlife species typically found in urban habitat include American crow (*Corvus brachyrhynchos*), rock dove (*Columba livia*), American robin (*Turdus americana*), Brewer's blackbird (*Euphagus cyanocephalus*), house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), northern mockingbird (*Mimus polyglottos*), mourning dove (*Zenaida macroura*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and striped skunk (*Mephitis mephitis*).

Herbaceous (Annual Grassland)

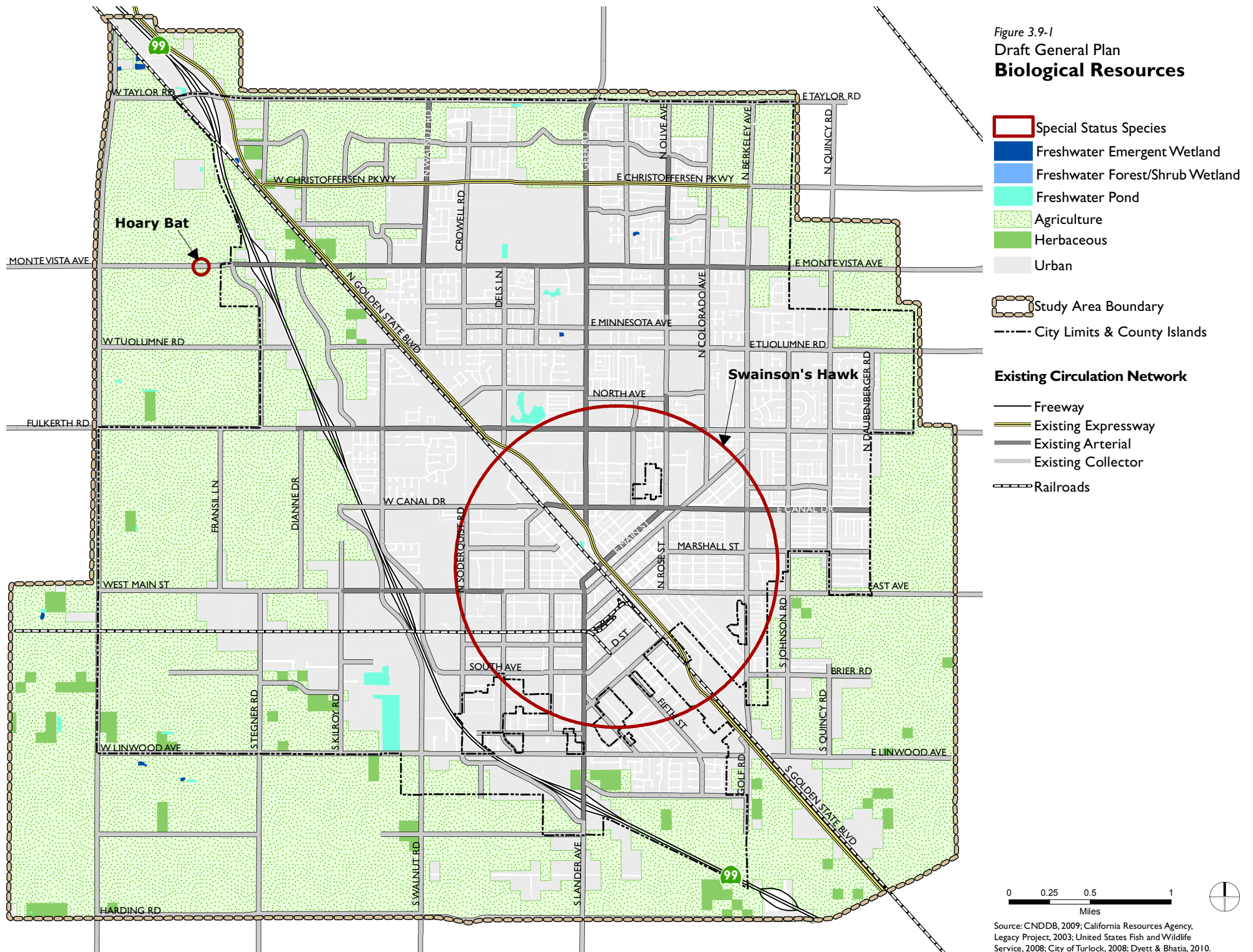
Herbaceous annual grasslands cover approximately 280 acres of land scattered in small areas throughout the Study Area. These areas are generally surrounded by agricultural land. Annual grassland is typically composed of herbaceous exotic grasses and forbs, and may include weedy species such as perennial ryegrass (*Lolium perenne*), soft chess (*Bromus hordeaceus*), foxtail barley (*Hordeum murinum*), ripgut brome (*Bromus diandrus*), wild oats (*Avena sp.*), and stork's bill (*Erodium botrys*). Wildlife species that use annual grassland include a variety of sparrows, white-tailed kite, northern harrier, red-tailed hawk, burrowing owl (*Athene cunicularia*), ring-necked pheasant (*Phasianus colchicus*), various rodents, lizards, snakes, and salamanders.

Freshwater Ponds and Wetlands

Freshwater ponds account for 56 acres of the Study Area. Most of these are associated with municipal parks or in agricultural areas. This category also includes the ponds associated with Turlock's wastewater treatment facility, which are excluded from the federal definition of wetlands.

Vegetation that comprises the freshwater emergent wetlands habitat is adapted to frequent inundation and ponding and includes hydrophilic emergent species such as common cattail (*Typha latifolia*) and tule rush (*Scirpus acutus*). In the Study Area, freshwater emergent wetland covers approximately 5 acres, and occurs in very small patches primarily surrounded by agricultural lands. A small patch (less than a half acre) of land classified as Freshwater Forest/Shrub Wetland exists between South Walnut Road and Highway 99 south of West Main Street. Wetland habitats may provide habitat for wildlife species such as waterfowl and wading birds, blackbirds (*Agelaius sp.*), amphibians, and reptiles such as garter snake (*Thamnophis sp.*) and pond turtle (*Emys marmorata*).

Figure 3.9-1
Draft General Plan
Biological Resources



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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. Table 3.9-2 summarizes the sensitive plant or animal species that may occur in the Study Area, based on a search of the California Natural Diversity Database (CNDDDB) for the four USGS quadrangles encompassing the Study Area.

Fauna

Two special-status species are presumed to be present in the Study Area: Swainson’s hawk and hoary bat. 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.¹ 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. The migratory species’ North American population is found from Canada to the southern United States, and is presumed to be present in the Study Area. 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 special status animal species may occur within the Study Area, and are presumed to exist in the vicinity. Portions of the Study Area may provide potential habitat, and pastures, vineyards, row crops, and orchards 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 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 very limited in the Study Area.

Flora

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 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.

¹ Audubon Society WatchList, available at <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>, accessed January 2012.

TABLE 3.9-2: SENSITIVE BIOLOGICAL RESOURCES POTENTIALLY FOUND IN THE STUDY AREA

<i>Common Name (Scientific Name)</i>	<i>Federal / State Status</i>	<i>CDFG Status</i>	<i>CNPS Status</i>	<i>Presence in Study Area</i>
Animal Species				
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		
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			
Plant Species				
San Joaquin Valley Orcutt grass (<i>Orcuttia inaequalis</i>)	Threatened / Endangered		1B.1	
Merced monardella (<i>Monardella leucocephala</i>)	None / None		1A	
Key to Special Status Designations:				
<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.				
Source: California Department of Fish and Game, California Natural Diversity Database, 2010; California Native Plant Society, 2010				

REGULATORY SETTING

Federal Regulations

Federal Endangered Species Act

Under the federal Endangered Species Act (FESA), the Secretary of the Interior and the Secretary of Commerce jointly have the authority to list a species as threatened or endangered (16 USC 1533[c]). Pursuant to the requirements of FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed threatened or endangered species may be present in the Study Area and determine whether the proposed project will have a potentially significant impact on such species. In addition, the

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agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC 1536[3], [4]). Project-related impacts to these species or their habitats would be considered significant in this EIR.

The USFWS also publishes a list of candidate species. Species on this list receive special attention from federal agencies during environmental review, although they are not protected otherwise under FESA. The candidate species are those for which the USFWS has sufficient biological information to support a proposal to list as endangered or threatened. Project impacts to such species would be considered significant in this EIR.

Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act

The Migratory Bird Treaty Act (MBTA, 16 USC Section 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668) protect certain species of birds from direct “take.” The MBTA protects migrant bird species from take by setting hunting limits and seasons and protecting occupied nests and eggs. The Bald and Golden Eagle Protection Act (16 USC Sections 668-668d) prohibits the take or commerce of any part of Bald and Golden Eagles. The USFWS administers both acts and reviews federal agency actions that may affect species protected by the acts.

Clean Water Act – Section 404

The Clean Water Act is a 1977 amendment to the Federal Water Pollution Control Act of 1972, which set the basic structure for regulating discharges of pollutants to waters of the United States. Section 404 establishes a program to regulate the discharge of dredged and fill material into waters of the United States, including wetlands.

Wetlands and other waters of the U.S. are subject to jurisdiction by the U.S. Army Corps of Engineers (Corps) and EPA under Section 404 of the Clean Water Act. Wet areas that are not regulated by this act include stock watering ponds, agricultural ditches in upland areas, and features that do not significantly contribute to the ecological function of navigable waters. The discharge of fill into a jurisdictional feature requires a permit from the Corps.

State Regulations

California Endangered Species Act

Under the California Endangered Species Act (CESA), the CDFG has the responsibility for maintaining a list of threatened species and endangered species (California Fish and Game Code Section 2070). The CDFG also maintains a list of candidate species, which are species that the CDFG has formally noticed as under review for addition to the threatened or endangered species lists. The CDFG also maintains lists of Species of Special Concern that serve as watch lists. Pursuant to the requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the Study Area, and determine whether the proposed project will have a potentially significant impact on such species. Project-related impacts to species on the CESA endangered list and threatened list would be considered significant in this EIR. In addition, CDFG encourages informal consultation on any proposed project that may impact a candidate species.

CEQA Guidelines

- **Section 15380.** Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to

meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals. This section was included in the Guidelines primarily to deal with a situation in which a project may have a significant effect on a species that has not yet been listed by either the USFWS or CDFG. Thus, CEQA provides the ability to protect a species from potential project impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

CEQA also calls for the protection of other locally or regionally significant resources, including natural communities. Although natural communities do not at present have legal protection, CEQA calls for an assessment of whether any such resources would be affected, and requires a finding of significance if there would be substantial losses. Natural communities listed in the California Natural Diversity Database as “high priority for inventory” are considered by CDFG to be significant resources and fall under the CEQA Guidelines for addressing impacts. Local planning documents such as General Plans often identify these resources as well.

- **Section 15065.** Sensitive plant and wildlife species that are not currently listed as endangered, threatened, or rare but would qualify for listing are afforded protection under CEQA. CEQA Guidelines Section 15065 (“Mandatory Findings of Significance”) requires that a reduction in numbers of a rare or endangered species be considered a significant effect. CEQA Guidelines Section 15380 (“Rare or Endangered Species”) provides for the assessment of unlisted species as rare or endangered under CEQA if the species can be shown to meet the criteria for listing.

California Fish and Game Code

- **Birds.** Birds of prey are protected in California under the Fish and Game Code (Section 3503.5, 1992). Section 3503.5 states that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “taking” by the CDFG. Any loss of fertile eggs, nesting raptors, or any activities resulting in nest abandonment would constitute a significant impact. Non-raptor native birds receive similar protection under California Fish and Game Code Section 3503. Project impacts to these species would not be considered significant unless the species are known to, or have a high potential to, nest in the Study Area or rely on it for primary foraging.
- **Plants.** The Native Plant Protection Act of 1977 (Fish and Game Code Sections 1900 et seq.) gives the CDFG authority to designate state endangered, threatened, and rare plants and provides specific protection measures for identified populations.
- **Waterways.** Under Sections 1600-1616 of the California Fish and Game Code, the CDFG regulates activities that substantially divert, obstruct the natural flow of, or substantially change rivers, streams, and lakes. The jurisdictional limits of the CDFG are defined in Section 1602 of the California Fish and Game Code as the bed, channel, or bank of any river, stream, or lake. The CDFG regulates activities that would result in the deposit or disposal of debris, waste, or other materials into any river, stream, or lake and requires a Streambed Alteration Agreement for such activities. Impacts to the jurisdictional area of the CDFG would be considered significant in this EIR.

California Native Plant Society

The California Native Plant Society (CNPS) maintains a list of special-status plant species based on collected scientific information. Designation of these species by the CNPS has no legal status or protection under

3.9 Biological Resources

federal or state endangered species legislation. CNPS designations are defined as follows: List 1A (plants presumed extinct); List 1B (plants rare, threatened, or endangered in California and elsewhere); List 2 (plants rare, threatened, or endangered in California, but more numerous elsewhere); List 3 (plants about which more information is needed – a review list); and List 4 (plants of limited distribution – a watch list). In general, plants appearing on CNPS List 1A, 1B, or 2 meet the criteria of Section 15380 of the CEQA Guidelines; thus, substantial adverse effects to these species would be considered significant in this EIR.

Porter-Cologne Water Quality Control Act State and Regional Water Quality Control Boards

The Porter-Cologne Water Quality Control Act establishes the SWRCB and the RWQCBs as the principal state agencies having primary responsibility in coordinating and controlling water quality in California. The Porter-Cologne Act establishes the responsibility of the RWQCBs for adopting, implementing, and enforcing water quality control plans (i.e., Basin Plans), which set forth the state's water quality standards (i.e. beneficial uses of surface waters and groundwaters) and the objectives or criteria necessary to protect those beneficial uses.

National Pollutant Discharge Elimination System

In 1987, amendments to the CWA added section 402(p), which established a framework to protect water quality by regulating industrial, municipal, and construction-related sources of pollutant discharges to waters of the U.S. In California, the National Pollutant Discharge Elimination System (NPDES) is administered by the SWRCB through the RWQCBs and requires that municipalities obtain permits which outline programs and activities to control storm water pollution.

Regional Regulations

Regional Water Quality Control Board, Central Valley Region

The Regional Water Quality Control Board (RWQCB) regulates waters of the state under the Porter-Cologne Water Quality Control Act. The relevant RWQCB for the Study Area is that of the Central Valley Region, whose jurisdiction extends the length of the Central Valley from Modoc County to Kern County. Under Section 401 of the Clean Water Act, the RWQCB has review authority of Section 404 permits. The RWQCB has a policy of no-net-loss of wetlands and typically requires mitigation for impacts to wetlands before it will issue a water quality certification. Dredging, filling, or excavation of isolated waters constitutes a discharge of waste to waters of the state, and prospective dischargers are required to submit a report of waste discharge to the RWQCB and comply with other requirements of the Porter-Cologne Water Quality Control Act. The RWQCB also creates a Water Quality Control Plan (Basin Plan) for the Sacramento and San Joaquin River Basins, which identifies water quality standards, objectives, and implementation programs for these two river basins in the region. Basin Plans have the legal force and effect of regulation.

Construction Activity Permitting

The RWQCB, Central Valley Region administers the National Pollution Discharge Elimination System (NPDES) storm water permitting program in the Study Area. Construction activities of one acre or more are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit). The project applicant must submit a Notice of Intent (NOI) to the SWRCB to be covered by the General Permit prior to the beginning of construction. The General Construction Permit requires the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) before construction begins. Required elements of a SWPPP include:

1. Site description addressing the elements and characteristics specific to the site;

2. Descriptions of Best Management Practices (BMPs) for erosion and sediment controls;
3. BMPs for construction waste handling and disposal;
4. Implementation of approved local plans;
5. Proposed post-construction controls; and
6. Non-stormwater management.

A SWPPP generally includes specifications for BMPs that would be implemented during project construction to control contamination of surface flows through measures to prevent the potential discharge of pollutants from the construction area. A SWPPP may also describe measures to prevent or control pollutants in runoff after construction is complete and identify a plan to inspect and maintain these facilities or project elements. SWPPP implementation starts with the commencement of construction and continues through the completion of the project.

Stanislaus County General Plan Conservation/Open Space Element

Land outside of the Turlock city limits but inside the Study Area is subject to the policies and regulations of Stanislaus County. The Conservation/Open Space Element of the Stanislaus County General Plan presents two goals relevant to biological resources: to encourage the protection of natural and scenic areas, and to protect fish and wildlife species in the County. Policies supporting these goals are listed below.

Vegetation and Wildlife Policies:

Policy 3. Areas of sensitive wildlife habitat and plant life (e.g. vernal pools, riparian habitats, flyways and other waterfowl habitats, etc.) including those habitats and plant species listed in the General Plan Support Document or by state or federal agencies shall be protected from development.

Policy 30. Habitats of rare and endangered fish and wildlife species shall be protected. Information on rare and endangered species and habitats is constantly being updated in response to a 1982 state law by the California State Department of Fish and Game through various sources which include the Stanislaus Audubon Society, California Native Plant Society, and the Sierra Club.

Local Regulations

Existing Turlock General Plan Open Space and Conservation Element (1992, updated 2002)

Vegetation and Wildlife Policies:

- 6.5-a Make efforts to enhance the diversity of Turlock's flora and fauna.
- 6.5-b Consider creation of suitable habitats that can support a variety of plant and animal species in designing new open spaces such as large community parks.
- 6.5-c Consider the requirement of biological assessments in conjunction with the preparation of new area-wide plans.
- 6.5-d Consider establishment of special 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 the existence of a Rare, Endangered, or Threatened species becomes available.

Impact Analysis

SIGNIFICANCE CRITERIA

A significant impact on biological resources would occur with full implementation of the proposed General Plan if the plan would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations; by the California Department of Fish and Game; or by the U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations; by the California Department of Fish and Game; or by the U.S. Fish and Wildlife Service, through direct removal, filling, hydrological interruption, or other means;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; or
- Conflict with any local policies or ordinances protecting biological resources, or with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

METHODOLOGY AND ASSUMPTIONS

This evaluation includes a review of vegetation communities and wildlife habitat, special-status species, and jurisdictional “waters of the United States” that occur or may potentially occur within or in the vicinity of the Study Area. The results of this assessment are based on literature searches, database queries, and some analysis using existing spatial data. The sources of reference data reviewed include the following:

- U.S. Fish and Wildlife Service (USFWS) Species List for USGS topographic quadrangles within and immediately surrounding the Study Area (USFWS 2010);
- California Natural Diversity Database (CNDDDB), Rarefind 3 computer program search of the USGS topographic quadrangles within and immediately surrounding the Study Area (CDFG 2010);
- California Native Plant Society (CNPS), Electronic Inventory computer program search of the for the USGS topographic quadrangles within and immediately surrounding the Study Area (CNPS 2010);
- California Department of Forestry and Fire Protection (CDF 2002) Multi-source Land Cover Data v2.

SUMMARY OF IMPACTS

Development proposed under the proposed General Plan would be situated on infill sites or land contiguous to existing development. Potential impacts on biological resources would be reduced to less than significant through implementation of proposed General Plan policies, as well as regional, State, and federal regulations.

Potential impacts are addressed below, along with proposed General Plan policies that would reduce these potential impacts to less than significant levels.

IMPACTS AND MITIGATION MEASURES

- 3.9-1** Buildout of the proposed General Plan would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations; by the California Department of Fish and Game; or by the U.S. Fish and Wildlife Service. (*Less than Significant*)

As indicated in Figure 3.9-1 and Table 3.9-1, the Study Area contains mostly human-modified habitats, with a great majority of the area classified as urban or under agricultural production. A patchwork of smaller areas (less than three percent of the Study Area) of grassland, emergent wetland, and freshwater pond also occur. Two special status species are presumed to be present in small portions of the Study Area: Swainson's hawk and hoary bat. A number of such species are present in the vicinity. These include the Valley elderberry longhorn beetle and San Joaquin Valley Orcutt grass, both of which have federal or state protection, and the Hardhead, Silvery legless lizard, Suisun song sparrow, Tricolored blackbird, Western pond turtle, and Merced monardella, which are identified as Species of Special Concern by the California Department of Fish and Game (CDFG) or are on the California Native Plant Society's Lists 1A or 1B.

Buildout of the proposed General Plan will allow for the introduction of development into currently agricultural lands that have some value as foraging habitat for wildlife species, and to a much smaller degree onto grassland vegetation. Development has the potential to affect a few sensitive habitats, individual plants, and wildlife species. The primary impact would be the removal of sensitive habitats for the construction of buildings, infrastructure and roadways. The introduction of developed land uses could also result in the elimination of habitat and food resources for wildlife through the removal of vegetative communities (including agricultural lands). The introduction of new sources of light and glare could affect nesting habitat and migratory corridors.

The limited amount of valuable habitat in the Study Area, compliance with federal and state law on a project-by-project basis, and implementation of the following proposed General Plan policies would reduce potential impacts on sensitive status species, habitat, and wildlife corridors to a less than significant level.

Proposed General Plan Policies that Reduce the Impact

Growth Management and Infrastructure Element Policies

- 3.1-a **Proactively manage growth.** Proactively manage and plan for growth in an orderly, sequential, and contiguous fashion.
- 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.
- 3.3-ad **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.
- 3.3-ae **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

3.9 Biological Resources

forms of pesticides, insecticides, herbicides, or other chemical substances by households and farmers.

- 3.3-af **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.

Conservation Element Policies

- 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.
- 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.
- 7.2-g **Allow Agricultural Uses to Continue.** Where agriculture exists within City limits, allow uses to continue until urban development occurs on these properties.
- 7.2-h **Support Participation in Williamson Act Program.** Support participation in the Williamson Act program by Study Area landowners.
- 7.2-i **Support Right to Farm.** Support the implementation of Stanislaus County's Agricultural Element and Right-to-Farm ordinance.
- 7.2-m **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.
- 7.4-a **Increase Biological Diversity.** Make efforts to enhance the diversity of Turlock's flora and fauna, including street trees.
- 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.

Mitigation Measures

None required.

Impact

3.9-2 Buildout of the proposed General Plan would not have a substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations; by the California Department of Fish and Game; or by the U.S. Fish and Wildlife Service, through direct removal, filling, hydrological interruption, or other means. *(Less than Significant)*

The Study Area does not contain any natural waterways or riparian habitats, and does not contain sensitive natural communities that have been previously identified.

Mitigation Measures

None required.

Impact

3.9-3 Buildout of the proposed General Plan would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means. *(Less than Significant)*

Freshwater emergent wetland accounts for approximately 5 acres of the Study Area, in small patches surrounding by urban or agricultural uses (see Figure 3.9-1). Potential impacts in the form of temporary or permanent loss due to filling of wetlands or other waters could result from new development within or in the vicinity of these wetlands and other waters. However, these areas make up a tiny fraction of the Study Area's land; furthermore, they are located either in already-urbanized areas, or in areas designated in the General Plan for continued agricultural use. The proposed General Plan will not add development potential to these sites.

Mitigation Measures

No additional mitigation is required.

Impact

3.9-4 Buildout of the proposed General Plan would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. *(Less than Significant)*

No areas within the Study Area are known to be used by wildlife (including a variety of bird, mammal, and fish species) as migratory corridors. As described above under Impact 3.9-1, development resulting from implementation of the proposed General Plan may remove some vegetative habitat currently providing cover and could increase the distance that animals would need to traverse. Development in the Study Area would also cause increases in vehicular traffic levels and nighttime light levels, which would deter wildlife movement in the area. However, the majority of the Study Area is urban or under agricultural production, with only very small and fragmented areas of grassland, pond, or emergent wetland.

Due to the relatively concentrated nature of development under the proposed General Plan, limited amount of valuable habitat in the Study Area, and compliance with federal and State law, combined with

3.9 Biological Resources

implementation of proposed General Plan policies, potential impacts on wildlife corridors would be reduced to a less than significant level.

Proposed General Plan Policies that Reduce the Impact

Policies that would mitigate this impact are listed under Impact 3.9-1.

Mitigation Measures

None required.

Impact

3.9-5 Buildout of the proposed General Plan would not conflict with any local policies or ordinances protecting biological resources, or with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. *(Less than Significant)*

The proposed General Plan does not conflict in any way with the existing vegetation and wildlife policies of the Stanislaus County General Plan or any other local ordinance. The Plan will serve to reinforce protections for sensitive habitat and special status species found in the Stanislaus County General Plan through proposed policies and the proposed compact development pattern. As such, this impact is considered less than significant.

Proposed General Plan Policies that Reduce the Impact

See policies listed for Impact 3.9-1.

3.10 Geologic and Seismic Hazards

This section describes geologic and seismic conditions in the proposed Turlock General Plan Study Area to provide relevant background information of the physical characteristics of the Study Area with respect to geologic hazards, soils, and seismic conditions. The following information is compiled from geologic maps and reports available from Stanislaus County, City of Turlock, the California Geological Survey (CGS; formerly California Divisions of Mines and Geology), the U.S. Geological Survey (USGS), and the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS).

Environmental Setting

PHYSICAL SETTING

Geologic Setting

The Study Area is located in the northern part of the San Joaquin Valley, a sedimentary basin bounded by the Sierra Nevada foothills and mountains to the east and the Coast Ranges (specifically, the Diablo Range) to the west. The San Joaquin Valley is a trough filled with as much as six miles of sediment from the Sierra Nevada. The Study Area is part of a low relief plain that was formed by coalescing alluvial fans formed by sediment erosion from the Sierra Nevada. Sediments in the valley range from a depth of approximately 7,000 feet in the northwest to 12,000 feet in the southwest.

The Study Area, with the exception of part of the southeast region, is underlain by continental rocks and deposits from the Miocene to the Holocene Age.¹ In the San Joaquin Valley, these deposits are characterized by a heterogeneous mix of generally poorly sorted clay, silt, sand and gravel; some beds of claystone, siltstone, sandstone and conglomerate; and may include a range of ages of alluvium and continental deposits. Part of the southeast portion of the Study Area is underlain by windblown sand and dune sand from the Holocene age. Six water-bearing geologic formations exist in Turlock Basin, which contains the Study Area. From youngest (closest to the surface) to oldest (deepest), these formations are the Modesto, Riverbank, Turlock Lake, Mehrten, Valley Springs, and Ione.²

Most of these subsurface layers are laterally discontinuous, except for the E-clay, also called the Corcoran Clay, which is a relatively impermeable blue to gray silt/clay layer occurring in the middle of the older alluvium of the Riverbank Formation throughout the Study Area. Depth to the top of the layer ranges from

¹ Page, R.W. (1986) Geology of the Fresh Ground-Water Basin of the Central Valley, California, With Texture Maps and Sections: Regional Aquifer-System Analysis. USGS Professional Paper 1401-C.

² Durbin, T. (2008) Assessment of Future Groundwater Impacts Due to Assumed Water-Use Changes: Turlock Groundwater Basin, California. Prepared for Turlock Groundwater Association.

3.10 Geologic and Seismic Hazards

about 50 feet in the northeast to about 150 feet in the west. The thickness of the layer varies from about 20 feet in the eastern part of the Study Area to about 80 feet in the west.³

Soils

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. They are generally highly productive for agriculture and present little constraint to development. According to soil survey information obtained from the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), three detailed soil types, Dinuba sandy loam (DrA), Hilmar loamy sand (HfA), and Delhi loamy sandy (DeA), account for two-thirds of the Study Area's soil.⁴ Some 23 additional soil types are present in relatively small amounts, as shown in Table 3.10-1.

³ Durbin (2008).

⁴ 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.

TABLE 3.10-1: STUDY AREA SOILS

<i>Soil Type</i>	<i>Soil Name</i>	<i>Additional Characteristics</i>	<i>Slope</i>	<i>Shrink-swell Potential</i>	<i>Erosion Susceptibility (Kw factor)¹</i>	<i>Farmland Priority</i>	<i>Acres in Study Area</i>	<i>Percent of Total</i>
DrA	Dinuba sandy loam		0 to 1%	Low	0.37	Prime	4,714	27%
HfA	Hilmar loamy sand		0 to 1%	Low	0.24	Statewide Importance	4,273	25%
DeA	Delhi loamy sandy		0 to 3%	Low	0.24	Prime	2,661	15%
HdA	Hanford sandy loam		0 to 3%	Low	0.32	Prime	1,016	6%
DmA	Dinuba fine sandy loam		0 to 1%	Low	0.37	Prime	908	5%
TuA	Tujunga loamy sand		0 to 3%	Low	0.20	Prime	708	4%
DtA	Dinuba sandy loam	Deep	0 to 1%	Low	0.37		656	4%
DwA	Dinuba sandy loam	Slightly saline-alkali	0 to 1%	Low	0.43	Prime	620	4%
HdpA	Hanford sandy loam	Moderately deep over silt	0 to 1%	Low	0.32	Prime	483	3%
DgA	Delhi loamy sand	Silty substratum	0 to 3%	Low	0.24	Prime	307	2%
DhA	Delhi sand		0 to 3%	Low	0.20	Statewide Importance	300	2%
HmA	Hilmar sand		0 to 3%	Low	0.20		187	1%
-	Various Other Soils						575	3%
Grand Total							17,409	100%

1. Kw factors range from 0.05 to 0.43. Higher values correspond with greater susceptibility to erosion.

Sources: United States Department of Agriculture, Natural Resources Conservation Service, 2010; Dyett & Bhatia, 2012.

3.10 Geologic and Seismic Hazards

Seismicity

Regional Faults

Figure 3.10-1 illustrates the locations of the Quaternary or younger faults in the region. 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 years⁵, 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.

Other nearby faults to the Study Area exhibiting historic displacement (activity within the last 200 years) are the Calaveras, Hayward and Concord-Green Valley faults located approximately 45 miles southwest, 60 miles west and 70 miles northwest of the Study Area, respectively. The Study Area could be impacted by earthquakes along these faults, but impacts from such an event are not likely to be severe.

Seismic Hazards

Surface Fault Rupture

Seismically induced ground rupture is defined as the physical displacement of surface deposits in response to an earthquake's seismic waves. The magnitude and nature of fault rupture can vary for different faults or even along different strands of the same fault. Surface rupture can damage or collapse buildings, cause severe damage to roads and other paved areas, and cause failure of overhead as well as underground utilities. Future faulting is generally expected along different strands of the same fault.⁶ Ground rupture is considered more likely along active faults. As no active faults are known to exist in the Study Area, the likelihood of fault rupture is minimal.

Ground Shaking

Ground movement during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geologic material. The composition of underlying soils, even those relatively distant from faults, can intensify ground shaking. Areas that are underlain by bedrock tend to experience less ground shaking than those underlain by unconsolidated sediments such as artificial fill or unconsolidated alluvial fill.

The Modified Mercalli (MM) intensity scale is commonly used to measure earthquake effects due to ground shaking. The MM values for intensity range from I (earthquake not felt) to XII (damage nearly total); intensities ranging from IV to X could cause moderate to significant structural damage (see Table 3.10-2).

Seismic Structural Safety

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 damage in ordinary structures, and in turn, risk of injuries and property damage.

⁵ Stanislaus County General Plan Support Documentation (1987).

⁶ California Geological Survey, Division of Mines and Geology (1997) Note 32.

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. Older structures generally were not built to withstand the lateral stress imposed by the ground shaking of a major earthquake. Generally, the older the structure, the less likely it is to resist an 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.

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. The City has very few buildings over three stories in height. The potential for damage caused by ground shaking in Turlock is not high given that known active faults are 45 to 70 miles distant.

Liquefaction

Liquefaction is a phenomenon whereby unconsolidated and/or near-saturated soils lose cohesion as a result of severe vibratory motion. The relatively rapid loss of soil shear strength during strong earthquake shaking results in temporary, fluid-like behavior of the soil. Soil liquefaction causes ground failure that can damage roads, pipelines, underground cables, and buildings with shallow foundations. Liquefaction more commonly occurs in loose, saturated materials.

No specific liquefaction hazard areas have been identified in Turlock. The potential for liquefaction is recognized throughout the San Joaquin Valley where unconsolidated sediments and high water tables coincide.

Slope Failure and Earthquake-Induced Landslides

A landslide or slope failure is a mass of rock, soil and debris displaced down slope by sliding, flowing, or falling. Slope failure is dependent on topography and underlying geologic materials, as well as factors such as rainfall, excavation, or seismic activities which can precipitate slope instability. Earthquake motions can induce significant horizontal and vertical dynamic stresses along potential failure surfaces within a slope. The Study Area is relatively flat; therefore, the risk of slope failure and earthquake-induced landslides is considered low.

Figure 3.10-1
Draft General Plan
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

0 5 10 20
MILES


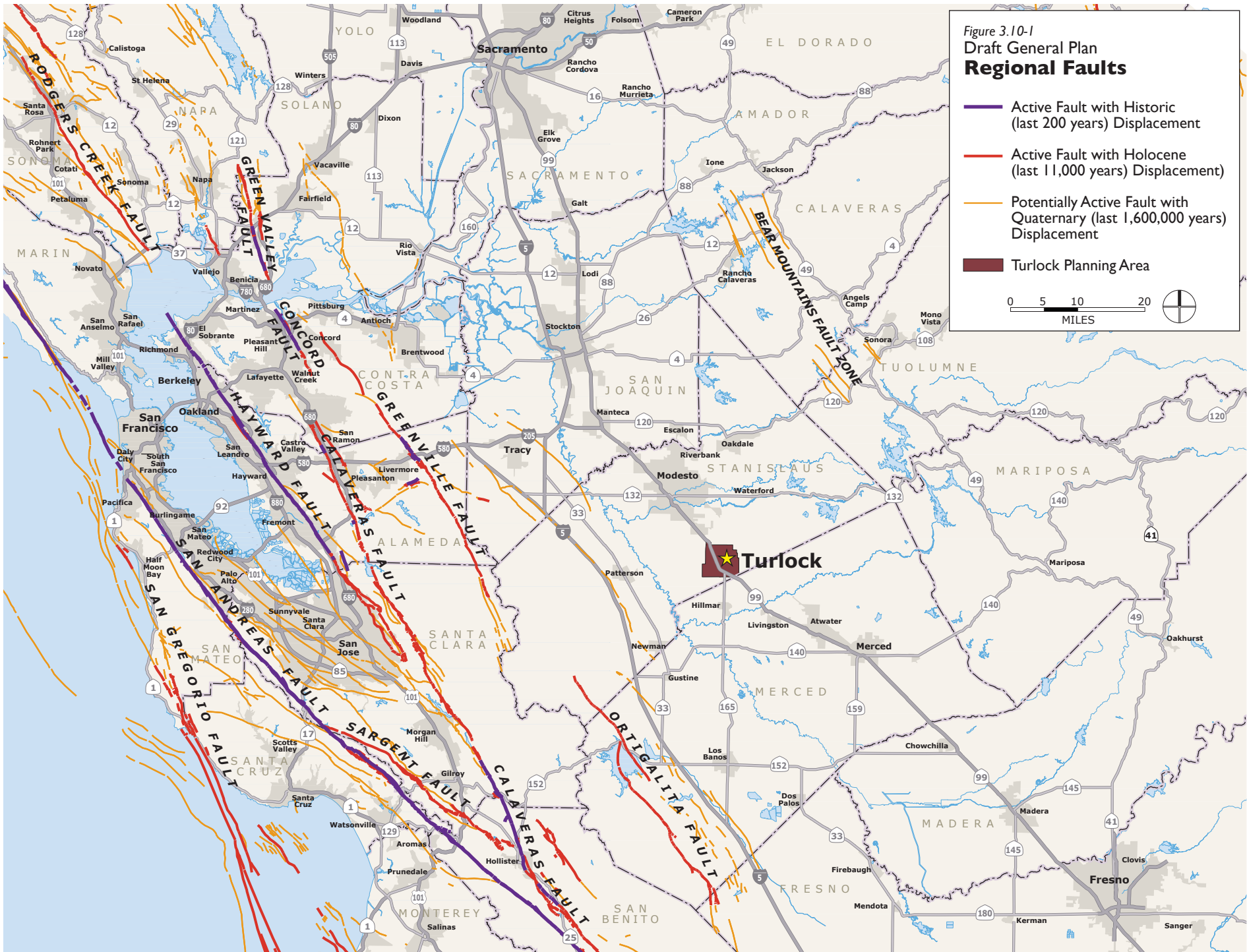



TABLE 3.10-2: MODIFIED MERCALLI INTENSITY SCALE

<i>Intensity Value</i>	<i>Intensity Description</i>	<i>Average Peak Acceleration</i>
I	Not felt except by a very few persons under especially favorable circumstances.	0.0017 g*
II	Felt only by a few persons at rest, especially on upper floors on buildings. Delicately suspended objects may swing.	< 0.014 g
III	Felt noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly, vibration similar to a passing truck. Duration estimated.	< 0.014 g
IV	During the day felt indoors by many, outdoors by few. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.	0.014–0.039 g
V	Felt by nearly everyone, many awakened. Some dishes and windows broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles may be noticed. Pendulum clocks may stop.	0.039–0.092 g
VI	Felt by all, many frightened and run outdoors. Some heavy furniture moved; and fallen plaster or damaged chimneys. Damage slight.	0.092–0.18 g
VII	Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motor cars.	0.18–0.34 g
VIII	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed.	0.34–0.65 g
IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.	0.65–1.24 g
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.	> 1.24 g
XI	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.	> 1.24 g
XII	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown upward into the air.	> 1.24 g

* g (gravity) = 980 centimeters per second squared. 1.0 g of acceleration is a rate of increase in speed equivalent to a car traveling 328 feet from rest in 4.5 seconds.

Source: Bolt, 1988; California Geological Survey, 2003.

Earthquake-Induced Settlement

Settlement of the ground surface can be accelerated and accentuated by earthquakes. During an earthquake, settlement can occur as a result of the relatively rapid compaction and settling of subsurface materials

3.10 Geologic and Seismic Hazards

(particularly loose, non-compacted, and variable sandy sediments) due to the rearrangement of soil particles during prolonged ground shaking. Settlement can occur both uniformly and differentially (i.e., where adjoining areas settle at different rates). Typically, areas underlain by artificial fills, unconsolidated alluvial sediments, slope wash, and areas with improperly engineered construction fills are susceptible to this type of settlement. Due to the distance from historically active faults, settlement of soils in Turlock is not likely to occur.

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.⁷

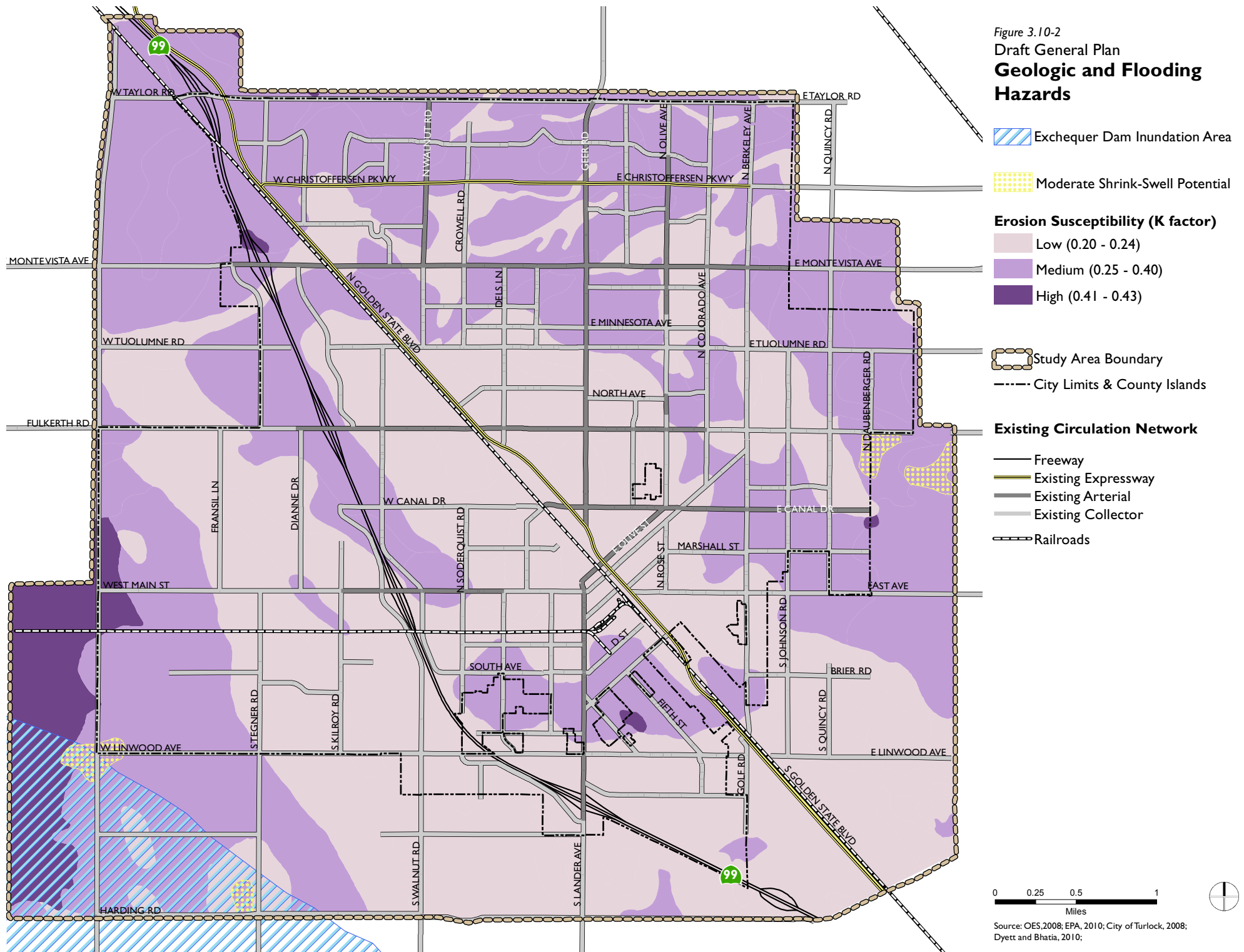
Just over half of the Study Area—8,805 acres, or 51 percent—is underlain by soils that are moderately or highly susceptible to erosion, with K values greater than 0.25 (K values range from 0.05 to 0.43, with higher values corresponding to greater susceptibility to erosion). Soils covering 647 acres have 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 cyclic 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.

⁷ Institute of Water Research, Michigan State University, website: <http://www.iwr.msu.edu/rusle/kfactor.htm>, accessed April, 2007.

Figure 3.10-2
 Draft General Plan
**Geologic and Flooding
 Hazards**



3.10 Geologic and Seismic Hazards

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 TRIP. Erosion and shrink-swell potential in the Study Area are shown in Figure 3.10-2.

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.

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. The predominant soils in the Study Area have low clay content and low to moderate silt content, and are not prone to subsidence. However, subsidence is a possibility given the falling water table in the vicinity of the Study Area.

REGULATORY SETTING

State Regulations

Alquist-Priolo Earthquake Fault Zoning Act (1972)

The Alquist-Priolo Earthquake Fault Zoning Act (formerly the Alquist-Priolo Special Studies Zone Act) requires the delineation of zones along active faults in California. The Alquist-Priolo Act regulates development on or near active fault traces to reduce the hazard of fault rupture and to prohibit the location of most structures for human occupancy across these traces.⁸ Cities and counties must regulate certain development projects within the delineated zones, and regulations include withholding permits until geologic investigations demonstrate that development sites are not threatened by future surface displacement. Surface fault rupture, however, is not necessarily restricted to the area within an Alquist-Priolo Zone.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 addresses non-surface fault rupture earthquake hazards, including liquefaction and seismically induced landslides, and its purpose is to protect public safety from the effects of strong ground shaking, liquefaction, landslides, and other ground failure, and other hazards caused by earthquakes. The Act requires the State Geologist to delineate various seismic hazard zones and requires cities, counties, and other local permitting agencies to regulate certain development projects within these zones. Before a development permit is granted for a site within a seismic hazard zone, a geotechnical investigation of the site must be conducted and appropriate mitigation measures incorporated into the project design. Stanislaus County has not been investigated for delineation under the Seismic Hazards Mapping Act and is not planned for future mapping.

⁸ A "structure for human occupancy" is defined by the Alquist-Priolo Act as any structure used or intended for supporting or sheltering any use or occupancy that has an occupancy rate of more than 2,000 person-hours per year.

Hospital Facilities Seismic Safety Act of 1973

To ensure that hospitals in California conform to high construction standards, the Alfred E. Alquist Hospital Facilities Seismic Safety Act (HSSA) was passed in 1973. The intent of the HSSA is to assure that hospitals are reasonably capable of providing services to the public after a disaster. The HSSA requires the establishment of rigorous seismic design regulations for hospital buildings and requires that new hospitals and additions to hospitals have the capacity, as far as is practical, to remain functional after a major earthquake.

State law requires that all existing hospital buildings providing general acute care as licensed under provisions of Section 1250 of the California Health and Safety Code, be in compliance with the intent of the HSSA by the year 2030.

California Building Code

The California Building Code (CBC) has been codified in the California Code of Regulations (CCR) as Title 24, Part 2. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. The 2010 CBC was published on July 4, 2010 and is effective January 1, 2011. It contains necessary California amendments which are based on the American Society of Civil Engineers (ASCE) Minimum Design Standards 7-05. ASCE 7-05 provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (flood, snow, wind, etc.) for inclusion into building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients which are used to determine a Seismic Design Category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site and ranges from SDC A (very small seismic vulnerability) to SDC E/F (very high seismic vulnerability and near a major fault). Design specifications are then determined according to the SDC.

Regional and Local Regulations

Stanislaus County Multi-jurisdictional Local Hazard Mitigation Plan (LHMP)

Turlock participates in the preparation of the Stanislaus County LHMP. The document provides a compendium of natural hazard assessments and mitigation measures to reduce identified hazard risk. It is required by federal emergency management agencies as a condition for funding through certain relief programs. The current LHMP was approved by FEMA and adopted in 2006. In June 2010, an updated LHMP was completed and submitted to the State, and the State-approved plan was received by FEMA in September 2010.

Turlock General Plan Safety Element

Seismic and Geologic Hazards Policies:

9.2-a Continue to use building codes as the primary tool for reducing seismic risk in structures.

3.10 Geologic and Seismic Hazards

- 9.2-b Continue to require all new buildings in the City to be built under the seismic requirements of the latest adopted Uniform Building Code.
- 9.2-c Continue to explore measures to induce building owners to upgrade and retrofit structures to render them seismically safe.

Impact Analysis

SIGNIFICANCE CRITERIA

Implementation of the proposed Plan would have a potentially significant adverse impact if the Plan would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map or based on other substantial evidence of a known fault
 - Strong seismic ground shaking
 - Seismic-related ground failure, including liquefaction
 - Landslides
- Result in substantial soil erosion or topsoil loss;
- Locate structures on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- Locate structures on expansive soils, as defined in Section Chapter 18 of the 2010 California Building Code, creating substantial risks to life or property;
- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state;
- Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

METHODOLOGY AND ASSUMPTIONS

This evaluation of geologic and seismic hazard conditions was completed using information collected from the United States Geological Survey and the California Geological Survey (CGS). In order to reduce or mitigate potential hazards from earthquakes or other local geologic hazards, the City ensures that development will continue to be completed in compliance with local and State regulations. The regulations include the California Building Code, the Uniform Building Code, the Alquist-Priolo Earthquake Fault Zoning Act, and the Seismic Hazard Mapping Act. Policies and implementation measures developed for the proposed General Plan include continued conformance with these applicable local and State building regulations.

SUMMARY OF IMPACTS

Potential seismic impacts associated with implementation of the proposed General Plan include ground shaking, liquefaction, and soil settlement. No Alquist-Priolo Earthquake Fault Zones or known active faults are in or near the Study Area, and as such, no impacts from fault-line surface rupture are anticipated.

Half of the Study Area has moderately to highly erosive soils. Soil is most vulnerable to erosion during construction, when it is not protected by vegetation or structures. This erosion is often caused by wind, but it may be exacerbated by water if storm water is not handled effectively. Compliance with the California Building Code and other state and local regulations, as well as proposed General Plan policies, ensures that impacts are reduced to levels that are less than significant.

Based on available soil surveys, very small portions of the Study Area (119 acres) are underlain by soil with moderate shrink-swell potential. These soils are expected to be found in parts of the Southeast expansion area and the Turlock Regional Industrial Park (TRIP), which could experience development. Areas which contain poorly consolidated soils may have the potential to settle when development occurs, and some subsidence may occur as well.

IMPACTS AND MITIGATION MEASURES

Impact

- 3.10-1** Implementation of the proposed Plan would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map or based on other substantial evidence of a known fault; strong seismic ground shaking; seismic-related ground failure, including liquefaction; and landslides. *(Less than Significant)*

As previously described, several geologic hazards (including ground shaking and liquefaction) have a low potential to occur within the Study Area and surrounding lands. The greatest seismic hazard in Turlock is the structural danger posed by groundshaking from earthquakes originating at an historically active fault at least 45 miles distant. The Study Area is generally flat; therefore, the risk of landslides is minimal. No specific liquefaction hazard areas have been identified in the Study Area; however the potential for liquefaction is recognized throughout the San Joaquin Valley. Within the Study Area, the potential for these geologic hazards can be addressed through compliance with State regulations (including the California Building Code) and implementation of standard construction practices and should not be considered a high constraint for future development of the Study Area.

Proposed General Plan Policies that Reduce the Impact

The following proposed policies would minimize potential seismic hazards:

- 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.

- 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.

3.10 Geologic and 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.

Implementation of the policies listed above would maintain potential Impact 3.10-1 at a level that is less than significant.

Mitigation Measures

None required.

Impact

3.10-2 Implementation of the Proposed Plan would not result in substantial soil erosion or topsoil loss. *(Less than Significant)*

Based on soil surveys, half the Study Area is underlain by soils moderately susceptible to erosion. Such soils, including Dinuba sandy loam (DrA) Hanford sandy loam (HdA), and Dinuba fine sandy loam (DmA), underlie significant agricultural areas where development is expected to occur under the General Plan. Areas underlain by significant areas of moderately erosive soils include in the Southeast 2, Southeast 3 and Northwest master plan areas. Erosion hazards would be highest during construction, when activities such as excavation, backfilling, grading, and demolition can remove stabilizing vegetation and expose areas of loose soil. This soil, if not properly stabilized during construction, can be subject to soil loss and erosion by wind and stormwater runoff.

Per Article 1 (Grading, Erosion, and Sediment Control) of Chapter 7-4 of the Turlock Municipal Code, all construction activities are required to include engineering practices for erosion control. Further, future development projects in the Study Area will be required to comply with National Pollutant Discharge Elimination System (NPDES) General Construction Permit requirements. Project applicants will be required to prepare a Storm Water Pollution Prevention Plan (SWPPP) to minimize the discharge of pollutants, including silt and sediment, during construction. The SWPPP will need to include measures to control erosion and effectively manage runoff and retain sediment on-site during construction. Compliance with existing policies and regulations, as well as the proposed General Plan policies below, will reduce this impact to less than significant levels.

Proposed General Plan Policies that Reduce the Impact

Conservation Element Policies

- 7.2-c **Protect Soil and Water.** Work to protect and restore natural resources essential for agricultural production.
- 7.2-m **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.

Safety Element Policies

- 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.

Mitigation Measures

None required.

Impact

- 3.10-3** Implementation of the Proposed Plan would not locate structures on expansive soils or on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse and create substantial risks to life or property. (*Less than Significant*)

Less than one percent of the Study Area has soils considered to have moderate potential for expansion (shrink-swell behavior). Expansive soils require particular engineering design, site preparation, and construction practices in order to prevent structure damage from soil movement associated with moisture level changes. When these practices are employed on a project-by-project basis the potential for structural damage is minimal.

Loose, soft, soils composed of sand, silt, and clay have the potential to settle after a building or other load is placed on the surface. Differential settlement of loose soils would be a concern in areas that have not previously supported structures and where new structures would place loads heavier than the soils could tolerate. Differential settlement can damage buildings and their foundations, roads and rail lines, and result in breakage of underground pipes. This risk is addressed through proper site engineering, and site-specific geotechnical investigations.

As required by the City of Turlock Municipal Code, building permit applications must be accompanied by a preliminary soil management report that characterizes soil properties in the development area. If the preliminary soils report indicates the presence of expansive soils, settlement, and potential for subsidence, the City will make recommendations for necessary adjustments to project plans that offset potential soil problems. The General Plan update contains a policy to reinforce efforts to minimize geologic hazards. Existing standards, in addition to the proposed General Plan policy below, reduce this potential impact to a less than significant level.

Proposed General Plan Policies that Reduce the Impact

- 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.

3.10 Geologic and Seismic Hazards

Mitigation Measures

None required.

Impact

- 3.10-4** Implementation of the Proposed Plan would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. *(Less Than Significant)*

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 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 Study Area does not contain any mineral resource recovery site delineated on a local land use plan. The absence of important mineral resources in the Study Area, together with the proposed General Plan policies below, make this potential impact less than significant.

