General Plan Update 2035

CITY OF WOODLAND

Opportunities and Challenges, Issues and Options

REVISED
June 2014

PREPARED BY

DYETT & BHATIA
Urban and Regional Planners

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EXECUTIVE SUMMARY

The City of Woodland is updating its General Plan: the "constitution" that will guide growth and development of the city and its environs through 2035. The General Plan will address a broad range of topics critical to maintainting and enhancing quality of life, including land use, housing, circulation, economic development, fiscal sustainability, environmental conservation, community design, and safety. Successful completion of the General Plan Update requires in-depth knowledge of the existing conditions, opportunities, and constraints across a range of key issue areas that the City is facing today. This knowledge is gained through a combination of outreach to the community (to assess the main issues and priorities from the public's perspective) as well as technical research and analysis.

Purpose

The Opportunities and Challenges, Issues and Options Report provides a review of current conditions and provides a base from which decisions can be evaluated for key elements including the development of the preferred land use plan and the Draft EIR and CAP. The Report provides a summary in one document that clearly identifies the physical aspects and elements that affect future land use and policy decisions. This is not a comprehensive analysis of all range of issues, but is rather focused on features and elements and the resulting assumptions or implications.

The Report is a key piece of technical work completed for the Woodland General Plan Update, complementing the public outreach conducted to date and the Economic and Fiscal Background Report completed in April 2013. It assesses all aspects of the city's built form, infrastructure, service provision, circulation network, and natural environment. Following the introduction, it includes chapters on:

- Land Use
- Environmental Resources and Constraints
- Circulation
- Public Facilities and Services

A final chapter, "Planning Opportunities and Challenges," summarizes the opportunities, challenges, issues, and options for each topic presented in the document. This assessment will directly inform the drafting and testing of land use alternatives, as well as the formulation of General Plan policies. Background research conducted for this document will also inform the environmental review of the General Plan required under the California Environmental Quality Act (CEQA). The following is a summary of the key opportunities and challenges:

Opportunities

- Ample land supply, sufficient to meet demand across sectors through 2035; few constraints on development
- Unique Downtown with character, historically significant structures, and potential for growth and greater vibrancy
- Excellent access to key regional assets that are important to economic development, such as rail, airport, Sacramento, major freeways, and UC Davis

Challenges

- Lack of flood solution impedes growth and economic development, particularly in industrial area
- Limited fiscal resources affects operation and maintenance of existing public resources (community facilities, roads, infrastructure) and the City's ability to provide and maintain new facilities in the future
- Growth on the periphery/on "greenfield" sites has potential to undermine efforts to revitalize older parts of the city; these potentially competing desires must be managed carefully to ensure that all development is mutually supportive

These overarching considerations, as well as those listed in the following table (Table E-1) and described in greater detail in the subsequent chapters, will structure much of the approach to the General Plan Update. Table E-1 provides a comprehensive tabular summary of the opportunities and challenges facing Woodland and makes some assumptions about the resulting implications of the various physical and natural elements within Woodland and its Urban Limit Line.

TABLE E-1 SUMMARY OF OPPORTUNITIES AND CHALLENGES BY TOPIC

ISSUES	OPPORTUNITIES	CHALLENGES
Growth/Development		
Residential	• Projected demand of approximately 4,000 to 5,500 dwelling units (du) through 2035 (depending on methodology used) • Spring Lake Specific Plan (SLSP) has ±3,000 dus to build out • Infrastructure capacity to the Spring Lake Master Plan Remainder Area (MPRA) provided through oversizing capacity in SL • Infill opportunities • Possibility for higher density land use categories • Create/expand mixed use categories in key locations like Downtown • Land supply, sufficient demand through 2035	• How much new land is needed to support residential growth, and where? • Timing and phasing regarding the extent of residential land development • Ensuring high quality design • Cost to build vs. market support/price • Providing affordable housing without redevelopment agency • Cost of connection fees and other City service charges for new construction
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Office	• Projected demand of 250,000 SF for local-serving office space through 2035 • Ample infill/reuse space available • Opportunities exist Downtown, along W Main; W Court; vacant retail areas • Opportunity to develop a business park that supports UC Davis and agriculture/biotech/seed industry • Increase non-residential Floor Area Ratios to allow for more intense commercial development (i.e. more square footage allowed on a site)	• Woodland not recognized in the regional office market • Majority of space available does not meet the needs of office-based companies the City may wish to attract • Successful business park requires substantial investment, marketing, long term development strategy • Cost of connection fees and other City service charges for new construction • Overcome the inertia of on-going obsolescence

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Downtown	• Increase activity, events, nightlife • Differentiate use experience • Distinctive/historic architecture • Available space, vacancies • Courthouse re-use • Demand for additional restaurants; entertainment, cultural uses activities • Important community asset	• Short-term infrastructure constraints • Competition with highway commercial • Higher development costs on many parcels because of reuse • Age of structures • Absentee owners • Parking: real or perceived shortage • Distance/awareness from I-5 and SR 113 • Cost of redevelopment compared to existing market rents • Environmental review for historic impacts • Desire/demand to support more restaurants

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Special Use Areas	• Rail relocation may assist flood solution • Plan mall, fairgrounds site as one area • Armfield area • Kentucky Avenue corridor • Crossroads and Cottonwood centers • SW corner SR 113/Main St • Gateways/entries • Ability to look at these sites holistically • Clarify intent and policies	• Outdated specific plans and policies that add confusion and constraints • Non-conforming sites and review delay • Too many land use designations • Lack of flexibility • Solution oriented process
Recreation and Open Space	• Provide passive and active recreational opportunities • Improve "livability" and "quality of life"	• Ability to meet service standards • Funding for acquisition and maintenance and operation
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Transit	• Excellent existing service provider • Improve service coverage • Improve service frequency • Improve service capacity • Air quality • Community health	• Funding (primarily for operations/maintenance) • Need greater density and mix of uses to support service expansion
Bicycle	• Create network of paths and trails • Improve "livability" • Reduce congestion • Safe Routes to School • Improvements to air quality • Community health	• Right-of-way availability • Funding for capital and operation/maintenance • Public insistence on use of the automobile
Pedestrian	• Encourage walking • Air quality and GHG improvements • Community health	• Need connectivity; fix gaps • Funding for improvements, operation/maintenance
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Storm Drainage	• Re-examine fees • Re-examine areas of benefit • Allow project-level solutions • Legislation to modify 218 process	• High impact fees • Program funding • New NPDES requirements • Distribution system undersized • Age of conveyance system • Levels of service vary by area • Street flooding in older areas
Flood Protection	• Opportunity for funding flood solution through a regional rail solution • Identify shallow versus deep depth areas • "Workarounds" for shallow areas • Possible private flood insurance options • Use fill in settling basin to build up pads • Assessment district	• Need immediate flood solution • New laws place liability on City, flood insurance • Need to improve Woodland's competitiveness • In areas of deeper floodplain flood insurance requirements, be available through private parties • Unknown comprehensive solution • Cost of infrastructure improvements may exceed benefit without multiple funding sources (Federal/State/Private)
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ISSUES	OPPORTUNITIES	CHALLENGES
Other, continued		
Environmental	• Woodland Regional Park habitat site • Relatively few environmental constraints overall besides flooding (limited habitat due to agricultural activities) • Successful odor management efforts • Consideration of noise standards for more urban environments	• Odor management (PCP; ponds, head-works) • Regional air quality conformity • Toxic air contaminant and noise exposure along freeways • Funding new regulatory requirements
Climate Change	• Improve sustainability • Lower energy demand for municipal and community use • Maximize use of resources • Water conservation practices • Adoption of CAP and alignment of policy and practice – often results in improved quality of life factors	• State regulation (reduced VMT) • CEQA exposure • Greenhouse gas emissions reduction • Expense to new development, residents and businesses • Increased environmental regulations • Climate change adaptation policies
CEQA/ Regulatory Streamlining	• Consistent projects move quickly • Eliminates exposure to lawsuits • Creates certainty • Minimizes risk • Saves money	• Upfront cost • Upfront level of detail and analysis • User education/implementation • Concerns over flexibility

Figure E-1 illustrates opportunities sites where development or redevelopment is likely to occur, and major physical constraints on new development. Features shown on the map exhibit existing physical conditions in the Planning Area, and include:

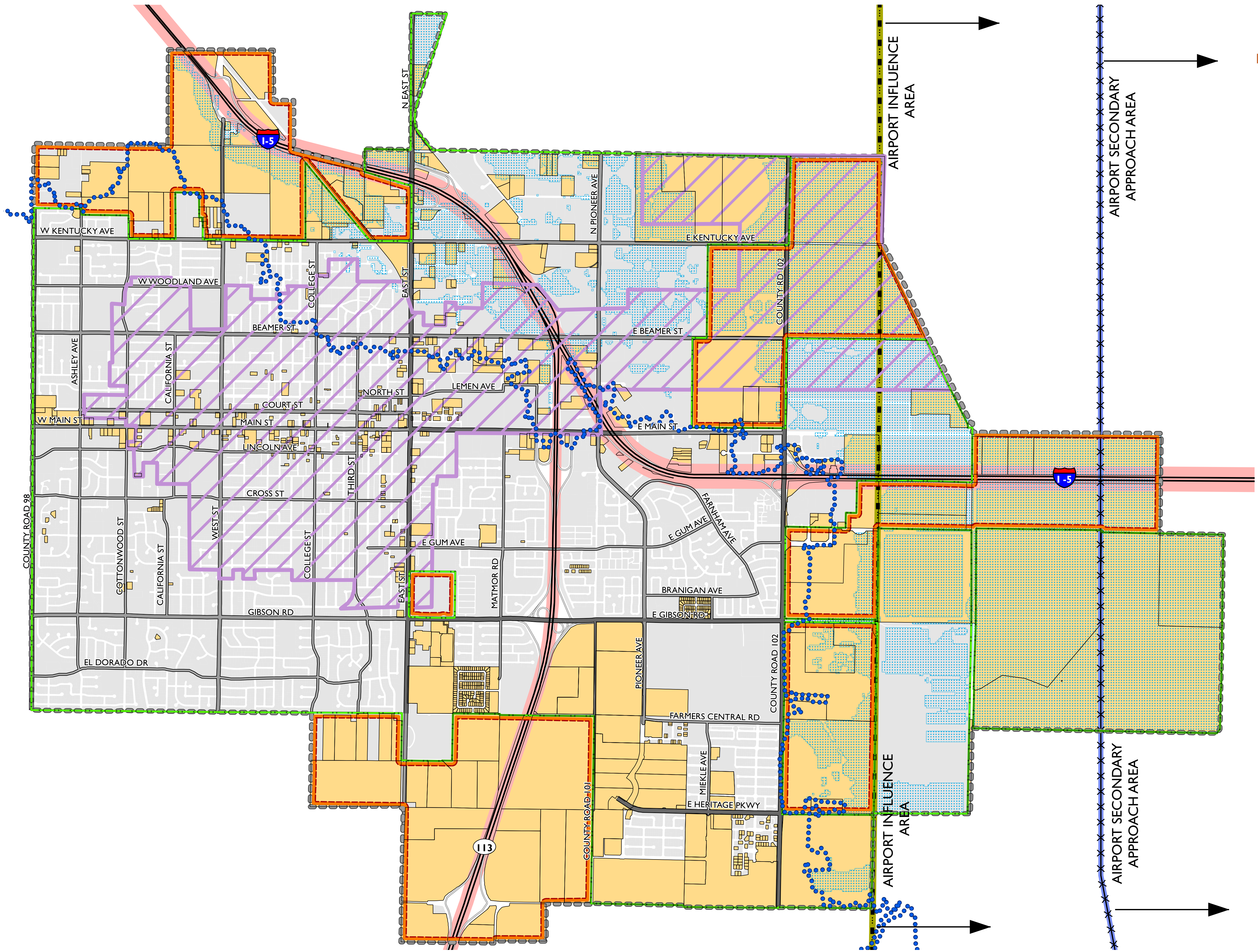
Opportunities

- Potential development opportunity sites, in **red**. These include a preliminary identification of vacant and underutilized parcels, as well as farmland in the Planning Area, and represent areas where the city may see new development over the course of the planning period.
- Areas within the current city limit versus outside the city limits (10-year and 20-year Sphere of Influence, as well as outside the SOI entirely but still within the ULL). Annexation of land outside of the city limits will require revenue-sharing agreements with Yolo County and possible reduction in property/sales tax (city limits shown in **green**; properties outside city limits shown with dark **orange** outline).

Constraints

- Deep (3 feet or greater) flooding areas, in **blue**. Development on properties within the 200-year floodplain must be designed to meet FEMA regulations, which may include elevating the floor above a specified base flood elevation and/or limiting the types of uses that are allowed on the ground floor. Properties with deep (3 feet or greater) historic flood depths are likely to face more serious development constraints than those that have typically experienced shallow flooding. These are the sites where development would be most constrained by flood risk.
- The area where wastewater flows to the Beamer sewer trunk line, which has very limited capacity to serve additional development (shown in **purple**).
- 70-decibel noise contours around highways (shown in **pink**). Some land uses are incompatible with this level of noise.
- The Sacramento Airport Influence Area (**olive** line) and Secondary Approach Area (**blue and black** line). Woodland is far enough from the Sacramento International Airport not to be affected by noise or aircraft approach restrictions, but a small portion of the Planning Area is within the Secondary Approach Area. Residential development in this area requires an overflight notification to be recorded.