Proposed General Plan Policies that Reduce the Impact

- 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.
- 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.

Mitigation Measures

None required.

3.11 Hazardous Materials and Wildland Fires

This section discusses hazardous materials issues related to the implementation of the proposed General Plan, including its consistency with applicable local, State, and federal plans, policies, and regulations. Industrial or commercial operations that involve the use of hazardous materials are described, and potential public health and environmental issues related to these uses are assessed and analyzed. This section also characterizes the potential for wildfire, and identifies any restrictions on land use, appropriate intensities for these areas, and fuel reduction methods consistent with the protection of special status species and habitats. Finally, it considers the adequacy of fire and emergency response in the Study Area, and the potential for significant environmental effects resulting from needed changes in service provision.

Environmental Setting

PHYSICAL SETTING

Hazardous Materials

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.

Areas where activities resulting in contamination are known or suspected to have taken place are tracked and monitored by federal and state agencies. Sites eligible for federal remediation funding through the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) are on EPA's Superfund list. The California Department of Toxic Substances Control and the State Water Resources Control Board list other sites in the state. These may be categorized as Leaking Underground Storage Tanks (LUST)—common at gas stations—or Other Cleanup Sites, which may or may not be fuel-related.

Leaking Underground Storage Tanks and Other Cleanup Sites

As of October 2011, the California Department of Toxic Substances Control and the State Water Resources Board are tracking 107 cases of contaminated sites in the Study Area, comprising a mix of LUSTs and other cleanup sites. Table 3.11-1 lists the sites identified by these agencies. Cleanup is currently active or the case is open and in progress at 19 of these sites, shown on Figure 3.11-1. Fourteen sites have open cases but cleanup is inactive; at 74 sites, cleanup has been completed and cases are closed. In general, sites with current or former contamination are clustered along major roadways where service commercial uses are located, such as Golden State Boulevard, or in industrial areas. Most sites are current or former gas stations.

3.11 Hazardous Materials and Wildland Fires

Valley Wood Preserving Site

The only Superfund site in the Study Area is at Valley Wood Preserving, Inc., a former wood preserving facility located along South Golden State Boulevard in the southeastern corner of the area. The wood preserving process, which ended in 1979, resulted in contamination of soil and groundwater with hexavalent chromium and arsenic. Cleanup began in the early 1990s and continued intermittently through 2007. Currently, a shallow, localized plume of low-level groundwater contamination remains on the site, but it has been deemed safe for future commercial and industrial activities and poses no threat to drinking water sources.¹ The location of the Superfund site and other identified hazardous sites are shown on Figure 3.11-1.

TABLE 3.11-1: REPORTED HAZARDOUS SUBSTANCE SITES, BY CLEANUP STATUS

<i>Site</i>	<i>Address</i>	<i>Cleanup Status</i>
Sites Identified by the California Department of Toxic Substances Control		
Valley Wood Preserving, Inc. ^{1,2}	2237 S. Golden State Blvd.	Active - Land Use Restrictions
So Cal Gas/Turlock MGP ²	650 S. Golden State Blvd.	Active
Walnut Elementary 2-Acre Addition	4219 N. Walnut Rd.	Certified
Banquet Foods ²	107 S. Kilroy Rd.	Certified
Turlock Sales Company	4924 E. Keyes Rd.	Certified
Sites Identified by the State Water Resources Control Board		
<i>Leaking Underground Storage Tanks</i>		
Betco Petroleum	632 Ninth aka 1034 Lander	Open - Site Assessment
Rodgers Mini Mart Case #2	1570 East	Open - Remediation
Town Service Case / Goodrich Oil Case #1&2	238 S. Golden State	Open - Remediation
Arco #6161	210 N. Golden State Blvd.	Open - Remediation
Auto King #3	952 Lander Ave.	Open - Remediation
Gomes and Sons Inc.	725 Tully Rd.	Open - Remediation
Goodrich Oil Co. Short Property	722 S. First	Open - Remediation
Monfredini Property aka Gaddys Shell	402 E. Main	Open - Remediation
Pacific Pride / Cardlock Facility	309 S Tully	Open - Remediation
Reflections Car Wash	1400 Geer Rd.	Open - Remediation
Stop n Save #4	825 Main	Open - Remediation
Unocal / Weiss Oil	881 N. Golden State	Open - Remediation
Unocal Bulk Plant No. 0796 (Former)	1000 N. Front	Open - Remediation
Beacon Station #54 Case #2	216 N. Golden State Blvd.	Open - Verification Monitoring
Fernandes Speed Shop	214 S. Center	Open - Verification Monitoring

¹ US EPA. Region 9: Superfund. Available Online at: <http://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/7508188dd3c99a2a8825742600743735/bf04af428c4405ac88257007005e93f7!OpenDocument>

TABLE 3.11-1: REPORTED HAZARDOUS SUBSTANCE SITES, BY CLEANUP STATUS

<i>Site</i>	<i>Address</i>	<i>Cleanup Status</i>
Suburban Propane	4625 N. Golden State Blvd.	Open - Verification Monitoring
Anderson Property	711 Lander	Open - Inactive
A and D Construction	1330 South	Completed - Case Closed
Anderson Residence	2725 Quincy	Completed - Case Closed
Arco # 5465	4700 N. Golden State	Completed - Case Closed
Arco #5489	2015 W. Main	Completed - Case Closed
Arco West Main	1030 W. Main	Completed - Case Closed
ATB Packing Company	501 S. Tegner	Completed - Case Closed
Auto King	150 E. Monte Vista	Completed - Case Closed
B and C Shop Equipment Rental	1301 Fulkerth	Completed - Case Closed
Barrell Inn Liquors	2219 Lander Ave.	Completed - Case Closed
Beacon Station Case #01	216 N. Golden State	Completed - Case Closed
Bonander Pontiac/Shell	300 S. Golden State	Completed - Case Closed
Bonander Pontiac	231 S. Center St.	Completed - Case Closed
Butterball Turkey Feed Mill	3600 W. Main St.	Completed - Case Closed
California State University Stanislaus	801 W. Monte Vista	Completed - Case Closed
Center Car Wash	325 S. Center	Completed - Case Closed
Chevron #90510	100 E. Glenwood	Completed - Case Closed
Chevron # 90678	141 N. Golden State	Completed - Case Closed
Chevron # 91760	2901 Geer	Completed - Case Closed
Chevron Bulk #10-01618 Turlock Terminal	1124 Front St.	Completed - Case Closed
Circle J Store # 3620 Case # 2	1405 N. Golden State	Completed - Case Closed
Circle K # 1940	1600 W. Main	Completed - Case Closed
Darpetro Gasco USA	1250 East	Completed - Case Closed
Dickey Petro	1001 S. Berkeley	Completed - Case Closed
Fikses Hardware	4631 W. Main	Completed - Case Closed
Florsheim Construction aka Portrait Estates	1027 Putnam	Completed - Case Closed
Foster Farms Case # 2 aka Center Truck Stop	1033 S. Center	Completed - Case Closed
Foster Poultry Farms Turkey Livehaul # 1	1033 S. Center	Completed - Case Closed
Foster Turkey Products	520 C	Completed - Case Closed
Gary Olson Trucking	2119 W. Tuolumne	Completed - Case Closed
Goodyear Tire Store	2602 Geer	Completed - Case Closed
Greyhound Bus Depot	245 S. Golden State Blvd.	Completed - Case Closed
Hammer Residence	4541 W. Tuolumne	Completed - Case Closed
Huizenga Trucking	2375 Industrial Rowe	Completed - Case Closed
JC Penney Store Building Former	139 W. Main	Completed - Case Closed

3.11 Hazardous Materials and Wildland Fires

TABLE 3.11-1: REPORTED HAZARDOUS SUBSTANCE SITES, BY CLEANUP STATUS

<i>Site</i>	<i>Address</i>	<i>Cleanup Status</i>
James Residence	1516 Daubenberger Rd.	Completed - Case Closed
Kirkes Electric Inc.	999 Golden State	Completed - Case Closed
Lakeside Truck Body Co.	1240 First St.	Completed - Case Closed
Loren Wright Property	1143 Flower	Completed - Case Closed
Maleks Golden State Gas Minimart	1060 N. Golden State	Completed - Case Closed
Manuel Bokides Texaco	1302 N. Golden State	Completed - Case Closed
Markley Residence	2800 Berkeley	Completed - Case Closed
Mid Valley Nut Company	2065 Geer	Completed - Case Closed
Miller Manufacturing	2032 Divanian	Completed - Case Closed
MKT Farms	600 S. Tegner	Completed - Case Closed
Moniz Oil Co.	301 Lander	Completed - Case Closed
Pacific Bell	551 S. Center	Completed - Case Closed
Pacific Telephone Truck Service	410 Tully	Completed - Case Closed
Premium West Coast	3001 Commerce	Completed - Case Closed
Quik Stop # 79	1260 Geer	Completed - Case Closed
Rodgers Mini Mart Case#1 aka Curtesy Oil	1570 East	Completed - Case Closed
Sanders Oldsmobile Cadillac / 201 N. Broadway	219 N. Broadway	Completed - Case Closed
Seven 11 # 16185	2500 Geer	Completed - Case Closed
Shell Service Station	2590 Geer	Completed - Case Closed
Skippers aka Turlock Towne Center	699 N. Golden State Blvd.	Completed - Case Closed
Snider Lumber Products	Third St. / C	Completed - Case Closed
Souza Butane Propane	199 W. Canal	Completed - Case Closed
TID Yard Annex	1105 N. Broadway	Completed - Case Closed
Thorsen's Plumbing	2310 S. Walnut	Completed - Case Closed
TID Corporation Yard	901 N. Broadway	Completed - Case Closed
Turlock Dairy Refrigeration	1819 S. Walnut	Completed - Case Closed
Turlock Fairgrounds	900 N. Broadway	Completed - Case Closed
Turlock Fruit Ranch	2707 Tuolumne	Completed - Case Closed
Turlock Industrial Park	936 Glenwood	Completed - Case Closed
Turlock School District	1427 Cooper	Completed - Case Closed
Unocal Service Station # 5439	2000 W. Canal	Completed - Case Closed
US Rentals	2800 S. Golden State	Completed - Case Closed
Utility Service & Electric Company	713 Lander	Completed - Case Closed
Wayside Exxon	1202 Geer	Completed - Case Closed
Western Stone Products	1800 Paulson	Completed - Case Closed

TABLE 3.11-1: REPORTED HAZARDOUS SUBSTANCE SITES, BY CLEANUP STATUS

<i>Site</i>	<i>Address</i>	<i>Cleanup Status</i>
Other Cleanup Sites		
Turlock Manufactured Gas Plant ²	645 S. Golden State Blvd.	Open - Site Assessment
City of Turlock Dry Cleaners - Turlock PCE Investigation	E. Main & Olive, W. Main & Locust	Open - Remediation
Valley Wood Preserving, Inc. ^{1, 2}	2013, 2031 S. Golden State Blvd.	Open - Remediation
Anderson Property	711 Lander Ave.	Open - Inactive
City of Turlock Dry Cleaners - Du Rite Cleaners	141 N. Center St.	Open - Inactive
City of Turlock Dry Cleaners - Snow White Cleaners	352 E. Olive Ave.	Open - Inactive
City of Turlock Dry Cleaners - Turlock Cleaners	429 E. Main St.	Open - Inactive
City of Turlock Dry Cleaners - Turlock Downtown Dry Cleaners	238 S. Golden State Blvd.	Open - Inactive
Foster Farms Rogers Warehouse (NP# 1224)	475 C St.	Open - Inactive
Golden State Utility Company	2007 W. Tuolumne Rd.	Open - Inactive
Mid Cal Oil Company (Site NP15)	1124 N. Front St.	Open - Inactive
Northern Tire Store	402 E. Main St.	Open - Inactive
Pizza Hut	201 W. Olive Ave.	Open - Inactive
Streeter Flying Service	4918 Christoffersen Rd.	Open - Inactive
Turlock Air Park	519 Greenway Ave.	Open - Inactive
Turlock Mosquito Abatement District	4412 N. Washington Rd.	Open - Inactive
Valley Grain Products of Madera	475 7th St.	Open - Inactive
Banquet Foods ²	107 S. Kilroy Rd.	Completed - Case Closed
Contamination Site NP1228 (Former Ohman Property)	4718 Colorado Ave.	Completed - Case Closed
International Paper	1500 W. Main	Completed - Case Closed

Notes:

1. This site is an EPA Superfund site.
2. This site is identified by both the DTSC and SWRCB.

Sources: California Department of Toxic Substances, 2011; State Water Resources Control Board, 2011; Dyett & Bhatia, 2011.

3.11 Hazardous Materials and Wildland Fires

Solid Waste Disposal and Transfer Sites

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. CalRecycle maintains the Solid Waste Information System database, which contains information on landfills, transfer stations, material recovery facilities, composting sites, transformation facilities, waste tire sites, and closed disposal facilities. A review of the database as of October 2011 finds four listed sites within the Study Area, as shown in Table 3.11-2. Hazardous material cleanup sites and solid waste facilities are shown in Figure 3.11-1.

TABLE 3.11-2: SOLID WASTE FACILITIES AND LANDFILL SITES

<i>Site</i>	<i>Type</i>	<i>Address</i>	<i>Operational Status</i>
City of Turlock Water Quality Control Facility	Composting Facility (Sludge)	901 S. Walnut	Active
Turlock Transfer	Large Volume Transfer/ Processing Facility	1100 S. Walnut	Active
Turlock Disposal Site	Solid Waste Disposal Site	901 S. Walnut	Closed

Source: California Department of Resources Recycling and Recovery, Solid Waste Information System, 2011.

3.11 Hazardous Materials and Wildland Fires

Railroad Hazards

Potential hazards associated with railroads include collisions and train derailment. Either of these can lead to human injury or death as well as various environmental impacts. The Federal Railroad Administration (FRA) regulates railroad safety and provides oversight to the use of railroads. A 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

Natural Gas Pipelines

One of the primary causes of disruption to underground pipelines 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 subsequently reducing potentially hazardous conditions.

Pacific Gas & Electric’s gas transmission pipeline system passes through the Study Area, with segments along the UPRR right-of-way north of Fulkerth Road; Geer Road north of Canal; Walnut south of Linwood; and portions of Chestnut Street, Soderquist Road, West Main Street, and West Avenue South. Spur lines are located along Washington Road and South Avenue.

As of 2011, the utility has adopted a program to guide risk assessment. The program focuses on upgrading key gas transmission pipeline segments in heavily populated and other critical areas; expanding the use of automatic or remotely operated shut-off valves in these areas; researching and developing improved inspection and diagnostic tools; and helping local areas create emergency response plans by providing detailed information on pipeline locations.²

Fire Hazards

Fire hazards include both urban and wildland fires. Urban fires involve the uncontrolled burning of built structures typically due to human-made causes; wildland fires affect grassland, forest, and brush (and the structures on them), and can result from either human or natural causes.

Factors that exacerbate urban structural fires include substandard building construction, highly flammable materials, delay in response time, and inadequate fire protection services. For wildland fires, the type and amount of fuel, topography, and climate are the primary factors influencing the degree of fire risk. Human activities such as smoking, debris burning, and equipment operation are the major causes of wildland fires.

The Study Area does not contain wildlands or steep slopes, making the risk of wildland fire 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. Although a wind-driven grass fire burned about 100 acres and threatened several buildings on May 22, 2008, in an area on the urban/agricultural edge, the entire Study Area is designated as a Low Risk Area (LRA)

² PG&E, available at <http://www.pge.com/about/newsroom/mediaevents/pipeline2020/index.shtml>, accessed November 2011.

by the California Department of Forestry and Fire Protection's Fire and Resource Assessment Program (FRAP.) Turlock Fire Department responds to commercial and residential structure fires, vehicle fires, rubbish fires, and vegetation fires.

Fire Threat

According to FRAP Fire Threat data, Fire Threat is a combination of two factors: (1) fire frequency, or the likelihood of a given area burning, and (2) potential fire behavior (hazard), which is most influenced by climate and landscape characteristics such as wind, temperature, humidity, and fuel moisture content. Fire frequency and fire behavior factors are combined to create the following threat classes:

- Little or No Threat
- Moderate
- High
- Very High
- Extreme

Only two small areas on the northwest corner of the Study Area, near Keyes, are designated as having "moderate" fire threat. The rest of the Study Area is designated as "low" fire threat by the CDF (see Figure 3.11-2).

Fire and Emergency Services

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. For more information on the District's four stations, equipment, staffing, and response time standard, see Chapter 3.14.

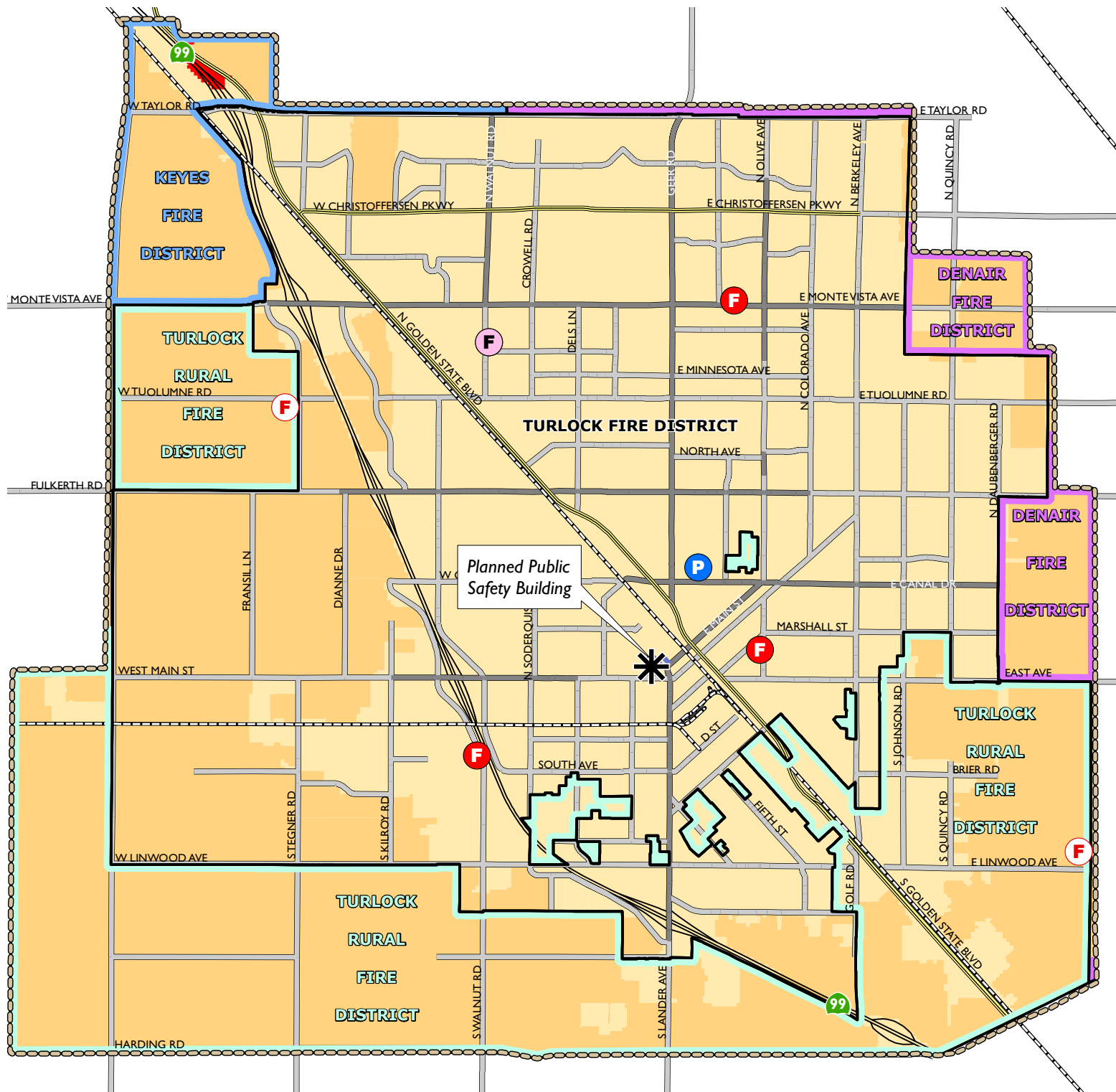
ISO Rating

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.

Figure 3.11-2
 Draft General Plan
**Fire Hazards and Public
 Safety Services**



- P Police Station¹
- F Fire Station
- F Fire Station to be relocated
- F Proposed Fire Station²

- Fire Hazard Class**
- Moderate
 - Non-Wildland/Non-Urban
 - Urban

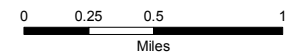
- Study Area Boundary
- City Limits & County Islands

- Existing Circulation Network**
- Freeway
 - Existing Expressway
 - Existing Arterial
 - Existing Collector
 - Railroads

NOTE: Keyes, Turlock Rural, and Denair fire districts extended beyond the study area boundary.

(1) Police Station to be relocated to New Public Safety Building.

(2) Precise location of Future Fire Stations may change.



REGULATORY SETTING

Hazardous materials and hazardous wastes are extensively regulated by federal, State, regional and local regulations, with the major objective of protecting public health and the environment. In general, these regulations provide definitions of hazardous substances; identify responsible parties; establish reporting requirements; set guidelines for handling, storage, transport, remediation, and disposal of hazardous materials and wastes; and require health and safety provisions for both workers and the public, such as emergency response and worker training programs. Sites which are subject to these regulations are identified on periodically-updated published lists at the federal, state, and local levels; the regulated sites include underground storage tank (UST) locations. The major regulations relevant to the proposed Project are summarized in the following subsections.

Definitions

Hazardous Materials

Hazardous materials are substances with certain physical or chemical properties that could pose a substantial present or future hazard to human health or the environment when improperly handled, disposed, or otherwise managed. Title 22 of the California Code of Regulations, Division 4.5, Chapter 11, Article 3 groups hazardous materials into the following four categories based on their properties: toxic (causes human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), and reactive (causes explosions or generates toxic gases). Hazardous materials are commonly used in commercial, agricultural and industrial applications as well as in residential areas to a limited extent.

Hazardous Waste

A hazardous waste is any waste that may (1) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness, or (2) pose a substantial present or potential hazard to human health or the environment, due to factors including, but not limited to, carcinogenicity, acute toxicity, chronic toxicity, bio-accumulative properties, or persistence in the environment, when improperly treated, stored, transported, or disposed of, or otherwise managed (California Health and Safety Code, Section 25141). Hazardous materials and wastes can result in public health hazards if improperly handled, released into the soil or groundwater, or released into the air through vapors, fumes, or dust.

Federal Regulations

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly referred to as Superfund, was enacted in 1980 to provide authorities the ability to respond to uncontrolled releases of hazardous substances that endanger public health and the environment. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at such sites, and established a trust fund to provide for cleanup when no responsible party could be identified. Additionally, CERCLA provided for the revision and republishing of the National Contingency Plan (NCP) that provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also provides for the National Priorities List (NPL), a list of national priorities among releases or threatened releases throughout the United States for the purpose of taking remedial action.

3.11 Hazardous Materials and Wildland Fires

Superfund Amendments and Reauthorization Act

The Superfund Amendments and Reauthorization Act (SARA) amended CERCLA on October 17, 1986. The Amendments increased the size of the Hazardous Response Trust Fund to \$8.5 billion, expanded the U.S. EPA's response authority, strengthened enforcement activities at Superfund sites, and broadened the application of the law to include federal facilities. In addition, new provisions were added to the law that dealt with emergency planning and community "right to know." SARA also required the EPA to revise the Hazard Ranking System to ensure that it accurately assesses the relative degree of risk to human health and the environment posed by sites and facilities subject to review for listing on the National Priorities List.

Resource Conservation and Recovery Act of 1976

The RCRA is the nation's key hazardous waste control law. It defines hazardous waste, provides for a cradle-to-grave tracking system and imposes stringent requirements on treatment, storage and disposal facilities. RCRA requires environmentally sound closure of hazardous waste management units at treatment, storage, and disposal facilities. The U.S. EPA is the principal agency responsible for the administration of RCRA, SARA, and CERCLA.

Title 49 of the Code of Federal Regulations (CFR 49)

Title 49 of the Code of Federal Regulations (CFR 49) contains lists of more than 2,400 hazardous materials and regulates the transport of hazardous materials. The U.S. Department of Transportation (DOT) has developed regulations pertaining to the transport of hazardous materials and hazardous wastes by all modes of transportation. The U.S. Postal Service (USPS) has developed additional regulations for the transport of hazardous materials by mail. US EPA has also promulgated regulations for the transport of hazardous wastes. These more stringent requirements include tracking shipments with manifests to ensure that wastes are delivered to their intended destinations.

Hazardous Materials Transportation Act

The U.S. Department of Transportation (DOT) regulates the interstate transport of hazardous materials and wastes through implementation of the Hazardous Materials Transportation Act. This act specifies driver-training requirements, load labeling procedures, and container design and safety specifications. Transporters of hazardous wastes must also meet the requirements of additional statutes such as RCRA, discussed previously.

Pipeline and Hazardous Materials Safety Administration

The Pipeline and Hazardous Materials Safety Administration (PHMSA) was created under the Norman Y. Mineta Research and Special Programs Improvement Act (P.L. 108-426) of 2004. The purpose of the Act is to provide a more focused research organization and establish a separate operating administration for pipeline safety and hazardous materials transportation safety operations. PHMSA is the federal agency charged with the safe and secure movement of hazardous materials by all modes of transportation. The agency also oversees the nation's pipeline infrastructure.

Federal Railroad Administration

The DOT FRA's primary function is ensuring the safety of the nation's approximately 700 railroads. FRA monitors the nation's rail transportation system for compliance with federal safety regulations, and utilizes a variety of methods to encourage railroads and shippers to meet federal regulations. FRA issues a variety of safety regulations and performs various inspections. In addition, FRA administers a safety program that oversees the movement of hazardous materials, such as petroleum, chemical, and nuclear products, throughout the rail transportation system.

State Regulations and Authorities

At the State level, agencies accept delegation of federal responsibility for the administration of hazardous materials and hazardous waste management. The Porter-Cologne Water Quality Control Act allows the SWRCB and the Regional Water Quality Control Board (RWQCB) to accept implementation responsibility for the Clean Water Act. The Hazardous Waste Control Act of 1977, and recent amendments to its implementation regulations, has given the Department of Health Services (DHS) the lead role in administering the RCRA program. The Hazardous Substances Highway Spill Containment Act gives the California Highway Patrol (CHP) the authority to respond to spills of hazardous materials on the state's highway system.

Hazardous Substance Account Act (1984), California Health and Safety Code Section 25300 et seq.

Hazardous Substance Account Act (1984), California Health and Safety Code Section 25300 et seq. (HSAA), known as the California Superfund, has three purposes: (1) to respond to releases of hazardous substances; (2) to compensate for damages caused by such releases; and (3) to pay the state's 10 percent share in CERCLA cleanups. Contaminated sites that fail to score above a certain threshold level in the EPA's ranking system may be placed on the California Superfund list of hazardous wastes requiring cleanup.

Hazardous Materials Release Response Plans and Inventory Act of 1985

The Hazardous Materials Release Response Plans and Inventory Act, also known as the Business Plan Act, requires businesses using hazardous materials to prepare a plan that describes their facilities, inventories, emergency response plans, and training programs. The law requires businesses that use hazardous materials to provide inventories of those materials to designated emergency response agencies, to illustrate on a diagram where the materials are stored, to prepare an emergency response plan, and to train employees to use the materials safely.

Hazardous Waste Control Act

The Hazardous Waste Control Act created the state hazardous waste management program, which is similar to, but more stringent than, the federal Resource Conservation and Recovery Act program. The act is implemented by regulations contained in Title 26 of the California Code of Regulations, which describes the following required aspects for the proper management of hazardous waste:

- Identification and classification;
- Generation and transport;
- Design and permitting of recycling, treatment, storage, and disposal facilities;
- Treatment standards;
- Operation of facilities and staff training; and
- Closure of facilities and liability requirements.

These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of them. Under the Hazardous Waste Control Act and Title 26, the generator of hazardous waste must complete a manifest that accompanies the waste from the generator to the transporter to the ultimate disposal location. Copies of the manifest must be filed with the DTSC.

3.11 Hazardous Materials and Wildland Fires

Emergency Services Act

Under the Emergency Services Act, the state developed an emergency response plan to coordinate emergency services provided by federal, state, and local agencies. Rapid response to incidents involving hazardous materials or hazardous waste is an important part of the plan, which is administered by the California Office of Emergency Services. The office coordinates the responses of other agencies, including EPA, the California Highway Patrol, regional water quality control boards, air quality management districts, and county disaster response offices.

California Pipeline Safety Act (CAPSA)

High-pressure pipelines must be operated and maintained in accordance to the regulations within the Pipeline Safety Act. These regulations require a minimum clearance of 12 inches between petroleum pipelines and other crosslines that intersect at a 90 degree angle. If the intersection angle is less than 90 degrees, the minimum clearance must be at least 24 inches. CAPSA Section 51014.6 provides that the pipeline and easement must be maintained clear of obstructions so that aerial observation can be conducted. No person, other than the pipeline operator, is allowed to build a structure, fence, wall or obstruction adjacent to any pipeline easement which would prevent complete and unimpaired surface access to the easement. In addition, no shrubbery or shielding is allowed on the pipeline easement which would impair aerial observation of the pipeline easement. (Transportation Research Board, 2004)

California Environmental Protection Agency

The California Environmental Protection Agency (Cal/EPA) was created in 1991 to coordinate state environmental programs, reduce administrative duplication, and address the greatest environmental and health risks. Cal/EPA unifies the state's environmental authority under a single accountable, cabinet-level agency. Cal/EPA has regulatory responsibility under Title 22 of the California Code of Regulations (CCR) for administration of the State and federal Superfund programs for the management and cleanup of hazardous materials. The Secretary for Environmental Protection oversees the following agencies: Air Resources Board, Integrated Waste Management Board, Department of Pesticide Regulation, State Water Resources Control Board, Department of Toxic Substances Control, and the Office of Environmental Health Hazard Assessment.

Department of Toxic Substance Control

The DTSC is responsible for regulating hazardous waste facilities and overseeing the cleanup of hazardous waste sites in California. The Hazardous Waste Management Program (HWMP) regulates hazardous waste through its permitting, enforcement and Unified Program activities. HWMP maintains the Cal/EPA authorization to implement the RCRA program in California, and develops regulations, policies, guidance and technical assistance/training to assure the safe storage, treatment, transportation and disposal of hazardous wastes. The State Regulatory Programs Division of DTSC oversees the technical implementation of the state's Unified Program, which is a consolidation of six environmental programs at the local level, and conducts triennial reviews of Unified Program agencies to ensure their programs are consistent statewide and conform to standards.

State Water Resources Control Board

Acting through the RWQCB, the SWRCB regulates surface and groundwater quality pursuant to the Porter-Cologne Water Quality Act, the federal Clean Water Act, and the Underground Tank Law. Under these laws, RWQCB is authorized to supervise the cleanup of hazardous waste sites referred to it by local agencies in those situations where water quality may be affected.

Depending on the nature of contamination, the lead agency responsible for the regulation of hazardous materials at the site can be the DTSC, RWQCB, or both. DTSC evaluates contaminated sites to ascertain risks to human health and the environment. Sites can be ranked by DTSC or referred for evaluation by the RWQCB. In general, contamination affecting soil and groundwater is handled by RWQCB and contamination of soils is handled by DTSC.

California Occupational Safety and Health Administration

Cal/OSHA and the Federal OSHA are the agencies responsible for assuring worker safety in the handling and use of chemicals in the workplace. Pursuant to the Occupational Safety and Health Act of 1970, Federal OSHA has adopted numerous regulations pertaining to worker safety, contained in the Code of Federal Regulations Title 29 (29 CFR). These regulations set standards for safe workplaces and work practices, including standards relating to hazardous material handling. Cal/OSHA assumes primary responsibility for developing and enforcing State workplace safety regulations. Because California has a federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those found in 29 CFR. Cal/OSHA standards are generally more stringent than federal regulations.

Cal/OSHA regulations concerning the use of hazardous materials in the workplace, as detailed in Title 8 of the CCR, include requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces hazard communication program regulations that contain training and information requirements, including procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees at hazardous waste sites. The hazard communication program requires that Material Safety Data Sheets (MSDSs) be available to employees and that employee information and training programs be documented.

Hazardous Materials Transport

California law requires that Hazardous Waste (as defined in California Health and Safety Code Division 20, Chapter 6.5) be transported by a California registered hazardous waste transporter that meets specific registration requirements. The requirements include possession of a valid Hazardous Waste Transporter Registration, proof of public liability insurance which includes coverage for environmental restoration, and compliance with California Vehicle Code registration regulations required for vehicle and driver licensing. Additional requirements can be found in Title 22 CCR, Chapter 13.

State agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the CHP and Caltrans. Together, these agencies determine container types used and license hazardous waste haulers for hazardous waste transportation on public roads. The CHP designates State and federal roadways as hazardous materials truck routes. The CHP classifies hazardous materials into three categories: explosives, poisons that can be inhaled, and radioactive material.

Bates Bill (Government Code Sec. 51175)

The Bates Bill, Government Code Section 51175, was prompted by the devastating Oakland Hills Fire of 1991. This mid-1990s legislation calls for the CAL FIRE Director to evaluate fire hazard severity in local responsibility area and to make a recommendation to the local jurisdiction where Very High Fire Hazard Severity Zones exist. The Government Code then provides direction for the local jurisdiction to take appropriate action.

3.11 Hazardous Materials and Wildland Fires

California Building Code

Government Code Sections 51175-51189, California Code of Regulations (CCR), Title 24, and the Public Resources Code Sections 4290 and 4291 contain a variety of requirements related to building construction, defensible space, and fire access in fire hazard severity zones.

California Wildland Hazard/Building Code Amendments

On September 20, 2005, the California Building Standards Commission approved the Office of the State Fire Marshal's emergency regulations amending the California Code of Regulations (CCR), Title 24, Part 2, known as the 2007 California Building Code (CBC). The amendment created new compliance requirements for new buildings located in any Fire Hazard Severity Zone, as designated by the California Department of Forestry and Fire Protection. No portion of the Study Area is designated as a Fire Hazard Severity Zone.

Regional Regulations and Agencies

Household Hazardous Waste Element and Countywide Integrated Waste Management Plan

In 1991, Government Code Section 65583.1 became effective, requiring that each city and county prepare a separate Household Hazardous Waste Element (HHWE). The HHWE identifies a program for the safe collection, recycling, treatment and disposal of hazardous wastes that should be separated from the solid waste stream and are generated by households. Funding mechanisms to support the program and a public information program are also included.

1. The Turlock HHWE was adopted by the City Council in 1994, approved by the Countywide Integrated Waste Management Board (CIWMB) and incorporated into the Countywide Integrated Waste Management Plan (CIWMP), comprised of the Countywide Siting Element, the Countywide Summary Plan and the SRREs and HHWEs for the County and for each city in the County. The CIWMP in its entirety is reviewed every five years; the most recent completed review took place in 2004.
2. Stanislaus County's Environmental Resources Division operates one permanent hazardous waste collection facility, on Morgan Road in Modesto, and schedules periodic mobile collections. The permanent collection center accepts most types of household hazardous waste, including batteries and electronics; mercury-containing items such as thermostats; household and landscape chemicals; paints and solvents; and motor oil.

Stanislaus County Multi-Jurisdictional Hazard Mitigation Plan

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.

Stanislaus County Department of Environmental Resources

The Stanislaus County Department of Environmental Resources, Hazardous Materials Program is the local Certified Unified Program Agency (CUPA). A local CUPA is responsible for administering/overseeing compliance with the following programs, as required by state and federal regulations:

- Hazardous Materials Release Response Plans and Inventories (Area Plans)
- California Accidental Release Prevention (CalARP) Program
- Underground Storage Tank Program (UST)

- Aboveground Petroleum Storage Act Requirements for Spill Prevention, Control and Countermeasure (SPCC) Plans (AST)
- Hazardous Waste Generator and Onsite Hazardous Waste Treatment (tiered permitting) Programs
- California Uniform Fire Code: Hazardous Material Management Plans and Hazardous Material Inventory Statements

Businesses, such as photographic processing, chrome plating or service stations, which generate small hazardous waste or require underground storage of hazardous materials, require a permit from the department.

Stanislaus County Office of Emergency Services

The Office of Emergency Services coordinates with Stanislaus County's nine cities to maintain Emergency Operations Plans (EOP's), and ensuring that they comply with National Incident Management System (NIMS) requirements. The Office also works with community-based groups on preparedness and emergency management.

OES is in the process of updating the County's Multi-Jurisdictional Hazard Mitigation Plan, which identifies disaster risks and identifies strategies for minimizing damage. The Plan aims to be a resource for decision-making and community preparedness. The current Plan was approved by FEMA in 2006.

Local Regulations

Turlock Municipal Code

Section 8-6 Uniform Code for the Repair, Vacation, or Demolition of Dangerous Buildings

The City of Turlock has adopted the "Uniform Code for the Abatement of Dangerous Buildings" published by the International Conference of Building Officials, as adopted and amended by the California Building Standards Commission in the California Building Standards Code; Title 24 of the California Code of Regulations.

Zoning Ordinance Section 9-2-115 Recycling and Solid Waste Disposal Regulations

This section of the zoning ordinance defines the City's policies regarding recycling and solid waste disposal, including adequate locations and appropriate surrounding land uses for such facilities.

Impact Analysis

SIGNIFICANCE CRITERIA

Implementation of the Proposed Plan would have a potentially significant adverse impact if the Plan would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;

3.11 Hazardous Materials and Wildland Fires

- Allow development on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

METHODOLOGY AND ASSUMPTIONS

The assessment of hazardous materials impacts consists of a qualitative review of the existing conditions applicable to the Study Area and a determination of whether the proposed General Plan includes adequate provisions to address the potential impacts associated with local hazardous conditions.

The fire hazard analysis considers project plans, current conditions in the Study Area, and applicable regulations and guidelines. California Department of Forestry and Fire Protection fire hazard maps were examined to determine the level of threat to persons and property within the Study Area.

This analysis of fire and emergency response considers current and proposed General Plan policies and goals, existing and proposed public and safety services within the city, and applicable regulations and guidelines.

SUMMARY OF IMPACTS

Implementation of the proposed General Plan could result in potential exposure of the public and the environment to hazardous materials or hazardous waste associated with future development and growth of the City's population. However, because hazardous materials use and disposal is highly regulated and the proposed General Plan contains additional policies regarding hazardous materials, potential impacts are less than significant.

No portions of the Study Area are classified as having a "High" or "Very High" fire threat. Therefore the threat of fire hazard (in particular wildland fire) is considered less than significant.

Implementation of the proposed General Plan would involve accommodation of approximately 33,000-56,000 new residents and 59,000 new jobs by 2030, increasing the long-term demand for fire and emergency response. Given the City's commitment to ensuring adequate fire service to provide timely response to all emergencies, as reflected in the General Plan, the impact on fire and emergency services is expected to be less than significant.

IMPACTS AND MITIGATION MEASURES

Impact

3.11-1 Implementation of the Proposed Plan would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. (*Less than Significant*)

Hazardous materials are regularly used, transported, and disposed of in Turlock. As reported above, these activities are subject to a variety of local, State and federal regulations. Future development under the proposed General Plan would be subject to regulatory programs such as Hazardous Materials business plans, aboveground and underground storage tank programs, and RCRA hazardous waste generator programs. The

City's Fire Department conducts Uniform Fire Code inspections and otherwise ensures that risks associated with the use of hazardous materials are minimized. Nevertheless, accidental release due to accidents, misuse or natural disasters could occur. Additional residential, commercial, and industrial development resulting from buildout of the proposed General Plan would likely increase the amount of hazardous materials transported, used or disposed of in the City.

Compliance with federal, State and local regulations, combined with proposed General Plan policies outlined below, would reduce the potential for a significant adverse effect on the environment, due to upset and accident involving the use, transport, and disposal of hazardous materials, to a less than significant level.

Proposed General Plan Policies that Reduce the Impact

The following proposed policies would minimize potential for a significant adverse effect on the environment due to upset or accident involving hazardous materials:

- 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.
- 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.

3.11 Hazardous Materials and Wildland Fires

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.

Implementation of the policies listed above would reduce the potential impact to less than significant.

Mitigation Measures

None required.

Impact

3.11-2 Implementation of the proposed General Plan would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. *(Less than Significant)*

As noted above, hazardous materials are regularly used, transported, and disposed of in the Study Area. The City implements a variety of local, State and federal regulations designed to address the use, transportation, and disposal of these materials. Although such activities are relatively well regulated and monitored, accidental release due to accidents, misuse or natural disasters (e.g., earthquakes) could occur. Additional residential,

commercial, and industrial development resulting from buildout of the proposed General Plan would likely increase the amount of hazardous materials transported, used or disposed of in the City. Although a number of businesses in the Study Area routinely store, handle, and transport hazardous substances, the use of these hazardous materials is controlled and permitted by the City's Fire Department which conducts Uniform Fire Code inspections of these facilities, and otherwise ensures that risks associated with the use of hazardous materials in the community are minimized. Furthermore, the proposed General Plan includes several policies that have been developed to ensure a safe environment for its residents, visitors, and businesses.

Proposed General Plan Policies that Reduce the Impact

Implementation of the policies listed under Impact 3.11-1 would reduce the potential impact to a level that is less than significant.

Mitigation Measures

None required.

Impact

3.11-3 Implementation of the proposed General Plan would not result in hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. *(Less than Significant)*

Schools are one of several sensitive receptors that must be taken into consideration when the City is reviewing new land uses or transportation routes that may accommodate the production, storage, use, or transportation of hazardous materials and/or wastes. Buildout of the proposed General Plan would result in increased population levels throughout the Study Area and would increase the number of school-age children. Accordingly, this would necessitate the construction of additional school facilities, as identified in the proposed Plan and in Section 3.14: Public Facilities of this EIR. Proposed General Plan policy 10.1-1 calls on the City to separate hazardous waste facilities from incompatible uses including schools through development standards and the development review process.

In addition to general CEQA requirements, school acquisition/development projects to be funded under the State School Facilities Program must satisfy several specific requirements established under the California Education Code and California Code of Regulations. These regulations require that potential school hazards relating to soils, seismicity, hazards and hazardous materials, and flooding be addressed during the school site selection process. Compliance with these requirements will address hazardous conditions associated with the siting of new public schools within the Study Area.

Proposed General Plan Policies that Reduce the Impact

Implementation of the policies listed under Impact 3.11-1—particularly policies 10.1-d, 10.1-l, and 10.1-m—would reduce the potential impact to a level that is less than significant.

Mitigation Measures

None required.

Impact

3.11-4 Implementation of the proposed General Plan would not have a potentially adverse impact by allowing development on a site that is included on a list of hazardous materials sites compiled

3.11 Hazardous Materials and Wildland Fires

pursuant to Government Code Section 65962.5 and, as a result, creating a significant hazard to the public or the environment. (*Less than significant*)

Development of vacant or previously developed lots that have been impacted by petroleum hydrocarbons from LUSTs or other chemical constituents could expose individuals to hazardous conditions resulting from ongoing or historical activities at the site or on neighboring properties. Businesses such as dry cleaners, gas stations, and airports are often contaminated. In addition, removal of historic structures for redevelopment that contain hazardous building materials such as asbestos, lead-based paint, or PCBs could expose individuals to hazardous conditions during demolition. Policies listed below reduce these impacts.

Railroad rights-of-way typically have surface contamination from lubricating oil used on train wheels and herbicides used to control weeds within these areas. While historic activities may have exposed soil surfaces to contaminants, the potential for exposure to these contaminants is minimal. Development under the proposed General Plan of lands adjacent these tracks would be required under policy 10.1-m to have soils analyzed for hazardous materials. In addition, compliance with all federal, State and local regulations, combined with proposed General Plan policies would reduce the potential of creating a significant hazard to the public or environment by locating land uses on hazardous or contaminated sites.

Proposed General Plan Policies that Reduce the Impact

Implementation of the policies listed under Impact 3.11-1—particularly policies 10.1-d, 10.1-l, and 10.1-m—would reduce the potential impact to a level that is less than significant.

Mitigation Measures

None required.

Impact

3.11-5 Buildout of the General Plan would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. (*Less than Significant*)

As more fully described in Chapter 3.3: Transportation of this EIR, implementation of the General Plan would result in an increased number of vehicle trips and miles of vehicular travel within the Study Area. While several local roadway facilities would experience deterioration in their level of service, improvements under the proposed General Plan are anticipated to preserve an acceptable level of service in the roadway system. The Proposed General Plan addresses these traffic impacts through a combination of policies and physical roadway improvements identified in the Circulation Diagram (see Chapter 3. 3).

The Safety Element provides policies that address conformance with local emergency response programs and continued cooperation with emergency response service providers. For example, policies have been developed to ensure that all applicable disaster plans are updated regularly and a coordinated emergency response system is maintained with other agencies. As such, implementation of the proposed General Plan would not physically impede the response times of emergency response vehicles or delay implementation of an evacuation plan, and less than significant impacts would occur.

Proposed General Plan Policies that Reduce the Impact

10.4-y **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-z **Maintain Evacuation Routes.** Ensure that major access and evacuation corridors are available and unobstructed in case of major emergency or disaster.

Mitigation Measures

None required.

Impact

- 3.11-6** Buildout of the proposed General Plan would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. *(Less than Significant)*

Wildland fires do not pose a significant threat to people and structures in the Study Area, due to the area’s flat topography and absence of wild lands. Only a very small portion of the Study Area, along Highway 99 just northwest of the City boundary, is considered by the California Department of Forestry and Fire Protection to have a moderate fire threat level.

Policies and implementation measures included as part of the proposed General Plan that would minimize this impact are summarized below. The New Growth Areas and Infrastructure Element provides policies and implementation measures that require new development to pay fair share costs for new fire stations and equipment. Other policies call for continued public awareness programs regarding potential fire hazards and requiring new development to ensure adequate access for emergency vehicles and equipment. Continued compliance with General Plan policies would reduce potential fire hazards to a less than significant level.

Proposed General Plan Policies that Reduce the Impact

Implementation of the policies listed under Impact 3.11-1 would reduce the potential impact to a level that is less than significant.

New Growth Areas and Infrastructure Element

- 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-f **Provide adequate public services.** Ensure the adequacy and quality of public services and facilities for all residents.
- 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
 - Police and fire services
 - General government services

3.11 Hazardous Materials and Wildland Fires

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.

Safety Element

- 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-f* **Be Prepared for Emergencies.** Continue to cooperate with Stanislaus County and other jurisdictions in preparing and implementing Emergency Preparedness Plans.
- 10.4-g **Strategic Planning.** Continue to develop strategic plans that identify high-priority community needs and organizational, staffing, and resource requirements to meet those needs.
- 10.4-h **Meet Response Time Standard Throughout Study Area.** Adequately distribute firefighting equipment and personnel throughout the Sphere of Influence to ensure quick response time (strive to achieve five-minute response time to all calls within the primary service area of each fire station, 90 percent of the time). Critical factors that affect response times are station locations and road circulation patterns.
- 10.4-i **Coordinate Facilities Planning With Urban Expansion.** Within two years of adoption of the General Plan, determine appropriate locations 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-j **Maintain Mutual Aid Agreements.** Maintain mutual aid agreements with other fire and emergency service departments in Stanislaus County.
- 10.4-k **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-l **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-m **Enforce Fire Safety Codes.** Continue enforcement of all aspects of Chapter 4-3 of the Municipal Code, Fire Codes and Administration.
- 10.4-n **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-o **Training Facilities.** Ensure that training facilities are maintained and upgraded as needed.

Mitigation Measures

None required.

3.11 Hazardous Materials and Wildland Fires

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3.12 Hydrology and Water Resources

This section describes hydrology and water quality issues related to the implementation of the proposed General Plan, including its consistency with applicable local, State, and federal plans, policies, and regulations. Turlock's groundwater basin, surface water drainage system, and potential for flooding are described.

Environmental Setting

PHYSICAL SETTING

Groundwater Hydrology

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, open space, and urban (residential, commercial, industrial, etc.) 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,¹ 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

¹ 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.

3.12 Hydrology and Water Resources

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.

In 2008, the Turlock Groundwater Basin Association published “Assessment of Future Groundwater Impacts Due to Assumed Water-Use Changes Turlock Groundwater Basin” in response to declining groundwater levels. 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 level contour maps used in the water budget study indicated that the 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 DWR monitoring network have introduced uncertainty in the measurement of groundwater levels, which translates into uncertainty in current storage estimates. Therefore, the magnitude and direction of changes in groundwater storage cannot be fully characterized through an analysis based solely on the groundwater level contours.

The estimated reduction in storage between 2002 and 2008 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 (about 20 feet from the mid-1990s through 2008). In the last three to four years, groundwater levels have begun to rise slightly. Although water use within the basin has been increasing, hydrodynamic adjustments within the basin have nearly kept 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.

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.

Potable Water Supply

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 million gallons per day (mgd)². 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.

As shown in Figure 3.12-1, the City used about 20,600 acre-feet of groundwater in 2011. 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.

² 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.

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 detention basins and reused for landscape irrigation. These landscape irrigation water systems are completely separate from the City's potable water distribution system.

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 Study Area, contaminants that may be present in groundwater include: salinity, nitrates, iron, manganese, boron, arsenic, radionuclides, bacteria, pesticides, and trichloroethylene.

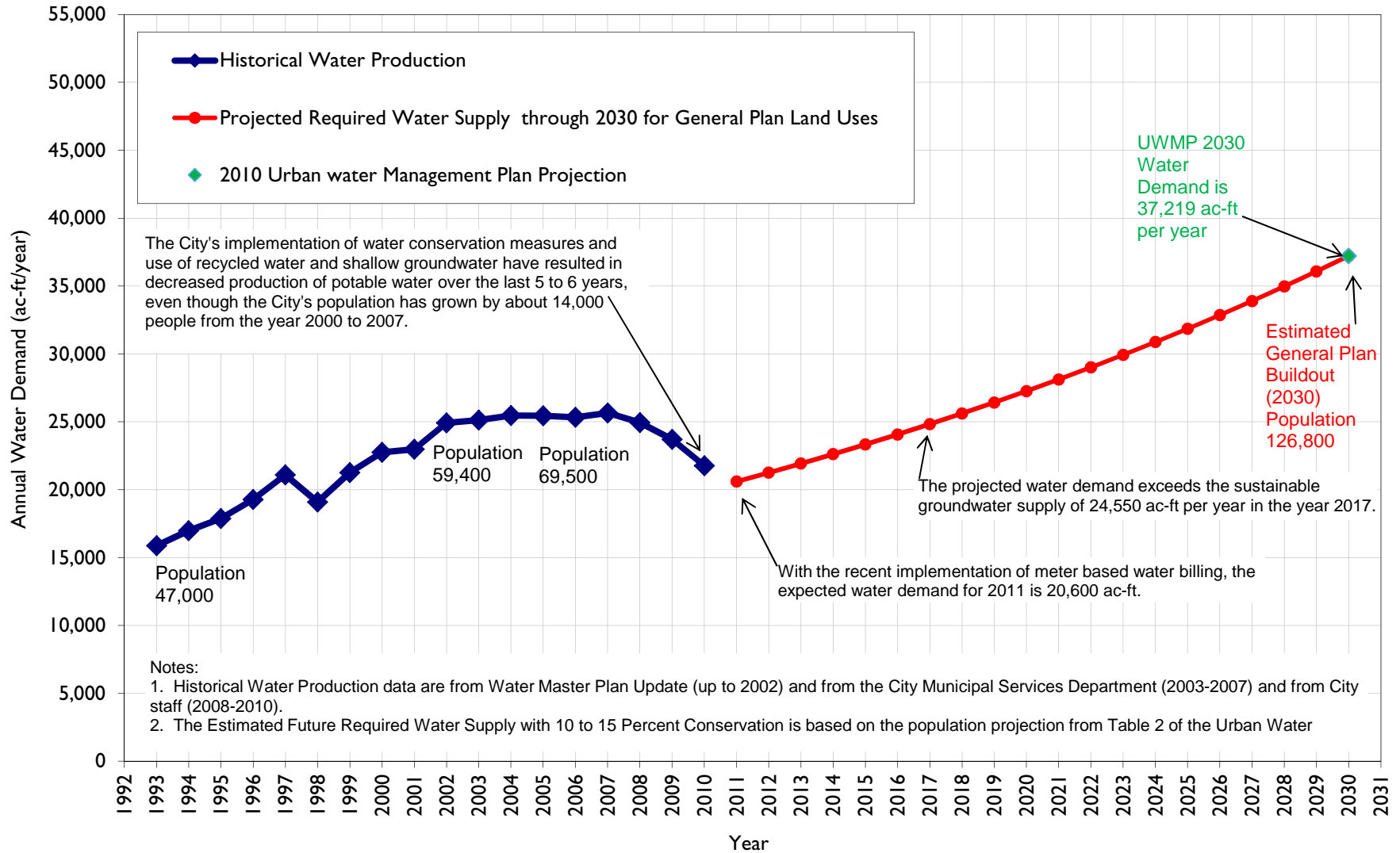
Nitrate is the most commonly occurring contaminant in the area. It has been introduced into groundwater from fertilizers, septic systems, and possibly livestock. The City routinely monitors the quality of the water supply to ensure that the water meets all Federal and State drinking water standards. 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 two of the wells slightly exceed the arsenic limit. The City is currently evaluating treatment options, along with identifying funding opportunities, to reduce the level of arsenic in the water produced by these two wells.