Figure E-1: Opportunity Sites and Development Constraints



Opportunity Sites*

Constraints

- 200 Year Flood Zone
- Potential Flood Depth of 3 ft. or greater
- Highway Noise Contour (70 db and over)
- Beamer Trunk Line Sewershed

ALUC Policy Boundaries

- Airport Influence Area
- Airport Secondary Approach Area
- City Limits
- Outside City Limits (Annexation and Fee-sharing Required)
- Urban Limit Line
- Highways
- Principal Arterials
- Minor Arterials
- Collectors
- Ramps
- Railroads

** Includes Properties with Development Projects.*

0 0.375 0.75 1.5 Miles

Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013

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Opportunities

- Potential development opportunity sites, in **red**. These include a preliminary identification of vacant and underutilized parcels, as well as farmland in the Planning Area, and represent areas where the city may see new development over the course of the planning period.
- Areas within the current city limit versus outside the city limits (10-year and 20-year Sphere of Influence, as well as outside the SOI entirely but still within the ULL). Annexation of land outside of the city limits will require revenue-sharing agreements with Yolo County and possible reduction in property/sales tax (city limits shown in **green**; properties outside city limits shown with dark **orange** outline).

Constraints

- Deep (3 feet or greater) flooding areas, in **blue**. Development on properties within the 200-year floodplain must be designed to meet FEMA regulations, which may include elevating the floor above a specified base flood elevation and/or limiting the types of uses that are allowed on the ground floor. Properties with deep (3 feet or greater) historic flood depths are likely to face more serious development constraints than those that have typically experienced shallow flooding. These are the sites where development would be most constrained by flood risk.
- The area where wastewater flows to the Beamer sewer trunk line, which has very limited capacity to serve additional development (shown in **purple**).
- 70-decibel noise contours around highways (shown in **pink**). Some land uses are incompatible with this level of noise.
- The Sacramento Airport Influence Area (**olive** line) and Secondary Approach Area (**blue and black** line). Woodland is far enough from the Sacramento International Airport not to be affected by noise or aircraft approach restrictions, but a small portion of the Planning Area is within the Secondary Approach Area. Residential development in this area requires an overflight notification to be recorded.

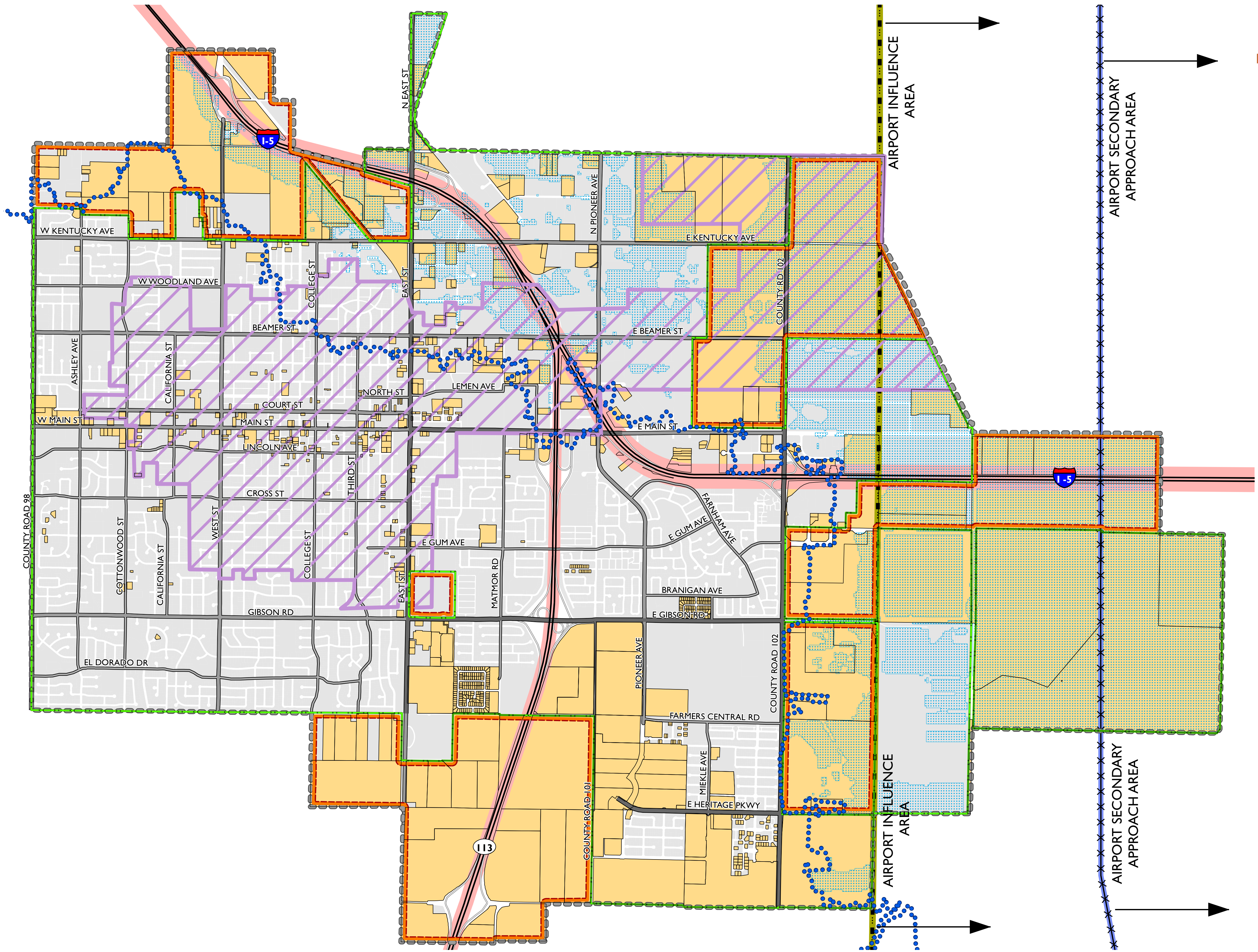


Figure E-1: Opportunity Sites and Development Constraints

Opportunity Sites*

Constraints

200 Year Flood Zone

Potential Flood Depth of 3 ft. or greater

Highway Noise Contour (70 db and over)

Beamer Trunk Line Sewershed

ALUC Policy Boundaries

Airport Influence Area

Airport Secondary Approach Area

City Limits

Outside City Limits (Annexation and Fee-sharing Required)

Urban Limit Line

Highways

Principal Arterials

Minor Arterials

Collectors

Ramps

Railroads

** Includes Properties with Development Projects.*

0 0.375 0.75 1.5 Miles

Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013

6 PLANNING OPPORTUNITIES AND CHALLENGES

The following discussion flows from the various key issues identified through this report on existing conditions and planning issues in Woodland. Opportunities and challenges pertaining to land use (generally and for each broad land use category), environmental resources, circulation, public services, and fiscal issues are discussed. The goal is to identify the key considerations for the General Plan Update as the process moves from information gathering to formulating land use and policy alternatives. The overarching opportunities and challenges facing Woodland that its General Plan Update must address are:

Opportunities

- Ample land supply, sufficient to meet demand across sectors through 2035; few constraints on development
- Unique Downtown with character, historically significant structures, and potential for growth and greater vibrancy
- Excellent access to key regional assets that are important to economic development, such as rail, airport, Sacramento, major freeways, and UC Davis

Challenges

- Lack of flood solution impedes growth and economic development, particularly in industrial area
- Limited fiscal resources affects operation and maintenance of existing public resources (community facilities, roads, infrastructure) and the City's ability to provide and maintain new facilities in the future
- Growth on the periphery/on "greenfield" sites has potential to undermine efforts to revitalize older parts of the city; these potentially competing desires must be managed carefully to ensure that all development is mutually supportive

Opportunities and challenges pertaining to each topic are also addressed in the individual chapters of this report. In some cases, a more detailed discussion of opportunities and constraints is found in those sections and subsections; this chapter highlights the most salient issues for consideration and introduces new ideas about the interplay between various planning subjects.

There are ample development opportunities in Woodland on infill sites, which can make use of existing infrastructure and avoid converting farmland. However, redevelopment of infill properties poses challenges as well that can make it difficult to compete with greenfield areas.

6.1 Land Use

General

Opportunities

While Woodland has a voter-approved Urban Limit Line (ULL), there is sufficient available land within this area to accommodate a range of growth possibilities while enabling the City to meet its economic development and quality of life objectives. Land is available in both infill and greenfield settings, and possibilities for development of both types would be explored during the General Plan update process.

Development of all land within the entire ULL may take an extended time—stretching several years beyond 2035, which is the horizon for this General Plan. Thus, the City needs to be strategic in how future land use is designated and distributed to ensure cohesive phasing and provision of infrastructure and services. The mix of land uses can be intensified in order improve environmental sustainability, better support alternative modes of transportation (decreasing reliance on single occupancy vehicle trips), and improve efficiency of service provision. Similarly, the General Plan Update allows the City the opportunity to explore the introduction of new land use designations, such as various types of mixed use (Downtown, Corridor, etc.) that can help facilitate a wider range of development activity. The General Plan Update also allows the City to focus on revitalizing key corridors and opportunity sites, such as Kentucky Avenue, East Street, West Main Street, and the County Fair Mall area.

Woodland is "land rich." Available land is a valuable resource that the City will want to be very strategic in utilizing, and this availability will only become more valuable with regulations and restrictions put in place that affect land availability in other nearby jurisdictions. What provides the best result and return for the community and City from a quality of life and fiscal sustainability standpoint?

In summary, the major land use opportunities that the City may explore through the General Plan Update are:

- Devise a phasing strategy for efficient and logical expansion of urban development within the ULL, including reviewing existing General Plan goals, policies, and assumptions that relate to growth management;
- Refresh the growth management strategy to better reflect future demand and community priorities;
- Identify new (and/or revise existing) land use designations to more effectively enable the type of development the City wants to see, particularly with regard to mixed use;

- Catalyze development in Downtown, along corridors, and on other infill sites; and
- Enable the development of new projects and neighborhoods that serve the community's needs and enhance quality of life.

Challenges

Having a generous availability of land and flexibility in land use creates challenges as well. Development of "greenfield" sites converts farmland, a valuable resource, to urban uses. Availability of greenfield sites also creates a disincentive to infill development and reinvestment in the city's core, on sites that are smaller, potentially more impacted, and potentially more expensive. Developing a phasing strategy for urban expansion—ensuring that development proceeds in an orderly fashion, with expansion onto greenfield sites occurring only as needed and in concert with extension of infrastructure and services—will be a key policy consideration for the General Plan Update. A logical phasing plan will also provide more certainty to property owners and allow the City to capitalize on partnership opportunities. The current land use categories that pertain to large parcels on the periphery that have longer-term development potential—e.g. Planned Neighborhood, Urban Reserve—may need to be reconsidered or redefined in order to help define a phasing plan.

While Woodland has some multifamily homes and housing specifically for seniors, a greater variety of options for multigenerational households, young singles and couples, and Baby Boomers looking to downsize is needed.

Residential

Opportunities

The Spring Lake Specific Plan (SLSP) has approximately 3,000 dwelling units still to build out, and the Master Plan Remainder Area (MPRA; which has not been approved/annexed or had a Specific Plan prepared) could potentially accommodate another 2,400. Beyond these large areas, Woodland has substantial capacity for infill development along its corridors and in Downtown.

Demographically, Woodland is changing—it has an increasing ethnic population, multigenerational families, and an aging Baby Boomer cohort. The General Plan Update offers the opportunity for Woodland to plan its housing mix to best serve the diverse housing needs of its future population—affordable single-family housing, housing that can accommodate larger families and multi-generational households, and smaller units in walkable settings for young urbanites or Baby Boomers looking to downsize.

Challenges and Issues

There are several principal challenges/issues relating to residential development:

- Currently, a large majority of the planned housing in Woodland is in the General Plan designated Planned Neighborhood areas of the SLSP and MPRA, which are located at the southern edge of the city. A greater geographic and housing type diversity may be necessary to meet the range of housing the population seeks.

- There remains a need for affordable ownership housing in the community. The City must find an additional 22 acres of land to zone to meet the State required Regional Housing Needs numbers for the recently reviewed Housing Element.
- An expressed desire by many community members is for housing in walkable settings, in traditional/established neighborhoods, or closer to Downtown Woodland. The General Plan needs to establish locations where such development may be feasible, and also facilitate production of affordable housing in these locations. This should be accompanied by a consideration of distribution, appropriate density, and design.
- It is a challenge to encourage housing elsewhere in the city, particularly on infill sites along corridors that need revitalization, if there is a large amount of greenfield housing capacity is available. The City will need to assess sound growth policy that provides for sound fiscal, service, and quality of life desires.
- Due to the cost of oversizing the infrastructure facilities in a greenfield area and to accommodate the future Master Plan Remainder Area, the Spring Lake infrastructure fees and Mello Roos costs place a burden on development that is passed on to homeowners. This results In individual homeowners shouldering the cost in the form of taxes and fees for development costs.
- The City has provided a significant amount of new single family first-time home buyer assistance as part of its affordable Inclusionary Program, but does not receive credit for this program as part of the RHNA assessment of available site analysis.
- It will be a challenge to find appropriate number and acreage required to meet the Housing Element requirements in order to provide adequate sites for the RHNA.