Without the Regional Surface Water Supply Project (described in the next section) as a long term water supply, increased use of the groundwater is likely to ultimately result in deterioration of groundwater quality, and lead to the need for additional 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 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. The City is also considering use of recycled water for agricultural irrigation.

Figure 3.12-1. Historical and Projected Annual Water Demands



Regional Surface Water Supply Project

To meet the future water demands, the cities of Turlock, Modesto, and Ceres have been evaluating a Regional Surface Water Supply Project (RSWSP) that will produce potable water from the Tuolumne River. The SRWA is developing an agreement with TID for the provision of raw water for the project. The RSWSP would initially provide the City with up to 16,800 acre-feet per year (15 mgd) of potable water, 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 \$145 million to \$154 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 transmission mains within the City at a cost of about \$20 million. This potential surface water supply would provide over half of the City's future water needs and thus significantly reduce the City's existing use of groundwater.

Background

In 2006, the Turlock Irrigation District (TID) prepared an Environmental Impact Report (EIR) to study the potential impacts of the Regional Surface Water Supply Project. As originally envisioned, TID would construct a water treatment plant (WTP) and pipeline facilities with the capacity to treat and deliver up to 42.5 million gallons per day (mgd) of surface water to the communities of Ceres, Hughson, Keyes Community Services District (Keyes), that portion of Modesto south of the Tuolumne River (South Modesto) and Turlock in Stanislaus County. All of these communities are located within the TID's service area and all rely exclusively on groundwater. Up to 66 cubic feet per second (cfs) of water would be diverted from the Tuolumne River to supply the RSWSP. The water will be diverted under an existing TID water right and using facilities already constructed or planned as part of TID's Infiltration Gallery Project in Special Run Pool 9.

The proposed Water Treatment Plant would encompass up to 20 acres on a 50-acre parcel located east of Geer Road and south of the Tuolumne River in unincorporated Stanislaus County, near the City of Hughson. Further, two pipelines would be constructed to deliver treated water to the participating communities; these pipelines would be constructed (primarily) in existing road rights-of-way and TID canal alignments.

As a result of the Notice Preparation (NOP) and public scoping session on the project a number of issues of concern and potential controversy related to the proposed project were identified. These issues included:

- Potential project effects on the availability of water for TID agricultural customers and domestic water users in La Grange;
- The effect of proposed project diversions from the Tuolumne River on aquatic resources, primarily anadromous fishes such as Chinook salmon and steelhead trout;
- Conversion of prime farmland to urban uses due to the construction of the proposed water treatment plant;
- Traffic-related impacts during construction of the WTP and installation of project pipelines;
- Construction-related impacts on air quality;
- Growth-inducing effects of providing a new source of treated surface water to the five participating communities; and
- Potential environmental impacts related to the construction and operation of facilities by the five participating communities to store, treat and/or distribute water delivered to the communities by the proposed project.

3.12 Hydrology and Water Resources

After analysis in the EIR, feasible mitigation measures were developed to reduce impacts to a level considered to be less than significant. Two cumulative impacts related to the proposed project were found to be significant and unavoidable even with the implementation of feasible mitigation measures. These were:

- Impact 4.1-6: The conversion of prime farmland to urban use under the proposed project would contribute substantially to the cumulative loss of farmland in Stanislaus County due to past and planned development within the county.
- Impact 4.8-7: Construction activities related to the proposed project will contribute substantially to cumulative PM10, PM2.5 and ozone emissions.

Regional Surface Water Supply Project Supplemental Environmental Impact Report

TID prepared and certified two environmental documents for the RSWSP in compliance with the California Environmental Quality Act (CEQA):

- A 2001 Mitigated Negative Declaration (MND) that addressed the construction of the infiltration gallery on the Tuolumne River, and associated pipeline and pump station.
- A 2006 Environmental Impact Report (EIR) that addressed other components of the RSWSP, including the WTP and transmission pipelines (Turlock Irrigation District: Regional Surface Water Supply Project (EIP/PBS&J) SCH# 2006022073).

Since the certification of the EIR, however, the Stanislaus Regional Water Authority (SRWA) has been established and overall responsibility for the project has transitioned from the TID to the SRWA. Specifically, the SRWA, not TID, will be responsible for all phases of the project including design, construction, financing, and operation.

Further, project components have changed since the earlier CEQA documents were certified. The project changes include new pipeline alignments, above-ground terminal valve control cabinets, and new pipeline tunnel crossings and associated staging areas. These changes could result in impacts to aesthetics, air quality, biological resources, cultural resources, noise, public utilities, transportation and traffic, and water quality. Additionally, Turlock is updating its General Plan, and the cities of Modesto and Ceres have updated their General Plans since the RSWSP EIR was certified.

Therefore, the SRWA will be reviewing the previously adopted environmental documents for the project and conducting a gap analysis that outlines changes to the project and changes in circumstances that necessitate additional environmental review. Most likely, a Supplemental EIR (SEIR) is necessary to analyze any new significant and substantially more severe environmental impacts that may occur as a result of the RSWSP that were not addressed in the prior CEQA documents.

In addition, CEQA compliance is needed for the terminal facilities that each city would need to construct in order to receive water from the RSWSP. These terminal facilities generally consist of storage tanks, pump stations, and pipelines that would connect with each city's existing water distribution system. The cities have determined that the SEIR should include these facilities as part of the project, and consider their impacts to the extent that they have not been adequately addressed in prior CEQA documents.

Joint Powers Authority: Stanislaus Regional Water Authority

On September 27, 2011, a Joint Powers Agreement (JPA) was executed between the cities of Turlock, Modesto and Ceres to establish the Stanislaus Regional Water Authority (SRWA). The member agencies of the SRWA are all heavily or entirely dependent upon groundwater as their source of water supply and

groundwater is a diminishing resource in the region. Each of the Participants is authorized to develop, obtain, and serve a municipal and industrial water supply, pursuant to California law. It is anticipated that the SRWA's Regional Surface Water Supply Project (RSWSP) will result in a safe, dependable, economical and long term municipal and industrial water supply system. The SRWA creates a forum and decision-making body to collectively discuss, develop and negotiate alternatives regarding the RSWSP.

The intent of the Joint Powers Authority is to develop the RSWSP whereby the SRWA would purchase water from the Turlock Irrigation District, treat such water in an SRWA-owned and operated water treatment plant, and make the treated water available at cost to the members of the SRWA.

The RSWSP is being developed over five phases consisting of: (i) initial scoping and data collection; (ii) program planning; (iii) project facilities planning; (iv) design and construction; and (v) project start-up and operation.

The SRWA has hired a General Manager to pursue development of the RSWSP. The SRWA is developing a work plan as well as a \$700,000 budget for the 2012-13 and 2013-14 fiscal years. The proposed work plan includes the following:

1. Planning and Design Activities
 - a. Infiltration gallery cleaning, hydraulic analysis, and water quality testing
 - b. Water needs assessment
 - c. Hydraulic modeling
 - d. Project concept report
2. Finance Activities
 - a. Infrastructure finance plan
 - b. Water rate analysis
3. CEQA gap analysis
4. Drinking Water Agreement with the Turlock Irrigation District for the purchase of raw water from the Tuolumne River to which the TID has an existing right.³

The anticipated outcome of the work plan is a written Infrastructure Implementation and Financing Plan which will form the basis for design documents and the approach to financing the RSWSP.

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.

³ In 2009, the member agencies of the SRWA negotiated a tentative agreement for the purchase of surface water from TID. With changes in the approach to the project, negotiations have recommenced. It is envisioned that the SRWA will purchase water from the TID's existing right; the TID will retain its right to the water.

3.12 Hydrology and Water Resources

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.

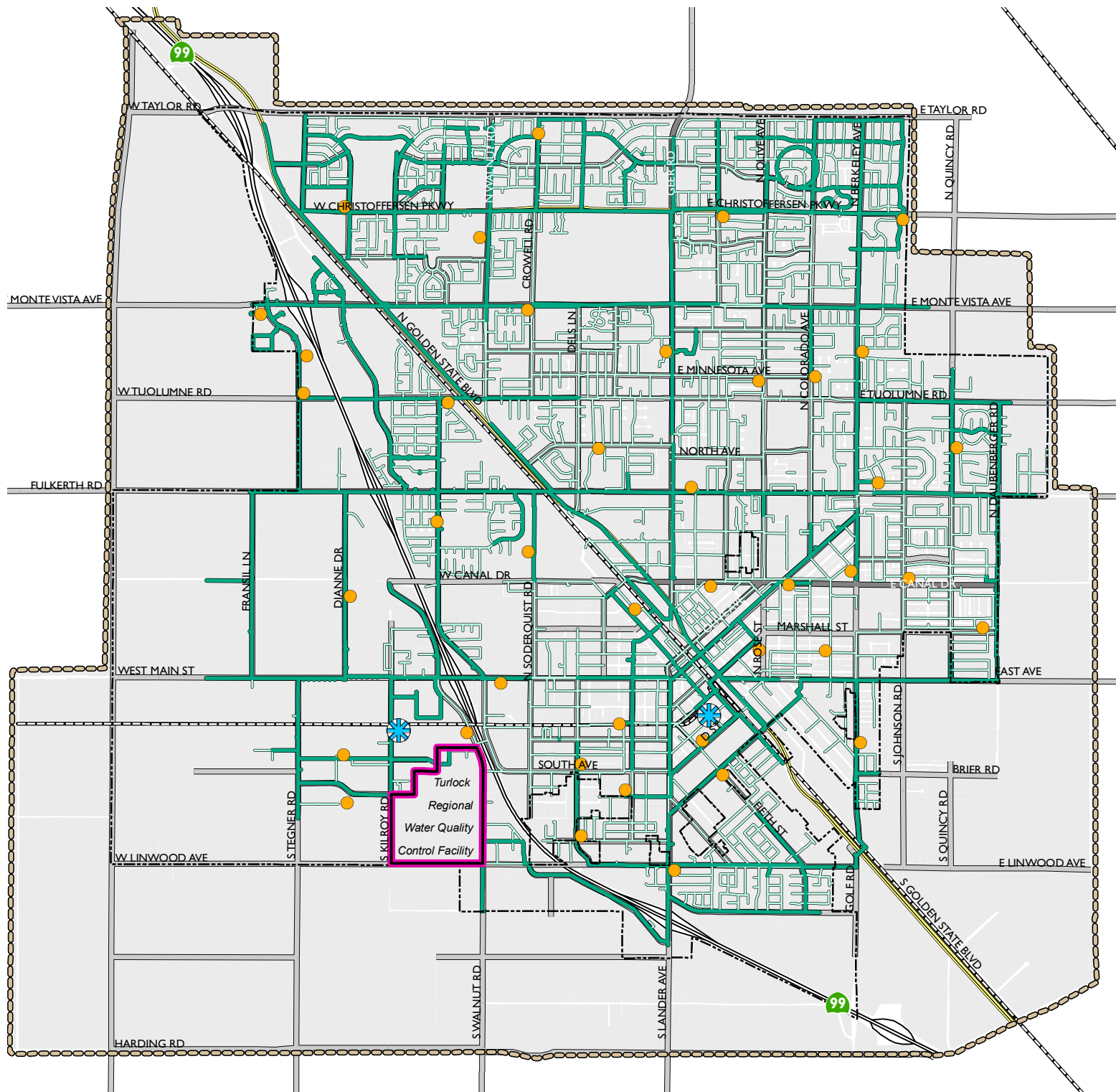
In more recent years, the City also conserves potable water from the deep aquifer by using recycled water for landscape irrigation and for power plant cooling. The City also uses shallow groundwater (non-potable water) and stormwater runoff for landscape irrigation, which further conserves potable water.

Water Distribution System

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 3.12-2 shows the City's existing potable water infrastructure. Figure 3.12-3 shows the proposed water infrastructure for buildout of the General Plan and the backbone infrastructure needed for RSWSP.

The major potable water infrastructure 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 northeast MPA, and three new wells in the southeast MPAs.

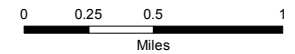
Figure 3.12-2
 Draft General Plan
Existing Potable Water Infrastructure



- Water Wells
- ⊗ Water Tanks
- 6" - 8" Water Main
- 9" - 16" Water Main
- Study Area Boundary
- City Limits & County Islands

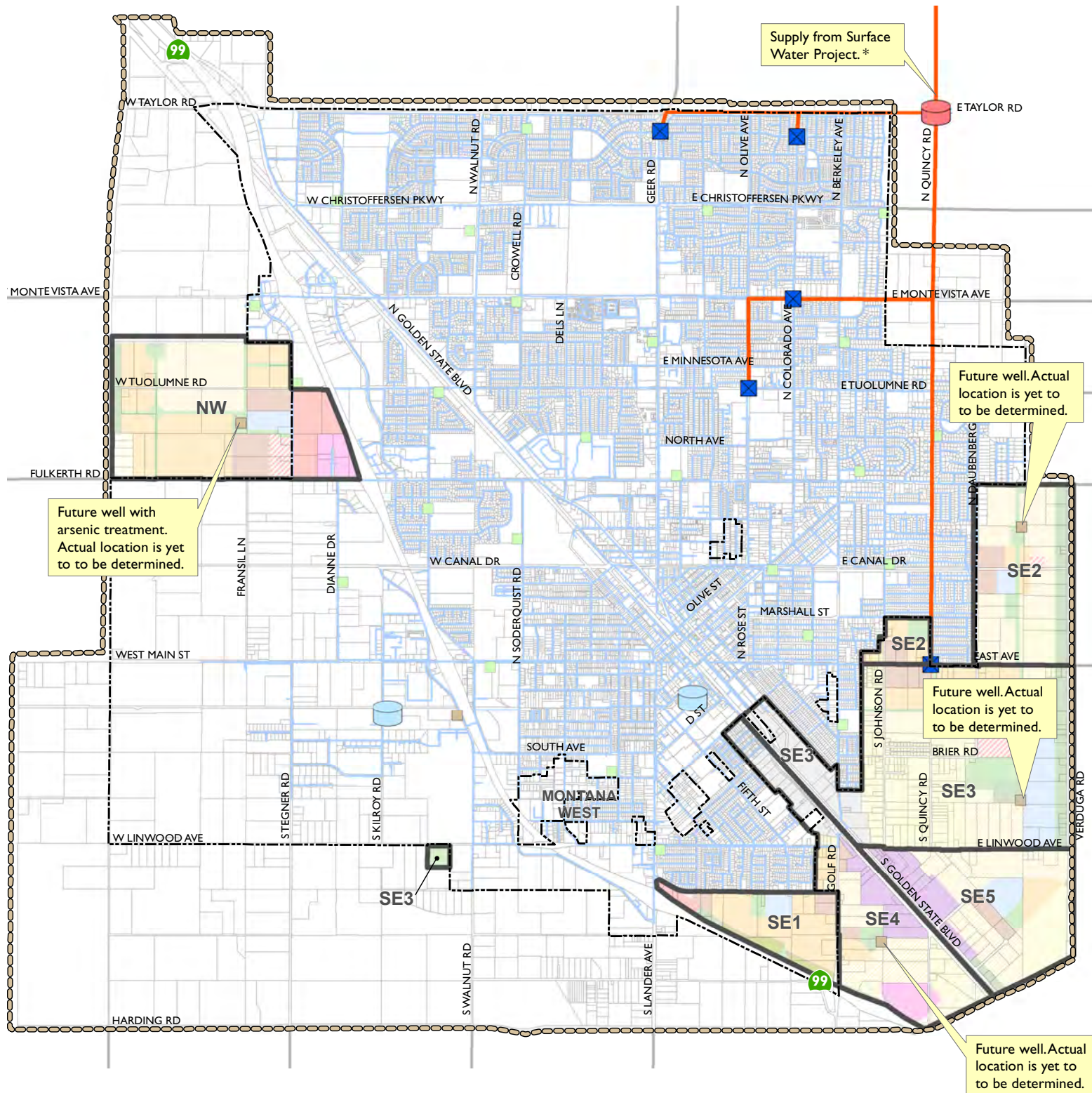
Existing Circulation Network

- Freeway
- Existing Expressway
- Existing Arterial
- Existing Collector
- Railroads



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

Figure 3.12-3
 Draft General Plan
**Preliminary Potable Water
 Facilities to Serve the
 Proposed General Plan
 Land Use**



- Proposed Transmission Main
- Connection to Existing Water System
- Terminal Reservoir
- Existing Water Line
- Future Well
- Operational Well
- Existing Reservoir
- Focus Areas
- Rural Residential
- Low Density Residential
- Low-Medium Density Residential
- Medium Density Residential
- High Density Residential
- Neighborhood Center
- Highway Commercial
- Community Commercial
- Heavy Commercial
- Office
- Industrial
- Public
- Park
- Detention Basin

- Boundaries**
- Study Area Boundary
 - City Limits & County Islands

Notes:
 Three wells should be adequate for all SE Master Plan Areas.

* **Not in Study Area**

0 0.25 0.5 1
 Miles

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.

Surface Water Resources

There are no natural streams in the Study Area. Three open, concrete-lined irrigation canals, Laterals 3, 4, and 5, pass through the Study Area from east to west, spaced apart by two and a half miles. The canals carry water primarily from the Tuolumne River and stored at Don Pedro Lake, located 50 miles east of Turlock. The water is distributed to farms throughout the 307-square mile Turlock Irrigation District (TID) service area. In addition to delivering water for irrigation, some of these canals are also used to convey and dispose of urban stormwater runoff from the City. 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.

There are also several retention basins and detention basins distributed throughout the City, which capture runoff during stormwater events. The retention basins hold the water until it percolates into the ground or evaporates. The detention basins hold the water until the downstream storm drains system and open channels have capacity to accept the stored runoff. However, part of the eastern area of the City drains directly to Lateral 4 without first being detained in a stormwater detention basin.

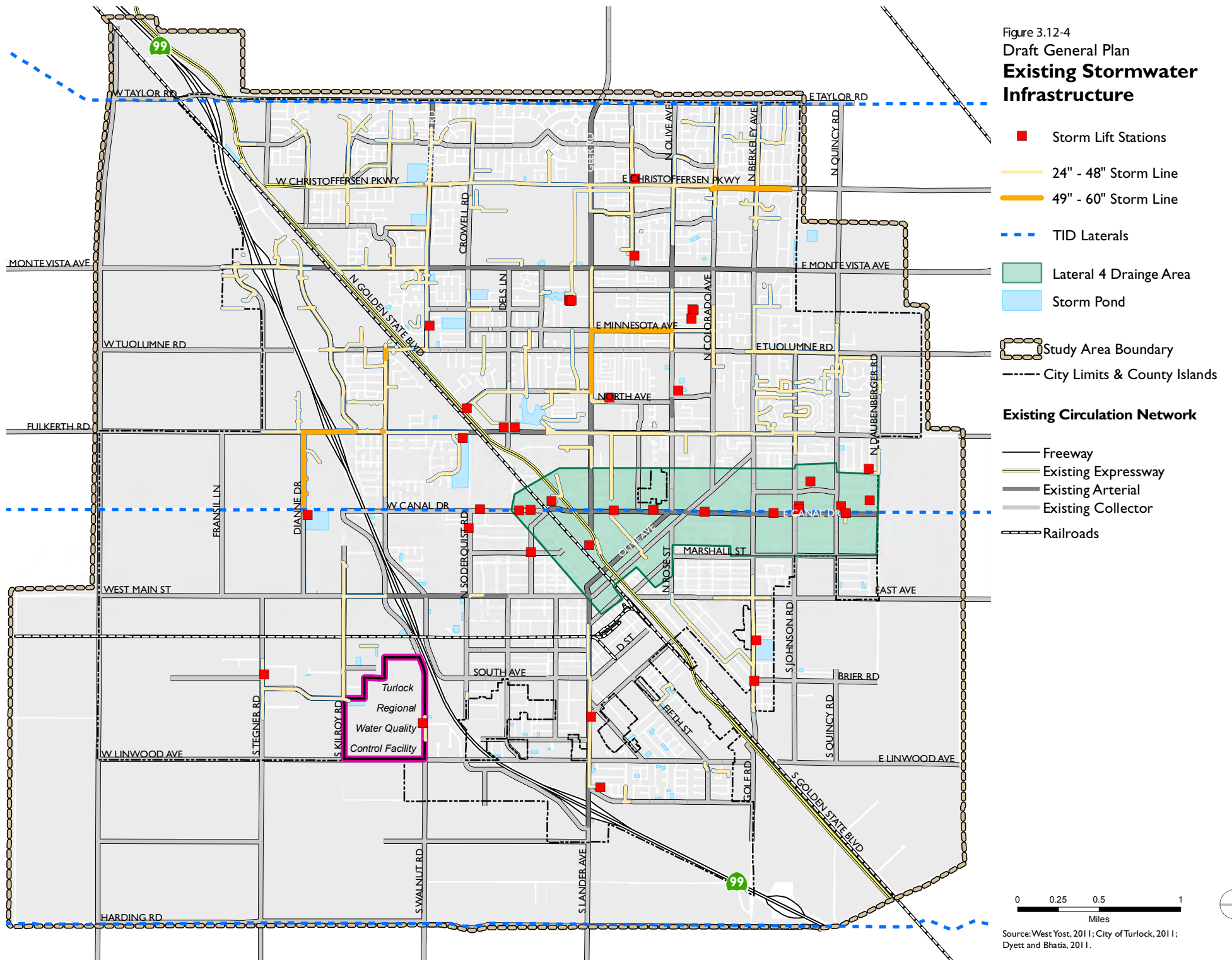
Stormwater

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 National Pollutant Discharge Elimination System (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 3.12-4. 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.

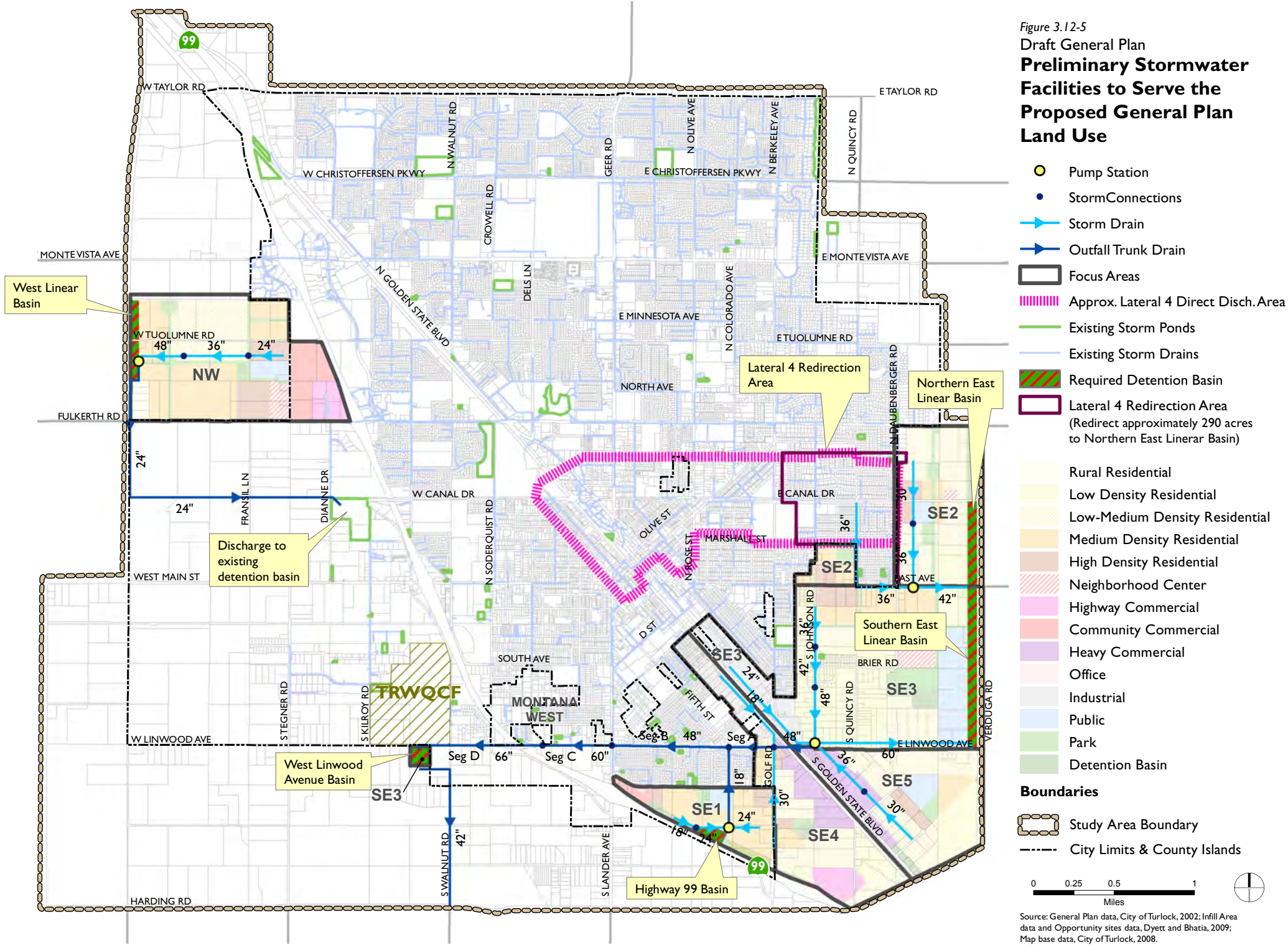
Currently, most of Turlock's stormwater drains to detention basins located throughout the City. Because groundwater levels are close to the ground surface, these basins are relatively shallow and it is necessary to pump runoff into many of the basins during storm events. After the storm passes, runoff 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.

Figure 3.12-4
 Draft General Plan
Existing Stormwater Infrastructure



- Storm Lift Stations
- 24" - 48" Storm Line
- 49" - 60" Storm Line
- - - TID Laterals
- Lateral 4 Drainage Area
- Storm Pond
- Study Area Boundary
- City Limits & County Islands
- Existing Circulation Network**
- Freeway
- Existing Expressway
- Existing Arterial
- Existing Collector
- Railroads

Figure 3.12-5
 Draft General Plan
**Preliminary Stormwater
 Facilities to Serve the
 Proposed General Plan
 Land Use**



- Pump Station
- StormConnections
- Storm Drain
- Outfall Trunk Drain
- Focus Areas
- Approx. Lateral 4 Direct Disch. Area
- Existing Storm Ponds
- Existing Storm Drains
- Required Detention Basin
- Lateral 4 Redirection Area (Redirect approximately 290 acres to Northern East Linear Basin)
- Rural Residential
- Low Density Residential
- Low-Medium Density Residential
- Medium Density Residential
- High Density Residential
- Neighborhood Center
- Highway Commercial
- Community Commercial
- Heavy Commercial
- Office
- Industrial
- Public
- Park
- Detention Basin
- Boundaries**
- Study Area Boundary
- City Limits & County Islands



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.

3.12 Hydrology and Water Resources

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.

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 required future detention basins and trunk drains needed to drain the basins have been preliminarily located and sized and are shown on Figure 3.12-5.

Flooding

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 wide-spread flood event. FEMA creates Flood Insurance Rate Maps (FIRMs) that identify the 100-year and 500-year floodplains for the purpose of informing flood insurance necessity. No part of the Study Area is within the FEMA-designated 100-year flood plain. In other words, FEMA has determined that there is less than one percent chance of flooding in any given year in the Study Area.

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 and 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.

Good stormwater management practices are promoted by the existing General Plan, and improvements are outlined in the City's Storm Drain Master Plan. The City and County each are responsible for implementing stormwater management programs under the terms of the Municipal General Permit for stormwater discharge, as described in the Regulatory Setting section.

Dam Safety and Inundation Hazard

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 Don Pedro Dam. However, as shown on Figure 3.10-2, 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 of the areas downstream of the dam could be caused by catastrophic 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.

REGULATORY SETTING

Federal Regulations

Clean Water Act

The Clean Water Act (CWA) was enacted in Congress in 1972 and amended several times since inception. It is the primary federal law regulating water quality in the U.S. and forms the basis for several state and local laws throughout the country. Its objective is to reduce or eliminate water pollution in the nation's rivers, streams, lakes, and coastal waters. The CWA prescribes the basic federal laws for regulating discharges of pollutants and sets minimum water quality standards for all surface waters in the U.S. At the federal level, the CWA is administered by the U.S. Environmental Protection Agency (EPA). At the state and regional levels, the CWA is administered and enforced by the SWRCB and the Regional Water Quality Control Boards (RWQCBs).

National Pollutant Discharge Elimination System

In 1987, amendments to the CWA added section 402(p), which established a framework to protect water quality by regulating industrial, municipal, and construction-related sources of pollutant discharges to waters of the U.S. The regulations require that discharges of stormwater from construction activity of one acre or more must be regulated and covered by a NPDES permit and that the applicant must develop and implement a Storm Water Pollution Prevention Plan (SWPPP) to control non-point pollution. In California, the NPDES is administered by the State Water Resources Control Board (SWRCB) through the RWQCBs and requires that municipalities obtain permits which outline programs and activities to control storm water pollution.

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA), administered by the EPA in coordination with the states, is the main federal law that ensures the quality of drinking water. Under the SDWA, EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards.

FEMA National Flood Insurance Program

FEMA operates the National Flood Insurance Program, which issues maps of Special Flood Hazard Areas (SFHA), based on water surface elevations of the 100-year flood event. FEMA requires assurance by the participating community that minimum floodplain management requirements are complied with, including minimum floor elevations above the "base flood"; that existing lands and structures or proposed structures are "reasonably safe from flooding"; and that all supporting analysis and documentation used to make that determination are on file and available upon request. The supporting hydraulic analysis and documentation includes topographic data and certification by a registered professional engineer or licensed land surveyor.

State Regulations

Porter-Cologne Water Quality Control Act State and Regional Water Quality Control Boards

The Porter-Cologne Water Quality Control Act established the SWRCB and the RWQCBs as the principal state agencies having primary responsibility in coordinating and controlling water quality in California. The Porter-Cologne Act establishes the responsibility of the RWQCBs for adopting, implementing, and enforcing water quality control plans (i.e. Basin Plans), which set forth the state's water quality standards (i.e. beneficial uses of surface waters and groundwater) and the objectives or criteria necessary to protect those beneficial uses. The Study Area lies within the jurisdiction of the Central Valley RWQCB, which has adopted the Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Basin Plan) to implement plans, policies, and provisions for water quality management.

3.12 Hydrology and Water Resources

Urban Water Management Planning Act

Since 1984, the Urban Water Management Planning Act has required "urban water suppliers" to develop written urban water management plans. While generally aimed at encouraging water suppliers to implement water conservation measures, it also created long-term planning obligations. In preparing urban water management plans, urban water suppliers must describe the following:

- Existing and planned water supply and demand;
- Water conservation measures and a schedule for implementing and evaluating such measures; and
- Water shortage contingency measures.

The Urban Water Management Planning Act requires urban water suppliers to use a 20-year planning horizon and to update the data in the urban water plans every five years. In preparing their 20-year management plans, water suppliers must address the subject of future population growth.

California Environmental Quality Act, SB 610 and SB 221

Section 15083.5 of the CEQA Guidelines requires the City to request certain information from the public water supply system(s) serving the General Plan area. This requested information includes: an indication of whether the projected water demand associated with the proposed General Plan was included in its last urban water management plan; and, an assessment "whether its total projected water supplies available during normal, single-dry, and multiple-dry water years as included in the 20-year projection contained in its urban water management plan will meet the projected water demand associated with the proposed project, in addition to the system's existing and planned future uses."

Senate Bill 610 became effective January 1, 2002, and requires cities in connection with CEQA review to consider water supply assessments to determine whether projected water supplies can meet the project's anticipated water demand. SB 610 also requires additional factors to be considered in the preparation of urban water management plans and water supply assessments.

SB 610 and CEQA Guidelines Section 15083.5 identifies major development projects generally as a residential development of more than 500 dwelling units; a commercial or industrial business employing more than 1,000 persons; or any other project that would have a water demand at least equal to a 500 dwelling unit project. SB 221 contains similar provisions as SB 610 but is intended for use with large residential subdivisions and a water supply assessment is usually required at the time of tentative tract map approval.

State Water Quality Certification Program

The RWQCBs also coordinate the State Water Quality Certification Program, or Section 401 of the CWA. Under Section 401, states have the authority to review any permit or license that will result in a discharge or disruption to wetlands and other waters under state jurisdiction, to ensure that the actions will be consistent with the state's water quality requirements. This program is most often associated with Section 404 of the CWA, which obligates the U. S. Army Corps of Engineers to issue permits for the movement of dredge and fill material into and from the "waters of the United States." Additionally, Section 404 requires permits for activities affecting wetlands. Prospective alterations of hydrologic features such as wetlands, rivers, and ephemeral creek beds resulting from construction require Section 404 permits.

Nonpoint Source Pollution Control Program Plan

California's Nonpoint Source Pollution Control Program Plan 1998 – 2013 was developed by the SWRCB and California Coastal Commission, in cooperation with the nine Regional Water Quality Control Boards, to

conform to the requirements of Coastal Zone Reauthorization Act (CZARA) and the CWA.⁴ The plan is intended to protect the State's water quality by expanding its polluted runoff control efforts. It specifies 60 management measures to prevent or reduce water quality degradation from agriculture, forestry, urban areas, marinas and boating, hydromodification, and wetlands. The Plan provides a single statewide approach to dealing with Nonpoint Source (NPS) pollution. A total of 28 state agencies are working collaboratively through the Interagency Coordinating Committee to implement the NPS Pollution Control Program Plan.

Construction General NPDES Permit

Stormwater discharges from construction activities on one acre or more are regulated by the RWQCB and are subject to the permitting requirements of the NPDES General Permit for Discharges of Stormwater Runoff Associated with Construction Activity (General Construction Permit, 99-08-DWQ). Effective July 1, 2010 all dischargers were required to obtain coverage under the Construction General Permit Order 2009-0009-DWQ adopted on September 2, 2009. The RWQCB established the General Construction Permit program to reduce surface water impacts from construction activities. The General Construction Permit requires the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) for construction activities. The SWPPP must be prepared before the construction begins, and in certain cases, before demolition begins. The SWPPP must include specifications for BMPs that would be required during project construction. BMPs are measures that are undertaken to control degradation of surface water by preventing soil erosion or the discharge of pollutants from construction areas. The SWPPP must describe measures to prevent or control runoff after construction is complete and identify procedures for inspecting and maintaining facilities or other project elements.

Examples of typical construction BMPs include scheduling or limiting activities to certain times of year; installing sediment barriers such as silt fences and fiber rolls; maintaining equipment and vehicles used for construction; tracking controls such as stabilizing entrances to the construction site; and developing and implementing a spill prevention and cleanup plan. Non-stormwater management measures include installing specific discharge controls during certain activities, such as paving operations, and vehicle and equipment washing and fueling. The California Stormwater Quality Association established BMPs for the State of California in the *California Stormwater Best Management Practice Handbook* (2003).

2007 California Flood Legislation

In 2007 several laws were enacted by the State of California to address flooding and flood risk. Brief summaries of the most relevant parts of these laws are summarized below.

Senate Bill 5

Under this bill the State was required to develop 100-year and 200-year flood maps for Central Valley by July 1, 2008 and to establish the Central Valley Flood Protection Plan (CVFPP) by 2012. The draft CVFPP was published on December 30, 2011 and is currently out for public review.

Within two years after the adoption of a flood protection plan by the Central Valley Flood Protection Board (formerly the Reclamation Board), communities within the Sacramento-San Joaquin Valley must amend their general plans to include the data and analysis contained in the plan, goals and policies for the protection of lives and property from flooding, and related feasible implementation measures. Within one year of the general plan adoption, zoning ordinance amendments must be enacted to maintain consistency with the general plan.

⁴ State Water Resources Control Board (SWRCB) and California Coastal Commission (CCC), 2000.

3.12 Hydrology and Water Resources

By 2015, for areas with a population of 10,000 or greater, local governments cannot approve new developments unless the land under review has 200-year flood protection or efforts are in place to provide that level of protection. For areas with a population of less than 10,000, new developments cannot be approved unless the area has 100-year flood protection.

Also, counties are required to collaborate with cities within the County to develop flood emergency plans.

Assembly Bill 70

- Under AB70, local governments could be held financially liable if they unreasonably approve new developments that are susceptible to flood damage beginning in 2008.

Assembly Bill 162

AB 162 requires cities and counties to address flood-related matters in the land use, conservation, safety, and housing elements of their general plans. Upon the next revision of the General Plan on or after January 1, 2009, cities and counties will need to revise the following elements:

- The Conservation Element shall identify rivers, creeks, streams, flood corridors, riparian habitats, and land that may accommodate floodwater for purposes of groundwater recharge and stormwater management.
- The Safety Element shall identify information regarding flood hazards and establish a set of comprehensive goals, policies, objectives, and feasible implementation measures to protect the community from the unreasonable risks of flooding.

After the initial revision of the elements, the planning agency shall review and, if necessary, revise elements to identify new information that was not available during previous revisions.

Assembly Bill 156

This law requires the state to prepare flood maps for areas in the Central Valley that are protected by state levees and to annually notify owners of property behind those levees of their flood risk starting in 2010.

Regional and Local Regulations

Municipal Storm Water NPDES Permit

The Municipal Storm Water Permitting Program established under NPDES regulates storm water discharges from municipal separate storm sewer systems (MS4s). In the first phase, the SWRCB issued permits to medium and large municipalities, typically grouped as co-permittees in a metropolitan region. In the second phase, the SWRCB adopted a General Permit for the Discharge of Storm Water from Small MS4s. The permits require a municipality or other storm water discharger to develop and implement a storm water management plan or program. The storm water programs incorporate BMPs that include construction controls (such as a model grading ordinance), legal and regulatory approaches (such as storm water ordinances), public education and industrial outreach (to encourage the reduction of pollutants at various sources), inspection activities, wet-weather monitoring, and special studies.

The City of Turlock's NPDES Phase II Storm Water Management Plan, covering the City itself, and the Storm Water Management Program for Stanislaus County, which covers all unincorporated parts of the County, including within the Study Area, were both adopted in 2003.

Storm Drain Master Plan, 1987; Revised August 1995

This document determined the required future storm drainage facilities for the city based on the anticipated growth from the 1984 General Plan. The Storm Drain Master Plan identifies the required drainage facilities for the years 1986 through 2006. In this time period, this document indicates that the area of the City was anticipated to grow from 3,700 acres to 11,000 acres, and the population was anticipated to grow from 35,200 to over 100,000 residents. The City was divided into eight drainage regions, and the required future storm water facilities were identified for each region (including cost estimates). The revisions to this document completed in 1995 consist of a series of tables listing the required facilities for each storm drain region. The tables identify whether the facilities have been constructed and provides updated facility cost estimates. This document provides the stormwater infrastructure design criteria that are still in use.

The Turlock Municipal Code contains regulations related to stormwater management in Title 6, Chapter 5, Article 8. The Subdivision Ordinance contains the specific drainage requirements for development projects.

Water, Sewer and Storm Drainage Provision

The City's Municipal Services Department's Utility Maintenance Division maintains Turlock's water, wastewater, and stormwater infrastructure. This includes 270 miles of water lines, over 240 miles of sewer lines, and more than 70 miles of storm drainage lines, 24 active water wells, 42 storm water lift stations, 18 sewer lift stations, and many stormwater detention/retention basins.

Turlock's 2010 Urban Water Management Plan evaluates water demand and potential supply based on projected population and urban area growth. The UWMP outlines the City's goals for securing water and managing demand through conservation measures.

Existing Turlock General Plan Public Facilities and Services Element

The Public Facilities and Services Element of the existing General Plan includes policies relating to water conservation and storm drainage. Relevant policies and standards include the following:

- 4.3-a Promote the orderly and efficient expansion of public utilities and the storm drainage system to adequately meet projected needs.
- 4.3-b Coordinate capital improvements planning for all municipal service infrastructure with the direction, extent, and timing of growth.
- 4.3-c Establish equitable methods for distributing costs associated with serving new development.
- 4.3-e Continue implementation of the 1988 Storm Drain Master Plan.
- 4.3-f Develop new detention basins in places indicated on the Plan Diagram.
- 4.3-g Continue joint park/detention basin usage and development.
- 4.3-h Encourage the use of porous materials for outdoor spaces and require public work improvements to incorporate their use where feasible.
- 4.3-i Require outdoor storm-water detention at project sites larger than two acres and consider using economic incentives to encourage projects to use porous surfaces and detain water at site.

3.12 Hydrology and Water Resources

- 4.3-j Require new construction sites to provide plans for erosion and sedimentation control from their sites during construction; establish guidelines for erosion control practices in Turlock
- 4.3-n Continue the City program of water system improvements to complement existing sewer system service capacities in the urban services area. Establish improvement priorities based on General Plan policies regarding the direction, extent, and timing of urbanization.
- 4.3-o Encourage water conservation measures in existing and new development, including flow restrictors and swimming pool covers.
- 4.3-p Support County programs to protect valuable groundwater resources.
- 4.3-q Investigate water rights issues associated with annexation of agricultural land to the City.

Impact Analysis

SIGNIFICANCE CRITERIA

Implementation of the proposed General Plan would have a potentially significant impact if it would:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level;
- Substantially alter existing drainage patterns of the area in a manner which would result in substantial erosion or siltation on- or offsite;
- Substantially alter existing drainage patterns of the area or increase surface runoff in a manner which would result in flooding on- or offsite;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place structures with a 100-year flood hazard area, which would impede or redirect flood flows;
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, or inundation by seiche, tsunami, or mudflow.

METHODOLOGY AND ASSUMPTIONS

Potable water and stormwater infrastructure needed for the growth of the General Plan have been preliminarily identified in the General Plan and the associated infrastructure plan. The proposed infrastructure is shown on Figures 3.12-3 and Figure 3.12-5. Also, General Plan policies were prepared to support the design, construction, operation, and maintenance of the infrastructure. There are also policies that help ensure impacts from the infrastructure are eliminated or minimized. This environmental evaluation is based on the potential for the currently proposed infrastructure to cause environmental impacts. However, additional planning and refinement of the infrastructure will be performed through preparation of water, sewer, wastewater treatment, and stormwater master plans and through design of the individual facilities at appropriate times in the future. It is assumed that this additional future work will further reduce or eliminate potential environmental impacts.

SUMMARY OF IMPACTS

Buildout of the general plan will result in the City using more water, which would result in exceeding the estimated sustainable groundwater yield of the underlying aquifer. To meet the future water demands, the cities of Turlock, Modesto, and Ceres have been developing the RSWSP that would provide more than enough potable water to meet the City's buildout water demands. This project is moving forward, and is considered feasible, as the Stanislaus Regional Water Authority (a joint powers authority comprised of the cities of Turlock, Modesto, and Ceres) is updating a previously adopted agreement with TID for provision of drinking water, and significant environmental analysis has been completed (the project has an adopted EIR from 2006, and a supplemental EIR is underway to assess project components that have changed since that time). However, a funding mechanism has not yet been approved, so implementation of the RSWSP is not yet finalized. Therefore, depletion of the groundwater is considered a significant impact, but mitigable

3.12 Hydrology and Water Resources

through implementation of the RSWSP. A further discussion of the feasibility, likelihood, and contingencies associated with this proposed mitigation measure is provided below.

Buildout of the General Plan will result in the construction of new development. Both during and after the construction, the new development could result in increased pollutants and sediment entering the stormwater and degrading the quality of the stormwater or causing siltation. Existing federal, state, and local regulations exist that help reduce this impact. Also the proposed stormwater infrastructure will provide treatment of the stormwater, thereby improving the water quality. The proposed stormwater infrastructure also directs the runoff to basins near the TRWQCF so that the stormwater could be treated to a very high level by the TRWQCF. Lastly, there are also several General Plan policies that help ensure that stormwater quality is protected. Consequently, this impact is less than significant.

Buildout of the General Plan will result in the construction of new development which leads to increase stormwater runoff volumes and rates. The proposed infrastructure has been sized to convey and detain the increased runoff. Consequently, this impact is less than significant.

The future development areas of the City are not within a FEMA 100-year floodplain or within the flood inundation areas of the New Don Pedro Dam or the New Exchequer Dam. Consequently, this impact is less than significant.

IMPACTS AND MITIGATION MEASURES

Impact

3.12-1 Buildout of the proposed General Plan will lead to a water demand that exceeds the currently available and sustainable groundwater supply. (*Significant, Mitigable*)

The water demand in the Study Area in 2011 was about 20,600 ac-ft. The estimated additional future water demands at the year 2030 and at buildout of the General Plan are shown on Table C-1 in Appendix C. Buildout of the General Plan will lead to future water demand in the year 2030 of 37,220 ac-ft per year (see Table C-2) and a demand at full buildout of 41,790 ac-ft per year (see Table C-3). Currently, all of the City's water supply comes from ground water. City Staff have estimated that the groundwater basin can sustain an annual water demand of about 24,550 ac-ft per year. As shown on Figure 3.12-2, the water demand is projected to exceed 24,550 ac-ft per year in the year 2017.

Buildout of the proposed General Plan without the RSWSP will result in the depletion of the groundwater supply and a lowering of the local groundwater table level.

Proposed General Plan Policies that Reduce the Impact

General Plan Policies 3.3-h through 3.3-q all improve the likelihood that the RSWSP or other water supplies will be implemented before the time that groundwater demands exceeds 24,550 ac-ft per year (estimated to be the year 2017). However, because availability of water supplies is not completely assured, this impact is considered significant.

3.1-f **Provide adequate public services.** Ensure the adequacy of public services and facilities for all residents.

3.3-h **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-i **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 RSWSP 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 37,220 acre-feet per year, and the ultimate buildout, including the entire TRIP, demand of 41,793 acre-feet per year. Surface water supplies (or other sources) will probably be needed by about the year 2017. 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, including for use by the City of Turlock. 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.

Mitigation Measures

The following mitigation measures would reduce this impact to a less than significant level:

- Successfully implement the RSWSP by the time the groundwater demands exceeds 24,550 ac-ft per year (estimated to be the year 2017).

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- Successfully identify and implement other potable water supply options by the time the groundwater demands exceeds 24,550 ac-ft per year (estimated to be the year 2017).
- Implement increased water conservation and /or increased use of recycled/nonpotable water within the City to reduce groundwater use and delay the required timing for implementation of the two mitigation measures listed above.

Feasibility of the Proposed RSWSP Mitigation Measure

The City of Turlock believes that implementation of the RSWSP is a feasible mitigation measure, given the project's advanced stages regarding water supply identification, environmental review, and establishment of the Stanislaus Regional Water Authority. It is the intent of the SRWA and its member agencies to develop a RSWSP project. Implementation of RSWSP is subject to a number of contingencies, but, as further discussed below, none of these contingencies render the project infeasible. The contingencies are:

1. Final negotiation of a raw water supply from the Turlock Irrigation District
2. Feasibility of financing the project notwithstanding impact on water rates
3. Completion of updated CEQA review

As noted in the Settings section above, the member agencies had previously negotiated a tentative water sales agreement with TID for a supply of raw water for the project; therefore, the development of an agreement with TID is not anticipated to pose a significant impediment to the project. More importantly, because TID is selling water to the SRWA as a wholesale customer, TID will retain its right to the water.

The development of the SRWA and the economic downturn has made the project more affordable than initially anticipated. The SRWA creates some economies of scale and increases the size of the rate base. Further, the general manager is tasked with finding outside sources of funds—including grants and low-interest loans—to reduce the costs of the project to the member agencies. With the downturn in the economy and resulting reduction in construction prices, it is estimated that the cost of the project is \$30-40 million lower than originally envisioned. Therefore, it is anticipated that the cost per customer for surface water will be lower than originally forecasted which should make the project more economically feasible.

Finally, as noted above, significant environmental analysis has been completed for the project. It is anticipated that the proposed CEQA gap analysis will not unearth any environmental issues not previously considered or that cannot be mitigated. The development of the SEIR will be the appropriate vehicle for the environmental review of the project pursuant to State Law.

Given that all of these contingencies can feasibly be satisfied, the City finds that implementation of the RSWSP as a feasible mitigation measure. In the event that the project is not able to move forward, the City will not allow further development to proceed until a water supply solution is reached. Per General Plan policies 3.1-f and 3.3-i, new master planned development shall not proceed in the absence of a secured potable water supply.

Impact

3.12-2 Buildout of the proposed General Plan could lead to increased urban pollutants and decreased stormwater runoff quality. (*Less than Significant*)

Urban development leads to the generation of contaminants such as pathogens, heavy metals, nutrients, pesticides, organic compounds, sediment, trash/debris, oil/grease, and others. These contaminants can pollute and degrade the stormwater runoff. The best approach to reducing stormwater pollution is to prevent

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the pollutants from entering the stormwater in the first place using Low Impact Development (LID) and stormwater quality BMPs. If the contaminants have entered the stormwater, treatment of the stormwater is another viable approach for improving the runoff water quality.

The City requires the implementation of LID and stormwater quality BMPs in new development projects and Public Works projects.

The stormwater system proposed for the growth of the General Plan includes stormwater collection systems that convey runoff to several detention basins. The basins can provide treatment of the stormwater and the stormwater can be directed to the TRWQCF where it could receive a very high level of treatment.

The runoff from the NW MPA will be detained in a basin located along the west edge of the NW MPA. While the water is in this basin, some of the sediment and pollutants will settle out of the water. Also, runoff from NW MPA could be directed to Lateral 4 or to the existing basin located just north of the TRWQCF. In this existing basin, additional sediment and pollutants will settle out of the water. From this existing basin, the runoff can be directed into Lateral 4 or to the TRWQCF. If directed to the TRWQCF, the runoff will receive a very high level of treatment prior to discharge to the Harding Drain/San Joaquin River (along with the rest of the treated wastewater).

The runoff from the SE MPAs will be detained in a basin located along the east or south edges of the MPAs. While the water is in these basins, some of the sediment and pollutants will settle out of the water. Also, runoff from SW MPA will flow to the proposed West Linwood Avenue Basin. In the West Linwood Avenue Basin, additional sediment and pollutants will settle out of the water. From this existing basin, the runoff can be directed into the Harding Drain or to the TRWQCF. If directed to the TRWQCF, the runoff will receive a very high level of treatment prior to discharge to the Harding Drain/San Joaquin River (with the rest of the treated wastewater).

With the use of LID and water quality BMPs as required by the General Plan policies and by having the ability to direct all runoff to the TRWQCF, it is possible to treat the more highly polluted dry weather runoff and first flush runoff (or possibly all runoff) before it is discharged to the receiving water channels Harding Drain, or Lateral 4). This ability reduces the potential to violate water quality standards or waste discharge requirements to a less than significant level. It also prevents the substantial degradation of stormwater quality.

Proposed General Plan Policies that Reduce the Impact

New Growth Areas and Infrastructure Element Policies

- 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.

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- 3.3-ad **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.

City Design Element 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.
- 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.
- 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 Zoning Ordinance and 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

Mitigation Measures

No mitigation measures are required.

Impact

3.12-3 Buildout of the proposed General Plan could lead to increased runoff rates and/or altered drainage patterns which would result in substantial erosion or siltation on- or off-site. (*Less than significant*)

Erosion and siltation degrade the quality of stormwater runoff and can cause significant impacts in downstream streams and channels where sediment is deposited. Urban development can lead to erosion of soils from the disturbed ground surface during and after the construction period. The best approach to prevent siltation is to prevent the erosion of the soil in the first place. Nevertheless, if sediment has entered the stormwater, treatment of the stormwater is another viable approach for removing the sediment and preventing downstream siltation.

Construction of the housing and other land uses included in buildout of the General Plan will result in significant disturbance of soil. If a storm occurs, the disturbed soils could be eroded, leading to downstream siltation.

However, the City currently protects surface water quality by requiring the implementation of 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.