Woodland has seen successful retail development near I-5 that serves both local and regional customers. A challenge for the city will be to continue to capture shoppers at locations near the edge of town while supporting successful retail Downtown as well.

The City needs to encourage the provision of housing, both new and existing, within a range of costs such that the average Woodland household can afford to purchase and stay in town.

Retail

Opportunities

There are opportunities for Woodland to expand or strengthen its retail development sector in order to provide tax benefits to the City and to better meet the needs of its population. The city has a large amount of existing retail development which may in fact result in a dilution of the strength of the sector. Strategies will be needed to address this issue while at the same time attracting new, high tax generating uses that address changing values and shopping habits while protecting the downtown. This includes tailoring uses in outlying areas to stem any sales "leakage," providing for retail needs of new population, and increase the city's regional presence to capture greater share of regional retail demand.

Population growth in Woodland alone will generate demand, at minimum, for another 400,000 square feet of retail (of all types) through 2035. Woodland's location on I-5 allows it to capture additional retail demand from the surrounding area, especially smaller neighboring communities to the north. Accounting for its share of regional demand, Woodland could potentially capture more retail sales dollars than what would be generated by population growth in the city alone. Capturing this demand could be accomplished by several different—and potentially complementary—approaches: planning for more freeway-oriented retail at the northern and southern "gateway" interchanges, while at the same time promoting unique, "specialty" retail in Downtown Woodland that would help attract visitors from outside the city to Downtown as a specific destination.

Challenges and Issues

There are several principal challenges for Woodland's retail sector that the General Plan should address:

- How to create a greater presence for the Downtown for residents and visitors in order to provide the concentration that will attract more retail and restaurants to Downtown, especially in the face of ever-growing freeway-oriented larger establishments;
- How to incentivize investment in the Downtown;
- Ensure that the community- and neighborhood-serving retail centers (with supermarkets, drugstores, convenience stores, and cafés/restaurants) are strengthened with strategies developed for addressing underperforming areas;

Monsanto recently expanded its research facility west of Woodland. Growth in the agricultural technology industry and proximity to UC Davis could represent an opportunity for the city for development of similar business/research park uses in Woodland. Top photo: Woodland Daily Democrat. Bottom photo: UC Davis.

- How to strategically expand the regional retail presence to improve the City's tax base and regional presence without curtailing growth or even harming retail in Downtown and neighborhood-accessible locations that the community seeks;
- Concern that the city has a large amount of retail development, but that it may be located in the wrong place and is very costly to rehabilitate;
- How to address the extensive amount of strip commercial along key corridors, which dilutes the success of key commercial nodes and Downtown; and
- There needs to be a greater vibrancy and activity drawing people to the Downtown and then the ability for customers to park and access businesses in a reasonable distance.

The current General Plan designates more land for retail uses than demand currently warrants, even through 2035. However, some of that land is in older shopping centers (many strip centers and the County Fair Mall) that are in need of reinvestment and revitalization. The challenge will be to ensure that there is adequate space allocated for retail to meet market needs in all parts of the city—not just in easily developable sites along the freeway—and to facilitate conversion of these older properties. Another challenge will be to ensure that different types of retail in Woodland can thrive simultaneously, that the larger stores near the freeway complement, rather than compete with, smaller stores Downtown and in neighborhoods.

Office

Opportunities

Downtown Woodland hosts some professional office space, mostly related to the Yolo County Courthouse, but otherwise serving a local market. Relocation of the Courthouse to the south side of Main Street will likely cause some movement in the office market, as existing office users may relocate to be nearer the new facility and new users may enter the market as the Courthouse expands. It is unclear what the impact of this relocation will be on the western portions of the downtown and how the existing courthouse will be reused.

The City is expected to see demand for at least 250,000 square feet of office space through 2035. This demand could be met through infill and reuse of land Downtown, and along West Main Street, West Court Street, and in Cottonwood Plaza, but other opportunities to expand Woodland's office presence exist as well.

The key General Plan opportunities for the office sector are the following:

- Build on the new Courthouse as a catalyst for new office development serving the law sector, with opportunities to serve local and visiting attorneys; and

- Establish Woodland as an agricultural, technology, and business park location by building on its proximity to UC Davis, focusing on R&D and service companies related to the ag biotech/seed research cluster, with flexible land use standards and spaces that could accommodate a mix of office, lab, and service/warehouse space.

Challenges and Issues

The supply of land currently designated for office uses exceeds the demand for this space through 2035. However, while existing built office space in Woodland may meet the needs of local small businesses desiring convenient in-town space, this inventory cannot be sized or configured to meet the needs of future users, particularly if the City chooses to pursue companies that would seek a business park setting or mixed use setting. The main challenges relating to office development include:

- Recasting the regional perception of Woodland as a regional office destination. The city is not a large office market, nor does it currently have a regional presence in this market. An economic development strategy including marketing/branding may be necessary.
- Designing a successful business park node. Much of the industrial space in the city is warehouse/distribution oriented, and there is no currently suitable business park land available. Establishing a successful business park requires more than land designation—these require ambiance, well-designed streets, landscaping, separation from noxious or visually unpleasant uses, and close proximity to retail, housing, and other amenities to attract professional workers.
- How should the city capitalize on access and proximity to UC Davis, as an incubator?
- Reuse of old courthouse as a possible office and employment generator for Downtown.
- Woodland is not considered a prime office location. Office locations in the Downtown are older and obsolete and in some places parking is not immediately accessible.

Woodland's assets, such as freeway, rail, and airport access, have attracted manufacturers and other heavy industrial uses. However, this is a shrinking sector, and flooding issues hinder the city's competitiveness.

Industrial

Opportunities

The city has large amounts of vacant land available for future industrial development, which is a significant asset. Woodland has established itself as an industrial center in the region, with a large number of warehousing, distribution, manufacturing, and other similar uses. These are concentrated in the northeast, but some are located elsewhere throughout the city along rail lines, such as in the East Street corridor. Woodland has many assets that make it appropriate and desirable for industrial users, such as its rail access; proximity to I-5, Sacramento International Airport, UC Davis, and surrounding agriculture; availability of large parcels (both for new construction and reuse); and affordable land costs.

An additional opportunity would be using recycled water in the industrial area. The quality of Woodland's recycled water is very good, and it will improve further following implementation of the surface water project. This would allow greater capacity for "wet" industries (food processing, beverage plants, etc.).

Challenges and Issues

The biggest challenges regarding industrial development in Woodland are:

- Additional future demand and uncertain benefit to the community, for the kind of industrial uses Woodland currently has (primarily warehousing and distribution) is unclear, and manufacturing has been a shrinking sector.
- Maximizing the wages, job opportunities, and revenue yield associated with this type of "low-investment" industrial use, which is difficult in an environment where automation is increasing.
- The impact to the community from uses with high truck volumes.
- The significant flooding-related challenges that Woodland faces are concentrated in the northeastern portion of the Planning Area, where industrial uses have traditionally been concentrated and will likely remain in the future. While historic flooding depths in this area have been low, special design considerations and additional insurance are necessary for building in this area, and new State regulations relating to building in the 200-year floodplain have recently come about (see Section 6.4 for more information on flooding constraints). There is fear concerning potential high insurance costs and liabilities to users and local jurisdictions. This constraint has deterred potential new industrial users, who have comparable opportunities elsewhere where flooding is not an issue.
- Extending additional wet utility infrastructure trunk lines to the industrial area. The City should look for an opportunity to partner with an industry to share the costs of a trunk line, which would then have available capacity for other users as well.
- Relook at the industrial land sector, including Specific Plan areas, to evaluate possible preferable use and performance standards to possibly differentiation heavier, noxious uses from the light/custom manufacturing and R and D uses.
- Improve the physical appearance and aesthetics of the industrial area. Address the significant amount of non-conforming uses and develop-

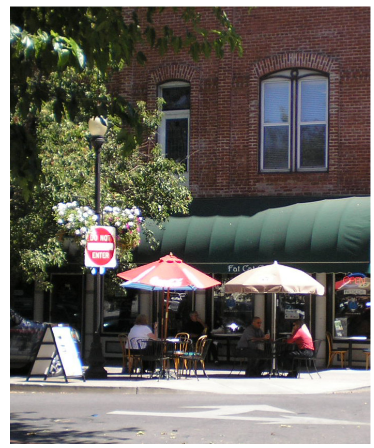
ment by developing strategies to focus on creating the type of desirable environment that will attract higher wage generating uses.

The industrial area faces other current challenges as well, some of which contribute to the difficulty in attracting new users: the age and obsolescence of structures, the lack of amenities, and high storm drainage impact fees.

Downtown

Opportunities

Downtown is distinctive, with a substantial stock of historical buildings and designation as a National Register Historic District. It offers unique shops and restaurants and is walkable, with a grid system of streets that connect it to the adjacent neighborhoods. Many older buildings have been maintained or restored, although some have languished due to neglect. Downtown Woodland has significant potential for revitalization, to further embody the vision that so many residents have for it: a vibrant area with activities, destinations, and entertainment day and night for all residents and their families. It also has the potential to accommodate a greater diversity of uses, and emerge as a residential district in its own right.



City residents treasure Downtown Woodland for its charm, family businesses, and historic character. They also want to see the area become livelier, with entertainment and a greater mix of uses.

Challenges and Issues

Redevelopment of older, urbanized cores typically presents greater challenges than new development on greenfield sites. For instance, it can be expensive to bring older buildings into compliance with today's building and fire codes (though cities can adopt the California Historical Buildings Code to address this constraint), and standard parking requirements may have to be waived or adjusted because of small parcel sizes. Properties may have absentee owners, who have less interest in improving their properties. Key challenges and issues are:

- How to address the issue that Main Street is a high volume roadway that has the competing need to move traffic through town, while at the same time needs to slow traffic in order to create a desirable pedestrian space with ambiance that will make residents and visitors enjoy their experience and what to shop and stay. Noise, dust, odors, traffic proximity and safety are issues that need to be overcome.
- How to bring activity and customers who have adequate disposable income and a desire to spend on Downtown Businesses. It is circular, in that it is essential to provide the right mix of business and entertainment to first attract and then to encourage spending.
- How to foster a unique identity for Downtown. There is widespread agreement in the community that Downtown needs to be more vital and a focus of the entire community, and perhaps even beyond. What should this role and identity be? During the initial outreach phase, community

members have offered several suggestions, including shaping an identity that builds on Woodland's agrarian roots, creating community gathering spaces and events, and potentially creating a marketplace flavored to cater to the large Hispanic community.

- How to create a critical mass of retail and restaurants in Downtown. Many of the establishments in Downtown are smaller, which have a difficult time competing with the convenience, size, and familiarity of large-format retail located near highways. The updated General Plan would need to balance retail uses in Downtown with freeway-oriented retail to ensure that these areas complement each other and that Downtown retailers can thrive. Are there key everyday uses that could be located Downtown that would bring more people there on a regular basis such that they became familiar with and desired to come Downtown? Is there a way that downtown concept and the downtown experience can be widened to include more than just the one linear Main Street, but rather encompass a number of blocks both to the north and south to create this critical mass?
- How to attract new residential uses in Downtown. Downtown Woodland is relatively large, and has the ability to be an identifiable residential district catering to the needs of those who desire living in walkable, urban settings. Key questions are where specifically residential uses should be located, what should the overall amount and type/character of this development be, and whether there is infrastructure capacity (parking, waste management, sewer, water, etc.) to easily allow this.
- Reuse of the County Courthouse. Relocation of the County Courthouse offers the opportunity to explore alternative uses for the large existing, Beaux-Arts style building that is on the National Register of Historic Places. A new college or institution is one idea that has been suggested by

Good street design creates a safe and pleasant environment for pedestrians and cyclists as well as vehicles. The new General Plan will include policies to create "Complete Streets" that are designed to serve all users.

the community. Since the building is owned by other agencies, the City would need to work with them to foster adaptive reuse.

- Meeting infrastructure needs. Finally, Downtown is also served by the city's oldest water and wastewater infrastructure: water pressure is low, and the sewer trunk line serving the area is at capacity. While these issues can be resolved, they persist in the short term.

6.2 Environmental Resources and Constraints

Opportunities

Because of agriculture and urban development, there are few significant biological habitats or other significant environmental resources in Woodland. However, there are several opportunities for environmental conservation and stewardship that Woodland could foster through this General Plan Update:

- Woodland Regional Park has been identified as a high priority property for habitat conservation, which represents an opportunity for outdoor environmental education and for low-impact recreation such as bird watching. There are several examples of development of such combined conservation and recreational amenities, including local examples in Yolo County; these areas can attract visitors from regions outside of Yolo County and thus provide economic benefits and contribute to local tourism.
- The City could also consider a proactive urban forest management program that increases habitat potential of the city's urban tree canopy and also provide co-benefits of moderating urban heat island effect, carbon sequestration (a limited benefit, as quantified in the 2010 Urban Forest Resource Analysis and Community Canopy Study, and costly for the City to expand and maintain), and enhanced aesthetics. The General Plan Update and Climate Action Plan also provide the City with the opportunity to comprehensively address carbon emissions, through land use and transportation decisions as well as through policies addressing energy efficiency. Addressing greenhouse gas emissions through land use and transportation planning has co-benefits of improving community health and wellness (by improving pedestrian and bicycle facilities and circulation), improving air quality, and providing greater choice in transportation modes.
- Additionally, the designation of Downtown as a National Register Historic District is a key asset of the City, and presents an opportunity for the updated General Plan to better capitalize on this distinction and foster economic development through tourism and local business support. The Downtown Specific Plan is the primary regulatory document for this area, and consistency between the Specific Plan, the updated General

Plan, and community objectives for the Downtown must be ensured. Additional considerations are due to agricultural and stormwater run off, including sediment deposits on local streets and properties. Most importantly, the time frame for the development of a future flood solution is critical to Woodland's continued economic growth. The City is mounting every effort to facilitate a solution sooner rather than later.