As development occurs, agricultural lands are converted to urban land uses. Most of the agricultural lands have nearly bare soils during the winter when storm events occur. Conversely, after urbanization, the soils are mostly covered with impervious surfaces, lawns, and other planted landscaping (even during the winter). After urbanization, the soils are less susceptible to erosion than the soils in agricultural lands. Consequently, after the construction period is completed, the soil is more protected from erosion than prior to urbanization. Additionally, as described above the proposed stormwater systems include detention basins that will help settle sediment out of the stormwater before it is discharged from the City stormwater systems to the receiving water channels.

Proposed General Plan Policies that Reduce the Impact

General Plan Policy 3.3-w requires the preparation of a stormwater master plan that has a goal of protecting the stormwater quality. General Plan Policy 3.3-y requires that stormwater infrastructure be designed and constructed to protect stormwater quality. General Plan Policy 3.3-x requires that adequate stormwater fees be collected to construct, operate, and maintain the stormwater systems (which helps protect storm water quality). General Plan Policy 3.3-ad requires the implementation of LID and stormwater quality BMPs in new development projects and Public Works projects. Also Policies 6.4-a through 6.4-f further elaborate on the use of LID and BMPs. The full text of these policies is listed under Impact 3.12-2.

3.12 Hydrology and Water Resources

Mitigation Measures

No mitigation measures are required.

Impact

3.12-4 Buildout of the proposed General Plan will lead to increased runoff volumes and rates which could lead to altered drainage patterns or exceeding the capacity of existing or proposed drainage system, which in turn could lead to increased flooding on- or off-site. (*Less than significant*)

Construction of impervious surfaces such as streets and buildings causes increased runoff rates and volumes. Without appropriate stormwater infrastructure, such as detention basins, the increased runoff could cause on-site or off-site flooding by exceeding the capacity of the existing or proposed stormwater infrastructure.

The City requires the implementation of LID and stormwater quality BMPs in infill, new development projects, and Public Works projects. Use of LID and BMPs tends to reduce the post development runoff rates and volumes.

The stormwater system proposed for the growth of the General Plan includes stormwater collection systems and pump stations to convey runoff to several detention basins. For the General Plan MPAs, the storm drains were sized to meet City's current stormwater design criteria. The storm drainage infrastructure was sized using the criteria in the City's Storm Drain Master Plan (1987). In particular:

- Detention basins were sized for the 10-year, 24-hour storm, which includes 2.0 inches of rainfall.
- Pump stations and trunk drains upstream of the detention basins were sized for the 2-year, 8-hour storm, which includes 1.0 inch of rainfall distributed evenly over the 8 hour period.
- The detention basin release rates (and downstream drains) were sized to enable the basins to be fully drained in 2 to 3 days from the start of the storm. The proposed stormwater infrastructure is shown on Figure 3.12-5.

The runoff from the NW MPA will be detained in a basin located along the west edge of the NW MPA. From this basin, the runoff can be discharged to Lateral 4. Because the runoff from the NW MPA is detained and released through a pump station, the City can control the release of the runoff to Lateral 4 to ensure the capacity of the channel is not exceeded.

The runoff from the SE MPAs will be detained in basins located along the east and south edges of the MPAs or in the proposed West Linwood Avenue Basin. From these basins, the runoff will be released to the Harding Drain or to the TRWQCF. Because the runoff from the SE MPAs is detained in basins, the City can control the release of the runoff to the Harding Drain to ensure the capacity of the Harding Drain is not exceeded.

The proposed stormwater infrastructure for the NW and SE MPAs are essentially independent of the City's existing stormwater infrastructure. Consequently, buildout of the General Plan will not result in impacts to stormwater systems serving the existing City areas.

Proposed General Plan Policies that Reduce the Impact

General Plan Policy 3.3-w requires the preparation of a stormwater master plan that has a goal of preventing flooding. General Plan Policy 3.3-y requires that stormwater infrastructure be designed and constructed to safely convey, detain, and dispose of current and future stormwater flows. General Plan Policy 3.3-x requires that adequate stormwater fees be collected to construct, operate, and maintain the stormwater systems.

General Plan Policies 3.3-ad and 6.4-a through 6.4-f requires the implementation of LID and BMPs in new development projects and Public Works projects. The full text of these policies is listed under Impact 3.12-3.

Mitigation Measures

No mitigation measures are required.

Impact

3.12-5 Buildout of the proposed General Plan could result in housing or other development within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map or place structures with a 100-year flood hazard area, which would impede or redirect flood flows. *(Less than significant)*

The City and General Plan MPAs are not within the Federal Emergency Management Agency’s 100-year floodplain nor is it within the California Department of Water Resource’s 200-year floodplain. Thus, buildout of the General Plan will not result in housing or other development being located within a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. Also, buildout of the General Plan will not impede or redirect flood flows.

Proposed General Plan Policies that Reduce the Impact

None Applicable

Mitigation Measures

No mitigation measures are required.

Impact

3.12-6 Buildout of the proposed General Plan could expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, or inundation by seiche, tsunami, or mudflow. *(Less than significant)*

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 Don Pedro Dam. However, as shown on Figure 3.10-2, 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. However, the inundation mapping is all south of West Linwood Avenue and does not cover any areas of proposed development. Although the West Linwood Avenue Detention basin is south of West Linwood Avenue, the basin is not within the inundation mapping.

Proposed General Plan Policies that Reduce the Impact

Not Applicable.

Mitigation Measures

No mitigation measures are required.

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3.13 Parks, Recreation, and Open Space

This chapter presents the environmental setting and impact analysis for parks, recreation facilities and public open space. The City's existing and proposed park and open space setting, park standards and their impacts are discussed in relation to applicable State and Federal regulations and policies established by the proposed General Plan.

Environmental Setting

PHYSICAL SETTING

Existing Parks

Turlock's park system comprises community parks, neighborhood-serving city parks, neighborhood school parks, and recreation corridors. Table 3.13-1 provides an inventory of existing parkland. As of 2010, Turlock has 164 acres of neighborhood park land and 85 acres of community park land, for a total of 249 acres. Dual use storm drainage basins that provide opportunities for recreational use make up another 90 acres of land. At a population of 71,100, the City currently provides 4.8 acres of park land per 1,000 residents, under existing General Plan standards. Under the proposed General Plan, dual-use storm drainage basins will not be counted toward parks acreage; counted this way, the current park land ratio is 3.5 acres per 1,000 residents. Park types and acreage standards are further detailed below.

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. 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. 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. Turlock's 24 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

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drainage basins). 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. Two other neighborhood-serving city parks have under an acre of land that serves only as a park land, but much larger areas of storm drainage basin improved for recreational use.

TABLE 3.13-1: EXISTING PARKS AND RECREATIONAL OPEN SPACES

<i>Park</i>	<i>Acres</i>		<i>Park</i>	<i>Acres</i>	
	<i>Park Only</i>	<i>Park/Storm Basin¹</i>		<i>Park Only</i>	<i>Park/Storm Basin¹</i>
Community Parks			Neighborhood School Parks		
Donnelly Park	27.6	10.0	Brown Elementary	5.0	-
Pedretti Park	25.4	-	Crowell Elementary	6.0	-
Regional Sports Complex	31.8	-	CSUS	5.0	-
Subtotal Community Parks	84.8		Cunningham Elementary	4.0	-
Neighborhood Parks			Dennis Earl Elementary	4.0	-
Neighborhood-Serving City Parks			Dutcher Middle	6.0	-
Curt Andre Park	2.4	-	Julien Elementary	5.0	-
Brad Bates Park	2.0	-	Osborn Elementary	5.0	-
Bristol Park	4.0	-	Turlock High	10.0	-
Broadway Park	1.8	-	Turlock Jr High	8.0	-
Centennial Park	3.5	-	Wakefield Elementary	4.0	-
Central Park ²	0.5	-	Pitman HS	20.0	-
Christoffersen Park	0.7	13.3	Sandra Tovar Medeiros Elem.	4.0	-
Dale Pinkney Park	3.3	-	Walnut Education Ctr	4.0	-
Columbia Park	4.6	-	Future Walnut School	4.0	-
Crane Park	7.0	-	Recreation Corridors (Greenway System)		
Crowell Park ^{2,3}	0.3	-	Northeast Turlock Greenbelt	-	17.9
Denair Park ²	0.8	-	Taylor Road Corridor	4.6	-
Ferreira Ranch Park / Rose Circle	5.2	-	Paseo Belleza	2.2	-
Four Seasons Park	4.3	-	Paseo Entrada	1.9	-
GAR Park ²	0.2	-	Paseo de Leon	2.1	-
Greenwood Park ²	0.3	-	Paseo del Sol	1.9	-
Markley Park	1.0	5.4	Subtotal Neighborhood Parks	163.8	
Rotary International Park	1.8	3.2	Total Acreage	248.6	
Skate Park	1.3	-	Acres/1000 Residents ⁴	3.5	
Soderquist Park	2.4	-			
Summerfaire Park	2.9	13.9			
Sunnyview Park	2.2	7.5			
Walnut/Christoffersen Basin	0.9	18.9			
Future NE Master Plan Park	4.0	-			

Notes:

1. Storm drainage basin with dual use as park land; not counted toward park acreage.
2. Pocket park
3. Unnamed park at north end of Crowell Rd.
4. Based on 2010 population of 71,100.

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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 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 15 parks in this category.

Recreation Corridors (Greenway System)

The master-planned neighborhoods developed in recent years in north and northeast Turlock feature recreation paths and greenbelts at the City's edge and "paseos" in the neighborhood interior, totaling about 13 acres.

For the purposes of acreage requirements discussed in the Standards section, Neighborhood-Serving City Parks, Neighborhood School Parks, and Recreation Corridors comprise the Neighborhood Parks category. Altogether, Turlock has 164 acres of existing Neighborhood Parks, representing two thirds of the City's parkland. See Table 3.13-1.

Park Standards

Turlock's Subdivision Regulations (Turlock Municipal Code Sections 11-7-201 *et seq.*) stipulate that new residential subdivisions must dedicate parkland at a ratio equal to that specified in the latest adopted General Plan, or pay an in-lieu fee. The existing General Plan established a baseline standard of 4.2 acres of park per 1,000 residents. In 2002, the parkland dedication standard was changed to 4.5 acres per 1,000 residents, based on the results of the 2000 Census and the parkland inventory completed as part of the General Plan update process taking place at that time. In both cases, dual use storm drainage basins were counted toward park acreage. As shown in Table 3.13-1, as of 2010, the actual parkland ratio is 4.8 acres per 1,000 residents when dual use basins are counted. The General Plan update proposes establishing the park acreage standard at 3.5 acres per 1,000 residents, meeting the current ratio when dual use storm drainage basins are not counted.

Park Accessibility

Another important aspect of parks is how accessible they are to residents. Turlock's current General Plan stipulates that all residents should be within 3/8-mile of a neighborhood-serving City park and within five miles of a community park (see Regulatory Setting section below.) The proposed General Plan maintains the 3/8-mile standard for neighborhood parks while noting that residents may also be within a half-mile of a neighborhood school park or community park. Figure 3.13-1 shows existing and proposed parks and park service areas according to these standards.

3.13 Parks, Recreation, and Open Space

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. 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.

TABLE 3.13-2: TURLOCK SPORTS FACILITIES INVENTORY

<i>Facility Type</i>	<i>Number, 2010</i>
Facilities Generally Open for Public Use	
Baseball Fields (Adult or Non-League) ¹	14
Softball Fields ¹	18
Soccer Fields	16
Basketball Courts (full court)	61
Basketball Courts (half court)	30
Open Play Areas	30
Gymnasium ²	6
Tennis Courts	17
Recreation Centers	0
Swimming Pools	3
Volleyball Courts	18
Facilities Not Generally Open for Public Use	
Baseball Fields (Little League)	4
Golf Courses (18-Hole and Driving Range)	0
Golf Courses (9-Hole)	0

Notes:

1. Eight (8) fields are counted as both baseball and softball fields.
2. The City currently relies on school sites for all gymnasiums.

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

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. The Division operates four community centers: the War Memorial, the Senior Center, the Youth Center, and the Rube Boesch Center. Most arts and recreation activities are hosted at the community centers, and the buildings are also available to be rented for special events. Organized sports are hosted at various community parks.

Adequacy of Existing Facilities

City Staff report that Turlock's existing parks and recreation facilities are not adequate to maintain a sufficient level of services for future population growth in the city. In particular, they emphasized an existing deficiency in indoor recreation facilities to meet the needs of the current population, a need that will become more critical as the city grows.

Staff specifically highlighted the need for the following indoor and outdoor facilities:

- Little League baseball complex (minimum four fields in one location);
- Community Park (minimum 30-35 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;
- Increased walking and biking trails accessible to a wide range of people, including seniors, the disabled, families, and active adults;
- Aquatic Center;
- Indoor facilities in several existing parks for recreation programs;
- Teen Center;
- Public indoor recreational venue to support volleyball, indoor soccer, basketball, fitness and wellness programs, and enrichment classes.

Open Space

State law requires all cities and counties to prepare and adopt a plan for the preservation and conservation of open space within its jurisdiction. Specific categories of open space are identified as priorities: open space for public health and safety; open space for the preservation of natural resources; open space for resource management; open space for outdoor recreation; and open space for the protection of Native American sites (see the Regulatory Setting section below.) In Turlock this function is performed by the General Plan.

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. 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 Diagram.

Parks, including dual use storm drainage basins, represent the Study Area's open space resources for outdoor recreation. Existing park land is described in the preceding section.

The current Land Use diagram does not designate any open space land for the protection of public health and safety because the Study Area has very little risk related to geology or seismicity, flooding, or wildland fires. Open space is also not specifically set aside for the preservation of natural resources or the protection of Native American sites. Sensitive biological resources generally coincide with agricultural land in the Study Area, and there are no records of sensitive Native American sites.

REGULATORY SETTING

State Regulations

Quimby Act

The 1975 Quimby Act (California Government Code section 66477) authorized cities and counties to pass ordinances requiring that developers set aside land, donate conservation easements, or pay fees for park improvements. The Act states that the dedication requirement of parkland can be a minimum of 3 acres per thousand residents or more, up to 5 acres per thousand residents if the existing ratio is greater than the

3.13 Parks, Recreation, and Open Space

minimum standard. Revenues generated through in lieu fees collected and the Quimby Act cannot be used for the operation and maintenance of park facilities. In 1982, the act was substantially amended. The amendments further defined acceptable uses of or restrictions on Quimby funds, provided acreage/population standards and formulas for determining the exaction, and indicated that the exactions must be closely tied (nexus) to a project's impacts as identified through studies required by the California Environmental Quality Act (CEQA).

State Open Space Standards

State planning law (Government Code Section 65560) provides a structure for the preservation of open space by requiring every city and county in the State 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." The following open space categories are identified for preservation:

- *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.
- *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).

Local Standards

In Turlock, parks and recreation facilities are administered by the City's 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.

Existing Turlock General Plan Public Facilities and Services Element (2002)

Park Standards:

Acreage. In 2002, the City's parkland dedication standard was revised from 4.2 to 4.5 acres per 1,000 residents, based on the results of the 2000 Census and the parkland inventory completed as part of the General Plan update. When the parks standard was 4.2 acres per 1,000 residents, the General Plan specified ratios of 2.8 acres of neighborhood-serving city parks and 1.4 acres of community parks per 1,000 residents.

Park Size. The current size standards for new parks are as follows:

- Neighborhood-Serving City Parks 3 to 8 acres
- Community Parks 18 acres or larger

Service Area. All city residents should live within the following distances of neighborhood and community parks:

- Neighborhood-Serving City Parks 3/8 of a mile (approximately 2000 feet)
- Community Parks up to a 5 mile radius

Parks and Recreational Open Space Policies:

Section 4.1 of the Public Facilities and Services Element outlines the City’s comprehensive policies towards park creation, maintenance, and funding. Section 6.1 of the Open Space and Conservation Element features policies for the conservation of agricultural land. Policies in these elements include, but are not limited to, the following:

- 4.1-a Develop a high quality, diversified public park system that provides a variety of recreational opportunities for all City residents.
- 4.1-b Explore mechanisms to increase the per capita park acreage.
- 4.1-c 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.
- 4.1-d Minimize substitution of private recreation facilities for developer fee payment or park dedication to ensure that a public park system will be permanently available to the entire community.
- 4.1-e Review park standards periodically to ensure that needs are being met.
- 4.1-f Continue cooperative efforts with the Turlock school district through joint use agreements for park and recreational facilities. Locate new city parks in conjunction with elementary or junior high schools wherever feasible.
- 4.1-g Explore a more equitable distribution of the cost of improved park standards between existing and new residents, businesses, and property owners.

Existing Turlock General Plan Open Space and Conservation Element (2002)

- 6.1-a Retain Turlock’s agricultural setting by limiting urban expansion to designated areas, providing additional industrial land suitable for agricultural industry, and minimizing conflicts between agriculture and urban activities.
- 6.1-b Require development at densities higher than typical in recent years in order to limit the amount of land needed for expansion while accommodating urban growth.
- 6.1-c Maintain a compact urban form to minimize the urban/agricultural interface; manage the interface by requiring buffers to reduce conflicts between uses.
- 6.1-d Annex residential land to the City only as it is needed, consistent with policies in Section 2.7 and in the City’s Residential Growth Management Program.
- 6.1-e Support the implementation of Stanislaus County’s Agricultural Element and Right-to-Farm ordinance.
- 6.1-f Work to protect and restore natural resources essential for agricultural production.

Impact Analysis

SIGNIFICANCE CRITERIA

Impacts of the proposed General Plan would be significant if buildout resulted in:

- Increase in the use of existing parks and recreational facilities such that substantial physical deterioration would occur or be accelerated;
- The need for development of new parks and recreational facilities which might have an adverse physical effect on the environment.

METHODOLOGY AND ASSUMPTIONS

This analysis considers the proposed General Plan policies and applicable regulations, as well as existing parks and recreation facilities in the Study Area. Acres of park land needed for the park standard were calculated by dividing the projected new population at buildout (127,000) by 1,000, multiplying by 3.5 acres, and subtracting existing park land. Recreational facilities needs are taken as those identified by the City as priorities. An increase in population without progress toward meeting park land standards or identified recreational needs is taken as a significant impact. It is assumed that a significant decrease in the park land ratio would increase park deterioration. Finally, the proposed General Plan service area standards for neighborhood and community parks are applied to the Study Area today and at projected build-out; a substantial increase in the number of residents not within standard service areas of parks would constitute a significant impact. Turlock has two principal types of open space: open space for outdoor recreation (parks, covered in this chapter) and open space for resource management (agricultural land.) The latter is covered in Chapter 3.1: Agriculture.

SUMMARY OF IMPACTS

Implementation of the proposed Turlock General Plan would result in a substantial increase in demand for park and recreation facilities due to the growth of population. The proposed General Plan Land Use Diagram provides enough new parkland to meet the General Plan park ratio of 3.5 acres per 1,000 residents, counting only park land available for use year-round (e.g. excluding storm drainage basins). Therefore while the General Plan would result in the need for new parkland, it satisfies this need and the impact is less than significant.

Deterioration of existing park facilities from increased use may be a concern near infill development. The proposed Plan calls on the City to pursue opportunities to create a new neighborhood-serving city park in any area where infill development is concentrated. The Plan includes a large new community park that will be used by all City residents, reinforces the need for ongoing parks maintenance, and promotes the creation of pocket parks in infill areas through City support for neighborhood initiatives. These policies make this impact less than significant.

IMPACTS AND MITIGATION MEASURES

Impact

- 3.13-1** Implementation of the proposed Plan would have a potentially significant impact on the environment if it would increase the use of existing parks and recreational facilities such that substantial physical deterioration would occur or be accelerated. (*Less Than Significant*)

An increase in population of up to 56,000 is anticipated as a result of the proposed General Plan. In the absence of substantial new park development, the additional population would place added physical demands on existing park facilities. With a greater number of people using the parks, they would be in active use for longer periods of time and/or be more intensively used over the course of a typical day. As a result, vital park elements such as vegetation, water resources, built structures, walking/biking paths, sport facilities and others would face increased wear-and-tear over the course of the planning period and their useful life could be shortened if not properly maintained.

The proposed General Plan would add nearly 200 acres of new park land, achieving the City's current park land ratio and new park land standard (not including dual use storm drainage basins) of 3.5 acres per 1,000 residents. Thus the overall demand for parks should be met by a proportionate increase in supply. New park land is designated in new neighborhoods that would be developed under the General Plan. However, up to 8,700 additional residents are expected to be accommodated on infill or redevelopment sites, placing a higher demand on existing parks in these areas.

The proposed General Plan includes policies, provided below that will help mitigate this potential impact. In particular, policy 4.1-h calls on the City to pursue opportunities for new neighborhood-serving city parks in areas where infill development is concentrated. Other policies reinforce the City's commitment ongoing parks maintenance, providing parks and recreation usable by all residents, and collecting revenue for park maintenance from non-residential sources, and promote neighborhood-based initiatives to create pocket parks. These policies should make the potential impact on the physical condition of existing parks less than significant.

Proposed General Plan Policies that Reduce the Impact

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

3.13 Parks, Recreation, and Open Space

4.1-g. **Community Parks.** Acquire and develop one new community park in the southeast (Southeast 3 Master Plan Area), concurrently with development. The new 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 eight new neighborhood-serving city parks, including three in the Southeast 2 Master Plan Area, two in the Northwest, and one each in the Southeast 1, 4, and 5 Master Plan Areas. Place neighborhood parks at the core of new neighborhoods and co-locate parks and school sites where 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-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.

4.1-o. **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-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.

Mitigation Measures

None required.

- 3.13-2** Implementation of the proposed Plan would have a potentially significant impact on the environment if it resulted in the need for development of new parks and recreational facilities which might have an adverse physical effect on the environment. (*Less Than Significant*)

As described under Impact 3.13-1, up to 56,000 new residents are anticipated under the proposed General Plan. These residents will need new parks and recreational facilities. The proposed General Plan provides these by clearly establishing new parks standards, including a parks ratio of 3.5 acres per 1,000 residents, matching the current ratio when dual use storm drainage basins are not included. The proposed General Plan also reinforces the City's policy to improve storm drainage basins for recreational use to the greatest extent possible, while not allowing these basins to be counted toward required park land. Other park standards address appropriate park sizes, park service areas, and park amenities. These standards are intended to ensure that parks are highly usable by all segments of the population, and that different types of parks (community parks, neighborhood parks, recreation corridors) serve specific roles in the overall parks and recreation system. Policies describing the parks and open space system under the proposed Plan are shown below. These policies reduce the potential impact related to the need for parks and recreation facilities to less than significant.

The development of parks and recreational facilities implies the potential for adverse effects to the local environment. For example, construction could negatively impact habitats for vegetation and wildlife or replace productive agricultural land. These types of impacts are considered in detail in other chapters of the EIR. In addition, policies listed below calling for the preservation of existing vegetation and the use of native plants help to reduce the potential impact to less than significant.

Proposed General Plan Policies that Reduce the Impact

In addition to policies listed under Impact 3.13-1, the following proposed policies reduce this potential impact.

Parks Policies

- 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.
- 4.1-h. **Neighborhood-Serving City Parks.** Acquire and develop eight new neighborhood-serving city parks, including three in the Southeast 2 Master Plan Area, two in the Northwest, and one each in the Southeast 1, 4, and 5 Master Plan Areas. Place neighborhood parks at the core of new neighborhoods and co-locate parks and school sites where possible, as depicted on the Parks diagram. In addition, pursue opportunities to create new neighborhood-serving city parks in areas where infill development is concentrated.
- 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.
- 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.
- 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.

3.13 Parks, Recreation, and Open Space

- 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*.
- 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
- 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.
- 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-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.
- 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 Turlock Regional Industrial Park.
- 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.
- 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.

Recreation Facilities Policies

- 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.

- 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.
 - **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.
 - **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.
- 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.

Mitigation Measures

None required.

3.13 Parks, Recreation, and Open Space

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3.14 Public Facilities and Services

This chapter presents the environmental setting and impact analysis for public services in the City of Turlock related to the proposed Turlock General Plan update. The public services included in this EIR include schools, libraries and community centers, and public safety (fire, police, and other emergency) services and facilities. City parks and recreation facilities are discussed in Section 3.13: Parks, Recreation and Open Space.

Environmental Setting

PHYSICAL SETTING

Public Schools

Pre-kindergarten through 12th grade public education for most of the Study Area is provided by the Turlock Unified School District (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. The portions of the Study Area in the Chatom and Keyes districts are mainly rural. Figure 3.14-1 shows the schools and school districts in the Study Area.

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.

Schools and Enrollment

The Study Area is served by 13 public elementary schools (ten in TUSD, one each in Denair, Chatom, and Keyes), five junior high schools, and three comprehensive high schools. There are also four small alternative programs, two pre-schools, and a K-12 charter school. All the schools operated by the Turlock, Denair, Chatom, and Keyes school districts serve students from within the Study Area, as well as students from surrounding rural areas. Table 3.14-1 lists 2008-2009 enrollment for all schools in the Turlock, Denair, and Chatom School Districts. In the 2008-09 academic year, Turlock Unified School District counted 13,828 enrolled students. The Denair school district has 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. In the Chatom and Keyes districts, 715 and 830 students are enrolled, respectively.

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 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. Denair Unified School District did not provide capacity data by school facility. The District's most recent study using State standards found the district was over-capacity, and enrollment is projected to grow by 117 students over the 2007-2012 period.

3.14 Public Facilities and Services

TABLE 3.14-1: SCHOOLS SERVING THE STUDY AREA

<i>School</i>	<i>2008-09 Enrollment</i>	<i>Capacity¹</i>
Turlock Unified School District		
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
<i>K-6 Subtotal</i>	<i>6,976</i>	<i>7,520</i>
Dutcher (7-8)	681	1,020
Turlock Junior High (7-8)	1,364	1,590
<i>7-8 Subtotal</i>	<i>2,045</i>	<i>2,610</i>
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
<i>9-12 Subtotal</i>	<i>4,807</i>	<i>5,030</i>
Turlock USD Subtotal	13,828	15,160
Denair Unified School District		
Denair Elementary (K-5)	640	
Denair Middle (6-8)	341	
Denair Community Day (7-8)	6	
Denair High (9-12)	373	
Oasis Community Day (9-12)	4	
Denair Charter Academy (K-12)	235	
Denair USD Subtotal	1,599	
Chatom Union School District		
Chatom Preschool (Pre-K)	40	
Chatom (K-5)	451	
Mountain View (6-8)	224	
Chatom USD Subtotal	715	
Total	16,142	

1. Capacity for traditional students as reported by TUSD, 2009. Capacity not reported by Denair USD or Chatom USD.

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

School Facilities Plans

Both Denair and Turlock Unified School Districts have plans to renovate existing schools and build new ones in the coming years. The Denair district intends to modernize all its schools, as funds are available. Turlock USD conducted a *School Facilities Needs Analysis* and *Capital Facilities Financing Plan* in 2008, and laid out a five-year program of modernization and new construction, at a total estimated cost of between \$223 million and \$287 million (some included projects were already underway or completed, but not fully funded). In the longer term, the plan also includes new junior high and high schools, and fully renovated stadiums for both existing high schools.

Community Facilities and Social Services

Turlock is home to several community centers and facilities. This section discusses both recreation and community centers as well as social and emergency services.

Stanislaus County Library

Turlock is served by one public library, centrally located downtown at 550 North Minaret Avenue. The library is part of the Stanislaus County Library system, whose 13 branches are integrated into a patron database that 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 currently 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 planning practice. The Turlock branch library comprises 10,000 square feet, which translates to 0.12 square feet per person today, short of both the current system-wide ratio and the Library's planning standard.

California State University, Stanislaus (CSUS) Library

The CSUS library has 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.

Arts Center

The Carnegie Arts Center, which was destroyed in an arson fire five years ago, 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.

Recreation and 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. Turlock's Recreation Division operates four community centers: the War Memorial, the Senior Center, the Youth Center, and the Rube Boesch Center. 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.

3.14 Public Facilities and Services

The Turlock Community Theater, which is housed at Turlock High School and operates on a long-term lease from the school, is a 1,000-seat performing arts space. It hosts a range of acts, from local performers to national touring artists. The theater was rehabilitated in 1999, the result of volunteer work and fundraising.

Emergency and Social Services

Turlock's social services needs are primarily served by two Stanislaus County agencies that have offices in the city: the Stanislaus County Community Services Agency and the Stanislaus County Behavioral Health and Recovery Services. The Community Services Agency is the city's source for employment programs, food stamps, Medi-Cal, childcare, and other types of social assistance. It also has offers counseling and homeless assistance programs. Behavioral Health and Recovery Services provides mental health and drug and alcohol abuse services.

In addition to government agencies, nonprofit organizations provide social services in Turlock. The Salvation Army and the United Samaritans Foundation both deal extensively with Turlock's homeless population. Aspira Foster and Family Services works in partnership with Turlock's Family Resource Center to provide services to foster families and children. Westside Ministries and Turlock Gospel Mission are two faith-based organizations that work with the local community and provide a range of services, from emergency food and clothing to after school programs.

The city's Housing Program Services Division also publishes a Community Resource Handbook, which provides information on housing, food and shelter; senior services; children and youth services; city and government agencies; consumer resources and information; disasters and preparedness; and volunteering.

Fire and Emergency Services

Facilities and Staffing

As noted in Chapter 3.11, the Turlock City Fire Department 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 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.

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 this standard for all calls within the primary service area of each fire station, 90 percent of the time.

Urban Design Requirements

In order to accommodate the size and performance of its trucks, the Fire Department has specifications for turning radii, road widths and other street standards for new developments. Streets must have a minimum width of 20 feet. Cul-de-sacs must have a radius of 40 feet. “Hammerhead” road endings must be a minimum of 120 feet long and 25 feet deep, and have a 30-foot opening to the road (which may then become 20 feet wide).

Police Service

Facilities and Staffing

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 242 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.

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. Table 3.14-2 represents the average response times for Priority 1, Priority 2, and Priority 3 calls for the last ten years.

TABLE 3.14-2 POLICE DEPARTMENT AVERAGE RESPONSE TIMES

<i>Year</i>	<i>Priority 1</i>	<i>Priority 2</i>	<i>Priority 3</i>	<i>Number of Priority 1 Incidents</i>
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 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. 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.

REGULATORY SETTING

Federal Regulations

Fire

The National Fire Protection Association publishes the Uniform Fire Code which provides standards for fire protection. The nationally recognized standards require that fire departments “have the capability to deploy an initial full alarm assignment within eight (8) minute response time to 90 percent of the incidents.” (NFPA 1710)

State Regulations

State law allows a city or county to impose fees as a condition of approving any development project if it can demonstrate a relationship between the fee and the purpose for which it is being earmarked. The jurisdiction must conduct studies to demonstrate a reasonable relationship between the need for the public facility and the type of development project. It must also be able to show there is a reasonable relationship between the amount of the fee and the cost of the public facility attributable to the development (California Government Code section 66000 et. seq.).

Local Regulations (Existing)

Turlock General Plan Public Facilities and Services Element (Existing)

School Policies

- 4.2-g Do not approve residential development in areas beyond the jurisdiction of Turlock school districts without consulting with the surrounding districts.

- 4.2-h Reserve school sites as shown on the General Plan Diagram.
- 4.2-i Continue present agreements with the Turlock school districts for joint usage of school parks for neighborhood recreation.

Police and Fire Service Policies

- 4.4-a Maintain the commitment 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.
- 4.4-b 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.
- 4.4-c 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.
- 4.4-j Adequately distribute fire-fighting equipment and personnel throughout the Sphere of Influence to ensure quick response time (5 minutes to all calls within the primary service area of each fire station).
- 4.4-k New fire station sites, including the proposed central public safety facility, should be selected and dedicated with new development based on the configuration and phasing of new development and urban expansion. Ease of access and efficient service areas should be major determinants.
- 4.4-l Do not allow building construction in the Sphere of Influence which is beyond the five (5) minute response time from any fire station.

Turlock General Plan Safety Element (Existing)

Fire Standards

- 9.3-d Maintain a Fire Department response time of five minutes or less for all urban service areas.
- 9.3-e Maintain mutual aid agreements with other departments in Stanislaus County.

Impact Analysis

SIGNIFICANCE CRITERIA

Implementation of the proposed Plan would have a potentially significant impact on the environment if it resulted in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

- Fire protection
- Police protection
- Schools
- Other public facilities

METHODOLOGY AND ASSUMPTIONS

This analysis considered existing and proposed public and safety services in the City, proposed General Plan policies, and applicable regulations and guidelines.

Schools

The projected student population was calculated according to housing build-out estimated by the proposed General Plan, and student generation rates and school sizes from the most recent School Facilities Fee Reviews by the Turlock Unified School District and the Denair Unified School District.

Public Safety Services

The need for additional fire stations, staffing and equipment is evaluated based on the Fire Department's preliminary analysis in light of the General Plan's proposed growth areas and the need to maintain standards. Police services are evaluated based on the current ratio of 1.22 police officers per 1,000 residents. Using the estimated population from the residential development within the Study Area, the number of new officers needed is determined.

SUMMARY OF IMPACTS

The Turlock Study Area is projected to gain between 36,000 and 55,000 residents and nearly 59,000 jobs over the course of the planning period following the General Plan. Additional residential development will contribute to an increase in the number of students in the public school system. Additional population will also necessitate new fire stations and other public safety facilities to adequately cover growth areas and meet response time standards. The General Plan Land Use Diagram identifies sufficient land for the new schools necessary to accommodate the additional students, together with proposed General Plan policies to ensure that schools will be built coincidentally with new growth areas. General Plan policies also direct the City to fund and develop public safety facilities as needed to maintain service levels. Impacts to public service delivery, therefore, will be reduced to a less than significant level.

Impact

3.14-1 Implementation of the proposed Plan would not result in substantial adverse physical impacts associated with the provision of new or physically altered schools, libraries, or other community facilities in order to maintain acceptable service. *(Less Than Significant)*

Projected Demand for Schools

As Turlock grows, additional school facilities will be required to meet new student demand. Student generation rates used to determine future school demand are based on housing development capacity under the General Plan, and student generation rates and school sizes based on the latest School Facilities Fee Review studies by the Turlock and Denair Unified School Districts. Student projections by planning phase are shown in Table 3.14-3. Eight new schools are identified in the proposed General Plan to accommodate the projected buildout population, including six elementary schools, one junior high school, and one high school. The first phase of expansion to the Southeast would include three elementary schools and new middle and high schools. A fourth elementary school would be added with the second phase of Southeast expansion, and a fifth would be included in the expansion to the Northwest. Infill development within the existing City limits would require one new elementary school. The approximate locations of future schools are shown in Figure 3.14-1.

The General Plan designates locations for one new high school accommodating 2,100 students, and there is an estimated capacity for an additional 223 students to be housed at existing high schools. Full buildout is anticipated to generate 3,079 high school students, which would result in a shortfall of space for approximately 700 students. Ongoing of school needs will be required as growth and demographic patterns change over time. While it is unlikely that buildout will occur during the planning period, TUSD should plan to provide high school space in addition to the sites designated.

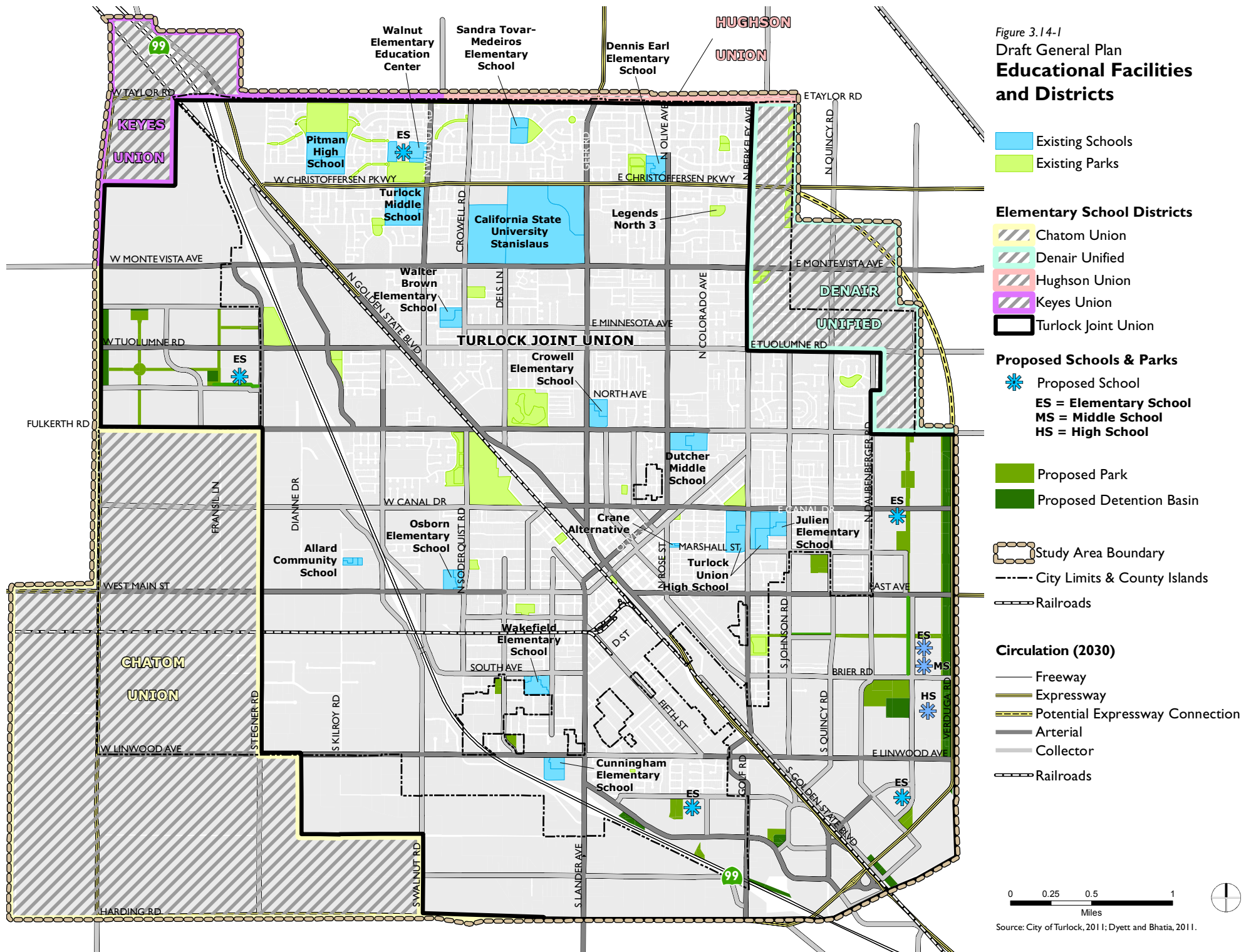
TABLE 3.14-3 PROJECTED ENROLLMENT AND SCHOOL DEMAND

<i>School</i>	<i>Approved & Infill</i>	<i>SE Expansion Areas</i>	<i>NW Expansion Area</i>	<i>Total</i>
Projected New Single-Family Units	1,601	5,347	1,043	7,992
Projected New Attached and Multi-Family Units ¹	2,799	5,753	3,257	11,808
Projected New K-6 Students	1,191	3,214	1,080	5,484
Existing Available K-6 Capacity				544
New Elementary School Capacity	880	880	880	5,280
Elementary Schools Needed	1	4	1	6
Projected New Middle School Students	292	805	257	1,354
Existing Available 7-8 Capacity				565
New Middle School Capacity		1,100		1,100
Middle Schools Needed	0	1	0	1
Projected New High School Students	661	1,843	575	3,079
Existing Available 9-12 Capacity				223
New High School Capacity		2,100		2,100
High Schools Needed	0	1	0	1

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

Sources: TUSD School Facilities Fee Review, 2008; TUSD, 2009; Dyett & Bhatia, 2011

Figure 3.14-1
 Draft General Plan
**Educational Facilities
 and Districts**



Demand for Libraries

As noted in the Physical Setting section, Turlock's public library facility does not currently meet its service standard for City residents. It comprises 10,000 square feet, which translates to 0.12 square feet per person today, short of both the current systemwide 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 Stanislaus County Library 2011-15 Strategic Plan systemwide standard of 0.40 to 0.45 square feet per resident, the City would need between 50,800 and 82,500 square feet of library space in 2030, or between 40,800 and 72,550 square feet in addition to the existing library. Based on the Current Facilities Space Conditions Assessment in the *Strategic Plan*, the existing Turlock branch library has a heavily used collection; shelving at capacity; a shortage of seating space for quiet reading or individual study; a shortage of space for children's activities; and a lack of acoustically-separate group study rooms or a community meeting room.¹

The Library's Strategic Plan recommends completion of a Master Facilities and Technology Plan to identify priority projects. The Library will likely pursue development of a library in the range of 25,000 to 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. The proposed General Plan calls for the City to explore creation of a joint school/community library as part of the new middle or high school. This could be done in partnership with the School District and potentially the County Library. The nearly 53,000-square foot California State University, Stanislaus Library is also available for free community use, and community members may check out materials for a small annual fee. This partnership could be enhanced in the future.

Together, a new library in the 25,000 to 30,000 square foot range and a new joint-use library of at least 25,000 square feet would meet projected demand in Turlock. Alternatively, the joint-use library could be smaller and the CSUS Library could be counted on to meet some demand.

Demand for Other Community Facilities

Community centers provide an important civic space for residents to gather and socialize. The City's 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 nine 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 future community parks; 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. Recreational facility needs are covered in Chapter 3.13: Parks, Recreation and Open Space.

Potential Impacts

Although the demand for school facilities will increase under the proposed General Plan compared to existing conditions, the Plan identifies sites for new facilities (six new elementary schools, one new junior high school and one new high school) to meet this demand. Proposed General Plan policies described below seek to ensure that school facilities are provided as needed, by committing the City to cooperate with Turlock Unified School District on the planning, financing, and construction of schools. If the designated school sites are not adequate to accommodate all new students with full buildout of the General Plan, the Plan calls for

¹ Stanislaus County Library (2011) Strategic Plan 2011-2015, July 2011.

3.14 Public Facilities and Services

the District and City to facilitate identification and development of an appropriate site.

It may reasonably be anticipated that Turlock will gain a new, larger library, a new teen center, and perhaps a new senior center during the planning period. These facilities are supported by General Plan policies, and would serve the growing demand for services in the Study Area. Stanislaus County Library is not currently planning facilities in Turlock that would meet projected demand. The General Plan calls for the City to support the Library system in its facilities planning efforts, and to explore the possibilities of a joint-use library as part of the new middle or high school, and of an enhanced partnership with California State University, Stanislaus. The proposed policies reduce impacts to library services to a less than significant level.

The impacts associated with new educational and community facilities are considered less than significant, as they will be made in order to maintain public services, and in proportion to population growth. Proposed General Plan policies will help to ensure that facilities and needs are closely aligned and adverse impacts are minimized.

Proposed General Plan Policies that Reduce the Impact

Parks, Schools, and Community Facilities Element Policies

Schools

- 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-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 following Master Plan areas: Southeast 1, 2, 3 and 5, and Northwest; and one within the existing City. A new high school and middle school in the Southeast 3 Master Plan Area is 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-f* **Additional School Capacity.** Full buildout of the General Plan will necessitate additional high school capacity beyond the planned high school in the Southeast 3 Master Plan Area. If needed, work

with the School Districts to increase capacity of existing schools or designate land and facilitate development of additional schools, as indicated by ongoing assessment of school needs.

- 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 multi-purpose rooms for community meetings and classes. Coordinate with the school districts on the siting of schools in relation to parks and the greenway system.
- 4.2-g* **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.
- 4.3-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.

Community Facilities and Services

- 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.
- 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. 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-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.
- 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. Community

3.14 Public Facilities and Services

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.

- 4.2-1 **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.

Mitigation Measures

None required.

Impact

- 3.14-2** Implementation of the proposed Plan would not result in substantial adverse physical impacts associated with the provision of new or physically altered public safety facilities, in order to maintain acceptable service ratios, response times or other performance objectives. *(Less Than Significant)*

Projected Demand for Fire Protection

With a larger population, call volume and complexity of fire protection services would likely increase. Increased call volumes could lead to simultaneous alarms and periods of either non-coverage or a requirement to employ mutual aid. Because the adequacy of fire protection emergency service (for both medical and fire suppression) hinges on call volume, call complexity and response times, potential increases in staff would depend upon these factors. 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 across the entire service area.

The Proposed General Plan anticipates that one new fire station will be developed with expansion into the Southeast master plan areas. With expansion into the Northwest Growth Area, the existing fire station in Northwest Turlock would be relocated. The General Plan recommends that the Fire Department prepare for the anticipated residential expansion to the Southeast first. Existing and proposed fire stations are shown in Figure 3.14-2, including a new Public Safety Building, which will house fire and police administration. The precise locations of future stations may change.

Projected Demand for Police Protection

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 while also considering the typical nature and type of calls for service; crime prevention and safety; appropriate measures for determining adequate levels of service; and requirements for additional facilities and staffing. The Turlock Police Department would need 152 sworn officers to maintain its current staffing ratio. If the rate of sworn officers to total Department staff remains the same, this translates to a staff of 235. The 2007 Space Needs Assessment anticipates that the planned Public Safety Building will house 242 employees in 2030. The new building is expected to be adequate to accommodate needed growth through the planning period.

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

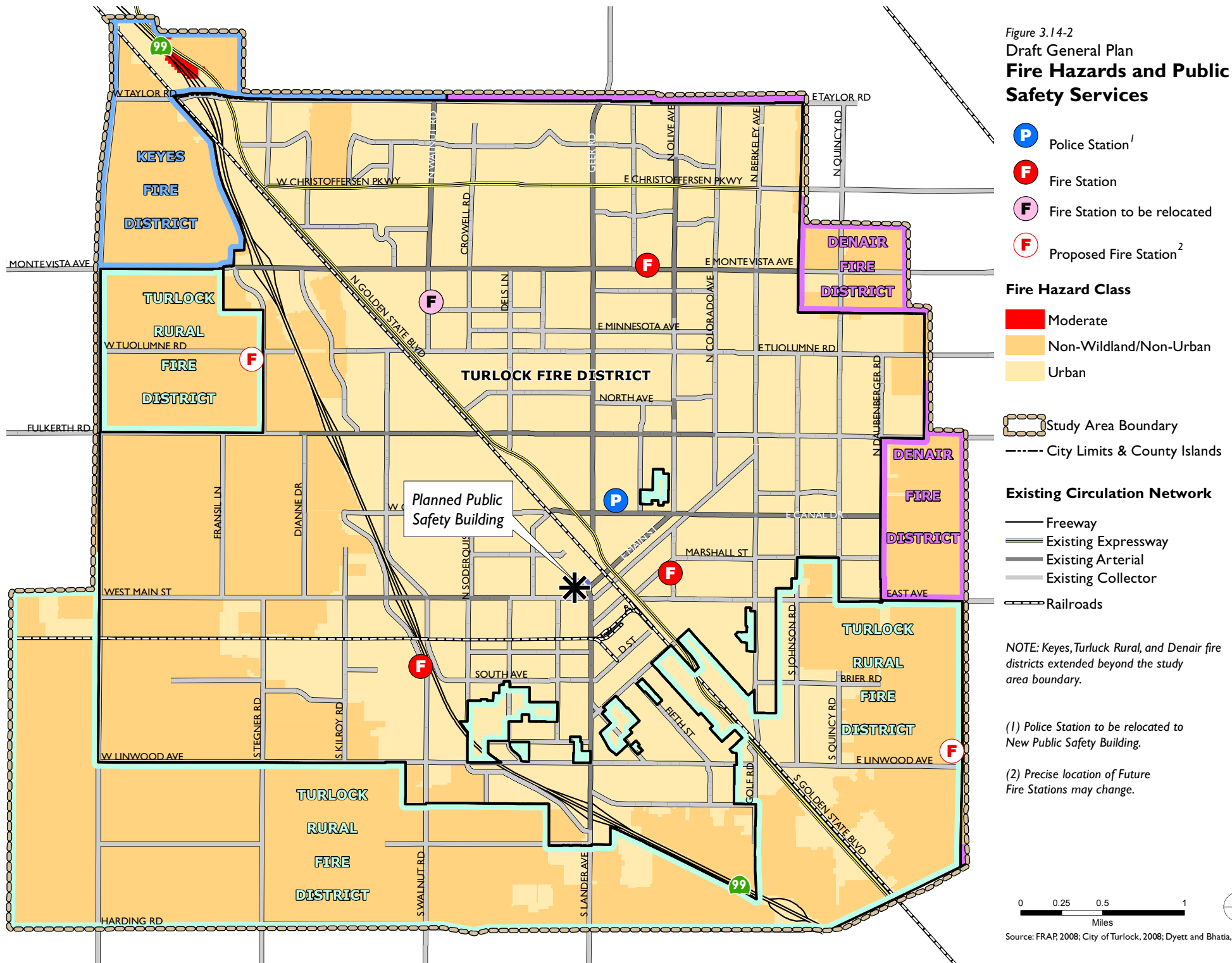
Communications Center also provides other departments and agencies inside and outside the City of Turlock with communication abilities. As development continues in the City of Turlock, additional infrastructure may be necessary to ensure adequate communication capacity. This includes but is not limited to a minimum radio coverage ratio and minimum signal strength in and out of structures.

Potential Impacts

The two additional fire stations anticipated to serve the City under the General Plan will not substantially increase the area of developed land but will help the Department to maintain its ISO rating and reach its performance standards. The planned Public Safety Building will accommodate the larger staff and police force that will be needed to serve Turlock through 2030, and this project is already underway. Other additional public safety facilities are expected to be relatively minor, and will be the subject of project-level environmental review. The impacts associated with the necessary provision of public safety services are considered less than significant, as they will be made in order to maintain service levels and in proportion to population growth. Proposed General Plan policies will help to ensure that facilities and needs are closely aligned and adverse impacts are minimized.

During the scoping period for this Draft EIR, the City of Turlock received comments from the two county fire districts (Keyes and Denair) that currently serve the unincorporated areas within the Study Area. These districts expressed concern that Turlock's annexation of currently unincorporated areas has a negative impact on their departments, insofar as it reduces their funding and therefore their ability to operate. However, this constitutes a fiscal impact, not an environmental impact (because the areas in question will continue to have fire service with buildout of the General Plan, just provided by a different entity), and thus is not considered significant in this document.

Figure 3.14-2
 Draft General Plan
**Fire Hazards and Public
 Safety Services**



Proposed General Plan Policies That Reduce the Impact

Safety Element Policies

- 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-f* **Be Prepared for Emergencies.** Continue to cooperate with Stanislaus County and other jurisdictions in preparing and implementing Emergency Preparedness Plans.
- 10.4-g **Strategic Planning.** Continue to develop strategic plans that identify high-priority community needs and organizational, staffing, and resource requirements to meet those needs.

Fire Service

- 10.4-h **Meet Response Time Standard Throughout Study Area.** Adequately distribute firefighting equipment and personnel throughout the Sphere of Influence to ensure quick response time (strive to achieve an average response time of six minutes to all calls within the primary service area of each fire station). Critical factors that affect response times are station locations and road circulation patterns.
- 10.4-i **Coordinate Facilities Planning With Urban Expansion.** Within two years of adoption of the General Plan, determine appropriate locations 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.

3.14 Public Facilities and Services

- 10.4-j **Maintain Mutual Aid Agreements.** Maintain mutual aid agreements with other fire and emergency service departments in Stanislaus County.
- 10.4-k **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-l **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-m **Enforce Fire Safety Codes.** Continue enforcement of all aspects of Chapter 4-3 of the Municipal Code, Fire Codes and Administration.
- 10.4-n **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-o **Training Facilities.** Ensure that training facilities are maintained and upgraded as needed.

Police Service

- 10.4-p **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-q **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-r **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-s **Maintain Community Partnerships.** Form pro-active 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-t **Complete Public Safety Building Project.** Complete the construction of the new Public Safety Building.
- 10.4-u **Examine Capital Facilities Fees.** Undertake a reexamination of the present Capital Facilities Fees schedule to reflect changes in Public Safety facility needs identified in this Plan.
- 10.4-v **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-w **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-x **Maintain Access to Fire Hydrants.** Develop and implement a program to apply and maintain red curbing at all fire hydrants.

Emergency Management

- 10.4-y **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-z **Maintain Evacuation Routes.** Ensure that major access and evacuation corridors are available and unobstructed in case of major emergency or disaster.

Given the General Plan's commitment to ensuring adequate public facilities, the impact on educational, recreational, cultural, police and fire services is expected to be less than significant.

Mitigation Measures

None required.

3.14 Public Facilities and Services

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3.15 Utilities

This section describes infrastructure conditions and needs for the following wastewater and solid waste utility systems. Water quality, water supply, and stormwater management are evaluated in Section 3.12: Hydrology and Water Resources.