Challenges and Issues

Flooding is expected to be a major consideration driving policy and land use decisions for the new General Plan. It will continue to affect the land use pattern, development regulations, growth management strategies, infrastructure provision, economic policy, and other fundamental aspects of the General Plan. The Plan will need to strategically address short- and long-term solutions to the hazards and restrictions on development in the 200-year floodplain, pursuant to the 2007 legislation from the State. Some additional constraints on development in the floodplain are discussed in Section 6.4 below.

With the exception of flooding, Woodland has relatively few environmental constraints. Certain environmental constraints present in—but not unique to—Woodland have implications for land use and policy decisions. For instance, toxic air contaminants (TACs) concentrate near freeways, impacting the type and design of new development in those corridors. Increasing noise, as well, is a consequence of increased automobile travel, railroad use, and growth in general. The new General Plan will need to incorporate noise standards that are appropriate for an urban environment (while still protecting sensitive noise receptors), criteria for locating uses where TACs are high, and other environmental health considerations.

6.3 Circulation

Opportunities

Woodland's circulation system performs very well, at acceptable levels of service for automobiles throughout the Planning Area. The current roadway network has excess capacity, suggesting that major improvements to accommodate new growth may not be needed (though this will be assessed quantitatively during the Alternatives phase of the General Plan Update process). There is enthusiasm amongst the public to improve access and facilities for travel by bicycle and on foot, as well as to improve transit service. Facilitating travel by these modes of transportation improves air quality, reduces greenhouse gas emissions, promotes community health, and lessens impacts on roadways and parking facilities. Safe and convenient bike access to Davis could be easily provided if the railroad along East Street were relocated. Thus, major circulation-related opportunities in the new General Plan include:

- Focusing on creating Complete Streets that are safe, pleasant, and efficient for all modes of travel, with a particular focus on expanding the pedestrian and bicycle network;
- Exploring options for rail relocation and opportunities for enhancing land use and transportation options along the East Street corridor as a result; and
- Reconsidering, from a policy perspective, how the City wants to set standards for roadway performance—continuing the traditional Level of Service (LOS) standard, changing the LOS standard, or adopting a different type of standard entirely, such as one that considers the performance and function of multiple modes of transportation. This approach would have the affect of allowing the community to choose what types of streets should be prioritized for different purposes, and apply different standards—for instance, standards for Downtown streets and residential neighborhoods could focus on improving the pedestrian experience, while standards for the industrial area could focus on truck movement, and standards for arterials near the highway could be focused on improving automobile flow and minimizing delay.

Challenges and Issues

Funding for roadway maintenance and improvements presents the greatest challenge for Woodland's circulation system. A number of improvements have been identified but not implemented due to lack of funds, such as the traffic-calming program. Funding is also necessary to implement the pavement maintenance program, as well as improvements to the bicycle and pedestrian network, which were identified as high priorities by the community. Improving transit service relies not only on funding, but also on increased density and land use mix in order to support the increased service and coverage that is desired. Finally, while Woodland's rail access is seen as a draw to industrial users, the presence of the railroad on East Street severely limits the revitalization potential of that corridor. Relocating the rail line to the east side of the Planning Area is a popular concept amongst community and decision-makers alike, but it presents serious funding and engineering challenges and may not be possible within the time horizon of the new General Plan.

6.4 Public Services and Utilities

Infrastructure and Flooding

Opportunities

Overall, Woodland is well served by utility infrastructure with available capacity (water, sewer, stormwater). The wastewater treatment plant has excess capacity, affording Woodland the potential opportunity to sell capacity to neighboring communities once it can ensure that it can serve its own projected growth. Implementation of the surface water project in conjunction with the City of Davis (anticipated in 2016) will allow Woodland to decrease reliance on groundwater. While there are specific geographic constraints and fee structure challenges that merit further attention, there may be short-term "workarounds" for developable parcels that could help jump start economic development in advance of more comprehensive long-term fixes.

Challenges and Issues

The fact that the sewer and stormwater systems are at capacity in Downtown places a significant limitation on that area's ability to intensify and accommodate more growth, particularly in the short term. Similarly, the flooding issues and stormwater fees in the northeastern industrial area are serious deterrents to new industrial development. Moreover, due to its location within the Sacramento-San Joaquin Valley, Woodland will be subject to additional regulations pursuant to the 2007 flood risk management legislation following adoption of the new General Plan; namely, the City will not be allowed to approve new development agreements, discretionary permits, discretionary entitlements, ministerial permits, or tentative maps in areas subject to the 200-year flood without demonstrating adequate flood protection measures. As a comprehensive citywide flooding solution is not likely to occur within the time horizon of this General Plan Update, a critical challenge for the new plan will be to identify interim solutions that will promote economic development and allow development to move forward in the affected areas. The City is working on development of a flood solution that is hoped to be achieved in the near term. Securing financing to support a flood solution is a key issue.

In addition to addressing potable water supply, the surface water project will also allow City to re-evaluate economic feasibility of using recycled water. However, the City also has an aging well infrastructure. Sixteen of the City's wells have been in operation for 30 years or longer and five wells for 40 years or longer. The typical life of a well is between 30 and 50 years. Because the City will continue to supplement surface water diversions from the Sacramento River with well water, the City will need to invest in new well construction, particularly to meet demand during summer months when water rights are limited. New State stormwater permit requirements are very onerous and will require development of new procedures, actions, and may carry high cost to implement (NPDS).

Some wells will be taken offline due to nitrate contamination and not because of age or because of mechanical difficulties. This provides an opportunity to have a "purple pipe"[1] hub created within the city proper. At very least, the

1 The convention for transmission of recycled water is to use purple-colored pipes, so that this water can be easily distinguished from other types of water (potable, wastewater, etc.).

park where a disabled well is located could be removed from the potable water system and irrigated by the now "unusable" well. This could then lead to having a source for recycled water in various places around the city.

Public Safety and Parks/Recreation

Opportunities

The General Plan Update allows Woodland to take a critical look at its park and recreation facilities and services, in terms of service standards that can be maintained, as well as in terms of the match between services provided and the needs and desires of the community. Woodland residents value their parks and other recreation centers, but also have some concern about their upkeep and safety. The planning process also gives the City the chance to evaluate the physical distribution of parks, to ensure that all neighborhoods are being served equally.