Environmental Setting

PHYSICAL SETTING

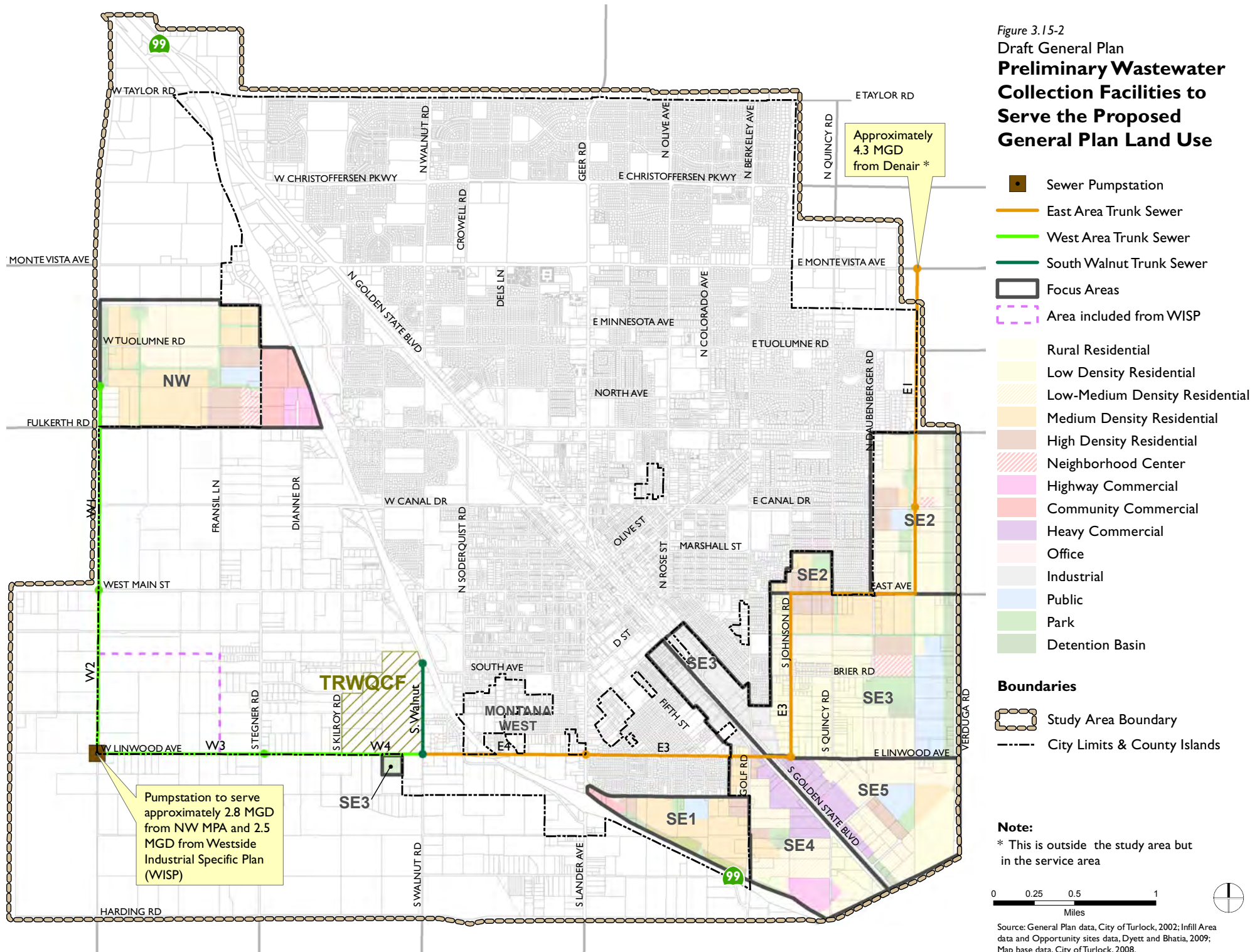
Sewer System

The sanitary sewer system consists of a series of sewer pipes and pump stations, as shown on Figure 3.15-1. The existing sewer system includes about 220 miles of sewer pipes ranging in size from 6 to 48-inches in diameter. The sewer system conveys the wastewater to the TRWQCF, located near the southwest corner of the City. The capacity of the Monte Vista Avenue trunk sewer is known to be exceeded during storm event. However, flows in the other sewers in the City are believed to mostly be within the sewer's capacities.

The proposed sewer system to serve the SE MPAs is shown on Figure 3.15-2. 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 SE MPA, and no existing sewers are needed to serve the SE MPAs.

The proposed sewer system to serve the NW MPA is also shown on Figure 3.15-2 and includes sewer pipes and one sewer pump station. These sewer facilities will also collect some wastewater flow from the TRIP, which eliminates the need for one previously proposed sewer pump station in the TRIP area. The proposed sewer system collects all of the flow from the NW MPA, and no existing sewers are needed to serve the NW MPA.

Figure 3.15-2
 Draft General Plan
**Preliminary Wastewater
 Collection Facilities to
 Serve the Proposed
 General Plan Land Use**



- Sewer Pump Station
- East Area Trunk Sewer
- West Area Trunk Sewer
- South Walnut Trunk Sewer
- Focus Areas
- Area included from WISP
- Rural Residential
- Low Density Residential
- Low-Medium Density Residential
- Medium Density Residential
- High Density Residential
- Neighborhood Center
- Highway Commercial
- Community Commercial
- Heavy Commercial
- Office
- Industrial
- Public
- Park
- Detention Basin

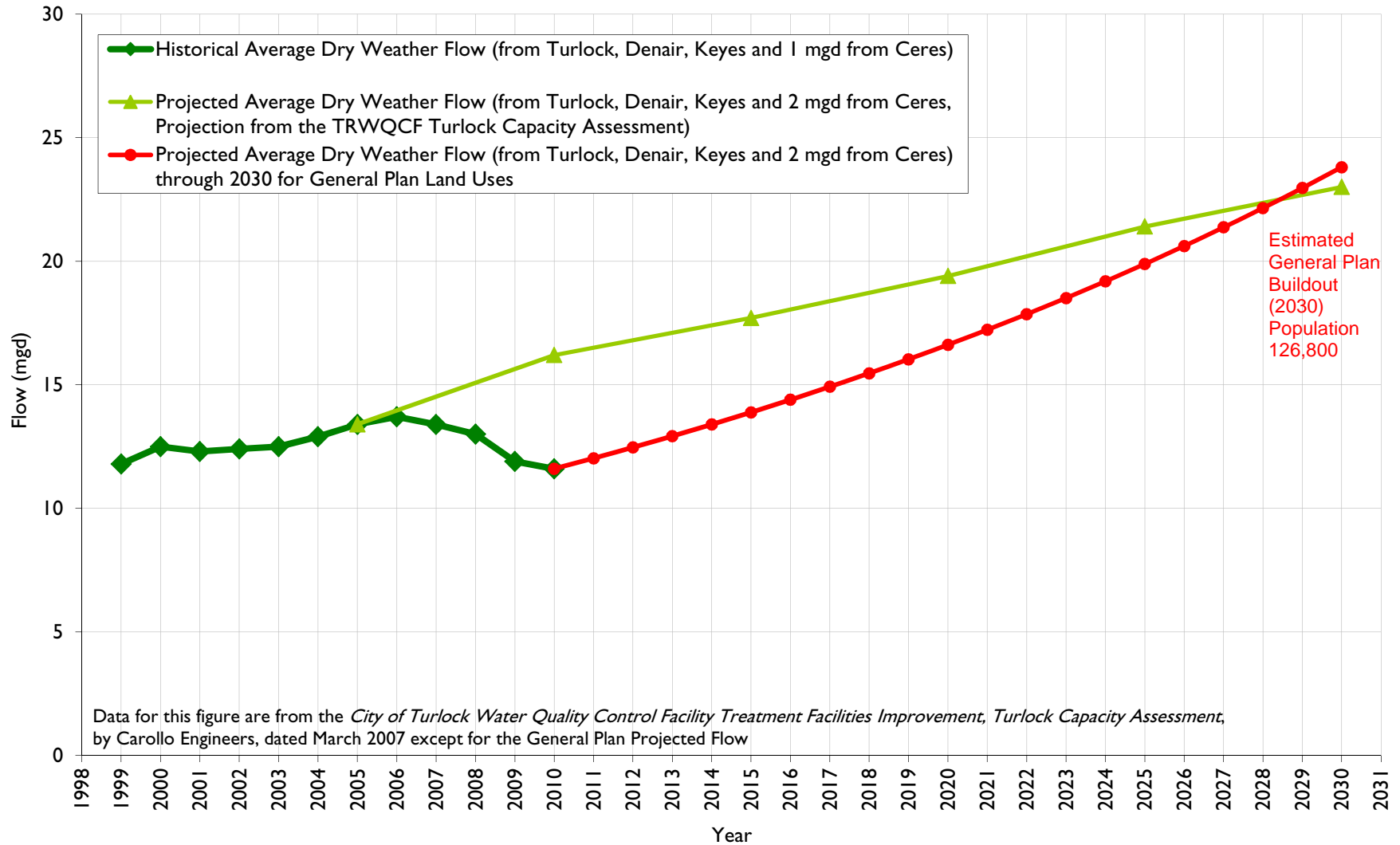
- Boundaries**
- Study Area Boundary
 - City Limits & County Islands

Note:
 * This is outside the study area but in the service area

0 0.25 0.5 1
 Miles

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.

Figure 3.15-3. Historical and Projected Wastewater Flows



Wastewater Treatment

The City of Turlock Water Quality Control Facility Treatment Facilities Improvement Capacity Assessment (Final, March 2007, hereafter called the Capacity Assessment), identified the current capacity of the TRWQCF to be about 14 mgd on an annual average flow basis. The flow in 2008, 2009, and 2010 were 13.7 mgd, 12.6 mgd, and 11.6 mgd, respectively. These flows include the flow from Denair and Keyes). Additionally, the TRWQCF also receives 1 mgd of primary treated wastewater from Ceres. Thus, the current flows are slightly below the existing capacity of the TRWQCF, and capacity expansions will be needed to serve the future growth of the City (both infill and for the General Plan MPAs).

The flow from just Turlock for 2009 was 11.9 mgd. The future wastewater flows have been estimated in Table 3.15-1 for the GPU MPAs and the infill areas. The total flow to the TRWQCF in 2030 is estimated to be about 23.8 mgd (see Table 3.15-2) and 26.6 mgd (see Table 3.15-3) at full buildout of the General Plan. These estimated future flows include the buildout flow from Denair and Keyes and 2 mgd of primary treated wastewater from Ceres. The past and projected flows are shown on Figure 3.15-3. For comparison, the Capacity Assessment also estimated the 2030 buildout flow to be 23.0 mgd (including the flows from Denair, Keyes, and 2 mgd of primary treated wastewater from Ceres).

The Capacity Assessment also identified improvements that would be needed at the TRWQCF to achieve an annual average flow capacity of 20 mgd. This capacity expansion also allows the TRWQCF to treat 2 mgd of primary treated wastewater from Ceres for a total capacity of 22 mgd. The plant site includes about 140 acres, but the current and planned treatment facilities only occupy about 60 acres of the site. Consequently, even after all the required facilities have been built to provide a capacity of 22 mgd, there will still be about 80 acres at the plant site that could be used to further expand the plant capacity to over 26.6 mgd.

Removal of THMs from the effluent will be needed as a result of the TRWQCF's new NPDES discharge permit. Preliminary work done by the City indicates that stripping of the THMs is feasible.

Stormwater

Stormwater infrastructure was presented and evaluated in Section 3.12, Hydrology and Water Resources.

Solid Waste

The City of Turlock 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 Stanislaus Resource Recovery Facility (SRRF), a 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 Solid Waste Management Division of the Stanislaus County Department of Environmental Resources, the Fink Road landfill—the only one operating in Stanislaus County—had capacity until 2017 for garbage (Class III waste) and 2023 for the waste-to-energy ash (Class II waste) as originally designed, with a total landfill capacity is 6.8 million tons. However, based on lower disposal rates, the County recently revised its projections for the life of the landfill to 2029 for Class III waste and 2043 for Class II. In addition, the County has initiated plans for an expansion and reconfiguration of the existing facility to extend its useful life by another 10 to 15 years beyond the revised projections. The project application is due to be submitted later in 2012, with approval anticipated

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within six months following submission. The expansion project would be complete prior to the scheduled original closure date of the landfill.¹

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 per person per day (50 percent diversion equivalent). In 2009, the Agency's jurisdiction achieved 3.3 pounds per person per day, or a 72 percent diversion equivalent.

REGULATORY SETTING

Utilities are not regulated as a whole, but rather different utilities are subject to different local, state, or federal regulations. This section provides a brief overview of the regulatory setting for each of the utilities serving the City of Turlock.

Federal Regulations

Water

Clean Water Act

The Clean Water Act is the principal federal law that addresses water quality. The primary objectives include the regulation of pollutant discharges to surface water, financial assistance for public wastewater treatment systems, technology development, and non-point source pollution prevention programs. The Clean Water Act also requires that states adopt water quality standards to protect public health and welfare and enhance the quality of water.

¹ Jami Aggers, Assistant Director, Stanislaus County Department of Environmental Resources. Personal communication, January 23, 2012.

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA), administered by the U.S. EPA in coordination with the states, is the main federal law that ensures the quality of drinking water. Under the SDWA, EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards. The Department of Public Health administers the regulations contained in the Act in the State of California.

Solid Waste

Resource Conservation and Recovery Act (Amended 1986)

The Resource Conservation and Recovery Act is a federal act regulating the potential health and environmental problems associated with solid waste hazards and non-hazardous wastes. Specific regulations addressing solid waste issues are contained in Title 40, Code of Federal Regulations.

State Regulations

Water

California Water Code

California Water Code (Porter-Cologne Act) establishes a program to protect water quality and beneficial uses of state water resources and addresses groundwater and surface water. The State Water Resources Control Board and the Regional Water Quality Control Boards (RWQCBs) are the principal state agencies responsible for control of water quality.

California Department of Public Health

A major component of the State Department of Public Health, Division of Drinking Water and Environmental Management, is the Drinking Water Program which regulates public water systems. Regulatory responsibilities include the enforcement of the federal and state Safe Drinking Water Acts, the regulatory oversight of public water systems, issuance of water treatment permits, and certification of drinking water treatment and distribution operators. State regulations for potable water are contained primarily within Titles 22 and 17, Chapter 5 of the California Code of Regulations.

The regulations governing recycled water are found in a combination of sources including the Health and Safety Code, Water Code, and Titles 22 and 17 of the California Code of Regulations. Issues related to treatment and distribution of recycled water are generally under the influence of the RWQCB, while issues related to use and quality of recycled water are the responsibility of the California Department of Public Health.

California Environmental Quality Act, SB 610, and SB 221

Section 15083.5 of the CEQA Guidelines requires the City to request certain information from the public water supply system(s) serving the planning area. This requested information includes: an indication of whether the projected water demand associated with the proposed general plan was included in its last urban water management plan; and, an assessment for any major development projects “whether its total projected water supplies available during normal, single-dry, and multiple-dry water years as included in the 20-year projection contained in its urban water management plan will meet the projected water demand associated with the proposed project, in addition to the system’s existing and planned future uses.”

Senate Bill 610 became effective January 1, 2002, and requires cities in connection with CEQA review to consider water supply assessments to determine whether projected water supplies can meet the project’s anticipated water demand. SB 610 also requires additional factors to be considered in the preparation of urban water management plans and water supply assessments.

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SB 610 and CEQA Guidelines Section 15083.5 identifies major development projects generally as a residential development of more than 500 dwelling units; a commercial or industrial business employing more than 1,000 persons; or any other project that would have a water demand at least equal to a 500 dwelling unit project. SB 221 contains similar provisions as SB 610 but is intended for use with large residential subdivisions and a water supply assessment is usually required at the time of tentative tract map approval.

Solid Waste

California Integrated Waste Management Board

The California Integrated Waste Management Board (CIWMB) establishes the statewide regulations for solid waste collection and disposal, including state-mandated diversion goals. Regulations authored by CIWMB (Title 14) were integrated with related regulations adopted by the State Water Resources Control Board pertaining to landfills (Title 23, Chapter 15) to form Title 27 of the California Code of Regulations.

The California Integrated Waste Management Act, AB 939 mandated that all jurisdictions in the State divert at least 50 percent of the solid waste generated by 2000 through source reduction, composting, and recycling activities. The Act gives the highest priority to source reduction and defines it as the act of reducing the amount of solid waste generated in the first place. Recycling and composting are given the next highest priority. The Act specifies that all other waste that is not diverted be properly and safely disposed of in a landfill or through incineration. The California Integrated Waste Management Act also mandates that each jurisdiction adopt a Source Reduction and Recycling Element (SRRE) which specifies how the community will meet the 50 percent goals set forth in the Act. Each community is also required to take measures to reduce solid waste generation and to provide for the safe disposal of special and hazardous wastes.

The Solid Waste Disposal Measurement System Act of 2008, SB 1016, amended the California Integrated Waste Management Act procedures for measuring and reporting diversion requirements. Starting in 2009, jurisdictions are required to calculate the 50 percent diversion requirement in a per capita disposal rate equivalent. CIWMB will determine the per capita disposal rate equivalent for each jurisdiction.

Gas and Electricity

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates Investor-Owned Utilities (IOUs) including those that offer electric, natural gas, steam, and petroleum service to consumers. The CPUC regulates both electric and natural gas rates and services provided by these utilities including in-state transportation over the utilities' transmission and distribution pipeline systems, storage, procurement, metering and billing. Natural gas regulations are found in General Orders 58, 94, 96, and 112, while electrical distribution regulations are found in General Orders 95, 128, 131, 165, and 166.

Regional Regulations

The Central Valley Regional Water Quality Control Board (RWQCB) governs many of the regulations associated with utilities, specifically potable water, sanitary sewers, storm drains, and recycled water. RWQCB has the authority to enforce water quality regulations found in the Clean Water Act based on the Porter-Cologne Water Quality Control Act. Issues related to treatment and distribution of recycled water are generally under the influence of the RWQCB, while issues related to use and quality of recycled water are the responsibility of the California Department of Public Health.

The RWQCB administers regulations related to wastewater discharges under the Federal Water Pollution Control Act of 1972, as amended, more commonly known as the Clean Water Act. Wastewater discharges are guided by NPDES (National Pollutant Discharge Elimination System) permits granted by the RWQCB.

Local Regulations

Water

City of Turlock Urban Water Management Plan, 2005 and 2010 Draft

The City of Turlock's Urban Water Management Plan (UWMP) documents the City's planning activities to ensure adequate water supplies are available to meet existing and future demands for water. The UWMP presents forecasted supplies and demands, describes the City's conservation programs, and identifies recycled water opportunities to the year 2030. The UWMP also includes a water shortage contingency analysis and a description of the plan adoption, public coordination, and planning coordination activities.

City of Turlock Water Master Plan Update, May 2009

The Municipal Services Department uses the Master Plan as the basis for projecting water demand and needed infrastructure capacity improvements. The document also includes an evaluation of water supply and demand through 2020 and identifies infrastructure necessary within the City to integrate the RSWSP into the City's existing water system.

The Turlock Municipal Code contains regulations related to the water system in Title 6, Chapter 5. The Subdivision Ordinance contains the specific water pipelines system requirements for development projects.

Existing Turlock General Plan Public Facilities and Services Element

The Public Facilities and Services Element of the existing General Plan includes policies relating to potable water. Relevant policies include the following:

- 4.3-a Promote the orderly and efficient expansion of public utilities and the storm drainage system to adequately meet projected needs.
- 4.3-b Coordinate capital improvements planning for all municipal service infrastructure with the direction, extent, and timing of growth.
- 4.3-c Establish equitable methods for distributing costs associated with serving new development.
- 4.3-n Continue the City program of water system improvements to complement existing sewer system service capacities in the urban services area. Establish improvement priorities based on General Plan policies regarding the direction, extent, and timing of urbanization.
- 4.3-o Encourage water conservation measures in existing and new development, including flow restrictors and swimming pool covers.
- 4.3-p Support County programs to protect valuable groundwater resources.
- 4.3-q Investigate water rights issues associated with annexation of agricultural land to the City.

Wastewater

City of Turlock Sewer System Management Plan, 2007

The Sewer System Management Plan describes the activities that the City performs to effectively manage its sanitary sewer system. It assigns specific responsibilities for management and operation of the system to City staff and identifies a time schedule for complying with the current and future regulatory requirements for owners of sanitary sewer systems.

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City of Turlock Water Quality Control Facility, Treatment Facilities Improvement, Turlock Capacity Assessment, Final Report, March 2007

This document evaluates the existing capacity of the TRWQCF, summarizes existing flow to the facility, projects future flows to the facility through the year 2030, and identifies the facility improvements required to treat the future flows.

The Turlock Municipal Code contains regulations related to the sewer system, including sewage disposal and service fees, in Title 6, Chapter 4. The Subdivision Ordinance contains the specific sanitary sewer system requirements for development projects.

Existing Turlock General Plan Public Facilities and Services Element

The Public Facilities and Services Element of the existing General Plan includes policies relating to wastewater and water treatment. Relevant policies include the following:

- 4.3-a Promote the orderly and efficient expansion of public utilities and the storm drainage system to adequately meet projected needs.
- 4.3-b Coordinate capital improvements planning for all municipal service infrastructure with the direction, extent, and timing of growth.
- 4.3-c Establish equitable methods for distributing costs associated with serving new development.
- 4.3-d Address the inadequacy of the wastewater treatment facility to serve the anticipated growth.
- 4.3-k Select and implement a plan to increase sewage treatment capacity.
- 4.3-l Complete wastewater treatment facility upgrade in accordance with Regional Water Quality Control Board requirements.
- 4.3-m Continue comprehensive efforts to plan for orderly growth.
- 4.3-n Continue the City program of water system improvements to complement existing sewer system service capacities in the urban services area. Establish improvement priorities based on General Plan policies regarding the direction, extent, and timing of urbanization.

Solid Waste

The CIWMB delegates local permitting, enforcement, and inspection responsibilities to Local Enforcement Agencies (LEA). The Turlock Municipal Code contains regulations related to solid waste and recycling, including construction and demolition debris recycling, in Title 6, Chapter 3.

Existing Turlock General Plan Open Space and Conservation Element

The Open Space and Conservation Element of the existing General Plan includes policies relating to solid waste and recycling. Relevant policies include the following:

- 6.6-a Reduce the generation of solid and hazardous waste. Promote recycling.
- 6.6-b Cooperate with State and County efforts to reduce generation of waste, increase recycling and reuse, and provide safe waste disposal sites.

- 6.6-c Implement measures specified in the Source Reduction and Recycling Element and the Household Hazardous Waste Element.
- 6.6-d Meet the mandatory waste diversion goals set by the State of 25 percent by 1995 and 50 percent by 2000; reduce the disposal of household hazardous waste in landfills by 75 percent in 1993 and 95 percent in 1997.
- 6.6-e Work with Stanislaus County to ensure the availability of adequate landfill capacity for Turlock's solid waste.

Impact Analysis

SIGNIFICANCE CRITERIA

Implementation of the proposed General Plan would have a potentially significant adverse impact if it would:

- Require or result in the construction of new water or wastewater treatment facilities, or expansion of existing facilities, the construction of which could cause adverse environmental effects.
- Result in sanitary sewer over flows by exceeding the capacity of existing or proposed sewers;
- Exceed wastewater treatment requirements of the Regional Water Quality Control Board;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Result in solid waste disposal needs that exceed the permitted landfill capacity serving the project
- Cause solid waste levels to be in non-compliance with federal, state, or local regulations related to solid waste.

METHODOLOGY AND ASSUMPTIONS

Potable water, sewer system, and wastewater treatment needed for the growth of the General Plan have been preliminarily identified in the General Plan. The proposed infrastructure is shown on Figures 3.12-3 and 3.15-2. Also, General Plan policies were prepared to support the design, construction, operation, and maintenance of the infrastructure. There are also policies that help ensure impacts from the infrastructure are eliminated or minimized. This environmental evaluation is based on the potential for the currently proposed infrastructure to cause environmental impacts. However, additional planning and refinement of the infrastructure will be performed through preparation of water, sewer, and wastewater treatment master plans, and through design of the individual facilities at appropriate times in the future. It is assumed that this additional future work will further reduce or eliminate potential environmental impacts.

SUMMARY OF IMPACTS

Buildout of the General Plan could result in increased sanitary sewer overflows. To collect and convey the wastewater generated by the buildout of the General Plan will use existing sanitary sewers for infill development and new sanitary sewers for the NW and SE MPAs. The City will prepare a sanitary sewer master plan that will evaluate the capacity of the existing sewer systems and identify sewer improvements needed to achieve the required capacity for the infill projected in the General Plan. The proposed sewer system for the SE MPAs was sized to convey all of the wastewater from the new growth in the SE MPAs. Use of existing sewers is not required to convey the wastewater from the SE MPAs. Wastewater from the

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NW MPA will be conveyed in a new trunk sewer to the TRWQCF sized for all of the flow from the NW MPA, and use of existing sewers is not required. Consequently, buildout of the NW MPA will not impact any existing sewers. This impact is less than significant.

To treat the wastewater generated by the buildout of the General Plan, the existing TRWQCF will have to be expanded to 23.8 mgd by the year 2030 and to 26.6 mgd at full buildout of the General Plan. The city already has a plan for expanding the capacity of the TRWQCF to 22 mgd. Also, there is land available at the TRWQCF to further expand the capacity to well above 26.6 mgd. This impact is less than significant.

Impacts regarding solid waste levels and disposal capacity are less than significant given diversion policies and sufficient capacity at the Fink Road Landfill and the Stanislaus Resource Recovery Facility. In addition, Turlock has exceeded the State mandated 50 percent waste diversion rates since before 2009. Ongoing waste reduction measures are included as part of the proposed General Plan, indicating that there is no impact as a result of the proposed General Plan regarding state, or local regulations related to solid waste.

IMPACTS AND MITIGATION MEASURES

Impact

Impact

- 3.15-1** Buildout of the proposed General Plan will lead to the construction of new groundwater wells and groundwater treatment systems that could cause adverse environmental effects. (*Less than significant*)

New groundwater wells will be required in the NW and SE MPAs to meet future peak water demands. Wells in the NW MPA may require an Arsenic treatment system. Wastewater flows from the well treatment systems will be directed into the sanitary sewer system and treated at the TRWQCF. The wells will be constructed within City owned parcels and will be visually designed to fit into the urban environment. The City has successfully constructed and operates over 20 wells in the past.

Proposed General Plan Policies that Reduce the Impact

New Growth Areas and Infrastructure Element Policies

- 3.3-h **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-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-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.

Mitigation Measures

None required.

- 3.15-2** Buildout of the proposed General Plan will result in sanitary sewer over flows by exceeding the capacity of existing or proposed sewers. (*Less than significant*)

To collect and convey the wastewater generated by the buildout of the General Plan will use existing sanitary sewers for infill development and new sanitary sewers for the NW and SE MPAs.

The existing sewers should have been sized to convey the wastewater from full development of the areas the sewers serve. So the existing sewers should be sized to allow for the future infill development. Nevertheless, sometimes land use planning changes or new tributary areas are added to an existing sewer, and the capacity of the sewer is exceeded. Also, over time sewer pipes and maintenance holes can settle and crack, allowing non-wastewater flows (rainfall or groundwater) to enter the sewer, which can also lead to flows that exceed the sewer capacity. The capacity of the Monte Vista Avenue trunk sewer is known to be exceeded during large storm events. However, flows in the other sewers in the City are believed to mostly be within the sewers' capacities.

The City will prepare a sanitary sewer master plan that will evaluate the capacity of the existing sewer systems and identify sewer improvements needed to achieve the required capacity.

The proposed sewer system for the SE MPAs is shown on Figure 3.15-2 and includes a connection to the Monte Vista Avenue sewer to redirect flow from Denair out of this sewer and into a new trunk sewer. This will reduce the flow in the exiting Monte Vista Avenue sewer and help prevent the capacity of this sewer from being exceeded. The new trunk sewer was sized to convey the diverted flow from Denair and the flow from the SE MPAs.

Wastewater from the SE MPAs will be conveyed in a new trunk sewer to the TRWQCF. Use of existing sewers is not required for the SE MPAs. Consequently, buildout of the SE MPAs will not impact any existing sewers.

Wastewater from the NW MPA will be conveyed in a new trunk sewer to the TRWQCF. Use of existing sewers is not required. Consequently, buildout of the NW MPA will not impact any existing sewers.

Proposed General Plan Policies that Reduce the Impact

New Growth Areas and Infrastructure Element Policies

- 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-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.

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- 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.

Mitigation Measures

None required.

Impact

- 3.15-3** Buildout of the proposed General Plan will lead to the expansion of the existing TRWQCF. (*Less than significant*)

To treat the wastewater generated by the buildout of the General Plan, the existing TRWQCF will have to be expanded to 23.8 mgd by the year 2030 and to 26.6 mgd at full buildout of the General Plan. These estimated future flows include the buildout flow from Denair and Keyes and 2 mgd of primary treated wastewater from Ceres. The Capacity Assessment identified improvements that would be needed at the TRWQCF to achieve an annual average flow capacity of 22 mgd. As shown on Figure 3.15-3, the flow to the TRWQCF is estimated to exceed 22 mgd in the year 2028. The plant site includes about 140 acres, but the current and planned treatment facilities will only occupy about 60 acres of the site. Consequently, even after all the required facilities have been constructed to provide a capacity of 22 mgd, there will still be about 80 acres at the plant site that could be used to further expand the plant capacity to 26.6 mgd.

The TRWQCF complies with the wastewater treatment requirements of the Regional Water Quality Control Board by complying with the NPDES Discharge Permit issued by the Board to the City. Removal of THMs from the effluent will be needed as a result of the TRWQCF's new NPDES discharge permit. Preliminary evaluations done by the City indicates that stripping of the THMs is feasible.

Proposed General Plan Policies that Reduce the Impact

New Growth Areas and Infrastructure Element Policies

- 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.
- 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.

Mitigation Measures

No mitigation measures are necessary.

3.15-4 Buildout of the proposed General Plan would cause an increase in waste generation. (*Less than significant*)

The current permit for the Fink Road Landfill, which receives Turlock's waste, has a limit of 2,400 tons/day. As of 2009, Turlock sent approximately 133 tons per day to the landfill, or 6 percent of the facility's daily capacity. Turlock's current waste generation rate per capita is estimated based on the average for the Regional Solid Waste Planning Agency for Stanislaus County of 3.3 pounds per person per day. Given the buildout population of 126,500, a conservative estimate of landfilled waste in 2030 would be 209 tons/day. This is considered conservative due to ongoing waste reduction and waste diversion efforts by the City of Turlock. This quantity of waste would be accommodated under the current permit, depending on increases from other jurisdictions. The Fink Road Landfill's next permit review date is August 2012.

The current expected lifespan of the landfill is 2029 for Class III waste and 2043 for Class II waste (ash from the waste-to-energy facility). Plans for expansion and reconfiguration of the landfill are currently underway that would increase the facility's lifespan by another 10 to 15 years. The details of the expansion are expected to be finalized in 2012, and a revised solid waste facility permit would be issued.

With the pending increased capacity of the Fink Road Landfill and continuing efforts on the part of the City of Turlock to maintain a high waste diversion rate, it is expected that sufficient capacity will exist for the waste projected by the proposed General Plan. In addition, the proposed General Plan includes policies that seek to continue reductions in waste and promote waste prevention and recycling at the municipal level. Given these factors, the impact of the proposed General Plan on waste facilities would be less than significant.

Proposed General Plan Policies that Reduce the Impact

New Growth Areas and Infrastructure Element Policies

- 3.3-ag **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-ah **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-ai **Implement Measures.** Implement measures specified in the Source Reduction and Recycling Element.
- 3.3-aj **Landfill capacity.** Work with Stanislaus County to ensure the continued availability of adequate landfill capacity for Turlock's solid waste.
- 3.3-ak **Green Waste Program.** Study the feasibility of adding food waste to the City's curbside compost pickup program.

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Mitigation Measures

None required.

4 Analysis of Alternatives

The California Environmental Quality Act (CEQA) mandates consideration and analysis of alternatives to the proposed General Plan. According to CEQA Guidelines, the range of alternatives “shall include those that could feasibly accomplish most of the basic purposes of the project and could avoid or substantially lessen one or more of the significant impacts” (Section 15126(d)(2)). The alternatives may result in new impacts that do not result from the proposed General Plan.

Case law suggests that the discussion of alternatives need not be exhaustive and that alternatives be subject to a construction of reasonableness. The impacts of the alternatives may be discussed “in less detail than the significant effects of the project proposed” (CEQA Guidelines Section 15126.6(d)). Also, the Guidelines permit analysis of alternatives at a less detailed level for general plans and other program EIRs, compared to project EIRs. The Guidelines do not specify what would be an adequate level of detail. Quantified information on the alternatives is presented where available; however, in some cases only partial quantification can be provided because of data or analytical limitations.

4.1 Background on Alternatives

A lengthy planning process took place to develop the proposed General Plan. The process emphasized community values and needs, and included a lengthy outreach process involving workshops, a newsletter, focus groups and interviews, and public meetings. Comments were gathered from residents, business owners and other members of the business community, local community organizations, university students, and City officials. The City Council and Planning Commission offered feedback during study sessions at each stage of the update process.

After an initial Existing Conditions Report, an Alternative Concepts Report was prepared, based on the existing conditions technical research and public input. The Alternative Concepts Report identified scenarios for a range of options on how to guide growth and development in Turlock, while achieving the City’s goals and guiding principles. Alternatives presented real options for key components—land use, development footprint, direction of growth, circulation, parks, and public facilities. Each of the four alternatives was evaluated for its impacts on transportation, utility capacity, and fiscal stability.

4.2 Alternatives Analyzed in this EIR

Three alternatives to the proposed General Plan are described and evaluated in this chapter. The alternatives draw upon concepts illustrated in the Alternative Concepts Report, but they have been modified somewhat to provide a greater understanding of how the proposed General Plan impacts could be reduced.

- Alternative 1: Infill and development of master plan areas Southeast 1, 2, and 3 only;

4 Analysis of Alternatives

- Alternative 2: Infill and development of master plan areas Southeast 1 through 5 only; and
- Alternative 3: No Project (1993 General Plan, partially updated in 2002).

Alternatives 1 and 2 derive from the Alternative Concepts Report, in which master plan areas for future development were originally developed and defined. The No Project Alternative represents expected development patterns if no General Plan Update occurred and instead the existing General Plan (adopted in 1993 and partially updated in 2002) were to remain in effect. Table 4.2-1 summarizes key characteristics of the alternatives (residential population, housing units, and jobs at buildout) and of the proposed General Plan. Existing data are also shown for reference.

TABLE 4.2-1: COMPARISON OF KEY CHARACTERISTICS; EXISTING, ALTERNATIVES, AND PROPOSED GENERAL PLAN¹

	<i>Existing</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>No Project</i>	<i>Proposed General Plan</i>
Housing Units	24,400	37,120	40,778	36,105	45,037
Households ²	23,530	35,783	39,310	34,805	43,416
Population ³	71,100	104,487	114,786	101,632	126,774
Employed Residents ⁴	26,700	41,795	45,915	40,653	50,710
Jobs	28,260	53,803	57,677	49,125	60,258
Jobs/Employed Residents Ratio	1.06	1.29	1.26	1.21	1.19

Notes:

1. Alternatives and General Plan values represent total development potential: existing + approved projects (not shown) + net new.
2. Buildout estimations of households assume a 3.6 percent housing unit vacancy rate.
3. Assumes 2.92 persons per household.
4. Estimates of employed residents based on 40 percent labor force participation rate for the buildout population.

Source: Dyett & Bhatia, 2011

Each of the alternatives uses the same density and intensity assumptions for land use categories, and each also assumes the same percentage buildout of the Turlock Regional Industrial Park. What differs between the alternatives is the amount of land converted to urban uses, and the mix of land use types and densities proposed.

The maps of the alternatives that follow the descriptions below illustrate land use designations in the master plan areas, which are illustrative of the goals and assumptions made for these areas in the General Plan and the EIR alternatives analysis. In the General Plan document itself, the master plan areas are not shown to have specific land uses on the General Plan Land Use Diagram in order to emphasize that their precise land use plans will be determined through the master planning process. However, for the purposes of buildout calculations, conceptual land use diagrams were developed. These are shown in the maps in this section. For the sake of comparison, a similar version of the map showing conceptual land uses in master plan areas for the Proposed Project is included as well.

ALTERNATIVE 1

Alternative 1 fills in growth on infill sites and in master plan areas Southeast 1 (Morgan Ranch), Southeast 2, and Southeast 3 only—the equivalent of “Phase 1” of development of the proposed

General Plan. This is roughly the amount of new development that could take place before necessitating the construction of a new S.R. 99 interchange around Youngstown Road, in the southeast corner of the Study Area.

Alternative 1 could support a total of some 104,500 residents and 53,800 jobs, leading to a jobs/employed residents ratio of 1.29. The population that this alternative could support essentially meets Turlock's low-end population projection for 2030 of 106,000 residents. This alternative produces the fewest number of housing units, new residents, and jobs compared with the proposed project and Alternative 2, but more than the No Project alternative.

Buildout under Alternative 1 is shown in Figure 4.2-1.

ALTERNATIVE 2

Alternative 2 fills in growth on infill sites and in master plan areas Southeast 1 (Morgan Ranch), Southeast 2, Southeast 3, Southeast 4, and Southeast 5, filling out the Study Area boundary in the southeast. With the development of areas Southeast 4 and 5, a new freeway interchange at Youngstown Road, in the southeast corner of the Study Area, would be required, as would major upgrades to the potable water system. This alternative represents the maximum amount of residential development that could take place in Turlock under proposed density/intensity standards without moving west of S.R. 99.

Alternative 2 could support a total of approximately 114,800 residents and 57,700 jobs, leading to a jobs/employed residents ratio of 1.26. This alternative produces the greatest number of housing units, new residents, and jobs compared with the other alternatives, but less than the proposed project. This alternative would support the mid-point population projection for the city of 115,000 residents.

Buildout under Alternative 2 is shown in Figure 4.2-2.

NO PROJECT ALTERNATIVE

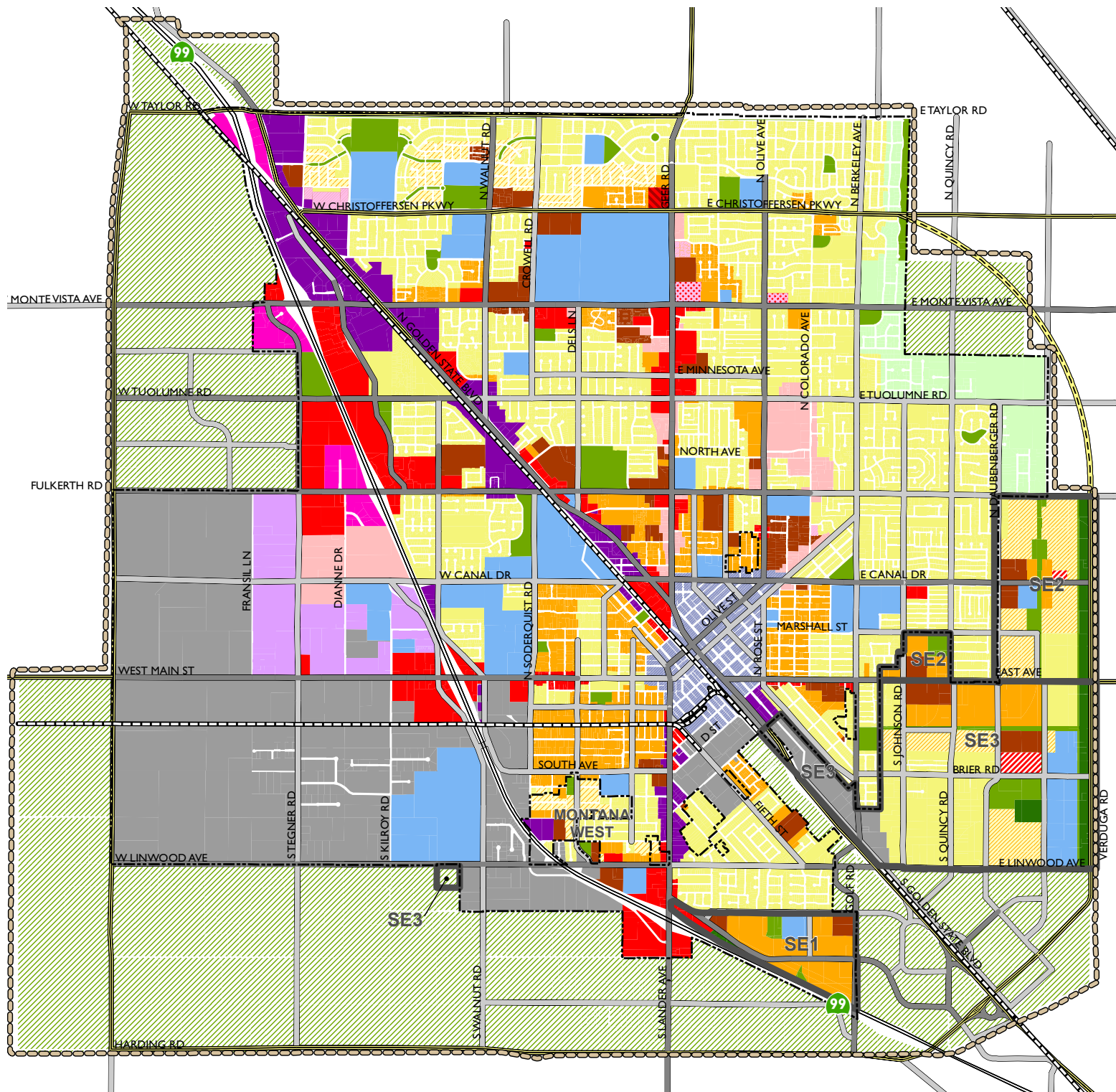
The No Project Alternative assumes continuation of land development under the existing General Plan and the current Zoning Ordinance (which implements the General Plan). Similar to Alternative 2, this alternative would result in development of the full southeast quadrant of the Study Area, but with a different development pattern and lower overall densities and intensities. Even though it covers the same land area as Alternative 2, the No Project alternative would actually add the fewest number of new housing units and jobs of any alternative due to its lower overall density and intensity of development. Buildout under the No Project alternative would support 36,100 housing units, approximately 101,600 residents, and 49,100 jobs (a jobs/employed residents ratio of 1.21). Residential development under the No Project alternative falls short of meeting even the low end population projection for the City of 106,000 residents by 2030.

The No Project alternative is illustrated in Figure 4.2-3.

PROPOSED PROJECT

The description of the proposed project is found in Chapter 2. Figure 4.2-4 illustrates the proposed General Plan with conceptual land uses in master plans visible.

Figure 4.2-1
Draft General Plan
Alternative I



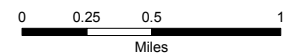
- Very Low Density Residential
- Low Density Residential
- Low-Medium Density Residential
- Medium Density Residential
- Medium Density Residential/Office
- High Density Residential
- High Density Residential/Office
- Downtown
- Neighborhood Center
- Community Commercial
- Community Commercial/Office
- Community Commercial/High Density Residential
- Highway Commercial
- Heavy Commercial
- Office
- Business Park
- Industrial
- Public
- Park
- Detention Basin
- Urban Reserve

Circulation 2030

- Freeway
- Expressway
- Potential Expressway Connection
- Arterial
- Collector
- Railroads

Boundaries

- Study Area Boundary
- City Limits & County Islands



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.

Figure 4.2-2
Draft General Plan
Alternative 2

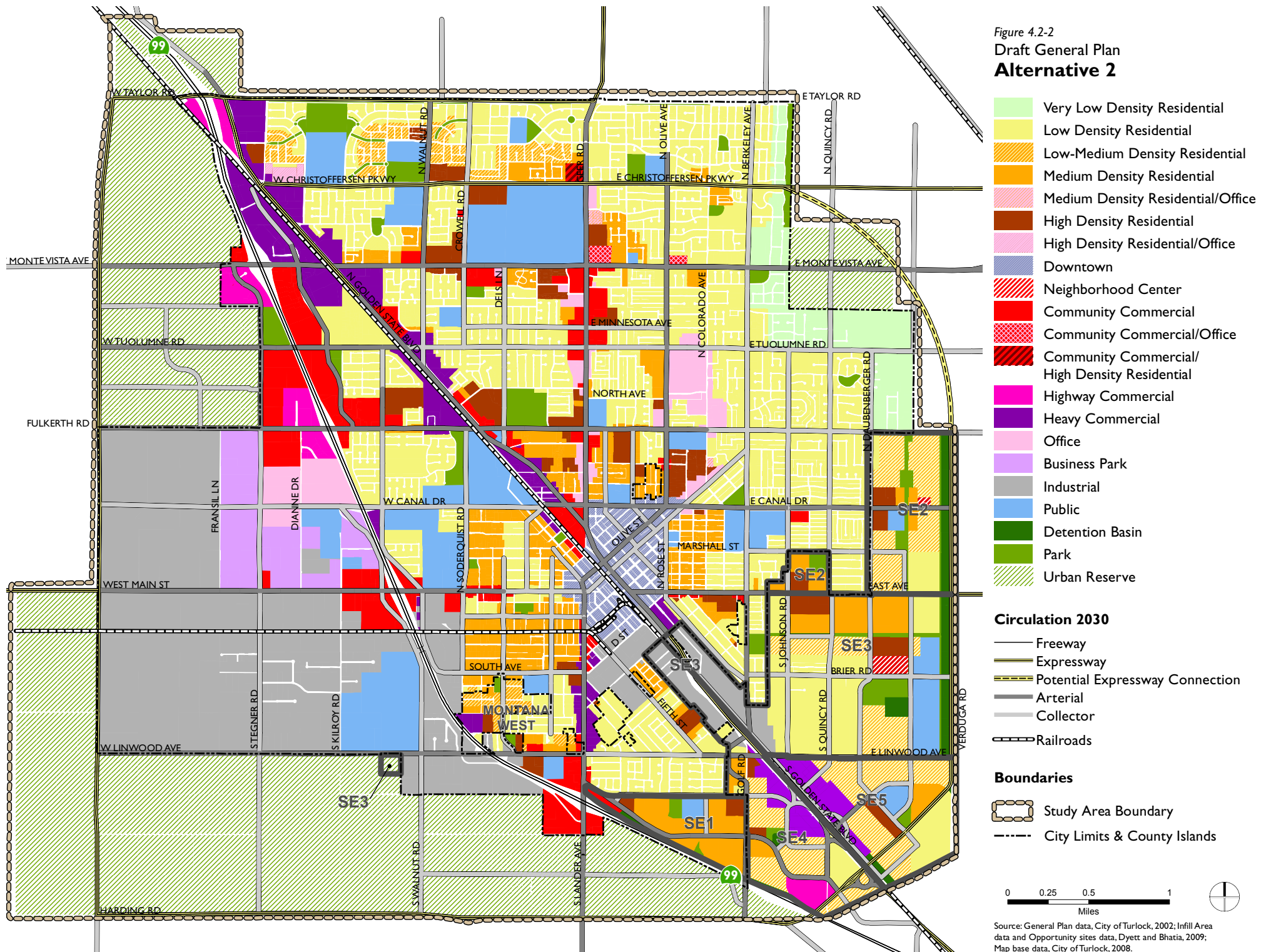
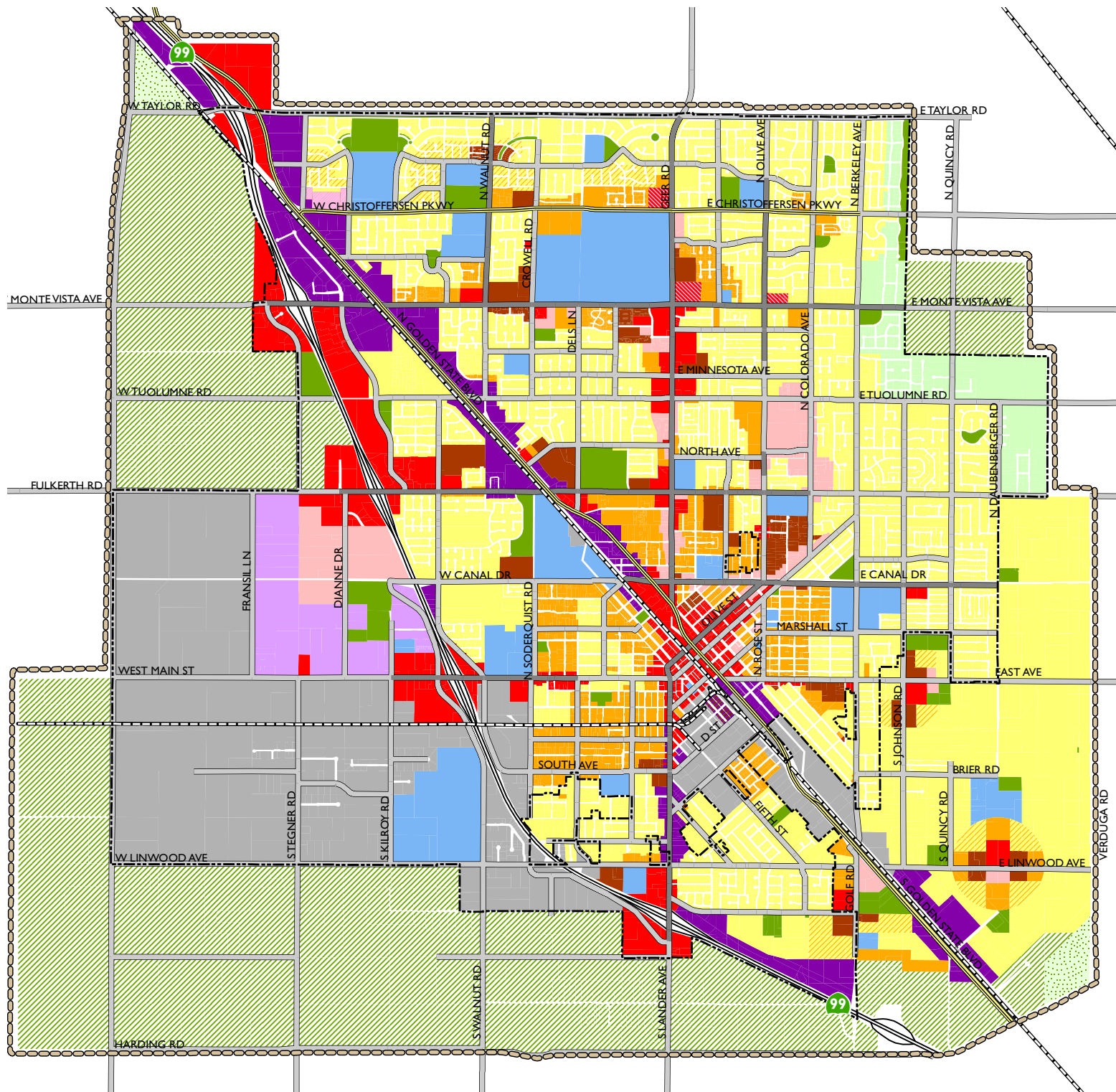


Figure 4.2-3
 Draft General Plan
No Project Alternative
(Existing General Plan)



- Very Low Density Residential
- Low Density Residential
- Low-Medium Density Residential
- Medium Density Residential
- High Density Residential
- High Density Residential/Office
- High Density Residential/Heavy Commercial/Industrial
- Community Commercial
- Community Commercial/Office
- Heavy Commercial
- Office
- Business Park
- Industrial
- Public
- Park
- Agriculture
- Urban Reserve

Existing Circulation Network

- Freeway
- Existing Expressway
- Existing Arterial
- Existing Collector

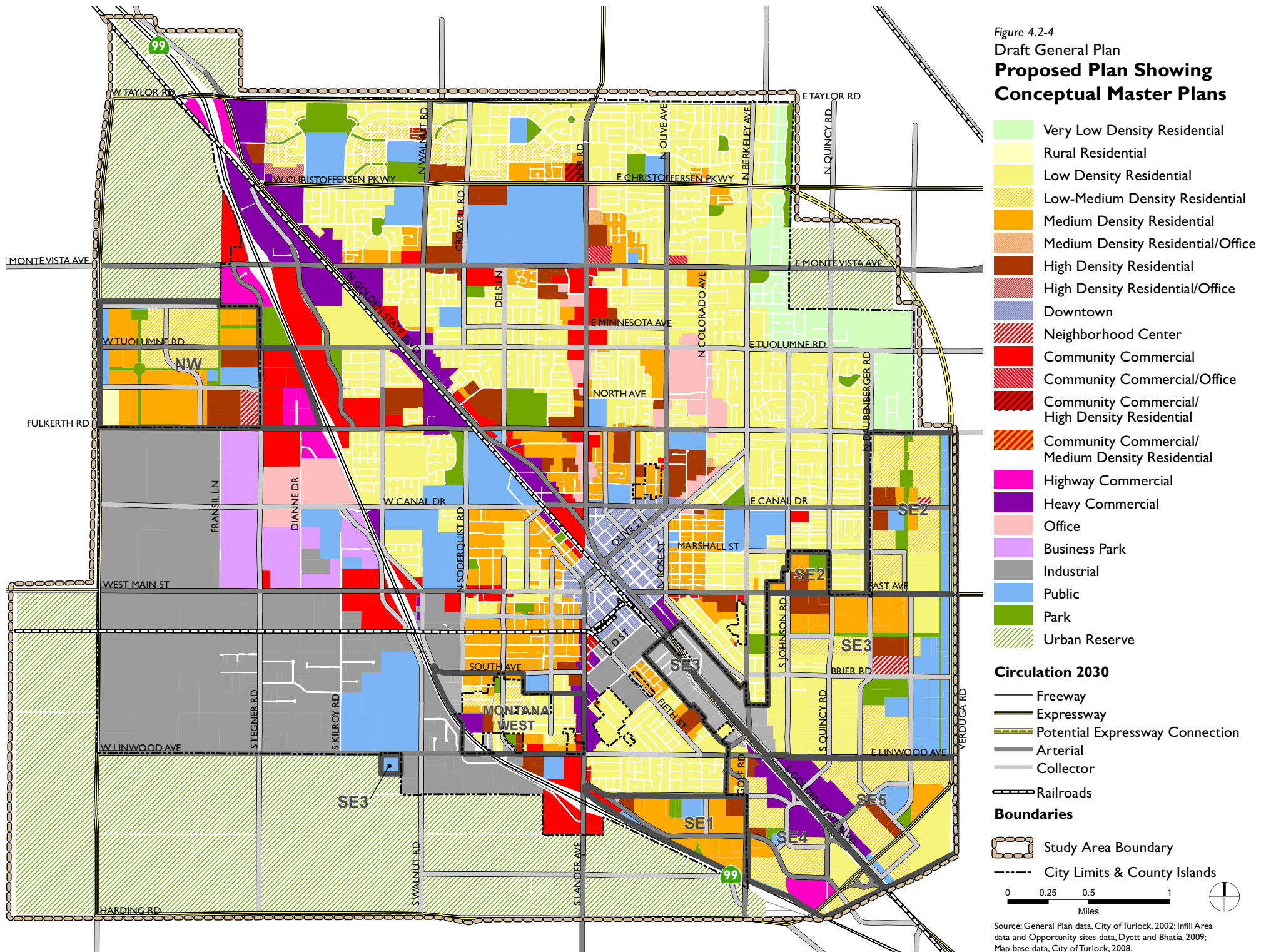
Boundaries

- Study Area Boundary
- City Limits & County Islands



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.

Figure 4.2-4
 Draft General Plan
**Proposed Plan Showing
 Conceptual Master Plans**



- Very Low Density Residential
- Rural Residential
- Low Density Residential
- Low-Medium Density Residential
- Medium Density Residential
- Medium Density Residential/Office
- High Density Residential
- High Density Residential/Office
- Downtown
- Neighborhood Center
- Community Commercial
- Community Commercial/Office
- Community Commercial/
High Density Residential
- Community Commercial/
Medium Density Residential
- Highway Commercial
- Heavy Commercial
- Office
- Business Park
- Industrial
- Public
- Park
- Urban Reserve

- Circulation 2030**
- Freeway
 - Expressway
 - Potential Expressway Connection
 - Arterial
 - Collector
 - Railroads

- Boundaries**
- Study Area Boundary
 - City Limits & County Islands
- 0 0.25 0.5 1
Miles

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.

4.3 Comparative Impact analysis

This comparative impact analysis of alternatives evaluates impacts in the same environmental issue areas analyzed in Chapter 3 for the proposed General Plan. Alternatives are compared to each other and the proposed project, with impacts assessed relative to baseline conditions using the same significance criteria used in Chapter 3. It is assumed that Alternatives 1 and 2 would generally include the same policies as those defined for the proposed General Plan, excluding site- or area-specific policies that would not apply because of differences in land use and extent of development.

AGRICULTURE

Development of each of the alternatives would result in a significant and unavoidable impact on agricultural resources, since there would be some conversion of important farmland to urbanized uses under all of the alternatives. Table 4.3-1 compares the relative differences in potential loss of farmland and crops under each Alternative and the proposed General Plan. A comparison of lands subject to Williamson Act contracts are also shown; however, for all alternatives, it is assumed that proper procedures (including minimizing early termination of active contracts), contained within the Williamson Act itself, will be followed as development occurs.

TABLE 4.3-1: COMPARISON OF DEVELOPMENT AREA COINCIDING WITH FARMLAND AND WILLIAMSON ACT CONTRACTS FOR ALTERNATIVES AND THE PROPOSED GENERAL PLAN (NET ACRES LOST)

<i>Resource</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>No Project</i>	<i>Proposed General Plan</i>
Farmland (acres)				
Prime	570	615	672	1,081
Local Importance	59	84	82	84
Statewide Importance	323	633	385	663
Unique	63	125	107	125
TOTAL	1,015	1,457	1,246	1,953
Williamson Act Contracts				
Active Status	222	238	227	318
Non-Renewal Status	4	33	4	168
TOTAL	226	271	231	486

Source: Dyett & Bhatia, 2011.

- *Alternative 1*: Development proposed under Alternative 1 would result in a reduced impact to agricultural resources compared to the proposed General Plan. Approximately half as many acres of land designated as Prime, Unique or Farmland of Statewide Importance (1,015) would be converted to urban uses under this alternative compared to the amount of important farmland that would be converted to urban uses under the proposed General Plan (1,953). In comparison to Alternative 2, approximately one third as many acres would be converted. Alternative 1 coincides with the fewest acres of cropland converted and active Williamson Act contracts ended compared with the proposed General Plan, Alternative 2, or the No Project alternative.

- *Alternative 2:* Development proposed under Alternative 2 would also result in lower agricultural resources impacts compared to the proposed General Plan, though more farmland would be converted than in Alternative 1. Alternative 2 would result in the same amount of agricultural conversion in the Southeast as the proposed General Plan, but would leave the land in the proposed Northwest development area in agricultural use.
- *No Project:* Implementation of the No Project alternative would result in less of an impact to agricultural resources compared to the proposed General Plan or Alternative 2, but slightly more than Alternative 1. This is because the development footprint for the No Project Alternative is smaller than the proposed Plan, but very similar to Alternative 1. Impacts to croplands and Williamson Act contracts are roughly the same as Alternative 1.

LAND USE AND HOUSING

Table 4.3-2 compares the development potential of residential and non-residential uses under each Alternative and the proposed General Plan, over and above totals from existing and approved projects. Alternative 1 results in the lowest growth alternative in terms of residential and non-residential development; Alternative 2 represents the highest growth alternative to the proposed Plan. None of the alternatives would divide an existing community or displace substantial numbers of existing housing or people. Similar to under the proposed General Plan, each alternative, if adopted, would be the guiding document in Turlock, indicating that local plans and zoning would be amended to conform to the alternative. The exception is the No Project Alternative, which represents the current General Plan, implemented by the current zoning ordinance.

- *Alternative 1:* Alternative 1 represents the second-lowest growth development scenario, after the No Project Alternative. This alternative produces fewer housing units and less non-residential space compared with Alternative 2 and the proposed General Plan. Alternative 1 only allows for enough growth to support the low end of Turlock's population projection, meaning that if population growth occurs more rapidly, then a cumulative regional impact could result if population and employment growth in the region may be required to locate in other parts of the region. It also supports the second-lowest number of new jobs.
- *Alternative 2:* This Alternative would result in the most housing units compared with the other alternatives, but not as many as the proposed General Plan. At buildout, Alternative 2 would support a total population of around 114,800 in 40,800 housing units. It would also produce more non-residential space and jobs than Alternative 1 and the No Project alternative, but still less than the proposed General Plan.
- *No Project:* The No Project alternative results in the fewest number of new housing units (36,100) and smallest increase in non-residential development and jobs. Buildout of the No Project Alternative would support a citywide population of 101,600—falling short of the low-end population projection for Turlock. This could result in a cumulative regional impact as population and employment growth in the region may be required to locate in other parts of the region. The No Project Alternative also has the fewest acres designated for parks, public facilities, and schools.

TABLE 4.3-2: COMPARISON OF BUILDOUT DEVELOPMENT POTENTIAL FOR ALTERNATIVES AND THE PROPOSED GENERAL PLAN

	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>No Project</i>	<i>Proposed General Plan</i>
Residential (Units)	37,120	40,780	36,100	45,040
Community Commercial (SF)	6,100,000	6,100,000	8,600,000	6,700,000
Heavy and Highway Commercial (SF)	6,700,000	8,900,000	8,600,000	9,300,000
Business Park & Office (SF)	3,100,000	3,100,000	3,700,000	3,100,000
Industrial (SF)	6,500,000	6,700,000	6,600,000	6,700,000
Downtown (SF)	5,500,000	5,500,000	0 ¹	5,500,000
Parks (Acres)	349	361	346	396
Public/Schools (Acres)	974	996	802	1,013

1. The No Project Alternative (current General Plan) has a Downtown Overlay zoning district that would allow development at the intensities allowed under the Proposed Project and the other alternatives; however, its General Plan designation for this area is Community Commercial.

Source: Dyett & Bhatia, 2009.

TRANSPORTATION

The differences in projected land use development for each alternative translate into varying levels of demand for transportation services throughout the City. It is assumed that the same policies and roadways improvements are in place for the proposed General Plan and Alternatives 1 and 2, so there would be similar levels of emphasis on creating walkable streets, pedestrian-supportive neighborhoods, and opportunities for bicycling and using public transit. The No Project alternative assumes the existing General Plan circulation network. Table 4.3-3 compares the effects of the alternatives and the proposed General Plan on the citywide transportation system, with existing conditions shown for reference.

TABLE 4.3-3: COMPARISON OF CUMULATIVE CITYWIDE TRANSPORTATION MEASURES FOR ALTERNATIVES AND THE PROPOSED GENERAL PLAN

<i>Measures of Daily Travel</i>	<i>Existing</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>No Project</i>	<i>Proposed General Plan</i>
Total Vehicle Trips	361,000	691,180	711,880	665,900	777,980
Total Vehicle Miles Traveled	1,400,600	2,589,400	2,647,400	2,596,700	2,795,300
Total Vehicle Hours Traveled	36,100	76,400	78,500	81,200	85,400
Avg. Vehicle Speed	39	34	34	32	33
Vehicle Hours of Delay	2,000	13,100	13,500	17,300	16,200

Source: Omni-Means, 2012

The proposed General Plan results in the highest levels of vehicle activity, as measured by the number of vehicle trips and vehicle miles travelled. This is largely because the proposed General Plan includes more employment than any of the other alternatives. All of the alternatives, similar to the proposed General Plan, create significant and unavoidable impacts based on County and Caltrans LOS policy, and on the few city roadways that cannot be feasibly improved.

The impacts of Alternatives 1 and 2 may be of slightly lower magnitude than the proposed General Plan, and the impacts may occur in somewhat different locations depending on the geographic pattern of development presented in each alternative. Despite having lower total vehicle trips, miles traveled, and hours traveled than Alternatives 1 and 2 and the proposed General Plan, the No Project alternative has lower average vehicle speeds and higher vehicle hours of delay. This is due to the expanded roadway network developed to support the proposed General Plan, which was also assumed in the Alternatives 1 and 2 analyses. The following sections on each alternative summarize impacts for each.

- *Alternative 1:* Alternative 1 includes substantial levels of new development, including buildout of master plan areas Southeast 1 (Morgan Ranch Specific Plan), Southeast 2, and Southeast 3. Alternative 1 includes significant new residential and nonresidential development compared to existing conditions, but would generate generally similar amounts of new vehicle miles travelled as the No Project alternative, and fewer vehicle hours travelled, despite generating more vehicle trips. Vehicle hours of delay would also be significantly less than the No Project alternative. The increased speeds, lower delay, and generally increased mobility under Alternative 1 is due in part to assuming the entire proposed General Plan circulation network built out, and in part due to the denser concentration of new development in the southeast areas of the City when compared to the No Project alternative.
- *Alternative 2:* Alternative 2 includes significantly more residential and nonresidential development than Alternative 1, assuming the buildout of Southeast 1, 2, 3, 4, and 5. Alternative 2 would generate generally slightly more new vehicle trips, vehicle miles travelled, vehicle hours travelled, and vehicle hours of delay than Alternative 1. As with Alternative 1, however, Alternative 2 would still generate fewer hours of delay and vehicle hours travelled than the No Project alternative despite generating more vehicle trips. Again, the increased speeds, lower delay, and generally increased mobility under Alternative 2 is due in part to assuming the entire proposed General Plan circulation network built out, and in part due to the denser concentration of new development in the southeast areas of the City when compared to the No Project alternative.
- *No Project:* The No Project alternative results in the fewest amount of new vehicle trips generated, and fewer vehicle miles travelled than Alternative 2 and the proposed General Plan. However, the No Project alternative has greater vehicle hours travelled than Alternatives 1 and 2, lower average vehicle speeds, and higher vehicle hours of delay than both other alternatives and the proposed General Plan. The added delay and slower travel times are likely a result of the circulation network from the proposed General Plan not being included in the analysis. The impacts of this alternative are more significant than Alternatives 1 and 2 because the mitigation and policy efforts of the proposed General Plan are not reflected in this scenario.

AIR QUALITY

Over the long term, the full implementation of the proposed Turlock General Plan would result in an increase in certain criteria pollutant emissions primarily due to an increase in vehicle-miles traveled. Overall, implementation of the proposed General Plan would result in a significant net increase of particulate matter which would exceed the annual SJVAPCD thresholds for PM10 and PM2.5, primarily as a result of increased entrained dust raised from roadways. Emissions of other ozone precursors—reactive organic gases (ROG) and nitrogen oxides (NO_x)—are expected to decrease by 2030, primarily as a result of increasingly stringent emission control measures ARB has adopted for new vehicle engines, particularly diesel engines. The proposed Plan also commits the City to support federal, State and Air District efforts to reduce emissions through its trip reduction and other air

4 Analysis of Alternatives

quality policies. Proposed General Plan policies intend to support the SJVAPCD's efforts to achieve and maintain air quality standards.

Air quality problems in the Valley are regional in nature, and this impact is considered a significant cumulative impact. The proposed Plan's contribution to this cumulative impact is considerable, because it would result in a greater increase in PM10 and PM2.5 compared to current conditions than would the No Project scenario in which growth occurs according to current land use regulations.

Stationary sources and diesel-fueled mobile sources would also generate emissions of TACs including diesel particulate matter that could pose a health risk. This impact is also expected to be potentially significant under the proposed Plan.

Implementation of the proposed Turlock General Plan in itself would not create objectionable odors affecting a substantial number of people. In addition, the proposed General Plan would not conflict with or obstruct implementation of regional air quality plans.

Air pollutant emissions are a function of human activity and are related to population and consequently to vehicle miles traveled (VMT) by the population. Development under all alternatives would result in increases in population and employment and consequently increases in traffic and air pollutant emissions. (Projected population, jobs, vehicle trips, and VMT are shown for each Alternative and the proposed General Plan, in tables 4.2-1 and 4.3-3.) Increasingly strict State and Air District rules governing criteria air pollutants have resulted in cleaner vehicles, and for nitrogen oxides and reactive organic gases, these gains are projected to more than offset increased mobile source emissions under all of the future growth scenarios considered. However, for each Alternative and the No Project scenario, the substantial increase in VMT over existing conditions would result in a significant air quality impact concerning PM10 and PM2.5, as would also occur with the proposed General Plan. Proposed General Plan policies would also apply to Alternatives 1 and 2 and further reduce impacts, but the impact would remain significant in all cases. Stationary sources and diesel-fueled mobile sources would also generate emissions of toxic air contaminants (TACs) including diesel particulate matter that could pose a health risk. This impact is also expected to be potentially significant under the proposed Plan and all alternatives.

Air quality problems in the Valley are regional in nature, and the impacts to air quality with regard to particulate matter and potential exposure to TACs are considered significant cumulative impacts. The contribution of each alternative to these cumulative impacts is considerable. The proposed Plan commits the City to support federal, State and Air District efforts to reduce emissions through its trip reduction and other air quality policies. Proposed General Plan policies intend to support the SJVAPCD's efforts to achieve and maintain air quality standards. These policies would be shared by Alternatives 1 and 2. However, the No Project alternative would not include these policies.

- *Alternative 1:* VMT for this alternative would be approximately 7 percent less than under the proposed General Plan. Alternative 1 would thus result in less air pollutant emissions than the proposed General Plan. However, VMT would increase by 85 percent over existing conditions. Resulting PM10 and PM2.5 emissions would have a significant impact, though would be less than under the proposed Plan. Alternative 1 would also involve less population and employment growth than the proposed Plan and may be expected to have comparatively less impact with regard to TACs, though this impact is still potentially significant.
- *Alternative 2:* VMT for this alternative would be approximately 5 percent less than under the proposed General Plan. Alternative 2 would thus result in less air pollutant emissions than the

proposed General Plan. However, VMT would increase by 89 percent over existing conditions, and the impact of increased PM10 and PM2.5 emissions would remain significant. Alternative 2 would also involve less population and employment growth than the proposed Plan and may be expected to have comparatively less impact with regard to TACs, though this impact is still potentially significant.

- *No Project*: VMT for this alternative would be approximately 7 percent less than under the proposed General Plan. However, this No Project Alternative would not benefit from proposed General Plan policies that seek to reduce VMT and air quality impacts. Still, VMT would increase by 85 percent over existing conditions, and the impact of increased PM2.5 and PM10 would still be significant. The No Project scenario would involve the least population and job growth of any of the scenarios and so the potential impact of TACs would be less.

CLIMATE CHANGE

Greenhouse Gas (GHG) emissions forecasts are based upon anticipated population and job growth, and the resultant increase in VMT, electricity use, and waste generation, as described in Section 3.5: Climate Change and Greenhouse Gases. The analysis of GHG emissions takes into consideration emissions reductions that would result from effective implementation of State legislation, including Assembly Bill 1493: Pavley; Senate Bill 1078 Sher and Executive Order S-14-08: Renewables Portfolio Standard; and Executive Order S-01-07: Low Carbon Fuel Standard. It also seeks to account for the effects of proposed land use mix of the General Plan and alternatives on vehicle-miles traveled, and the effects of the mix of detached and attached single-family and multi-family housing as it relates to energy use.

The proposed General Plan involves the most population and employment growth of any of the alternatives, and is projected to result in the highest aggregate GHG emissions. Implementation of the Plan is projected to result in 948,200 metric tons of CO₂e (MTCO₂e) in 2030, compared 748,400 MTCO₂e today, 867,300 MTCO₂e in the No Project scenario, and 878,700 and 910,300 MTCO₂e for Alternatives 1 and 2, respectively. However, the proposed General Plan would also result in the greatest decrease in emissions per service population when compared to existing conditions, from 7.5 in 2008 to 6.3 by 2030. Of all the scenarios, the No Project results in the lowest overall emissions but the highest per service population emissions.

The same pattern holds true when only emissions from passenger vehicles are considered and the effects of State mandates are screened out. Implementation of the proposed General Plan is expected to result in the greatest overall emissions but the lowest emissions per capita of any of the alternatives, while the No Project would result in the least overall emissions but the highest emissions per capita. Under all scenarios, both overall emissions and emissions per capita are projected to increase from existing conditions as a result of population and jobs growth, and increased VMT.

As noted in Section 3.5, several policies in the proposed General Plan, which would also be included in Alternatives 1 and 2, would result in further reductions in GHG emissions. However, given the current uncertainty in quantifying the impacts of the measures, it is not possible to determine in this analysis if the proposed policies would reduce emissions sufficiently to meet significance thresholds. In this analysis, the “efficiency metric” (per service population or per capita) is considered most relevant, and has been used for significance thresholds. The proposed Project does not meet the significance thresholds established here, based on State legislation, but it performs better than the No Project scenario or either alternative. Given projected growth over the planning period, the proposed Project would be the environmentally preferred alternative with regard to GHG emissions, though it would still result in a significant impact.

TABLE 4.3-4: PROJECTED GREENHOUSE GAS EMISSIONS BY ALTERNATIVE (MTCO₂E)

	Existing	2020				2030			
		Alt. 1	Alt. 2	No Project	Proposed General Plan	Alt. 1	Alt. 2	No Project	Proposed General Plan
Service Population									
Residents	71,100	87,710	92,330	86,400	97,470	104,490	114,790	101,630	126,770
Jobs	28,260	40,150	41,700	38,210	42,710	53,800	57,680	49,130	60,260
Total	99,360	127,860	134,030	124,610	140,180	158,290	172,470	150,760	187,030
GHG Emissions from Top 3 Sources (metric tons CO₂e per year)									
Electricity Use ¹	376,200	424,100	444,300	416,100	464,500	524,700	572,400	504,200	618,600
Transportation ²	263,800	301,900	305,900	302,400	316,300	299,700	306,400	300,500	323,500
Solid Waste	108,400	152,700	160,100	148,800	167,400	196,900	214,500	187,500	232,700
Total	748,400	878,700	910,300	867,300	948,200	1,021,300	1,093,300	992,200	1,174,800
CO ₂ e Per Service Population	7.53	6.87	6.79	6.96	6.76	6.45	6.34	6.58	6.28
Meets Significance Threshold? ³	NA	No	No	No	No	No	No	No	No
CO ₂ e Per Capita from Passenger Vehicles ⁴	3.71	4.16	4.00	4.23	3.92	4.67	4.34	4.81	4.15
Meets Significance Threshold? ⁵	NA	No	No	No	No	No	No	No	No

Notes:

1. Residential and commercial emissions reflect a 9.6% emissions reduction in 2020 and a 7.7% reduction in 2030 compared to overall Business-as-Usual emissions in 2030 as a result of application of State mandates.
2. Transportation emissions reflect Pavley 1 and 2 and the Low Carbon Fuel Standard, estimated to result in a 6.1% reduction in GHGs in 2030 and a 16.0% reduction in 2030 compared to overall Business-as-Usual emissions.
3. Significance thresholds established as 6.6 MTCO₂e per SP in 2020, 3.8 MTCO₂e per SP in 2030, to match State goals under AB 32 and EO S-3-05.
4. State mandates (Pavley I and II and LCFS) are screened out for this measure.
5. Significance thresholds established as 3.53 in 2020 and 3.47 in 2030 to meet reduction goals for StanCOG under SB 375. Reductions from State mandates not counted.

Sources: California Department of Finance, 2008; California EDD, 2008; CARB, 2008; CARB, 2012; Dyett & Bhatia, 2012; Omni Means, 2012.

- *Alternative 1.* Alternative 1 would result in 8,000 fewer housing units, 22,300 fewer residents, and 6,500 fewer jobs than the proposed General Plan in 2030. Due to the smaller amount of growth in this alternative, annual VMT within the city would be approximately 75 million less under Alternative 1 than under the proposed General Plan, a difference of 8 percent. Alternative 1 results in the fewest total emissions of any scenario except the No Project. On the other hand, emissions per service population are slightly higher for Alternative 1 than for any other except for the No Project. Alternative 1 would include policies that address GHG emissions, thereby further reducing emissions, but given the uncertainty in ascertaining the effects of these policies, they are not quantified in this analysis. Alternative 1 would constitute a significant cumulative impact, and its contribution would be considerable. However, it would perform more favorably per service population and per capita compared to the No Project alternative. Though Alternative 1 would result in fewer total emissions than the proposed Project or Alternative 1, it would have higher emissions per service population (which are used as significance thresholds for this analysis) than the proposed Plan.
- *Alternative 2.* Alternative 2 would result in an estimated 54 million fewer VMT than under the proposed General Plan, a difference of 5.5 percent. Alternative 2 results in the second to highest total emissions, behind only the proposed General Plan, but results in the second lowest emissions per service population, indicating that it is more efficient than Alternative 1 at accommodating growth. Alternative 2 would include policies that address GHG emissions, but these policies are not quantified here. Alternative 2 would not meet significance thresholds based on meeting State goals, and its contribution to the significant cumulative impact would be considerable. It would have lower per service population and per capita emissions compared to the No Project (Business as Usual) scenario. Though Alternative 2 would result in fewer total emissions than the proposed Project, it would have higher emissions per service population (which are used as significance thresholds for this analysis) than the proposed Plan.
- *No Project.* VMT within the city under the No Project scenario would be about 73 million less than under the proposed General Plan, a difference of about 7.6 percent. The No Project Alternative results in the lowest total emissions but the highest emissions per service population and per capita of any of the Alternatives. The No Project Alternative does not include any new policies to support further GHG emissions reductions, as in the proposed General Plan and Alternatives 1 and 2. With its inferior performance with regard to GHG emissions efficiency factors, the No Project would not meet significance thresholds based on State goals, and its contribution to the significant cumulative impact would be considerable.

NOISE

The comparison of noise impacts under the alternatives and the proposed General Plan is based on traffic volume generated on the roadway network. In terms of construction related noise and vibration, the amount of construction is correlated with the extent of development, and so it may be assumed that the proposed General Plan would have relatively greater impacts than Alternatives 1 and 2, with the No Project alternative having the least impact. However, the No Project alternative would not benefit from the proposed General Plan's policies.

- *Alternative 1:* Alternative 1 generates fewer trips compared with the proposed General Plan, since it projects less development overall. Citywide noise levels associated with this Alternative are therefore likely to be lower than the proposed General Plan. Similarly, Alternative 1 is likely to involve less construction and have less construction-related impact than the proposed General Plan.

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- *Alternative 2:* Although this alternative projects more households, it projects less non-residential development, thereby resulting in lower traffic volumes and associated noise levels than the proposed General Plan. There would be more construction than under Alternative 1, but less than under the proposed Plan.
- *No Project:* The No Project alternative results in the lowest levels of development and therefore projects the fewest trips and associated noise increases of all the alternatives and the proposed General Plan. This alternative would also involve the least construction. On the other hand, in terms of construction noise, this scenario would not benefit from noise mitigation policies provided by the proposed General Plan. Therefore, it may result in more noise impacts relative to rates of construction activity than the other alternatives.

AESTHETICS AND VISUAL RESOURCES

Differences in impacts on visual resources relate primarily to the extent and type of development under each of the alternatives, and to the impact on streetscape character. The No Project provides the least improvement of streetscape. The proposed General Plan and Alternatives 1 and 2 would result in similar impacts on visual resources.

- *Alternative 1.* With the least amount of new development projected for both residential and non-residential uses, this alternative would still include improved streetscape character. As under the proposed Project, views may be obstructed in localized areas due to new development though views would not be impacted on an area-wide basis and it is expected that overall, new views will compensate for any lost views. Existing views to agricultural lands are expected to be replaced by new views of agricultural land. Protection of existing neighborhoods would be the same as with the proposed General Plan, and short-term impacts would be less since the overall level of development is less.
- *Alternative 2.* With slightly less new development projected for housing units and comparable non-residential development, this alternative would still include improved streetscape character. As under the proposed Project, views may be obstructed in localized areas due to new development though views would not be impacted on an area-wide basis and it is expected that overall, new views will compensate for any lost views. Protection of existing neighborhoods would be the same as with the proposed General Plan, as would short-term impacts since the overall level of development is similar.
- *No Project.* This alternative would have a similar amount of new development Alternative 2, so it would have fewer short-term impacts on visual resources and make fewer changes to the existing character than the proposed Project. However, the No Project alternative does not include new policies for Traditional Neighborhood preservation, updates to the Downtown Master Plan, or design for urban/agricultural edge conditions, meaning that there could result in greater impacts to existing visual resources.

CULTURAL RESOURCES

Development proposed under each of the three alternatives would result in similar impacts to cultural resources as compared to the proposed General Plan. Similar to the proposed General Plan, urbanization associated with future growth might damage or destroy currently unidentified cultural resources during construction-related activities; however, policies in the proposed General Plan are in place to ensure appropriate handling of those resources should they be discovered. The intensification of land uses within the existing City limits may result in greater impacts on historic resources due to infill development, while construction and excavation activities on currently undeveloped land may

result in impacts to archaeological resources. Overall, potential cultural resources impacts would be similar to those for the proposed General Plan under each of the alternatives, and would be less than significant.

BIOLOGICAL RESOURCES

Each of the alternatives and the No Project scenario would result in similar levels of impacts on biological resources and habitats. Few, if any, land use changes are planned for areas in the study area where special status species are presumed to occur. The conversion of agricultural land to urbanized uses may affect foraging habits or movement of some species, with the greatest conversion anticipated with the proposed General Plan followed by Alternative 2 (see Agricultural section above for a comparison of converted agricultural land). As with the General Plan, compliance with federal and State law, combined with implementation of General Plan policies, would reduce potential impacts on special status species, habitat, and wildlife corridors to a less than significant level for all alternatives.

GEOLOGIC AND SEISMIC HAZARDS

Seismic and geologic hazard impacts are similar across all alternatives, as compared to the proposed General Plan, resulting in less than significant impacts.

- *Alternatives 1 and 2:* Alternatives 1 and 2 propose development that is similar in nature to that anticipated under the proposed General Plan, though the overall level of development will be lower in each of these alternatives, meaning there would be fewer structures and people that could be impacted. Current State and federal regulations require specific engineering and design criteria to minimize impacts related to geologic, soils, and seismic hazards, which would apply to local geologic/soil conditions under each of these alternatives and the proposed General Plan. Policies and implementation measures included as part of the proposed General Plan incorporate all applicable regulations to minimize these impacts. For this reason, geologic impacts under Alternatives 1 and 2 are considered somewhat less compared to those of the proposed General Plan due to smaller development footprints.
- *No Project:* The No Project alternative would also result in development that is similar in nature to that anticipated under the proposed General Plan, but with less development. Current State and federal regulations require specific engineering and design criteria to avoid impacts related to geologic, soils, and seismic hazards, which would apply to both the No Project Alternative and the proposed General Plan. For this reason, geologic impacts under the No Project Alternative are considered to be similar to those of the proposed General Plan, though somewhat lower due to the smaller development footprint.

HAZARDOUS MATERIALS

Hazardous materials impacts under Alternatives 1 and 2, as well as the No Project alternative, are considered to be similar to those of the proposed General Plan, since the nature of new development is fairly similar. Alternative 1 has the smallest development footprint and does not propose development in master plan area SE 4, where Turlock's one federal Superfund site is located; however, hazardous materials generation, storage and clean-up are heavily regulated by federal, State and local regulations that would apply to all scenarios, and residents would not be exposed to any hazards associated with that site even if it did develop. The No Project alternative would not include the additional hazardous materials and public safety policies and implementation measures contained as part of the proposed General Plan.

HYDROLOGY AND WATER RESOURCES

Potable water demand and supply constitutes a significant impact (Impact 3.12-1) for the proposed project, consequently the EIR alternatives are evaluated below in relation to this impact. Impacts 3.12-2 through 3.12-6 are less than significant for the preferred project and would also be less than significant for all of the EIR alternatives.

All of the alternatives are modifications of the preferred land use plan, but include a lower level of development. Consequently, the level of impact from the alternatives is less than from the preferred land use plan. However, the impacts relative to water demand and supply are still significant for all three alternatives—the difference is the year at which the sustainable groundwater supply would be exceeded, which is linked to the buildout population of the alternatives. Consequently, the mitigation measures necessary would be the same for the alternatives as for the proposed project, the difference being the timeframe in which they would be necessary.

- *Alternative 1:* Buildout of Alternative 1 will lead to future water demand in the year 2030 of 32,360 ac-ft per year and a demand at full buildout of 36,930 ac-ft per year. Currently, all of the City's water supply comes from ground water. City Staff have estimated that the groundwater basin can sustain an annual water demand of about 24,550 ac-ft per year. The water demand is projected to exceed 24,550 ac-ft per year in the year 2019 (versus 2017 for the proposed General Plan). Buildout of Alternative 1 without the Regional Surface Water Supply Project (RSWSP) will result in the depletion of the groundwater supply and a lowering of the local groundwater table level.
- *Alternative 2:* Buildout of Alternative 2 will lead to future water demand in the year 2030 of 34,970 ac-ft per year and a demand at full buildout of 39,550 ac-ft per year. The water demand is projected to exceed 24,550 ac-ft per year in the year 2018 (versus 2017 for the proposed General Plan). Buildout of Alternative 2 without the RSWSP will result in the depletion of the groundwater supply and a lowering of the local groundwater table level.
- *No Project Alternative:* The No Project alternative would result in growth of the City according to the previous General Plan, which would lead to a level of development similar to Alternative 1 (above). Consequently, the impacts associated with the No Project Alternative are also similar to those for Alternative 1.

PARKS AND RECREATION

The City's parkland supply would increase under each alternative, with the proposed General Plan resulting in the largest net gain in total acreage. The smallest increase in net parkland as well as the lowest number of acres per thousand residents would occur under the No Project alternative.

- *Alternative 1.* This alternative includes 225 acres of new parks and basins, resulting in 5.4 acres of parks and drainage basins per thousand residents and 3.7 acres of parks only per thousand residents. The parks only ratio is greater than existing conditions and is the highest among all alternatives and the proposed General Plan. This alternative would exceed the goal of 3.5 acres of parks only per thousand residents.
- *Alternative 2.* This alternative includes 263 acres of new parkland, which is greater than Alternative 1 or the No Project Alternative. However, because Alternative 2 projects the largest increase in population of the alternatives, it results in just 3.6 acres of parks only per thousand residents and 5.2 acres of parks and drainage basins per thousand residents. For the

parks only ratio, this is slightly more than under the proposed General Plan. This alternative would slightly exceed the goal of 3.5 acres of parks only per thousand residents.

- *No Project.* The No Project alternative only anticipates an increase of 121 acres of parks and basins, by far the lowest amount of parkland of any of the alternatives. This Alternative also has the smallest increase in population, resulting in 4.5 acres of parks and drainage basins per thousand residents and 3.3 acres of parks only per thousand residents. These ratios are lower than under existing conditions, the proposed General Plan, or Alternatives 1 and 2. Furthermore, the No Project Alternative would fall short of the proposed General Plan’s goal of 3.5 acres of parks only per thousand residents.

Table 4.3-5 illustrates the proposed parks and parks per thousand residents for each Alternative and the proposed General Plan.

TABLE 4.3-5: PARKLAND COMPARISON OF ALTERNATIVES

	<i>Existing</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>No Project</i>	<i>Proposed General Plan</i>
Park Acreage					
Parks Only	249	386	408	331	446
Parks and Drainage Basins	339	564	602	460	660
Population					
	71,100	104,487	114,786	101,632	126,774
Acres/1,000 Resident					
Parks Only	3.5	3.7	3.6	3.3	3.5
Parks and Drainage Basins	4.8	5.4	5.2	4.5	5.2

Source: Dyett & Bhatia, 2011

PUBLIC FACILITIES

The comparison of impacts on public facilities is based on the degree of increased demand on public schools, and public safety and emergency preparedness facilities and services. The proposed General Plan and all three alternatives propose some increased demand on these public services and utilities. With little new demand for public services and facilities, the No Project alternative is the environmentally superior alternative in this issue area. However, impacts on all public services and utilities were found to be less than significant.

Schools

The comparison of impacts on school facilities is based on the degree of increased student enrollment and demand for new school facilities. Each of the alternatives and the proposed General Plan exceed capacity of existing facilities. This analysis considered the same enrollment factors per new housing unit for all alternatives (provided by the Turlock Unified School District [TUSD]), as was used to evaluate the proposed General Plan. Table 4.3-6 shows the projected student enrollment for each Alternative and the number of schools needed. Adequate facilities are provided by each scenario through land designated for public or quasi-public facilities, or in the case of the proposed General Plan and Alternatives A and B, within Mixed Use Centers. Moreover, the TUSD, the current General Plan, and the proposed General Plan all support the sharing of City and TUSD facilities, which could result in lower costs and infrastructure needs. Each of the alternatives includes the students and facility needs resulting from approved development projects as well as development of the alternative scenario. All of the alternatives and the proposed General Plan result in a less than significant impact.

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- *Alternative 1.* In this alternative there will be fewer students, reducing demand for new schools in Turlock, compared with Alternative 2 and the proposed General Plan. Approximately 5,900 new students are anticipated in this Alternative, requiring four new school facilities.
- *Alternative 2.* This alternative results in a housing and population greater than Alternative 1, but less than the proposed General Plan, yielding approximately 7,950 new students and requiring five new schools.
- *No Project.* The No Project alternative results in the smallest population growth, and therefore the smallest increase in student enrollment. Under the No Project alternative there will be approximately 5,100 more students, requiring four new schools. Although new facilities would be required, a larger proportion of students would be accommodated through existing schools and potentially smaller facilities.

TABLE 4.3-6: COMPARATIVE NEW STUDENT PROJECTIONS AND SCHOOL FACILITY NEED ESTIMATES

	<i>Existing Available Capacity</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>No Project</i>	<i>Proposed General Plan</i>
New Students ¹		5,870	7,949	5,124	9,854
Elementary (K-6)	544	3,244	4,373	2,861	5,452
Middle (7-8)	565	802	1,089	695	1,341
High (9-12)	223	1,824	2,487	1,568	3,061
Schools Needed ²		4	5	4	8
Elementary (K-6)		3	4	3	6
Middle (7-8)		0	0	0	1
High (9-12)		1	1	1	1 ³

Notes:

1. Student generation rates are from the TUSD 2008 School Facilities Fee Review. Pupils per new single family detached housing unit are: 0.37 for K-6; 0.10 for 7-8; and 0.24 for 9-12. Pupils per new single family attached/multi-family housing unit are: 0.21 for K-6; 0.05 for 7-8; and 0.10 for 9-12. Numbers do not sum precisely due to rounding.
2. TUSD 2008 School Facilities Fee Review indicates school capacity at 880 students per school for K-6; 1,100 students per school for grades 7-8; and 2,100 students per school for 9-12.
3. Full buildout of the proposed General Plan may result in the need for an additional small high school.

Sources: TUSD School Facilities Fee Review, 2008; Dyett & Bhatia, 2011

Public Safety and Emergency Preparedness

Current police and fire protection is designed to meet the needs of the existing population and employment base. Implementation of the proposed General Plan or any of the alternatives would result in an increase in residents and employees, thereby increasing the long-term demand for police assistance and emergency fire response. 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. As a result, the City is in the process of developing a new public safety facility for police and fire administration, to be located at 244 North Broadway. The facility will accommodate a projected staff of 242 by 2030, as calculated in the Needs Assessment, thus easing the service burden expected from the proposed General Plan or any of the alternatives. Even with the new public safety facility, however, additional fire facilities will be necessary in areas where significant new development would occur in order to maintain acceptable response times. Policies that require the maintenance of levels of service would be included in all alternatives.

- *Alternative 1:* With less new development overall, Alternative 1 would place less demand on police, fire, and emergency services and facilities than the proposed General Plan or Alternative 2. However, Alternative 1 would include more development than the No Project, and therefore more demand on services. Expansion of existing capacity would be made based on identified needs, as described above, and would include the new Public Safety Building and one new fire station in the Southeast, but no station in the Northwest as under the proposed General Plan.
- *Alternative 2:* This alternative provides for higher population and job growth than Alternative 1 or the No Project, and therefore would have a greater impact on demand for police, fire, and emergency services. It provides for less overall growth than the proposed General Plan, however, and would have a smaller impact on services as a result. Expansion of existing capacity would be made based on identified needs, as described above, and would include the new Public Safety Building and one new fire station in the Southeast, but no station in the Northwest as under the proposed General Plan.
- *No Project:* The No Project alternative would result in the smallest population and job increase, causing the least impact on fire and police resources. However, expansion of existing capacity may still be necessary as the population grows. For this scenario, improvements would be made based on existing General Plan policies, which specify a five-minute response time standard for fire and emergency services, likely necessitating a new fire station in the Southeast. The Public Safety Building would also go forward.

UTILITIES

Demands on the City's wastewater and solid waste systems would increase under all of the alternatives, as well as the proposed General Plan, due to increases in population. Because these increased demands are proportional to increases in urbanized area and total population, the levels of impact from the alternatives are less than from the proposed project.

Alternatives 1 and 2 are assumed to include the same set of policies in the proposed General Plan. This includes direction to prepare master plan documents for the potable water supply and distribution, sanitary sewer system, Turlock Regional Water Quality Control Facility (TRWQCF), and storm water system. The No Project Alternative assumes the continuation of policies in the current General Plan.

Wastewater

All of the alternatives and the proposed General Plan will require an expansion of the TRWQCF, and would result in sanitary sewer flows beyond capacity of current pipes. However, Alternatives 1 and 2 would share the same policies as the proposed General Plan, requiring the evaluation of sewer capacity and construction of appropriately sized wastewater infrastructure to serve new development as it occurs in the master plan areas. (Existing infrastructure is adequate to serve infill development.) Policies in the existing General Plan, which would apply to the No Project Alternative, similarly require maintenance of facility master plans and construction of infrastructure to serve new development. Similar to the proposed General Plan, the impact is considered to be less than significant for all alternatives.

Solid Waste

Solid waste generation is calculated on a per capita basis, such that Alternative 1 and the No Project Alternative, which have lower population growth, will result in less waste generated and therefore require less landfill space. Alternative 2 will generate more waste and therefore require more landfill

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space than Alternative 1 and the No Project Alternative, but less than the Proposed Project. The Fink Road Landfill, which accepts Turlock's waste, has capacity for Class III solid waste through 2029 and Class II ash through 2043. It is expected to accommodate the city's solid waste until that point (although this does not account for major changes in the solid waste generation from other jurisdictions that landfill), as well as waste from other communities, and Stanislaus County Department of Environmental Resources (which operates the landfill) is currently formulating plans for an expansion of the facility that would add another 10-15 years to its expected lifespan. However, ongoing waste reduction and waste diversion efforts by the City are expected to reduce per capita waste over time. As a result, for each Alternative and the proposed General Plan waste would be accommodated and the impact is less than significant.

4.4 Environmentally Superior Alternative

CEQA Guidelines require the identification of an environmentally superior Alternative among the alternatives analyzed in an EIR. Alternative 1 has been selected as the environmentally superior alternative. Table 4.4-1 summarizes the relative impacts for each alternative, for all of the topics discussed in this chapter.

Alternative 1 has the least impact, relative to the proposed General Plan, Alternative 2, and the No Project Alternative in five of the six environmental areas that have significant impacts: Traffic and Circulation, Agricultural Resources, Hydrology, Air Quality, and Noise.

Alternative 1 has relatively more adverse impacts in the area of Climate Change and Greenhouse Gases (an area of significant impact) and in the area of Land Use and Housing, when compared to the proposed General Plan and Alternative 2. Particularly, in terms of Land Use, Alternative 1 only provides for enough development to meet the low end of Turlock's population projections. By allowing just three master plan areas to develop, Alternative 1 could result in a cumulative regional impact by potentially failing to accommodate Turlock's population growth and putting additional development pressure on the surrounding unincorporated areas or other parts of the region. Alternative 1 would accommodate 104,500 residents at buildout, which assumes that Turlock would grow at an average annual rate of 1.9 percent through 2030. By comparison, Turlock grew by 2.6 percent per year over the last 20 years. If the 2.6 percent rate continued, Alternative 1 would reach buildout in just 15 years.

Regarding greenhouse gas emissions, while Alternative 1 results in the second-lowest total greenhouse gas emissions (second only to the No Project), its emissions per service population are second-highest.

TABLE 4.4-1: COMPARISON OF IMPACTS

<i>Topic</i>	<i>Proposed General Plan</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>No Project</i>
Agriculture	4	1	3	2
Land Use and Housing	1	3	1	4
Transportation	3	1	2	4
Air Quality	4	1	3	2
Climate Change	1	3	2	4
Noise	4	1	3	1
Aesthetics and Visual Resources	1	1	1	4
Cultural Resources	-	-	-	-
Biological Resources	-	-	-	-
Geologic and Seismic Hazards	-	-	-	-
Hazardous Materials	-	-	-	-
Hydrology and Water Resources				
Water Supply	4	1	3	1
Storm Drainage and Flooding	-	-	-	-
Parks and Recreation	3	1	1	4
Public Facilities				
Schools	4	1	1	1
Public Safety and Emergency Preparedness	-	-	-	-
Utilities				
Water Supply	See Hydrology & Water Resources			
Wastewater	-	-	-	-
Stormwater	See Hydrology & Water Resources			
Solid Waste	-	-	-	-
Grand Total	29	14	20	27
<i>Significant Impacts Only</i>	<i>20</i>	<i>8</i>	<i>16</i>	<i>14</i>
1-4	= Relative Impact (1 = lowest, 4 = highest)			
-	= No Difference and Less than Significant			
	= Significant Project Impact			

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The No Project Alternative results in the lowest amount of population growth, but due to its lower overall density and intensity of development, its larger urban development footprint results in greater development of agricultural land and the highest VMT and carbon emissions per service population of any of the alternatives. It also does not include many of the policies that would ensure development of Complete Streets, greater energy efficiency and sustainable site design for new development, or others that reduce air pollution and carbon emissions. Additionally, the No Project Alternative would not support enough population to meet the low end population projection for Turlock in 2030, so it would not meet the city's future needs.

Alternative 1 has the lowest environmental impact overall, and the lowest amount of significant impacts, making it the environmentally superior alternative. While this is the case, by only accommodating the low end of Turlock's projected population growth, Alternative 1 could put more growth pressures on other cities in the region and unincorporated portions of Stanislaus and Merced counties.

Alternative 2 does a better job of meeting Turlock's anticipated growth needs, accommodating the projected midpoint of the city's population growth forecasts. Largely because it accommodates more population and jobs—resulting in more agricultural land converted and more vehicle miles traveled—Alternative 2 has a greater impact on the environment than Alternative 1, but not as high as the proposed Project. This alternative represents a “middle ground” between accommodating growth and minimizing impacts on the environment, but it is not environmentally superior.

The proposed General Plan would fully accommodate the maximum projected population and job growth in Turlock, and plans for its orderly, sequential development through a master planning process. The key difference between the proposed Plan and Alternatives 1 and 2 is the amount of population growth accommodated, manifested in where and how much land is urbanized. Specifically, the proposed Project includes a residential master plan area on the west side of SR 99. The inclusion of this master plan area represents a policy decision to allow growth to potentially take place in that area during this General Plan time period (in Phase II) versus leaving it for consideration in the next General Plan. It is possible that this last growth area would be required by 2030, but not a certainty.

Allowing growth in Turlock through contiguous responsible development relieves some of this pressure elsewhere in the region and ensures that Turlock plays its part in accommodating the San Joaquin Valley's growth in a sustainable, compact, urban form. The proposed General Plan achieves all plan objectives while establishing policies to reduce environmental impacts to, but overall it would have greater impacts on the environment than the alternatives due directly to its larger buildout population.

4 Analysis of Alternatives

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5 CEQA Required Conclusions

This section presents a summary of the impacts of the proposed Turlock General Plan in several subject areas specifically required by CEQA, including significant irreversible environmental changes, significant unavoidable impacts, growth-inducing impacts, cumulative impacts, and impacts found not to be significant. These findings are based on the analysis provided in Chapter 3: Settings, Impacts, and Mitigation Measures.

5.1 Significant Irreversible Environmental Changes

CEQA Guidelines require the EIR to consider whether “uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely” (CEQA Guidelines Section 15126.2(c)). “Nonrenewable resource” refers to the physical features of the natural environment, such as land, waterways, etc. Irretrievable commitments of non-renewable resources associated with the proposed Turlock General Plan include:

AIR QUALITY

Increases in vehicle trips and traffic resulting from implementation of the proposed General Plan would potentially contribute to long-term degradation of air quality and atmospheric conditions in the region, other parts of California, and the Western United States. However, technological improvements in automobiles, as well as commercial and industrial machinery, may lower the rate of air quality degradation in the coming decades.

AGRICULTURAL LAND AND OPEN SPACE

Development under the proposed General Plan could result in the permanent conversion of approximately 1,986 acres of farmland to urban uses, 57 percent of which is classified as Prime Farmland. This conversion has a wide array of impacts, ranging from habitat modifications to visual disruptions to new noise sources and stormwater drainage constraints. Overall, this represents a significant and irreversible environmental change.

WATER CONSUMPTION

New development under the proposed General Plan will increase the demand for public water. It would place a greater demand on the city’s Municipal Services Department, which derives its water from groundwater sources in the Turlock Sub-Basin of the San Joaquin Groundwater Basin, to increase its water capacity. After the city grows to a population that requires more than the annual sustainable rate of groundwater supply (approximately 24,550 acre-feet), anticipated to occur around 2017, the city will have

5 CEQA-Required Conclusions

to implement a new water supply system either involving surface water or treated shallow groundwater. This increased demand for public water represents an irreversible environmental change.

ENERGY SOURCES

New development under the proposed General Plan would result in increased energy use, in the form of new buildings and transportation. Both residential and nonresidential development use electricity, natural gas, and petroleum products for power, lighting, heating, and other indoor and outdoor services; cars use both oil and gasoline. Use of these types of energy for new development would result in the overall increased use of nonrenewable energy resources. This represents an irreversible environmental change.

CONSTRUCTION-RELATED IMPACTS

Irreversible environmental changes could also occur during the course of constructing development projects made possible by the proposed General Plan. New construction would result in the consumption of building materials, such as lumber, sand and gravel for construction. Some of these resources are already being depleted worldwide.

5.2 Significant Unavoidable Impacts

Significant unavoidable impacts are those that cannot be mitigated to a level that is less than significant. According to CEQA Guidelines 15126(b), an EIR must discuss any significant environmental impacts that cannot be avoided under full implementation of the proposed program. Chapter 3 identified the following significant unavoidable impacts when comparing the proposed Plan to existing conditions:

AGRICULTURAL RESOURCES

While one quarter of the gross proposed General Plan potential development area is infill and will not reduce the amount of farmland, some conversion of agricultural land to urban use is inevitable given Turlock's growth needs. If the proposed General Plan were developed to maximum capacity, 1,986 acres of farmland classified would be replaced by urban development (including parks and open spaces). Approximately 1,130 acres, or 57 percent, of the farmland converted is classified as Prime Farmland. Although there are policies in the proposed General Plan to reduce this impact, the potential conversion of agricultural land—which will affect some agricultural activities and prime agricultural soils—is significant and unavoidable.

TRANSPORTATION

Buildout of the General Plan will result in added traffic on local transportation facilities. Certain facilities are already experiencing some congestion. Where reasonably feasible, improvements to these facilities have been proposed in the General Plan circulation system to improve performance to a level of service D, measured on an average daily traffic (ADT) basis. An ADT-based LOS D is the trigger identified in the General Plan at which affected roadways would need to be improved, wherever possible. Where available right of way allows and where widening or other improvements to ameliorate vehicle congestion could be undertaken without compromising the safety and efficiency of other travel modes, the General Plan Circulation Diagram designates the facility for improvement. However, in some locations, widening roadways to accommodate traffic projections would conflict with competing General Plan policies to provide a balanced transportation system. Intersections and roadways along these segments will likely

experience delays and will not operate at the significance threshold of LOS D or better, resulting in a significant and unavoidable impact. The proposed General Plan acknowledges some vehicular congestion in exchange for a roadway system that provides “Complete Streets” and balances all modes of travel.

Full buildout of the proposed General Plan would result in significant and unavoidable impacts on County and Caltrans roadway facilities, exceeding the levels of service standards established by those entities. Stanislaus County and Caltrans both have policies indicating LOS C at the peak hour as the acceptable service level threshold for facilities under their jurisdiction. County roads outside the City’s sphere of influence and facilities under Caltrans purview (i.e. State Route 99) that will operate below LOS C upon General Plan buildout will constitute significant and unavoidable impacts per each agency’s significance criteria. Improvements to these facilities, especially SR 99, will require collaborative planning efforts and improvements financing, as they are regional facilities. The General Plan includes several policies that aim to reduce the impact of new traffic generated by buildout of the City’s proposed General Plan, while fostering cooperation and collaboration between jurisdictional partner agencies in order to plan, finance, and construct improvements outside the City’s purview. However, even with these policies in place, the amount of growth and development associated with the City of Turlock’s proposed General Plan is likely to continue to generate traffic on County and State roads at a significant level.

AIR QUALITY

The proposed General Plan would result in an increase in criteria pollutant emissions primarily due to local and regional vehicle emissions and vehicle travel generated by future population growth associated with buildout of the proposed Plan. Stationary sources and area sources would result in lesser quantities of criteria pollutant emissions. Stationary sources and diesel-fueled mobile sources would also generate emissions of TACs including diesel particulate matter that could pose a health risk. The proposed General Plan includes many of the measures identified by the SJVAPCD as applicable to reduce air quality impacts of general plans. Unfortunately, transportation modeling is still unable to account for the positive influence of these policy and land use design choices. Based strictly on the transportation modeling conducted for the proposed Project in accordance with SJVAPCD CEQA Guidelines, future growth in accordance with the proposed General Plan would exceed the annual SJVAPCD thresholds for PM10, as well as the threshold used for this analysis for PM2.5, and would therefore result in a significant and cumulatively considerable net increase of criteria pollutants.

In addition, full buildout of the proposed General Plan would result in a significant, unavoidable, and cumulatively considerable impact on sensitive receptors by exposure to significant pollutant concentrations. Development of the proposed General Plan could place sensitive land uses near freeways, intersections or roadways associated with air pollutant emissions that exceed State or federal ambient air quality standards. Similarly, existing sensitive land uses near local roadways that experience increased levels of traffic resulting from development of the proposed General Plan could be exposed to air pollutant emissions that exceed State and/or federal ambient air quality standards. In particular, high concentrations of carbon monoxide are most likely to develop where there is significant congestion. The roadways for which this is the case are generally located next to or near the freeway (SR 99). In the case of the proposed Project, these concentrations are most likely to occur in areas of significant traffic congestion, reasonably expected to be along roadways that would experience Level of Service (LOS) E or F under the proposed General Plan. It should be noted that considerable development may occur before these levels of congestion are reached on certain roadways.

As with criteria pollutants, the City will implement a variety of policies and implementation measures designed to address air quality issues. However, given the uncertainty as to whether future air quality impacts associated with the potential exposure of sensitive receptors to substantial pollutant concentrations

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could be adequately mitigated, this impact remains significant and unavoidable. No additional feasible mitigation is currently available.

The proposed General Plan is being offered despite these significant impacts because the City is in need of an updated land use plan that can thoughtfully and creatively accommodate projected population growth, as well as provide for jobs and economic development over the next 20 years. The current General Plan is no longer practical for Turlock because stronger growth management is necessary and the current Plan does not offer adequate, concrete policies in accordance with recent State laws to promote walkability, bikeability, and minimize the impacts of growth. The proposed General Plan is consistent with regional and Statewide smart growth and Sustainable Communities Strategy goals in which urban development is directed toward existing urban infill sites near transit corridors in order to avoid the loss of open space. Ultimately, buildout of the proposed Plan would increase the overall residential density in Turlock from slightly less than 6 dwelling units per acre to 7.8 dwelling units per acre, which exceeds the density put forth in the San Joaquin Valley Blueprint project's Preferred Growth Scenario, which is 6.8 units per acre for the Valley overall and 5.6 units per acre for Stanislaus county. The proposed General Plan overall seeks to achieve this goal through growth management tools, master planning and phasing, and policies that give high priority to infill, density, connectivity, and jobs-housing balance. The significant impacts related to the proposed General Plan would not be considerably different under any other likely growth scenario for Turlock that accommodates the anticipated residential and non-residential growth projected for the city.

CLIMATE CHANGE AND GREENHOUSE GASES

Under the proposed General Plan, future emissions are estimated to increase to 948,200 metric tons CO_{2e} in 2020 and 1,174,800 metric tons CO_{2e} in 2030 with State mandates, an overall increase of approximately 57 percent over existing conditions. This increase in emissions under the proposed General Plan is largely a result of housing and job growth. (However, per service population emissions are projected to decline by 17 percent over the planning period under the proposed General Plan when compared to existing conditions, as emissions decline relative to population and employment growth.) The emissions estimate, however, does not account for policies in the proposed General Plan that would contribute to lowering emissions, but that are difficult to quantify. Given the current uncertainty in quantifying the impacts of the measures, it is not possible to determine in this analysis if the proposed policies would reduce emissions sufficiently. Therefore, the proposed General Plan would result in a considerable contribution to the significant cumulative impact.

NOISE

Noise resulting from vehicles, trains, and stationary operations are expected to increase as a result of the proposed General Plan. Increases are expected to occur both along existing roadways in developed areas and along new roadways in future growth areas, and in the vicinity of new stationary operations, particularly industrial uses. Potential impacts on existing and future land uses will primarily be the result of additional vehicles traveling along local 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. Given the uncertainty as to whether future noise impacts could be adequately mitigated for all individual projects, potential impacts related to substantial permanent increases in ambient noise related to traffic, railroads, and stationary sources are considered significant and unavoidable.

5.3 Growth-Inducing Impacts

The EIR must examine the potential growth-inducing impacts of the proposed General Plan. More specifically, CEQA Guidelines require that the EIR “discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly” (CEQA Guidelines Section 15126.2(d)). This analysis must also consider the removal of obstacles to population growth, such as improvements in the regional transportation system.

Growth-inducing impacts such as those associated with job increases that might affect housing and retail demand in other jurisdictions over an extended time period are difficult to assess with precision, since future economic and population trends may be influenced by unforeseeable events, such as natural disasters and business development cycles. Moreover, long-term changes in economic and population growth are often regional in scope; they are not influenced solely by changes or policies related to a single city or development project. Business trends are influenced by economic conditions throughout the state and country, as well as around the world.

Another consideration is that the creation of growth-inducing potential does not automatically lead to growth. Growth occurs through capital investment in new economic opportunities by the private or public sector. These investment patterns reflect, in turn, the desires of investors to mobilize and allocate their resources to development in particular localities and regions. These and other pressures serve to create policy. These factors, combined with the regulatory authority of local governments, mediate the growth-inducing potential or pressure created by a proposed plan. Despite these limitations on the analysis, it is still possible to qualitatively assess the general potential growth-inducing impacts of the proposed General Plan.

PROJECTED GROWTH

Population

The Study Area will accommodate a maximum population of approximately 126,800 people at buildout, an increase of about 78 percent over the 2010 estimated population of 71,100.¹ This represents an average annual growth rate of 2.9 percent, which is slightly higher than the rate of 2.6 percent experienced in the city over the last 20 years. The proposed General Plan accommodates 25 percent more residents than the No Project scenario, which allows for a population of 101,600 people. Growth projections for Turlock for 2030 range from around 104,000 total residents to 126,800 total residents (midpoint of 115,000), meaning that the proposed Plan accommodates the high end of the projection. The decision to create a General Plan that can accommodate the maximum level of projected growth is policy-based; it is quite possible that Turlock will not experience this maximum level of growth, and that therefore the full extent of urban development permitted under the proposed Plan would not be needed. The master planning and phasing policies included in the Plan allow for less population to be accommodated while still ensuring that new development areas are well-planned, cohesive, and compact.

Housing Units

Turlock currently contains some 24,400 housing units. Approximately 1,400 housing units have recently been approved or are under construction. The proposed General Plan accommodates 19,200 new residential units, beyond those in the pipeline. Together, this results in the potential for 45,000 housing units,

¹ California Department of Finance, 2010.

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an increase of 71 percent above existing and approved units. Approximately 58 percent of the housing units will be low-density single-family detached, 16 percent single family attached (low/medium density townhouses and duplexes), and the remaining 26 percent higher density multifamily and mixed-use residential.

Employment

Turlock currently has approximately 28,260 jobs. Total additional employment accommodated in the General Plan by new commercial, office, industrial, and mixed-use land designations could allow for 32,000 new jobs in Turlock. In sum, Turlock could accommodate up to 62,260 jobs under the General Plan, an increase of 113 percent. Similarly, the proposed General Plan accommodates 53 percent more jobs than the No Project scenario, which could support 49,130 jobs.

Jobs/Employment Balance

A city's jobs/employment ratio (jobs to employed residents) would be 1:1 if the number of jobs in the city equaled the number of employed residents. In theory, such a balance would eliminate the need for commuting. More realistically, a balance means that in-commuting and out-commuting are matched, leading to efficient use of the transportation system, particularly during peak hours. The current jobs/employment ratio in Turlock is 1.06, which is already very balanced. The proposed General Plan will add more jobs than population. By 2030, the jobs/employment ratio should improve to 1.19, with the potential for reducing out-commuting for work.

Indirect growth-inducing impacts such as those associated with job increases that might affect housing and retail demand in other jurisdictions over an extended time period are difficult to assess with precision, since future economic trends may be influenced by unforeseeable events, such as natural disasters and business and development cycles. Moreover, long-term changes in economic and population growth are often regional in scope; they are not influenced solely by changes or policies in Turlock.

INCREASE IN REGIONAL HOUSING DEMAND

As the employment base in Turlock increases, more people may be drawn to Turlock and surrounding areas, thereby increasing housing demand in both Turlock and other adjacent areas that are within commuting distance. Proposed new employment would primarily be located in central Turlock and in the Turlock Regional Industrial Park (TRIP), easily accessible from major transportation routes. Service to Turlock via regional bus service and potential future regional rail connections would also provide access to new jobs from other cities. In addition, the proposed General Plan has the potential to result in development of over 20,000 new housing units by the year 2030 at its maximum, which will help meet much of the increased housing need. Turlock's updated Housing Element, which addresses housing programs and how Turlock will accommodate its regional housing needs allocation, is part of the proposed General Plan. The Housing Element includes programs to address regional housing needs in the near term, and subsequent revisions will extend, modify, or add to these programs as needed to continue to respond to the City's "fair share" of regional housing needs, as required by law.

GROWTH MANAGEMENT

While Stanislaus County does not have a regional growth management policy in place, Turlock's proposed General Plan provides for the managed and orderly expansion of the city through its master planning system. With the delineation of master plans and phasing, and the policy that a subsequent master plan cannot proceed until 70 percent of building permits have been issued for the preceding one, the proposed General Plan seeks to ensure that new neighborhoods and employment centers are developed

with the complete range of amenities, infrastructure, and land use mix to serve new residents and employees in a sustainable fashion. The master planning approach also helps prevent the premature conversion of farmland to urban uses and ensures that extension of services and utilities can be provided and financed.

While policies to regulate the location, pace, and timing of growth are included in the proposed General Plan, these will not restrict Turlock's ability to meet its housing need obligations or long-range growth projections by regional agencies. Key policies and strategies are described in Chapter 2: Project Description and Section 3.2: Land Use and Housing.

5.4 Cumulative Impacts

CEQA requires that the EIR examine cumulative impacts. As discussed in CEQA Guidelines Section 15130(a)(1), a cumulative impact "consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts." Furthermore, the analysis of cumulative impacts need not provide the level of detail required of the analysis of impacts from the project itself, but shall "reflect the severity of the impacts and their likelihood of occurrence" (CEQA Guidelines Section 15130(b)).

In order to assess cumulative impacts, the EIR must analyze either a list of past, present, and probable future projects or a summary of projections contained in an adopted general plan or related planning document. It is important to note that the proposed General Plan is essentially a set of projects, representing the cumulative development scenario for the reasonably foreseeable future in the Turlock Study Area. This future scenario incorporates the likely effects of surrounding regional growth.

By their nature, the air quality, transportation, noise, and greenhouse gas (GHG) emissions analyses presented in Chapter 3: Settings, Impacts, and Mitigation Measures represent a cumulative analysis of the Study Area as a whole. As a result of adding the proposed General Plan to the regional land use and transportation baseline, the travel demand, level of service operations, and associated air quality and GHG emissions produced by the proposed project is the cumulative condition for CEQA purposes. Some cumulative impacts on agricultural resources, transportation, and noise are found to be significant; in addition, the cumulative effects on GHG emissions and air quality are found to be cumulatively significant, and the project's contribution cumulatively considerable.

Other cumulative impacts are identified below and within the relevant sections of Chapter 3.

OTHER CUMULATIVE IMPACTS

For some issue areas evaluated as direct impacts in Chapter 3, concurrent implementation of the proposed General Plan, along with regional growth and development, may result in cumulative impacts. However, the project's contribution is not cumulatively considerable. These include:

- *Cumulative Effects on Water Quality.* The proposed Project, in combination with regional growth and development, could increase impervious surfaces resulting in a greater chance of flood and potential impacts to water quality. However, due to the built-out nature of the Study Area, and the extensive Plan policies designed to improve stormwater management and reduce stormwater pollution, the proposed Project's contribution to this potentially significant cumulative impact is not cumulatively considerable.

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- ***Cumulative Effects on Birds and Animals.*** Increased noise, light, and habitat disturbance resulting from urban development both within the Study Area as well as in adjacent unincorporated areas could adversely affect biological resources such as migratory birds and other wildlife species. However, with applicable policies in place as described in the direct impact analysis in Chapter 3, the project's contribution to this potentially significant cumulative impact is not cumulatively considerable.
- ***Cumulative Increases in Hazardous Materials.*** The increase in local population and employment could result in the increased use of hazardous household, commercial, and industrial materials, as well as a cumulative increase in exposure to risk associated with accidental release of hazardous materials into the environment. However, City, State, and federal regulations, such as those that control the production, use, and transportation of hazardous materials would apply to development countywide; therefore, the project's contribution to this potential cumulative impact is not cumulatively considerable.
- ***Cumulative Effects on Historical Resources.*** The accommodation of future growth also constitutes a (very low) likelihood that future development will encounter challenges associated with known and unknown historic resources. However, there is the possibility of cumulative impacts to historical resources in the future in the context of regional growth and development. The City of Turlock cannot be sure that all cumulative impacts on such historical resources can be mitigated to less than significant levels. Consequently, the proposed General Plan may have the potential to contribute to cumulative impacts to these historic resources. However, with implementation of proposed General Plan policies and state and federal law, the proposed Project's contribution to this significant cumulative impact is not cumulatively considerable.

These types of impacts are not limited to the Study Area but are characteristic of any area that is experiencing population and employment growth.

5.5 Impacts Found Not To Be Significant

CEQA requires that an EIR provide a brief statement indicating why various possible significant impacts were determined to be not significant. Chapter 3 of this EIR discusses all potential impacts, regardless of their magnitude. A similar level of analysis is provided for impacts found to be less than significant as impacts found to be significant. Significance of an impact is assessed in relation to the significance criteria provided in each section in Chapter 3. A summary of all impacts is provided in the Executive Summary of this EIR. However, some topic areas were analyzed and then found not to be significant issues and therefore were not presented in Chapter 3. These issues are discussed below.

ENERGY AND MINERAL RESOURCES

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 1994 provides more detailed information on mineral resources within the Study Area.

Natural Gas Resources

Historically, natural gas has been extracted in Stanislaus County. The California Department of Conservation's Division of Oil, Gas, and Geothermal Resources' *2010 Annual Report of the State Oil and Gas Supervisor*² indicates that there were two active natural gas wells in Stanislaus County in 2010. Both of these are located just east of the City of Riverbank. There are no wells located in the Turlock Study Area, active or idle.

Proposed General Plan Implications

Changes in land use associated with implementation of the proposed General Plan are focused in areas surrounding the existing city and are not likely to increase land use conflicts between the few existing locations of mineral and natural gas resources and the placement of future sensitive land uses. Additionally, the proposed General Plan includes several policies that strive to minimize land use conflicts between incompatible land uses through the establishment of buffer areas, as well as to work with regional agencies as appropriate to determine a course of action if any mineral resources are discovered in the Study Area.

² California Division of Oil, Gas, and Geothermal Resources. 2010 Annual Report of the State Oil and Gas Supervisor. Available online at: <http://www.conservation.ca.gov/dog/pages/index.aspx>. Accessed December 20, 2011.

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- Czopek, Vanessa, County Librarian. Personal communication, December 13, 2010 and December 19, 2011.
- Jim, Cynthia, County Librarian. Personal communication, December 6 and 13, 2010.
- Lilly, Susan, County Librarian. Personal communication, October 12 and 16, 2009.

TURLOCK IRRIGATION DISTRICT

- Severson, Dan, Analyst, Strategic Planning Department. Personal communications, January 5, 2012.
- Monier, Wes, Strategic Issues and Planning Department Manager. Personal communications, September 23, November 4 and 10, December 10, 11, and 23, 2009.
- Weis, Larry, General Manager/CEO. Response received January 23, 2009.
- Barton, Jeff, PE, Assistant General Manager – Civil Engineering. Response received January 23, 2009.
- Williams, Tina, Service and Sales Supervisor. Personal communication, October 15, 2009.

TURLOCK SCAVENGER COMPANY

- Marchant, Alan, President. Response received February 17, 2009.
- West, Bill, Operations Manager. Response received February 17, 2009.

TURLOCK UNIFIED SCHOOL DISTRICT

- McGuire, Patricia, Assistant Superintendent. Response received via Turlock Planning Division, January 15, 2009.
- Smith, Roger, Facilities Planner and Safety Coordinator. Personal communications, September 30, 2011, December 15, 2011.

8 Report Authors

The City of Turlock

Debra Whitmore, Deputy Director, Planning Division

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**Appendix A: Notice of Preparation of Draft
Environmental Impact Report (EIR)**

Appendix A: Notice of Preparation of Draft Environmental Impact Report (EIR)

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**NOTICE OF PREPARATION OF
DRAFT ENVIRONMENTAL IMPACT REPORT (EIR)
CITY OF TURLOCK GENERAL PLAN UPDATE**

Date: December 27, 2010

To: Responsible Agencies, and Interested Parties and Organizations

Subject: Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Turlock General Plan

Location: City of Turlock, California

The City of Turlock is preparing an update to its General Plan and has determined that an Environmental Impact Report (EIR) will be necessary pursuant to the California Environmental Quality Act (CEQA). The City of Turlock requests your input on how the General Plan update may affect the environment. More specifically, input is being solicited relative to the scope and content of environmental analysis that is relevant to your individual or agency's statutory/regulatory responsibilities in order to ascertain potential impacts of the proposed project.

Although specific proposals and revisions for the Turlock General Plan update have not yet been determined, we are soliciting your comments. This will allow your input to be taken into consideration during the formulation of the environmental impacts of the General Plan to be addressed in the EIR. A description of the proposed project, location map, and preliminary identification of the potential environmental effects are contained in the attached materials.

If your agency is a responsible agency as defined by Section 15381 of the State CEQA Guidelines, your agency will need to use the environmental documents prepared by the City of Turlock when considering your permit or approval for action.

Due to the time limits mandated by State law, you should submit your comments as soon as possible but no later than 30 days after your receipt of this notice per CEQA Guidelines Section 15082(b). Please send your written response, along with the name of your agency contact person, to Debbie Whitmore, Deputy Director, City of Turlock Development Service Department, Planning Division, 156 S. Broadway, Suite 120, Turlock, CA 95380-5454. Responses can also be faxed to Ms. Whitmore at (209) 668-5107 or emailed to dwhitmore@turlock.ca.us.

A public Scoping Meeting will be conducted on January 18, 2011 at 6:00PM, at the Turlock City Hall Council Chambers, 156 S. Broadway, Turlock, CA. If you have questions regarding this NOP or the Scoping Meeting, please contact Ms. Whitmore at (209) 668-5542 x 2218.

Debbie Whitmore, Deputy Director, Planning Division

Date

City of Turlock

PROJECT TITLE

City of Turlock General Plan Update

LEAD AGENCY NAME AND ADDRESS

Development Services Department, Planning Division
156 S. Broadway, Suite 120
Turlock, CA 95380-5454

CONTACT PERSON AND PHONE NUMBER

Debbie Whitmore, Deputy Director, Planning Division
City of Turlock
(209) 668-5542 x 2218

PROJECT LOCATION AND BOUNDARIES

Location

The City of Turlock is located in Stanislaus County, on the eastern side of California's San Joaquin Valley, approximately 100 miles east of the San Francisco Bay Area. The City is on the State Route 99 corridor, linking it to other Central Valley cities including Modesto, Stockton, and Sacramento to the north and Fresno and Bakersfield to the south. *Figure 1* shows Turlock in its regional context.

Project Boundaries

The Study 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 Study 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 proposed Study Area comprises 17,460 acres, or 27 square miles of both incorporated and unincorporated land bearing relation to the City's future growth. More specifically, the Study Area roughly extends to Taylor Road to the north, Waring Road and Verduga Road to the east, Harding Road to the south, and Commons Road and Washington Road to the west. Within the proposed Study Area, the existing land uses are 43 percent agriculture, 29 percent residential, 8 percent industrial, 8 percent vacant, 6 percent commercial and office space, 5 percent public or semi-public, and 1 percent parks/open space. Around two-thirds of the agricultural land within the boundary is Prime Farmland, and most of the remainder is Farmland of Statewide Importance. The proposed Study Area boundary is shown in *Figure 2*.

DESCRIPTION OF PROJECT

The City of Turlock has initiated a comprehensive update of its General Plan, which is an opportunity for community members to explore long-term goals and development for the City. The State of California requires every city and county to have a comprehensive General Plan, which acts as a constitution for long-term physical development. The General Plan identifies current and future needs in areas including land use, transportation, open space and conservation, public services, and environmental quality.

The purpose of this project is to update the City’s existing General Plan to accommodate and guide development through 2030. The City of Turlock last comprehensively updated its General Plan in 1992, with a major amendment completed in 2003. This update is intended to include summary information, goals, and policies addressing the following topics (which may be combined or in stand-alone elements):

- Introduction;
- Land Use and Economic Development;
- New Growth Areas;
- Parks, Schools, and Community Facilities;
- Circulation;
- City Design;
- Conservation and Environmental Protection;
- Air Quality and Greenhouse Gases;
- Noise;
- Safety; and
- Implementation.

Throughout the Plan, cross-references will guide the reader to related policies in other sections and elements. The Implementation Program unifies separate elements by identifying key actions for the City to undertake in the five years following Plan adoption. Table 1 provides more detail on the material covered in each chapter and shows how the chapters of the General Plan correspond with the State requirements for General Plan elements.

Table 1: Organization of the General Plan

<i>General Plan Element</i>	<i>State-Mandated?</i>	<i>Major Issues Addressed</i>	<i>Closely Related Elements</i>
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	No	Overall growth management strategy, phasing and design of new neighborhoods, transportation and utility infrastructure associated with new growth areas	All
Parks, Schools, and Community Facilities	Yes (Parks)	Parks, schools, libraries, recreational facilities	Land Use, New Development Areas, Conservation
Circulation	Yes	Street classifications, transit service, pedestrian and bicycle needs, rail, air, truck routes	Land Use, New Development Areas
City Design	No	City form, residential neighborhoods, public space, Downtown	Land Use, Housing, Circulation
Conservation and	Yes ¹	Agriculture and soils, biological	Land Use, Air Quality

Table 1: Organization of the General Plan

<i>General Plan Element</i>	<i>State-Mandated?</i>	<i>Major Issues Addressed</i>	<i>Closely Related Elements</i>
Environmental Protection		resources, water quality/hydrology, cultural resources, mineral resources, waste management	and Greenhouse Gases, Public Facilities and Services
Air Quality and Greenhouse Gases	Yes (Air Quality) ² ; No (Greenhouse Gases)	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
Implementation	No	Programs to be undertaken in five years following Plan adoption	All
Financial	No	Plan implementation costs, municipal financing options, fiscal impact analysis	All

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 170.

To meet the deadlines of California’s Department of Housing and Community Development (HCD), the City has already completed a Housing Element, which was submitted to HCD in March 2010. A Negative Declaration was completed and certified at that time as well. Anticipated adoption of the Housing Element is in 2011.

The General Plan Update will outline a broad range of policies related to growth, development, and conservation in the City of Turlock through 2030. The update offers the City Council and Planning Commission to establish the City’s priorities regarding growth through development of infill sites, transportation improvements, new neighborhoods, and parks/recreation areas, among others. An ongoing public participation process is providing opportunities for community input and informing the guiding principles on which the plan is based. The new General Plan will serve as the base for new capital facilities development, any needed changes to zoning or other implementing ordinances, annual budget, and operations and maintenance activities.

The EIR will analyze the potential environmental consequences of adopting the proposed General Plan. It will discuss how General Plan policies will affect the environment, identify significant impacts, and recommend measures to mitigate those impacts. The EIR will also consider the environmental impacts of alternatives developed earlier in the planning process, and identify an environmentally superior alternative. This NOP is a required publication at the outset of the EIR process.

The EIR will provide a programmatic environmental assessment of the General Plan update and identify potentially significant impact issues early in the process so that appropriate mitigating policies can be developed and incorporated into the General Plan, thus resulting in a “self-mitigating” document. Subsequent environmental review will be conducted for major development projects, public works and infrastructure improvements to evaluate site-specific impacts.

A series of public hearings will allow for additional public input before City decision-makers certify the EIR and adopt the updated General Plan.

SURROUNDING LAND USES

The Project Area is largely surrounded by agricultural uses. The unincorporated communities of Keyes and Denair lie just to the northwest and the northeast of the Study Area, respectively.

GENERAL PLAN DESIGNATIONS

To be determined by Project.

ZONING

To be updated following project adoption.

OTHER AGENCIES WHOSE APPROVAL IS REQUIRED

No other agencies are required to approve the City of Turlock’s General Plan update. Development under the plan, however, may require approval by federal, State, and/or responsible trustee agencies that may rely on this EIR for information relative to their areas of expertise and jurisdiction.

POTENTIAL ENVIRONMENTAL IMPACTS TO BE CONSIDERED

Potential topics for this EIR include:

- Agriculture and Soil Resources;
- Land Use and Housing;
- Transportation;
- Air Quality;
- Climate Change;
- Noise;
- Aesthetics and Visual Resources;
- Cultural Resources;
- Biological Resources;
- Geologic and Seismic Hazards;
- Hazardous Materials, Wildland Fires, and Other Hazards;
- Hydrology and Water Resources;
- Parks, Recreation, and Open Space;
- Public Facilities and Services; and
- Utilities.

In addition to the potential areas of environmental impact listed above, the EIR will evaluate the cumulative impacts and potential growth-inducing impacts of the proposed General Plan as well as the alternative plans. The No Project alternative will evaluate the impacts resulting from continued implementation of existing plans, policies, and regulations that currently govern the city. As appropriate, other alternatives that would avoid or lessen or avoid environmental impacts related to the proposed General Plan will be discussed. Referring to General Plan policies, the EIR will also recommend measures to mitigate environmental impacts.

Figure 1: Regional Location

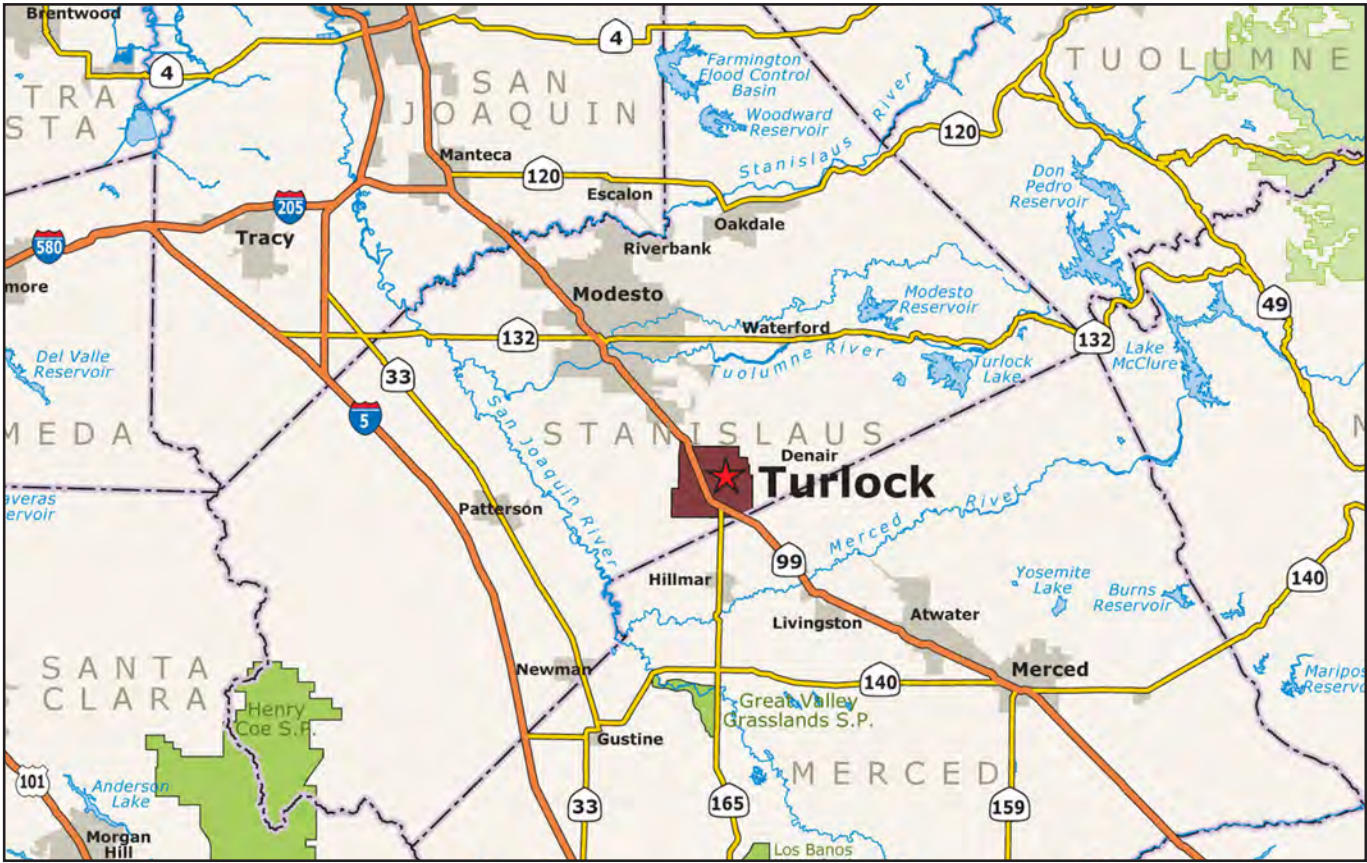
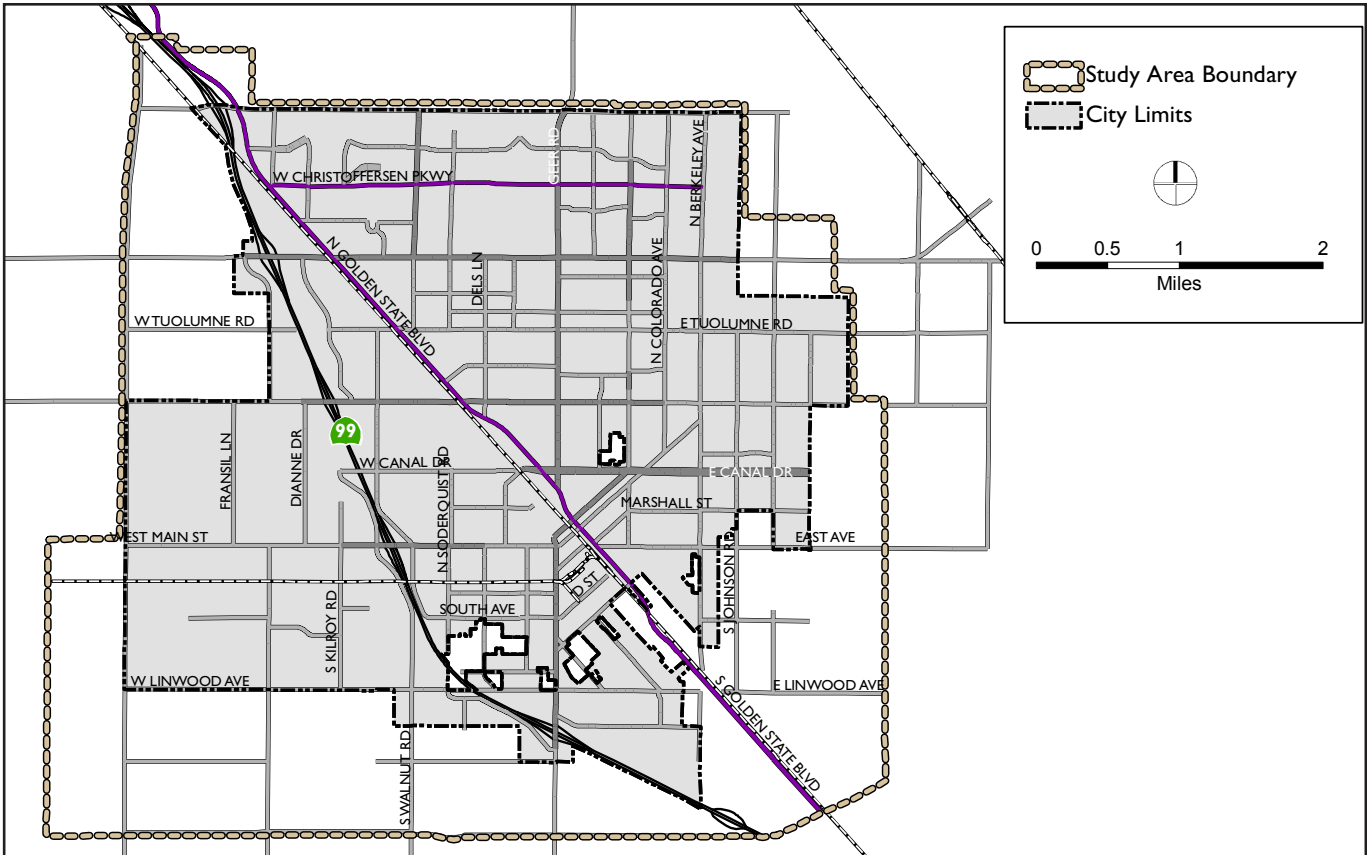


Figure 2: Study Area Boundary



Appendix A: Notice of Preparation of Draft Environmental Impact Report (EIR)

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Appendix B: Notice of Preparation Responses

Appendix B: Notice of Preparation Responses

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January 24, 2011

Debbie Whitmore
City of Turlock
Planning Department
156 S. Broadway Suite 120
Turlock, CA 95380

**Project: Notice of Preparation of a Draft Environmental Impact Report - City of
Turlock General Plan Update**

District CEQA Reference No: 20110004

Dear Ms. Whitmore:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the Notice of Preparation (NOP) for the City of Turlock General Plan Update that includes a planning area of 17,460 acres of both incorporated and unincorporated land in relation to the City's future growth. The NOP notes that the City of Turlock last updated its General Plan in 1992 with a major amendment in 2003. The District offers the following comments:

Air Quality Element

- 1) The District recommends that the update to the general plan include an air quality element, or its equivalent. AB 170 (Reyes) requires cities and counties in the San Joaquin Valley to include an air quality element or air quality implementation strategies in their general plans and to submit their plan to the District for review. To assist in addressing this new requirement the District has prepared its Air Quality Guidelines for General Plans (AQGGP). The AQGGP can be found on the District's website at <http://www.valleyair.org/transportation/Entire-AQGGP.pdf>.

- 2) The District recommends that the air quality section of the EIR include the following discussions:
- 2a) **A description of federal, state, and local regulatory environment and existing air quality conditions impacting the area.** The District is currently designated as extreme non-attainment of the federal national ambient air quality standard for ozone and non-attainment for PM2.5. More information on the District's federal and state attainment status can be found on the District's web page at <http://www.valleyair.org/aqinfo/attainment.htm>.
 - 2b) **A description of the project, including a discussion of existing and post-project emissions.** The discussion should include a description of the methodology, model assumptions, inputs and results used in characterizing the project's impact on air quality. The discussion should also include emissions from short-term activities such as construction, and emissions from long-term activities, such as operational, and area wide emission sources.
 - 2c) **A discussion of cumulative air impacts.** The discussion should identify any impacts that would result in a cumulatively considerable net increase of any criteria pollutant or precursor for which the San Joaquin Valley Air Basin is in non-attainment.
 - 2d) **A discussion of greenhouse gas (GHG) emissions.** It is suggested that the EIR include a discussion of GHG emissions generated by the project and the effect they will have, if any, on global climate change. Detailed discussions of GHGs and current state and federal regulations, and links to other GHG resources can be found on the District's website at: http://www.valleyair.org/Programs/CCAP/CCAP_idx.htm
 - 2e) **A discussion of the potential health impact of Toxic Air Contaminants (TACs), if any, to near-by receptors.** Accurate quantification of health risks and operational emissions requires detailed site specific information, e.g. type of emission source, proximity of the source to sensitive receptors, and trip generation information. The required level of detail is typically not available until project specific approvals are being granted. Thus, the District recommends that as future projects are identified the potential health risks be further reviewed, including those that would be exempt from CEQA requirements.

Special consideration should be given when approving projects that could expose sensitive receptors to TACs. Prior to conducting a Health Risk Assessment (HRA), an applicant may perform a prioritization on all sources of emissions to determine if it is necessary to conduct an HRA. A prioritization is a screening tool used to identify projects that may have significant health impacts. If the project has a prioritization score of 10 or more, the project has the potential to exceed the District's significance threshold for health impacts of

10 in a million. If the prioritization score indicates that TACs are a concern, the District recommends that an HRA be performed. If an HRA is to be performed, it is recommended that the project proponent contact the District to review the proposed modeling approach. For more Information on conducting a prioritization or HRA please contact Mr. Leland Villalvazo, Supervising Air Quality Specialist, at hramodeler@valleyair.org. Additional information on TACs can be found on the District's Air Quality Modeling page at http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm.

- 2f) **A discussion of nuisance odors.** If there is evidence that the project could result in sensitive receptors being exposed to objectionable odors, the District recommends that potential odor impacts be included in the discussion. The discussion should include potential impacts as a result project location. Special consideration should be given when siting new odor sources near existing receptors or when siting new receptors near existing sources. The District recommends that as individual projects are identified the odor impacts be further evaluated, including those that would be exempt from CEQA requirements.
- 2g) **A discussion of all feasible measures that will reduce air quality impacts.** Given the size of the project, it is reasonable to conclude that mobile source emissions resulting from growth and development would have significant impacts on air quality. To reduce the project related impacts on air quality the General Plan should include design standards that reduce vehicle miles traveled (VMT). VMT can be reduced through encouragement of mixed-use development, walkable communities, etc. Recommended design elements can be found on the District's website at <http://www.valleyair.org/ISR/ISROnSiteMeasures.htm>.

Land Use Planning

- 3) Nearly all development projects within the San Joaquin Valley Air Basin, from general plans to individual development projects have the potential to generate air pollutants, making it more difficult to attain state and federal ambient air quality standards. Land use decisions are critical to improving air quality within the San Joaquin Valley Air Basin because land use patterns greatly influence transportation needs and motor vehicle emissions are the largest source of air pollution. Land use decisions and project design elements such as preventing urban sprawl, encouraging mix-use development, and project designs that reduce vehicle miles traveled (VMT) have proven benefit for air quality. The District recommends that the update to the General Plan include or incorporate by reference, policies that will reduce or mitigate VMT impacts to the extent feasible. VMT can be reduced through encouragement of mixed-use development, walkable communities, etc. Recommended design elements can be found on the District's website at:

<http://www.valleyair.org/ISR/ISROnSiteMeasures.htm>.

To aid agencies in addressing VMT impacts the District has prepared the following guidance documents: *Air Quality Guidelines for General Plans*, and *AB 170 Requirements for General Plans*. These documents provide general information and recommendations for policies that are effective in reducing impacts from growth and development projects. These documents are available on the District's web site at:

http://www.valleyair.org/transportation/Guidelines_for_General_Plans.htm.

District Rules and Regulations

4) Individual development projects would be subject to District Rule 9510 (Indirect Source Review) if upon full build-out the project would include or exceed any one of the following:

- 50 dwelling units
- 2,000 square feet of commercial space;
- 25,000 square feet of light industrial space;
- 100,000 square feet of heavy industrial space;
- 20,000 square feet of medical office space;
- 39,000 square feet of general office space; or
- 9,000 square feet of educational space; or
- 10,000 square feet of government space; or
- 20,000 square feet of recreational space; or
- 9,000 square feet of space not identified above.

District Rule 9510 is intended to mitigate a project's impact on air quality through project design elements or by payments of applicable off-site mitigation fees. Any applicant subject to District Rule 9510 is required to submit an Air Impact Assessment (AIA) application to the District no later than applying for final discretionary approval, and to pay any applicable off-site mitigation fees before issuance of the first building permit.

The District recommends that a mitigation measure be included that requires, for any project, within the scope of this NOP, subject to Rule 9510, demonstration of compliance with District Rule 9510, including payment of all applicable fees before issuance of the first building permit, be made a condition of project approval.

District ISR staff is available to meet with the Lead Agency or project proponent to further discuss the requirements of Rule 9510 for individual development projects. More information on District Rule 9510 can be obtained by:

- Calling the District's ISR staff at (559) 230-6000;
- E-mailing inquiries to: ISR@valleyair.org; or
- Visiting the District's website at: <http://www.valleyair.org/ISR/ISRHome.htm>.

5) Individual development projects may also be subject to District regulations including, but limited to: Regulation VIII (Fugitive PM10 Prohibitions), District Rule 2010

(Permits Required), Rule 2201 (New and Modified Stationary Source Review), Rule 4002 (National Emission Standards for Hazardous Air Pollutants), Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). To avoid potential delays in project development, the District strongly encourages project proponents contact the District's Small Business Assistance (SBA) Office early in the planning phase to discuss whether an Authority to Construct (ATC) and Permit to Operate (PTO) are required, and to identify other District rules or regulations that apply to their project.

The District recommends that a mitigation measure be included that requires, for any project within the scope of this NOP that is subject to District permits, demonstration of compliance with District permitting requirements, such as a copy of the ATC, before issuance of the first building permit, be made a condition of project approval.

District staff is available to meet with you and/or the applicant to further discuss the regulatory requirements that are associated with this project. If you have any questions or require further information, please call Patia Siong at (559) 230-5930 and provide the reference number at the top of this letter.

Sincerely,

David Warner
Director of Permit Services

Arnaud Marjollet
Permit Services Manager

DW: ps

cc: File

January 26, 2011
City of Turlock Planning Division
Attention: Debbie Whitmore

My name is Brad Barker, and I am the chairperson for the Yokuts Group of the Sierra Club. Our group has about 850 members throughout Stanislaus County (including the City of Turlock). I am writing on behalf of our management committee to express our concerns for Turlock's General Plan Update.

Please consider these remarks as official comments to the Notice of Preparation for the General Plan EIR.

A region that was devastated by so many foreclosures and crashing property values needs to have cities that are cautious and very moderate about future growth. And, the sacrifice of good farmland comes at a steep cost that can never be repaid with more tract homes and strip malls.

We urge you to be as specific as possible with your new General Plan. Abstract principles that suggest a desire for smart growth don't matter if proper practice is not established. Nebulous promises and vague directives are confusing and often ignored. Please give specific, practical direction to current and future city officials.

We urge you enact some form of meaningful farmland protection: mitigation or urban growth limits or some farmland policy to keep the best soils producing in the future. We agree with the Turlock Planning Commission that future growth in Turlock should be to the southeast, nearer to the downtown core of the city, and away from the prime farmland to the northwest.

To ensure smart growth, housing must follow job creation. And while Turlock has performed better than some of its neighbors with this ratio, this entire region must do much better. The pattern of building huge residential tracts when there are no jobs for the people who live there must come to an end. Bad planning hurts everyone.

We urge you to design a transportation plan with specific policies that establish better public transportation, encourage bicycling and walking, and minimize the impacts of increased truck and car traffic. Air quality is a huge public health concern in the valley, and this issue must be carefully addressed.

A few other considerations: Where is a clean, ample water supply for any future expansion? Will the City encourage the redevelopment of existing residential and commercial buildings, empty and otherwise, to prevent blight and protect already established neighborhoods? Will developer fees be set to ensure new development pays for itself, and the costs are not subsidized by current residents? And, why would Turlock even consider expanding to the northwest across Hwy. 99 onto prime farmland?

Clearly, now is not the time for any large expansion. Even when the economy improves, if we want to avoid the heartaches and financial ruin of previous bad planning, the City of Turlock needs to proceed with a cautious General Plan that specifically enacts smart growth policies.

Thank you for considering our point of view, and please keep us informed of any new developments in the General Plan Update process.

--Brad Barker, Chair, Yokuts Group of the Sierra Club, 1305 Edgebrook Drive, Modesto, CA, 95354 (209) 526-5281



RECEIVED

January 10, 2011

JAN 18 2011

Debra Whitmore
City of Turlock
156 South Broadway, Suite 120
City of Turlock, CA 95380

CITY OF TURLOCK
PLANNING DIVISION

RE: Notice of Preparation for a Draft Environmental Impact Report for the City of Turlock's General Plan Update

Dear Ms. Whitmore:

Thank you for the opportunity to comment on your Notice of Preparation for a Draft Environmental Impact Report (DEIR) for the city's general plan update. In preparing the general plan and accompanying DEIR, the city should examine the sections of state planning law that involve potential hazards the city may face. For your information, I have underlined specific sections of state planning law where identification and analysis of hazards are discussed (see Attachment A).

Prior to the release of the draft general plan or within the DEIR, city staff or your consultants should examine each of the requirements in state planning law and determine if there are hazard issues within the community which the general plan should address. A table in the DEIR (or general plan) which identifies these specific issues and where they are addressed in the general plan would be helpful in demonstrating the city has complied with these requirements. If the DEIR determines that state planning law requirements have not been met, it should recommend that these issues be addressed in the general plan as a mitigation measure.

We note that state planning law includes a requirement for consultations with state agencies in regard to information related to hazards. Cal EMA would be happy to share all available information at our disposal to facilitate the city's ability to comply with state planning and environmental laws.

If you have any questions about these comments, please contact Andrew Rush at (916) 845-8269 or andrew.rush@calema.ca.gov.

Sincerely,


Dennis Castrillo
Environmental Officer

cc: State Clearinghouse

Attachment A

Hazards and State Planning Law Requirements

General Plan Consistency

65300.5. In construing the provisions of this article, the Legislature intends that the general plan and elements and parts thereof comprise an integrated, internally consistent and compatible statement of policies for the adopting agency.

Seven Mandated Elements

65302. The general plan shall consist of a statement of development policies and shall include a diagram or diagrams and text setting forth objectives, principles, standards, and plan proposals. The plan shall include the following elements:

(a) A land use element that designates the proposed general distribution and general location and extent of the uses of the land for housing, business, industry, open space, including agriculture, natural resources, recreation, and enjoyment of scenic beauty, education, public buildings and grounds, solid and liquid waste disposal facilities, and other categories of public and private uses of land. The location and designation of the extent of the uses of the land for public and private uses shall consider the identification of land and natural resources pursuant to paragraph (3) of subdivision (d). The land use element shall include a statement of the standards of population density and building intensity recommended for the various districts and other territory covered by the plan. The land use element shall identify and annually review those areas covered by the plan that are subject to flooding identified by flood plain mapping prepared by the Federal Emergency Management Agency (FEMA) or the Department of Water Resources. The land use element shall also do both of the following:

(1) Designate in a land use category that provides for timber production those parcels of real property zoned for timberland production pursuant to the California Timberland Productivity Act of 1982, Chapter 6.7 (commencing with Section 51100) of Part 1 of Division 1 of Title 5.

(2) Consider the impact of new growth on military readiness activities carried out on military bases, installations, and operating and training areas, when proposing zoning ordinances or designating land uses covered by the general plan for land, or other territory adjacent to military facilities, or underlying designated military aviation routes and airspace.

(A) In determining the impact of new growth on military readiness activities, information provided by military facilities shall be considered. Cities and counties shall address military impacts based on information from the military and other sources.

(B) The following definitions govern this paragraph:

(i) "Military readiness activities" mean all of the following:

(I) Training, support, and operations that prepare the men and women of the military for combat.

(II) Operation, maintenance, and security of any military installation.

(III) Testing of military equipment, vehicles, weapons, and sensors for proper operation or suitability for combat use.

(ii) "Military installation" means a base, camp, post, station, yard, center, homeport facility for any ship, or other activity under the jurisdiction of the United States Department of Defense as defined in paragraph (1) of subsection (e) of Section 2687 of Title 10 of the United States Code.

(b) A circulation element consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, any military airports and ports, and other local public utilities and facilities, all correlated with the land use element of the plan.

(c) A housing element as provided in Article 10.6 (commencing with Section 65580).

(d) (1) A conservation element for the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources. The conservation element shall consider the effect of development within the jurisdiction, as described in the land use element, on natural resources located on public lands, including military installations. That portion of the conservation element including waters shall be developed in coordination with any countywide water agency and with all district and city agencies, including flood management, water conservation, or groundwater agencies that have developed, served, controlled, managed, or conserved water of any type for any purpose in the county or city for which the plan is prepared. Coordination shall include the discussion and evaluation of any water supply and demand information described in Section 65352.5, if that information has been submitted by the water agency to the city or county.

(2) The conservation element may also cover all of the following:

(A) The reclamation of land and waters.

(B) Prevention and control of the pollution of streams and other waters.

(C) Regulation of the use of land in stream channels and other areas required for the accomplishment of the conservation plan.

(D) Prevention, control, and correction of the erosion of soils, beaches, and shores.

(E) Protection of watersheds.

(F) The location, quantity and quality of the rock, sand and gravel resources.

(3) Upon the next revision of the housing element on or after January 1, 2009, the conservation element shall identify rivers, creeks, streams, flood corridors, riparian habitats, and land that may accommodate floodwater for purposes of groundwater recharge and stormwater management.

(e) An open-space element as provided in Article 10.5 (commencing with Section 65560).

(f) (1) A noise element which shall identify and appraise noise problems in the community. The noise element shall recognize the guidelines established by the Office of Noise Control in the State Department of Health Care Services and shall analyze and quantify, to the extent practicable, as determined by the legislative body, current and projected noise levels for all of the following sources:

(A) Highways and freeways.

(B) Primary arterials and major local streets.

(C) Passenger and freight on-line railroad operations and ground rapid transit systems.

(D) Commercial, general aviation, heliport, helistop, and military airport operations, aircraft overflights, jet engine test stands, and all other ground facilities and maintenance functions related to airport operation.

(E) Local industrial plants, including, but not limited to, railroad classification yards.

(F) Other ground stationary noise sources, including, but not limited to, military installations, identified by local agencies as contributing to the community noise environment.

(2) Noise contours shall be shown for all of these sources and stated in terms of community noise equivalent level (CNEL) or day-night average level (Ldn). The noise contours shall be prepared on the basis of noise monitoring or following generally accepted noise modeling techniques for the various sources identified in paragraphs (1) to (6), inclusive.

(3) The noise contours shall be used as a guide for establishing a pattern of land uses in the land use element that minimizes the exposure of community residents to excessive noise.

(4) The noise element shall include implementation measures and possible solutions that address existing and foreseeable noise problems, if any. The adopted noise element shall serve as a guideline for compliance with the state's noise insulation standards.

(g) (1) A safety element for the protection of the community from any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence, liquefaction, and other seismic hazards identified pursuant to Chapter 7.8 (commencing with Section 2690) of Division 2 of the Public Resources Code, and other geologic hazards known to the legislative body; flooding; and wild land and urban fires. The safety element shall include mapping of known seismic and other geologic hazards. It shall also address evacuation routes, military installations, peakload water supply requirements, and minimum road widths and clearances around structures, as those items relate to identified fire and geologic hazards.

(2) The safety element, upon the next revision of the housing element on or after January 1, 2009, shall also do the following:

(A) Identify information regarding flood hazards, including, but not limited to, the following:

(i) Flood hazard zones. As used in this subdivision, "flood hazard zone" means an area subject to flooding that is delineated as either a special hazard area or an area of moderate or minimal hazard on an official flood insurance rate map issued by the Federal Emergency Management Agency. The identification of a flood hazard zone does not imply that areas outside the flood hazard zones or uses permitted within flood hazard zones will be free from flooding or flood damage.

(ii) National Flood Insurance Program maps published by FEMA.

(iii) Information about flood hazards that is available from the United States Army Corps of Engineers.

(iv) Designated floodway maps that are available from the Central Valley Flood Protection Board.

(v) Dam failure inundation maps prepared pursuant to Section 8589.5 that are available from the Office of Emergency Services.

(vi) Awareness Floodplain Mapping Program maps and 200-year flood plain maps that are or may be available from, or accepted by, the Department of Water Resources.

(vii) Maps of levee protection zones.

(viii) Areas subject to inundation in the event of the failure of project or nonproject levees or floodwalls.

(ix) Historical data on flooding, including locally prepared maps of areas that are subject to flooding, areas that are vulnerable to flooding after wildfires, and sites that have been repeatedly damaged by flooding.

(x) Existing and planned development in flood hazard zones, including structures, roads, utilities, and essential public facilities.

(xi) Local, state, and federal agencies with responsibility for flood protection, including special districts and local offices of emergency services.

(B) Establish a set of comprehensive goals, policies, and objectives based on the information identified pursuant to subparagraph (A), for the protection of the community from the unreasonable risks of flooding, including, but not limited to:

- (i) Avoiding or minimizing the risks of flooding to new development.
 - (ii) Evaluating whether new development should be located in flood hazard zones, and identifying construction methods or other methods to minimize damage if new development is located in flood hazard zones.
 - (iii) Maintaining the structural and operational integrity of essential public facilities during flooding.
 - (iv) Locating, when feasible, new essential public facilities outside of flood hazard zones, including hospitals and health care facilities, emergency shelters, fire stations, emergency command centers, and emergency communications facilities or identifying construction methods or other methods to minimize damage if these facilities are located in flood hazard zones.
 - (v) Establishing cooperative working relationships among public agencies with responsibility for flood protection.
- (C) Establish a set of feasible implementation measures designed to carry out the goals, policies, and objectives established pursuant to subparagraph (B).
- (3) After the initial revision of the safety element pursuant to paragraph (2), upon each revision of the housing element, the planning agency shall review and, if necessary, revise the safety element to identify new information that was not available during the previous revision of the safety element.
- (4) Cities and counties that have flood plain management ordinances that have been approved by FEMA that substantially comply with this section, or have substantially equivalent provisions to this subdivision in their general plans, may use that information in the safety element to comply with this subdivision, and shall summarize and incorporate by reference into the safety element the other general plan provisions or the flood plain ordinance, specifically showing how each requirement of this subdivision has been met.
- (5) Prior to the periodic review of its general plan and prior to preparing or revising its safety element, each city and county shall consult the California Geological Survey of the Department of Conservation, the Central Valley Flood Protection Board, if the city or county is located within the boundaries of the Sacramento and San Joaquin Drainage District, as set forth in Section 8501 of the Water Code, and the Office of Emergency Services for the purpose of including information known by and available to the department, the office, and the board required by this subdivision.
- (6) To the extent that a county's safety element is sufficiently detailed and contains appropriate policies and programs for adoption by a city, a city may adopt that portion of the county's safety element that pertains to the city's planning area in satisfaction of the requirement imposed by this subdivision.

Consistency with Airport Land Use Plans

65302.3. (a) The general plan, and any applicable specific plan prepared pursuant to Article 8 (commencing with Section 65450), shall be consistent with the plan adopted or amended pursuant to Section 21675 of the Public Utilities Code.

Review of Safety Element

65302.5. (a) At least 45 days prior to adoption or amendment of the safety element, each county and city shall submit to the Division of Mines and Geology of the Department of Conservation

one copy of a draft of the safety element or amendment and any technical studies used for developing the safety element. The division may review drafts submitted to it to determine whether they incorporate known seismic and other geologic hazard information, and report its findings to the planning agency within 30 days of receipt of the draft of the safety element or amendment pursuant to this subdivision. The legislative body shall consider the division's findings prior to final adoption of the safety element or amendment unless the division's findings are not available within the above prescribed time limits or unless the division has indicated to the city or county that the division will not review the safety element. If the division's findings are not available within those prescribed time limits, the legislative body may take the division's findings into consideration at the time it considers future amendments to the safety element. Each county and city shall provide the division with a copy of its adopted safety element or amendments. The division may review adopted safety elements or amendments and report its findings. All findings made by the division shall be advisory to the planning agency and legislative body.

(1) The draft element of or draft amendment to the safety element of a county or a city's general plan shall be submitted to the State Board of Forestry and Fire Protection and to every local agency that provides fire protection to territory in the city or county at least 90 days prior to either of the following:

(A) The adoption or amendment to the safety element of its general plan for each county that contains state responsibility areas.

(B) The adoption or amendment to the safety element of its general plan for each city or county that contains a very high fire hazard severity zone as defined pursuant to subdivision (b) of Section 51177.

(2) A county that contains state responsibility areas and a city or county that contains a very high fire hazard severity zone as defined pursuant to subdivision (b) of Section 51177, shall submit for review the safety element of its general plan to the State Board of Forestry and Fire Protection and to every local agency that provides fire protection to territory in the city or county in accordance with the following dates as specified, unless the local government submitted the element within five years prior to that date:

(A) Local governments within the regional jurisdiction of the San Diego Association of Governments: December 31, 2010.

(B) Local governments within the regional jurisdiction of the Southern California Association of Governments: December 31, 2011.

(C) Local governments within the regional jurisdiction of the Association of Bay Area Governments: December 31, 2012.

(D) Local governments within the regional jurisdiction of the Council of Fresno County Governments, the Kern County Council of Governments, and the Sacramento Area Council of Governments: June 30, 2013.

(E) Local governments within the regional jurisdiction of the Association of Monterey Bay Area Governments: December 31, 2014.

(F) All other local governments: December 31, 2015.

(3) The State Board of Forestry and Fire Protection shall, and a local agency may, review the draft or an existing safety element and report its written recommendations to the planning agency within 60 days of its receipt of the draft or existing safety element. The State Board of Forestry and Fire Protection and local agency shall review the draft or existing safety element and may

offer written recommendations for changes to the draft or existing safety element regarding both of the following:

(A) Uses of land and policies in state responsibility areas and very high fire hazard severity zones that will protect life, property, and natural resources from unreasonable risks associated with wildland fires.

(B) Methods and strategies for wildland fire risk reduction and prevention within state responsibility areas and very high hazard severity zones.

(b) Prior to the adoption of its draft element or draft amendment, the board of supervisors of the county or the city council of a city shall consider the recommendations made by the State Board of Forestry and Fire Protection and any local agency that provides fire protection to territory in the city or county. If the board of supervisors or city council determines not to accept all or some of the recommendations, if any, made by the State Board of Forestry and Fire Protection or local agency, the board of supervisors or city council shall communicate in writing to the State Board of Forestry and Fire Protection or to the local agency, its reasons for not accepting the recommendations.

Open Space Plans

65560. (a) "Local open-space plan" is the open-space element of a county or city general plan adopted by the board or council, either as the local open-space plan or as the interim local open-space plan adopted pursuant to Section 65563.

(b) "Open-space land" is any parcel or area of land or water that is essentially unimproved and devoted to an open-space use as defined in this section, and that is designated on a local, regional or state open-space plan as any of the following:

(1) Open space for the preservation of natural resources including, but not limited to, areas required for the preservation of plant and animal life, including habitat for fish and wildlife species; areas required for ecologic and other scientific study purposes; rivers, streams, bays and estuaries; and coastal beaches, lakeshores, banks of rivers and streams, and watershed lands.

(2) Open space used for the managed production of resources, including but not limited to, forest lands, rangeland, agricultural lands and areas of economic importance for the production of food or fiber; areas required for recharge of groundwater basins; bays, estuaries, marshes, rivers and streams which are important for the management of commercial fisheries; and areas containing major mineral deposits, including those in short supply.

(3) Open space for outdoor recreation, including but not limited to, areas of outstanding scenic, historic and cultural value; areas particularly suited for park and recreation purposes, including access to lakeshores, beaches, and rivers and streams; and areas which serve as links between major recreation and open-space reservations, including utility easements, banks of rivers and streams, trails, and scenic highway corridors.

(4) Open space for public health and safety, including, but not limited to, areas which require special management or regulation because of hazardous or special conditions such as earthquake fault zones, unstable soil areas, flood plains, watersheds, areas presenting high fire risks, areas required for the protection of water quality and water reservoirs and areas required for the protection and enhancement of air quality.

STATE OF CALIFORNIA
 FACSIMILE COVER
 10-2A-0049

TO: Debbie Whitmore Deputy Director		FROM: Janet P. Jaramillo, Transportation Planner Caltrans – D10, Intergovernmental Review	
		DEPARTMENT OF TRANSPORTATION 1976 EAST CHARTER WAY STOCKTON, CA 95205	
UNIT/COMPANY: City of Turlock Planning Division		DATE: 1-28-11	TOTAL PAGES (Including Cover Page): 3
		FAX # (209) 942-7164	ATSS FAX N/A
DISTRICT/CITY: Turlock		PHONE # (209) 942-6022	ATSS N/A
		PHONE # (209) 668-5640	FAX # (209) 668-5107
		ORIGINAL DISPOSITION:	

RE: 10-STA-Various
 Notice of Preparation (NOP) of a
 Draft Environmental Impact Report (DEIR)
 City of Turlock General Plan Update
 State Clearinghouse No. 2010122096

Thank you,

- Janet -

DEPARTMENT OF TRANSPORTATION
P.O. BOX 2048 STOCKTON, CA 95201
(1976 E. DR. MARTIN LUTHER KING JR. BLVD. 95205)
PHONE (209) 941-1921
FAX (209) 948-7194
TTY 711



*Flex your power!
Be energy efficient!*

January 28, 2011

**10-STA-Various
Notice of Preparation (NOP) of a Draft
Environmental Impact Report (EIR)
City of Turlock General Plan Update
State Clearinghouse No. 2010122096**

City of Turlock
Planning Division
156 S. Broadway, Suite 120
Turlock, CA 95380
Attn: Debbie Whitmore, Deputy Director

Dear Ms. Whitmore:

The California Department of Transportation (Caltrans) appreciates the opportunity to review and comment on the comprehensive update of the City of Turlock General Plan. Locations are at Taylor, Waring, Verduga, Harding, Commons, and Washington Roads. Caltrans has the following comments:

Traffic Operations

- The projects within the Turlock General Plan area may cause a significant impact to State Routes. As the Plan projects within the influence area of the State Highway System (SHS) move forward, a traffic analysis for each development will be required. Please refer to the "Guide for the Preparation of Traffic Impact Studies" developed by Caltrans, in order to determine impacts and mitigations to the affected SHS.

Environmental

- Caltrans has responsibility for the maintenance and operation of State and Interstate highways within California. Any proposals that would affect the State Highway System are of concern to the Department. This proposal would impact multiple State and Interstate Highways with the potential to impact the operations and maintenance of the State Highway and Federal Interstate Systems within Northern and Central California. Comment on operations and maintenance impacts are deferred to Planning and Traffic Operations.

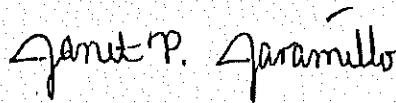
"Caltrans improves mobility across California"

Ms. Debbie Whitmore
January 28, 2011
Page 2

- This proposal would encroach into Caltrans right of way, requiring issuance of Encroachment Permits by Caltrans. As defined in CEQA section 21069, Caltrans would act as a Responsible Agency for projects requiring an Encroachment Permit. An application for an Encroachment Permit must include appropriate environmental studies and a copy of the environmental document adopted by the Lead Agency. These documents should identify Caltrans as a Responsible Agency and should include an analysis of impacts to cultural resources, biological resources, hazardous waste locations, and other resources mentioned above, within Caltrans right of way. Appropriate avoidance, minimization, and mitigation measures must be identified.

If you have any questions, please contact Janet P. Jaramillo at (209) 942-6022 (email: jjaramil@dot.ca.gov) or me at (209) 941-1921. We look forward to continuing to work with you in a cooperative manner.

Sincerely,



--for--
TOM DUMAS, Chief
Office of Metropolitan Planning

c: Scott Morgan, State Clearinghouse
Joshua Mann, Stanislaus County Planning & Community Development

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



January 27, 2011

Debra Whitmore
City of Turlock
156 South Broadway, Suite 120
Turlock, CA 95380

Re: Notice of Preparation, Draft Environmental Impact Report (DEIR)
City of Turlock General Plan Update
SCH# 2010122096

Dear Ms. Whitmore:

As the state agency responsible for rail safety within California, the California Public Utilities Commission (CPUC or Commission) recommends that development projects proposed near rail corridors be planned with the safety of these corridors in mind. New developments and improvements to existing facilities may increase vehicular traffic volumes, not only on streets and at intersections, but also at at-grade highway-rail crossings. In addition, projects may increase pedestrian traffic at crossings, and elsewhere along rail corridor rights-of-way. Working with CPUC staff early in project planning will help project proponents, agency staff, and other reviewers to identify potential project impacts and appropriate mitigation measures, and thereby improve the safety of motorists, pedestrians, railroad personnel, and railroad passengers.

The traffic impact study within the transportation/circulation section of the DEIR needs to specifically consider traffic safety issues to the at-grade railroad crossings. In general, the major types of impacts to consider are collisions between trains and vehicles, and between trains and pedestrians.

Measures to reduce adverse impacts to rail safety need to be considered in the DEIR. General categories of such measures include:

- Installation of grade separations at crossings, i.e., physically separating roads and railroad track by constructing overpasses or underpasses
- Improvements to warning devices at existing highway-rail crossings
- Installation of additional warning signage
- Improvements to traffic signaling at intersections adjacent to crossings, e.g., traffic preemption
- Installation of median separation to prevent vehicles from driving around railroad crossing gates
- Prohibition of parking within 100 feet of crossings to improve the visibility of warning devices and approaching trains

Debra Whitmore
City of Turlock
SCH # 2010122096
January 27, 2011
Page 2 of 2

- Installation of pedestrian-specific warning devices, channelization and sidewalks
- Construction of pull out lanes for buses and vehicles transporting hazardous materials
- Installation of vandal-resistant fencing or walls to limit the access of pedestrians onto the railroad right-of-way
- Elimination of driveways near crossings
- Increased enforcement of traffic laws at crossings
- Rail safety awareness programs to educate the public about the hazards of highway-rail grade crossings

Commission approval is required to modify an existing highway-rail crossing or to construct a new crossing.

Thank you for your consideration of these comments. We look forward to working with the City on this project. If you have any questions in this matter, please contact me at (415) 713-0092 or email at ms2@cpuc.ca.gov.

Sincerely,



Moses Stites
Rail Corridor Safety Specialist
Consumer Protection and Safety Division
Rail Transit and Crossings Branch
180 Promenade Circle, Suite 115
Sacramento, CA 95834-2936

**TURLOCK GENERAL PLAN UPDATE
SCOPING MEETING COMMENTS
January 18, 2011**

Name: Denair Fire Dept Glenn Doerksen ch.

Optional Address: 4409 N. Grallon Rd Denair or P.O. Box

Phone: 209-632-5032 station 535-4790 c.

Comments: The Denair Fire Dept Strongly opp
any Annexation of Property from The D
Fire Protection district. Over The Past 20
Turlock City Has Taken away hundreds of
if not Thousands, without any considerat.
The Budget or Financial recourse of T
Denair Fire Dept. would like to meet w:
city leaders to discuse more Thanks.

Turlock Historical Society
P.O. Box 18
Turlock, CA 95381

RECEIVED

FEB 22 2011

CITY OF TURLOCK
PLANNING DIVISION

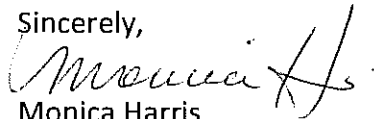
City of Turlock
Planning Division
156 S. Broadway #120
Turlock, CA 95380

Dear Sirs:

The Turlock Historical Society wishes to thank the planning division for including them in their mailings regarding issues that require environmental impact studies; the latest mailing being the impact report for the general plan proposal. The Board feels that it must keep in mind its mission statement to preserve history and decline, as a group, from commenting on the general plan proposal.

The Board will welcome mailings in the future concerning other impact reports or projects.

Sincerely,



Monica Harris

Secretary

KEYES FIRE DISTRICT



ROBERT WATT
Chief

P.O. Box 832
5629 7th Street
Keyes, CA 95328

(209) 634-7690
Fax: (209) 634-0659
b.watt@keyesfiredist.com

January 18, 2011

Debra Whitmore, Deputy Director, Planning
City of Turlock
156 S. Broadway, Suite 120
Turlock, CA 95380

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JAN 19 2011
CITY OF TURLOCK
PLANNING DIVISION

**SUBJECT: NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT –
CITY OF TURLOCK GENERAL PLAN UPDATE**

Dear Ms. Whitmore:

Thank you for the opportunity to review and comment on the City's Notice of Preparation of a Draft Environmental Impact Report (EIR) for the City of Turlock General Plan Update. LAFCO policy encourages cities and Stanislaus County to adopt general plans, policies, and agreements which protect farmland outside urban boundaries, encourage compact and efficient growth, and avoid unnecessary conversion of farmlands. The following comments are provided for the City's consideration, as Lead Agency in the preparation of the EIR:

Agricultural Resources

One of LAFCO's main charges, as put forth by the Legislature, is to protect and promote agriculture. The redesignation of land to a use other than Agriculture on an agency's general plan tends to prematurely cease the use of the land for agricultural purposes. The Williamson Act is considered a mechanism to preserve agricultural land both in the short and long term. The City's EIR should discuss the location of these lands as it relates to possible phasing, general plan policies, development, and financing scenarios which would preserve the agricultural viability of this land as long as possible.

Although it is unknown if a sphere of influence modification will be proposed with the General Plan update, the territory proposed for inclusion in the City's proposed General Plan Update includes prime farmland and numerous lands under active Williamson Act contracts. It should be noted, that Government Code Section 56426.5 prohibits LAFCO from approving a change to a sphere of influence if that territory is under a Williamson Act Contract, unless it makes certain findings.

According to the Notice of Preparation (NOP) the General Plan Study Area includes approximately 17,460 acres, including the City's existing limits (10,701+/- acres). While no specific mitigation measures have yet been identified to offset or reduce the impacts related to the conversion of agricultural lands, the City is strongly encouraged to include such mitigation measures in the EIR. For example, mitigation measures which encourage the use of agricultural conservation easements or other mechanisms for the direct loss of agricultural land should be considered in order to lessen the impact of the loss of important farmland.

Public Services and Facilities

The EIR should discuss what specific measures will be implemented to improve and/or maintain the current level of services (e.g. water quality and quantity, wastewater infrastructure) and

capacity, adequate police and fire protection) prior to expansion of the City's boundaries. This information can also be utilized to prepare the "Plan for Services" required by LAFCO policy and State Law (Government Code Section 56653), which requires information on the present and future level of services, and evidence that the annexing agency can at least maintain the current level of public services already provided within its boundaries.

Sphere of Influence Policies

Although the subject Notice of Preparation does not indicate whether or not the City intends to request a proposed Sphere of Influence (SOI) revision following adoption of the Turlock General Plan Update, LAFCO offers the following comments regarding SOI policies.

Government Code Section 56076 defines a sphere of influence as "a plan for the probable physical boundaries and service area of a local agency, as determined by the commission". It is an area within which a city or district may expand, over an undefined period of time, through the annexation process. In simple terms, a sphere of influence is a planning boundary within which a city or district is expected to grow at some future time.

LAFCO will designate a Sphere of Influence line for each local agency that represents the agency's probable physical boundary and includes territory eligible for annexation and the extension of that agency's services within a zero to twenty-year period. LAFCO shall also designate a Primary Area line for a local agency, which represents the agency's short-term growth area. Areas within an adopted Primary Area shall be eligible for annexation and extension of urban services within a zero to ten-year period.

Territory not in need of urban services, including open space, agriculture, non-protested, or protested and not upheld Williamson Act contracted lands, shall not be assigned to an agency's sphere of influence, unless the area's exclusion would impede the planned orderly and efficient development of this area. LAFCO policy states that sphere amendments will not be approved if there is sufficient alternative land available for annexation within the existing SOI.

City/County Meeting

An expansion of the sphere of influence triggers a requirement for City of Turlock representatives to meet with the County to discuss the proposed sphere and explore methods to reach agreement on its boundaries, development standards, and zoning requirements within the sphere.

If an agreement is reached, LAFCO is required to give great weight to that agreement in the consideration of any proposed sphere of influence. If no agreement is reached, an application may be submitted and the Commission shall consider a sphere of influence for the City consistent with adopted policies.

Municipal Service Review

In accordance with Commission policies and Government Code Sections 56425 and 56430, when updating a Sphere of Influence, a Municipal Service Review (MSR) must be prepared.

Although the MSR may be prepared before the Commission's consideration of a sphere of influence expansion, the EIR should include the preparation of the MSR as it relates to the overall General Plan update.

The MSR requires the consideration of several factors such as: 1) growth and population projections for the affected area; 2) present and planned capacity of public facilities and adequacy of public services, including infrastructure needs or deficiencies; 3) financial ability of agencies to provide services; 4) status of, and opportunities for, shared facilities; 5) accountability for community service needs, including governmental structure and operational efficiencies; and 6) any other matter related to effective or efficient service delivery, as required by Commission policy.

Sphere of Influence Plan

In order for the Commission to establish a sphere of influence, a Sphere of Influence Plan, which outlines the City's probable 20-year service area boundaries, service capabilities and financing for development within the territory, is required. The City is expected to provide the required information and develop the plans based on their own specific situations and expertise regarding their services, infrastructure, and financing plans to provide the necessary services.

The Commission utilizes these documents in determining the sphere of influence and developing written determinations with regard to that sphere (Government Code Section 56425), with respect to each of the following:

1. The present and planned land uses in the area, including agricultural and open-space lands.
2. The present and probable need for public facilities and services in the area.
3. The present capacity of public facilities and adequacy of public services that the agency provides or is authorized to provide.
4. The existence of any social or economic communities of interest in the area if the commission determines that they are relevant to the agency.

The Sphere of Influence Plan also guides the Commission in the review of subsequent annexation proposals to the City.

General Comments

- The Study Area Boundary Map (Figure 2) is difficult to read and/or ascertain how the proposed boundary aligns with existing parcels and/or roadways.

Presentation to the Commission

The Commission has encouraged cities during their general plan update process to schedule a presentation before the Commission. In the past, this has been valuable in obtaining the Commission's comments prior to finalizing any general plan policies relating to the sphere of influence and annexation, as well as, developing a proposed sphere of influence boundary line for the Commission's consideration. If you would like to meet to discuss this matter further or to schedule a presentation before the Commission, please call me at your earliest convenience.

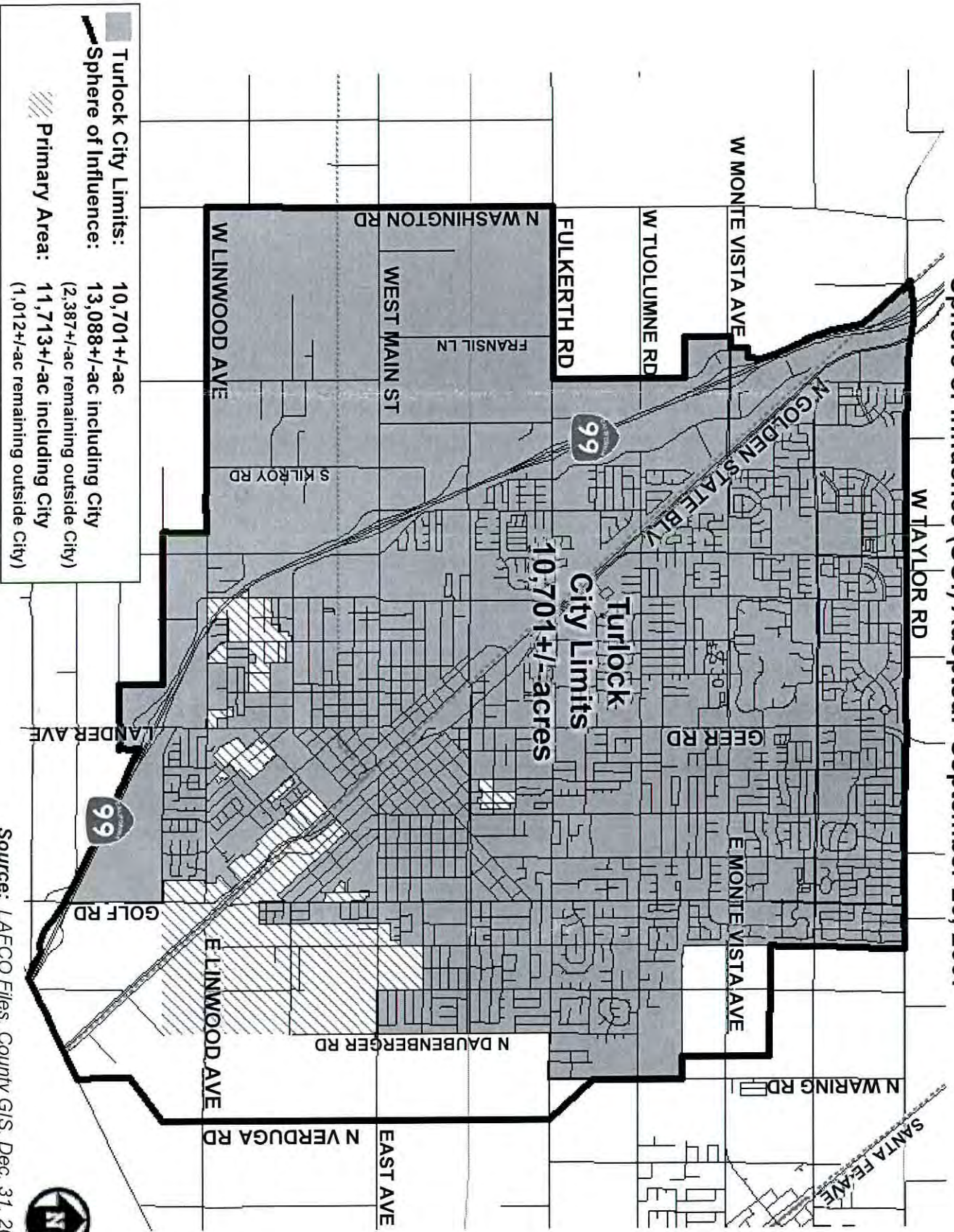
Sincerely,



Marjorie Blom
Executive Officer

Turlock

Sphere of Influence (SOI) Adopted: September 26, 2007



Source: LAFCO Files, County GIS, Dec. 31, 2010

NATIVE AMERICAN HERITAGE COMMISSION

915 CAPITOL MALL, ROOM 364
 SACRAMENTO, CA 95814
 (916) 653-4082
 (916) 657-5390 - Fax



December 31, 2010

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JAN - 7 2011

CITY OF TURLOCK
PLANNING DIVISION

Debra Whitmore
 City of Turlock
 156 South Broadway, Suite 120
 Turlock, CA 95380

RE: SCH# 2010122096 General Plan Update; Stanislaus County

Dear Ms. Whitmore:

The Native American Heritage Commission (NAHC) has reviewed the Notice of Preparation (NOP) referenced above. The California Environmental Quality Act (CEQA) states that any project that causes a substantial adverse change in the significance of an historical resource, which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA Guidelines 15064(b)). To comply with this provision the lead agency is required to assess whether the project will have an adverse impact on historical resources within the area of project effect (APE), and if so to mitigate that effect. To adequately assess and mitigate project-related impacts to archaeological resources, the NAHC recommends the following actions:

- ✓ Contact the appropriate regional archaeological Information Center for a record search. The record search will determine:
 - If a part or all of the area of project effect (APE) has been previously surveyed for cultural resources.
 - If any known cultural resources have already been recorded on or adjacent to the APE.
 - If the probability is low, moderate, or high that cultural resources are located in the APE.
 - If a survey is required to determine whether previously unrecorded cultural resources are present.
- ✓ If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
 - The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure.
 - The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological Information Center.
- ✓ Contact the Native American Heritage Commission for:
 - A Sacred Lands File Check. **USGS 7.5 minute quadrangle name, township, range and section required.**
 - A list of appropriate Native American contacts for consultation concerning the project site and to assist in the mitigation measures. **Native American Contacts List attached.**
- ✓ Lack of surface evidence of archeological resources does not preclude their subsurface existence.
 - Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5(f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
 - Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.
 - Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5(e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

Sincerely,

Katy Sanchez
 Program Analyst
 (916) 653-4040

cc: State Clearinghouse

Native American Contact List

Stanislaus County

January 4, 2011

Tule River Indian Tribe
Ryan Garfield, Chairperson

P.O. Box 589

Porterville , CA 93258

(559) 781-4271

chairman@tulerivertribe-nsn.
gov

(559) 781-4610 FAX

Yokuts

Southern Sierra Miwuk Nation

Les James, Spiritual Leader

PO Box 1200

Mariposa , CA 95338

209-966-3690

Miwok

Pauite

Northern Valley Yokut

Southern Sierra Miwuk Nation
Jay Johnson, Spiritual Leader

5235 Allred Road

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209-966-6038

Miwok

Pauite

Northern Valley Yokut

North Valley Yokuts Tribe
Katherine Erolinda Perez

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Ohlone/Costanoan

Northern Valley Yokuts

Bay Miwok

Southern Sierra Miwuk Nation
Anthony Brochini, Chairperson

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Mariposa , CA 95338

tony_brochini@nps.gov

209-379-1120

209-628-0085 cell

Miwok

Pauite

Northern Valley Yokut

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH# 2010122096 General Plan Update; Stanislaus County.

>>> "Dan Radulescu" <DRadulescu@waterboards.ca.gov> 12/30/2010 2:47 PM >>>
Hello Ms. Whitmore:

1. Our comments refer mainly to the Biological Resources, Hydrology and Water Quality components in Conservation and Environmental Protection element. We believe that, in addition to avoidance exercised first, minimization second, if adequate compensatory mitigation measures are not implemented, the project may have the potential to result in significant impacts to aquatic and aquatic dependent resources. Recent studies from U.S. Geological Survey have demonstrated that immediate and significant impacts can result at very low level of changes of imperviousness in watersheds due to urbanization. <http://pubs.usgs.gov/ds/423/>
2. We support serious consideration of an Environmentally Superior Alternative as the preferred alternative as the City contemplates a balanced growth scenario.
3. Please address how the implementation of General Plan activities may lead to cumulative impacts to natural resources, such as wetlands, vernal pools, riparian vegetation, etc. Based on the beneficial uses protected through the Basin Plan adopted by the Central Valley Regional Water Board, significant cumulative impacts may lead to degradation of the water quality of the region's water resources and further impairments to the species depending on those water resources and potential human health impacts. We believe that serious consideration should be given to approaches that will reduce the impacts to less than significant levels through the techniques outlined in CEQA Guidelines Section 15370.
4. In regard to the NOP of the proposed EIR , we would like to recommend the City that, in conjunction with avoidance and minimization analysis, as outlined in CEQA Guidelines Section 15370, to incorporate Low Impact Development (LID), Smart Growth standards in the City's Code, if not already adopted, in order to mitigate some of the impacts related to urbanization and provide sustainable approaches for the (re)development of the City areas while preserving the natural resources. The LID Code should include incentives to allow flexible approaches for implementation. The proposed General Plan update is within the regulated area covered by the Phase II Small Municipal Separate Storm Sewer System (MS4) Permit, NPDES No. CAS000004, Water Quality Order No. 2003-0005-DWQ, (Order) which is regulated by the Regional Water Board. An integral and enforceable part of the Order includes the Storm Water Management Program (SWMP). One of the six programmatic control measures in the SWMP includes the Planning and New Development Program. The Order states that the Permittees must require long-term post-construction best management practices (BMPs) that protect water quality and control runoff flow ideally to the pre-development levels to be incorporated into development and significant redevelopment projects. LID strategies are specifically required, as well as the City addressing LID designs early in the entitlement phase of a project.

LID is a sustainable practice that benefits water supply and contributes to water quality protection. The goal of LID is to mimic a sites predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to the source of rainfall. LID provides opportunities to preserve natural resources, such as wetlands, riparian areas and corridors, etc., avoid and minimize impacts starting at the source and at initial phases of planning and design of a project. It also provides opportunities for mitigation close to the source avoiding expensive, end-of-pipe, treatment controls.

Hydromodification strategies should include controls to manage the increases in the magnitude, volume and duration of runoff from development projects in order to protect receiving waters from increased potential for erosion and other adverse impacts, ideally to the pre-development levels.

On 20 January, 2005, Resolution 2005-0006 was adopted by the State Water Resources Control Board. The resolution adopted the concept of sustainability as a core value for all California Water Boards activities and programs, and directed California Water Boards staff to consider sustainability in all future policies, guidelines, and regulatory actions, including the review of applicable CEQA documents.

Please also note that the new Construction Storm Water General Permit, recently issued by the State Water Board, Order 2009-0009-DWQ, also require the implementation of post-construction controls. http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

Further consideration should be given to the new CalGreen Code, CCR Title 24, Part 11, which require storm water controls for small size sites, and encourages the local agencies to adopt LID requirements in their building codes.

For further details please check

http://www.opr.ca.gov/ceqa/pdfs/Technical_Advisory_LID.pdf

http://www.epa.gov/smartgrowth/about_sg.htm

http://www.waterboards.ca.gov/water_issues/programs/low_impact_development/index.shtml

http://www.epa.gov/smartgrowth/water_scorecard.htm

Thank you for the opportunity to present comments,

Dan Radulescu, EJD, P.E., CPSWQ

Lead, MS4 Permitting & Water Quality Certification Unit

Central Valley Regional Water Quality Control Board | CalEPA

11020 Sun Center Drive, Suite 200

Rancho Cordova, CA 95670-6114

Ph:(916) 464-4736

F:(916) 464-4775

dradulescu@waterboards.ca.gov

Find us on the web at <http://www.waterboards.ca.gov/centralvalley/>



CHIEF EXECUTIVE OFFICE

2011 FEB -1 A 10: 30

RECEIVED

FEB 28 2011

CITY OF TURLOCK
PLANNING DIVISION

January 31st, 2011

MEMO TO: Stanislaus County Environmental Review Committee

FROM: Department of Planning and Community Development
Joshua Mann, Associate Planner JM

SUBJECT: **CITY OF TURLOCK - NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE CITY OF TURLOCK GENERAL PLAN UPDATE**

Thank you for providing the Stanislaus County with the opportunity to comment on the proposed project. The Stanislaus County Planning and Community Development Department looks forward to commenting on the proposed policies, implementation measures, and associated mitigation measures when the draft General Plan Update becomes available for review.



RECEIVED

FEB 28 2011

OFFICE OF FIRE WARDEN
FIRE PREVENTION BUREAU

Gary Hinshaw
Fire Warden

Ray Jackson
Deputy Fire Warden

Kenneth Slamon
Fire Marshal

CITY OF TURLOCK
PLANNING DIVISION 3705 Oakdale Road, Modesto, CA 95357

STANISLAUS COUNTY ENVIRONMENTAL REVIEW COMMITTEE

DATE: January 13, 2011
ADDRESS: City Wide
LOCATION: City Wide
PROJECT #: City of Turlock General Plan Update Draft EIR
APPLICANT: City of Turlock
RMS#: NEED

This project may pose a significant impact with mitigation on the Denair, Keyes, and Turlock Rural Fire Protection Districts.

On behalf of the Denair, Keyes, and Turlock Rural Fire Protection Districts the following mitigation measure is required.

The impact of annexations with detachment from a fire district needs to be studied and addressed. Detachments leave the fire districts hard pressed to meet their obligation to the remaining portion of the district.

**Kenneth Slamon
Fire Marshal**

Denair, Keyes, and Turlock Rural Fire Protection Districts



AGRICULTURAL COMMISSIONER'S OFFICE AND
SEALER OF WEIGHTS & MEASURES

RECEIVED

FEB 23 2011

CITY OF TURLOCK
PLANNING DIVISION

Gary Caseri
Agricultural Commissioner/Sealer

3800 Cornucopia Way, Suite B
Modesto, California 95358

Phone: 209.525.4730 Fax: 209.525.4790

Stanislaus County Environmental Review Committee Referral Response Form

TO: Stanislaus County Planning & Community Development
1010 10th Street, Suite 3400
Modesto, CA 95354

FROM: Stanislaus County Department of
Agriculture & Weights and Measures

SUBJECT: ENVIRONMENTAL REFERRAL - CITY OF TURLOCK - NOTICE OF PREPARATION
OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE CITY OF TURLOCK
GENERAL PLAN UPDATE

Based on this agencies particular field(s) of expertise, it is our position the above described project:

- Will not have a significant effect on the environment.
 May have a significant effect on the environment.
 No Comments.

Listed below are specific impacts which support our determination: (e.g., traffic general, carrying capacity, soil types, air quality, etc.) - (attach additional sheets if necessary)

1. This project has the potential to take land out of current Agricultural production and may permanently eliminate Agricultural uses in some areas which would add to the cumulative loss of agricultural land available for production in Stanislaus County.
2. Any proposed build out will increase pressure to develop nearby agricultural land.

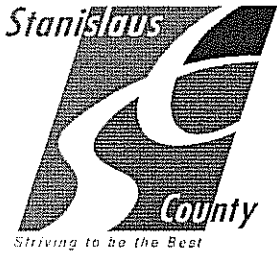
Listed below are possible mitigation measures for the above-listed impacts *PLEASE BE SURE TO INCLUDE WHEN THE MITIGATION OR CONDITION NEEDS TO BE IMPLEMENTED (PRIOR TO RECORDING A MAP, PRIOR TO ISSUANCE OF A BUILDING PERMIT, ETC.)*:

1. Agricultural Buffer policies need to be considered and established if applicable.
2. Agricultural lands need to be protected.

In addition, our agency has the following comments:

Response prepared by:

Milton O'Haire	Assistant Commissioner/Sealer	1/25/11
Name	Title	Date



CHIEF EXECUTIVE OFFICE
Richard W. Robinson
Chief Executive Officer

Patricia Hill Thomas
Chief Operations Officer/
Assistant Executive Officer

Monica Nino-Reid
Assistant Executive Officer

Stan Risen
Assistant Executive Officer

RECEIVED

FEB 23 2011

CITY OF TURLOCK
PLANNING DIVISION

1010 10th Street, Suite 6800, Modesto, CA 95354
P.O. Box 3404, Modesto, CA 95353-3404
Phone: 209.525.6333 Fax 209.544.6226

STANISLAUS COUNTY ENVIRONMENTAL REVIEW COMMITTEE

February 18, 2011

Debbie Whitmore, Deputy Director
City of Turlock, Planning Division
156 S. Broadway Suite 120
Turlock, CA 95380

SUBJECT: ENVIRONMENTAL REFERRAL – CITY OF TURLOCK – NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE CITY OF TURLOCK GENERAL PLAN UPDATE

Ms. Whitmore:

The Stanislaus County Environmental Review Committee (ERC) has reviewed the subject project and has determined that it may have a significant effect on the environment.

The following comments/conditions are submitted by Kirk Ford from the Department of Planning and Community Development. Concerns include the following issues:

- 1) Detachment from the Fire Districts and trying to keep them financially whole
- 2) The location of the study area boundary which apparently takes in the frontage of parcels and appears to bisect parcels beyond just the roadway needs along Taylor and other roads
- 3) The location of the study area boundary in other locations that do not follow parcel boundaries but seems to split them instead.

In addition, the ERC attaches hereto and incorporates herein by reference comments/conditions from the Agricultural Commissioners Office dated January 25, 2011, from the Office of the Fire Warden (Fire Prevention Bureau dated January 13, 2011 and general comments from the Department of Planning and Community Development dated January 31, 2011.

The ERC appreciates the opportunity to comment on this project.

Sincerely,

Christine Almen, Senior Management Consultant
Environmental Review Committee

cc: ERC Members

Attachment
B-36



RECEIVED

Board of Directors:
Joe Alamo
Charles Fernandes
Michael Frantz
Ron Macedo
Rob Santos

JAN 21 2011

CITY OF TURLOCK
PLANNING DIVISION

January 20, 2011

City of Turlock
Planning Division
Attn: Debbie Whitmore
156 South Broadway, Suite 120
Turlock, CA 95380

RE: Notice of Preparation of a Draft Environmental Impact Report (EIR) for the City of Turlock General Plan (Plan) Update

Dear Ms. Whitmore:

The Turlock Irrigation District (District) appreciates the opportunity to review and comment on the referenced project. District standards require development that occurs within the District's boundary, that impacts irrigation and electric facilities, to meet the District's requirements.

Numerous irrigation improvement district and private facilities (pipelines, pumps, ditches, etc.) exist in the plan area and will be subject to the requirements of current District Standards. These facilities will need to be abandoned or upgraded and in many cases, relocated to accommodate development. An overall strategy for mitigating impacts to irrigation should be developed to avoid inefficiencies that can occur when reviewing on a project-by-project basis. Development build-out should try to emphasize in-fill development to reduce conflicts between remaining agricultural production and the progressing development.

The EIR should also address development impacts to groundwater supplies as well as quality. The impacts of storm water and drainage patterns created by encroaching development should also be included in the Plan.

The Electric Utility has no comment concerning this project at this time.

If you have any questions concerning irrigation system requirements, please contact me at (209) 883-8384. Questions regarding electric utility requirements should be directed to Paul Rodriguez at (209) 883-8438.

Sincerely,

Arie W. Vander Pol
Engineering Technician, Civil
CE: 2010065

City of Turlock Planning Division
Attn. Debbie Whitmore, Deputy Director
156 S. Broadway, Suite 120
Turlock, CA 95380-5454

Hello Debbie,

I have attended most of the Turlock General Plan Update meetings over the past two years. From the start the majority of the people supported preserving our surrounding farmland for future generations. We recognize this is some of the best farmland in the world, and it produces a very significant amount of food for our country. At one meeting I proposed we freeze our City boundaries, and never extend beyond that point. I have had a business here in Turlock for 35 years, but I believe our quality of life transcends population growth. With population growth we not only take farmland out of production, we bring in all the problems associated with larger cities. Let the EIR recognize the value of our surrounding farmland, and if we must grow, make the growth go up and not out. For the EIR I propose we remove some of the best farmland from our general plan update, and forever preserve it for the production of food.

A Turlock native and Turlock businessman,

Milton Trieweiler
P.O. Box 2020
Turlock, CA 95381

Appendix C: Hydrology and Utilities Supporting Data Tables

Tables C-1, C-2, and C-3 provide supporting data for Section 3.12, Hydrology. Tables C-4, C-5, and C-6 provide supporting data for Section 3.15, Utilities.

TABLE C-1: FUTURE WATER DEMANDS FROM THE DEVELOPMENT OF MASTER PLAN AREAS AND INFILL AREAS

Land Use	Water Demand Factor, gpm/acre(a)	Demand Factor, ac-ft/yr/acre	Preferred Land Use Plan (ac-ft/yr)							Infill Areas		
			<u>Master Plan Subareas</u>							Total	In the Year 2030 (Partial TRIP Buildout)	At Buildout (Full TRIP Buildout)
			NW	SE1	SE2	SE3	SE4	SE5				
Rural Residential (assuming only 1 acre of a 5 acre lot is irrigated)	0.49	0.80	14.7						14.7			
Very Low Density Residential	2.47	3.98							0.0	470.8	470.8	
Low Density Residential	2.47	3.98			178.3	1,027.5	122.0	232.0	1,559.8	625.9	625.9	
Low-Medium Density Residential	2.47	3.98	427.7		563.2	421.2	514.4	616.5	2,543.0			
Medium Density Residential	2.47	3.98	781.7	466.9	159.4	343.6	111.5	82.1	1,945.2	267.3	267.3	
High Density Residential	7.29	11.76	606.9	181.4	303.8	445.5	115.6	170.7	1,824.0	979.5	979.5	
High Density Residential/Office	4.24	6.83							0.0	12.4	12.4	
Office	1.18	1.90		2.4					2.4	101.5	280.6	
Business Park	1.18	1.90							0.0	131.0	545.9	
Community Commercial/Office	1.18	1.90							0.0	49.7	145.2	
Community Commercial	1.18	1.90	165.5	17.1					182.5	298.9	298.9	
Community Commercial/High Density Residential	4.24	6.83							0.0	58.6	58.6	
Downtown	1.18	1.90							0.0	74.0	74.0	
Heavy Commercial	1.18	1.90					91.1	117.4	208.6	248.8	252.9	
Highway Commercial	1.18	1.90					57.6		57.6	52.5	52.5	
Neighborhood Center	1.18	1.90	34.2		8.1	35.7			78.0			
Industrial	3.32	5.36				415.2	255.3		670.5	1,221.3	4,852.7	
Public	1.18	1.90	32.5	24.2	16.4	150.3		42.1	265.5	233.9	482.2	
Park	2.04	3.29	116.1	28.9	133.6	199.1	13.8	23.5	515.1	17.3	17.3	

TABLE C-1: FUTURE WATER DEMANDS FROM THE DEVELOPMENT OF MASTER PLAN AREAS AND INFILL AREAS

<i>Land Use</i>	<i>Water Demand Factor, gpm/acre(a)</i>	<i>Demand Factor, ac-ft/yr/acre</i>	<i>Preferred Land Use Plan (ac-ft/yr)</i>							<i>Infill Areas</i>		
			<i>Master Plan Subareas</i>							<i>Total</i>	<i>In the Year 2030 (Partial TRIP Buildout)</i>	<i>At Buildout (Full TRIP Buildout)</i>
			<i>NW</i>	<i>SE1</i>	<i>SE2</i>	<i>SE3</i>	<i>SE4</i>	<i>SE5</i>				
Detention Basin	2.04	3.29	67.7	15.7	122.4	159.1	27.5	23.0	415.4			
Urban Reserve	0.00	0.00							0.0			
Agriculture	0.00	0.00							0.0			
Total			2,247	737	1,485	3,197	1,309	1,307	10,282	4,844	9,417	
Average Day Demand (gpm)									6,374	3,003	5,838	
Maximum Day Demand (gpm) (peaking factor = 1.65)									10,517	4,954	9,632	
Peak Hour Demand (gpm) (peaking factor = 2.15)									13,704	6,456	12,551	

Note: Urban Reserve water demand factor is 0 gpm/acre because this area is agricultural land and will obtain its water from private wells or other non-City sources.

Source: West Yost Associates, 2011

**TABLE C-2: SUMMARY OF ESTIMATED WATER DEMANDS IN THE YEAR 2030
(PARTIAL BUILDOUT OF THE TRIP)**

<i>Water Demand Source or Type</i>	<i>Water Demand</i>
Estimated Existing Conditions Demand (ac-ft/yr)	22,094
Infill Annual Demand in the Year 2030 (ac-ft/yr) (Partial Buildout of the TRIP)	4,844
Master Plan Areas Annual Demand (ac-ft/yr)	10,282
Total Annual Water Demand in the Year 2030 (ac-ft/yr)	37,219
Average Day Demand in the Year 2030 (gpm)	23,073
Maximum Day Demand in the Year 2030 (gpm) (peaking factor = 1.65)	38,070
Peak Hour Demand in the Year 2030 (gpm) (peaking factor = 2.15)	49,607

Source: West Yost Associates, 2011

**TABLE C-3: SUMMARY OF ESTIMATED WATER DEMANDS AT FULL BUILDOUT
(FULL BUILDOUT OF THE TRIP)**

<i>Water Demand Source or Type</i>	<i>Water Demand</i>
Estimated Existing Conditions Demand (ac-ft/yr)	22,094
Infill Annual Demand at Full Buildout (ac-ft/yr) (Full Buildout of the TRIP)	9,417
Master Plan Areas Annual Demand (ac-ft/yr)	10,282
Total Annual Water Demand at Full Buildout (ac-ft/yr)	41,793
Average Day Demand at Full Buildout (gpm)	25,908
Maximum Day Demand at Full Buildout (gpm) (peaking factor = 1.65)	42,748
Peak Hour Demand at Full Buildout (gpm) (peaking factor = 2.15)	55,702

Source: West Yost Associates, 2011

TABLE C-4: FUTURE AVERAGE WASTEWATER FLOWS FROM THE DEVELOPMENT OF MASTER PLAN AREAS AND INFILL AREAS

Land Use	Dwelling Units per acre ^(a)	Average Flow Factor, gpd/acre	Average Flow from the Master Plan Areas (mgd)							Infill Areas		
			NW	SE1	SE2	SE3	SE4	SE5	Total	In the Year 2030 (Partial TRIP Buildout)	At Buildout (Full TRIP Buildout)	
Rural Residential	0.2	48	0.001							0.001		
Very Low Density Residential	1.6	384								0.000	0.045	0.045
Low Density Residential	5.0	1200			0.054	0.310	0.037	0.070		0.470	0.189	0.189
Low-Medium Density Residential	7.5	1800	0.193		0.255	0.191	0.233	0.279		1.150		
Medium Density Residential	11.0	2640	0.519	0.310	0.106	0.228	0.074	0.054		1.291	0.177	0.177
High Density Residential	22.5	5400	0.279	0.083	0.139	0.204	0.053	0.078		0.837	0.450	0.450
High Density Residential/Office ^(c)		3250								0.000	0.006	0.006
Office		1100		0.001						0.001	0.059	0.162
Business Park		1100									0.076	0.316
Community Commercial/Office		1100								0.000	0.029	0.084
Community Commercial		1100	0.096	0.010						0.105	0.173	0.173
Community Commercial/High Density Residential		1100									0.009	0.009
Downtown		1100									0.043	0.043
Heavy Commercial		1100					0.053	0.068		0.121	0.144	0.146
Highway Commercial		1100					0.033				0.030	0.030
Neighborhood Center		1100	0.020		0.005	0.021						
Industrial		3300				0.255	0.157			0.413	0.751	2.986
Public		1100	0.019	0.014	0.009	0.087		0.024		0.153	0.135	0.279
Park		100	0.004	0.001	0.004	0.006	0.000	0.001		0.016	0.001	0.001
Detention Basin		0								0.000		
Urban Reserve		0								0.000		
Agriculture		0										

TABLE C-4: FUTURE AVERAGE WASTEWATER FLOWS FROM THE DEVELOPMENT OF MASTER PLAN AREAS AND INFILL AREAS

<i>Land Use</i>	<i>Dwelling Units per acre^(a)</i>	<i>Average Flow Factor, gpd/acre</i>	<i>Average Flow from the Master Plan Areas (mgd)</i>							<i>Infill Areas</i>	
			<i>NW</i>	<i>SE1</i>	<i>SE2</i>	<i>SE3</i>	<i>SE4</i>	<i>SE5</i>	<i>Total</i>	<i>In the Year 2030 (Partial TRIP Buildout)</i>	<i>At Buildout (Full TRIP Buildout)</i>
Total Average Flow			1.129	0.419	0.572	1.302	0.640	0.575	4.559	2.317	5.095
Peak Wet Weather Flow Peaking Factor			2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Peak Wet Weather Flow (mgd) (peaking factor of 2.1)			2.82	1.05	1.43	3.25	1.60	1.44	11.40	5.79	12.74

Notes:

1. Residential flow factors are based on the dwelling unit density, three people per dwelling unit, and 80 gpd per person, which does not include commercial/industrial, and other nonresidential flows.
2. Urban Reserve and Agriculture flow factor is 0 gpd/acre because it is assumed that this area is agricultural land and will use privately owned septic systems for wastewater treatment and disposal.

Source: West Yost Associates, 2011.

**TABLE C-5: SUMMARY OF WASTEWATER FLOWS TO THE TRWQCF IN THE YEAR 2030
(PARTIAL BUILDOUT OF THE TRIP)**

<i>Wastewater Flow Source or Type</i>	<i>Flow Rate, mgd</i>
Average Flow from Existing City	11.90
Average Flow from Future Turlock Infill in the Year 2030 (mgd)	2.32
Average Flow from Master Plan Areas in the Year 2030 (mgd)	4.56
Average Flow from Denair at buildout in 2030 (mgd)	2.03
Average Flow from Keyes at buildout in 2030 (mgd)	0.99
Ceres (Ceres will discharge a maximum of 2.0 mgd to the TRWQCF at buildout) (mgd)	2.00
<i>Total Average Dry Weather Flow (mgd)</i>	<i>23.79</i>
Peak Dry Weather Flow (mgd) (peaking factor of 1.3, but not applied to Ceres flow)	30.33
Peak Wet Weather Flow (mgd) (peaking factor of 2.1, but not applied to Ceres flow)	47.77

Source: West Yost Associates, 2011.

**TABLE C-6: SUMMARY OF WASTEWATER FLOWS TO THE TRWQCF AT FULL BUILDOUT
(FULL BUILDOUT OF THE TRIP)**

<i>Wastewater Flow Source or Type</i>	<i>Flow Rate, mgd</i>
Average Flow from Existing City	11.90
Average Flow from Future Turlock Infill at Full Buildout (mgd)	5.10
Average Flow from Master Plan Areas at Full Buildout (mgd)	4.56
Average Flow from Denair at buildout in 2030 (mgd)	2.03
Average Flow from Keyes at buildout in 2030 (mgd)	0.99
Ceres (Ceres will discharge a maximum of 2.0 mgd to the TRWQCF at buildout) (mgd)	2.00
Total Average Dry Weather Flow (mgd)	26.57
Peak Dry Weather Flow (mgd) (peaking factor of 1.3, but not applied to Ceres flow)	33.94
Peak Wet Weather Flow (mgd) (peaking factor of 2.1, but not applied to Ceres flow)	53.60

Source: West Yost Associates, 2011.

Appendix C: Hydrology and Utilities Supporting Data Tables

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DYETT & BHATIA
Urban and Regional Planners

755 Sansome Street, Suite 400
San Francisco, California 94111
☎ 415 956 4300 📠 415 956 7315