With respect to public safety, the police and fire departments have the opportunity to reconsider their service standards and look for ways to increase their efficiency and quality of service.

The City is working with UC Davis and Yolo County with regard to cooperation and coordination for inter-agency support.

Challenges and Issues

Any discussion of increasing the number of public parks and recreation facilities must be accompanied by a strategy for their ongoing operation and maintenance. The City must focus on maintaining what it currently has, maintaining what is being proposed, and securing a revenue source for both of those efforts. If thought of as a business plan, the General Plan helps define the goals and strategies to live within the City's means. The same challenge applies to police and fire service: existing deficiencies in response times must be addressed—and service must be able to be maintained—before considering how to serve additional growth. The City will be evaluating critical service needs in all service sectors under the City's umbrella of agency service from parks to public safety. What is critical and what can the City afford. What is that balance?

6.5 Economic Development Fiscal Considerations

Opportunities

The General Plan Update offers three major opportunities pertaining to fiscal sustainability:

- Balancing land use and service levels with current fiscal realities,
- Growing the fiscal base in the longer term, and
- Providing a long term business plan for the community.

Service levels can be reconsidered and realigned, and community expectations reset, which is necessary given current economic and fiscal conditions that have caused the City struggles to maintain and provide services at the levels specified in recent years. Fiscal considerations may also guide land use decisions: for instance, development within city limits provides greater revenue than that which requires annexation because it is not subject to revenue sharing agreements with Yolo County. Similarly, the General Plan Update provides a chance for the City to evaluate the fiscal impacts of various land use alternatives during the next stage of the Update process, so that the public and decision-makers can clearly understand the implications of land use patterns and policies on the General Fund. Ultimately, the General Plan can play a role in setting the City on a course for fiscal sustainability through a steady expansion of revenues and provision of services in line with the community's needs and the city's financial capabilities.

Challenges

Woodland has faced a number of significant fiscal challenges in the last several years. By and large, these are not unique to Woodland and have been experiences shared by many California jurisdictions:

- Declining property values, particularly for residential development
- Loss of redevelopment funds
- Rising costs of employee benefits
- Loss of sales tax due to new economy and shopping habits
- High infrastructure costs, both capital and operation/maintenance
- Challenges of maintaining levels of service desired by the community and essential to ensuring public safety and welfare

But more specifically, the City is struggling to balance providing services and amenities with the ability to pay for them. The city is also burdened by the requirement to pay off bond debt for oversized facilities such as the Sports Park, Community and Senior Center, and new police station. Woodland needs growth and incoming income to be able to pay off that debt. Assumptions made back when debt was taken on were vastly overestimated, and the City is now struggling financially.

Of the major contributors to the City's General Fund, the General Plan has the most influence (directly or indirectly, through land use and policy decisions) over sales tax, property tax, and development fees. In general, the City has relied heavily on new development to generate revenue, and over the course of the economic downturn (during which development has slowed significantly), the impact on the City's General Fund has been critical.

Various types of development (residential versus commercial, for example) have different net impacts on the City's General Fund, as they require different levels of service and contribute different amounts of tax revenue. New growth, while it generates economic benefits, also requires services such as police, fire, road maintenance, infrastructure, and other community amenities. Future land uses in Woodland must be planned for in a way that is mindful of these uses' fiscal impact, but not at the expense of other community goals such as having an appropriate land use mix. Service standards must be set at levels that are fiscally sustainable but also provide for the safety and quality of life that Woodland residents expect. Achieving a balance between maintaining/enhancing quality of life (especially with respect to community facilities and safety services), while still living within the City's means, is a key challenge.

A final challenge pertaining to fiscal issues is the mismatch between the timeframe of the General Plan (20 years) and the City's shorter-term fiscal circumstances. Implementation of many of the policies in the General Plan will take many years, and the fiscal effects of plan policies and strategies will not be seen immediately. The City must identify a short-term fiscal strategy to address current concerns that is still aligned with the long-term General Plan approach.

While employee benefit costs may continue to be an issue in the coming years, addressing this challenge is outside the scope of the General Plan Update.

For a more detailed discussion of market potential, fiscal constraints, and general economic development opportunity and challenges, please refer to the companion document entitled "**Economic and Fiscal Background Report**," published April 2013 and available on the General Plan Update website.

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5 COMMUNITY FACILITIES AND SERVICES

This chapter provides an overview of community facilities and services located within the Planning Area and evaluates whether there is sufficient capacity to accommodate projected growth. Community facilities discussed below include parks and open space, schools, public safety services (police, fire), and utilities (water, wastewater, stormwater, and natural gas). Evaluation of key demands, such as required park ratios and public safety service levels will be considered as part of the General Plan update.

5.1 Parks and Open Space

The City of Woodland owns and operates numerous parks and recreation facilities. Programming of park resources is provided by the Community Services Department, while the Public Works Department provides maintenance. Maintaining existing facilities, acquiring and developing additional facilities to meet future needs, and providing programming for parks and recreation areas as the city's population grows will be an important component of the General Plan Update.

Existing Facilities and Planned Improvements

The city has 16 neighborhood parks, four community parks, five community sports parks, and two recreational facilities, including the 60-acre Woodland Community and Senior Center. The City also owns a 160-acre undeveloped park site known as Woodland Regional Park, which is located just beyond new residential development along County Road 102 (CR 102) and County Road 25 (CR 25) on the east side of Woodland. This site will be designated as habitat through a conservation easement, but public access and some minimal recreational facilities (e.g. paths) may still be provided.[1] Altogether, the city contains approximately 171 acres of developed parkland and 177 acres of undeveloped parkland for a total of 348 acres. Woodland's current inventory of parks and recreation facilities is listed in Table 5.1-1. Figure 5-1 maps their location in the Planning Area.

1 Woodland Regional Park has remnants of an old waste fill site and is populated with Special-Status species.

The City plans additional park development as part of the Spring Lake Specific Plan (SLSP), which at buildout will include more than 4,000 new housing units. Jack Slaven Park (8 acres) is the first of 28 acres of neighborhood parks to be developed in Spring Lake. According to the Specific Plan, construction of the second neighborhood park is triggered by issuance of the 1,950th building permit, and construction of the third neighborhood park is triggered by the issuance of the 3,250th building permit. An additional 16 acres of neighborhood parks are planned in the Master Plan Remainder area.

TABLE 5.1-1 PARKS AND RECREATION FACILITIES INVENTORY

PARK OR RECREATION FACILITY NAME	ACREAGE
Neighborhood Parks	
Beamer Park	2.2
Campbell Park	6.7
Christiansen Park	1.6
City Park	3.9
Cline Park	4.4
Everman Park	3.4
Freeman Park	2.3
Harris Park	3.1
Jack Slaven Park	8.0
North Park	1.4
Roddy Park	0.5
Schneider Park	3.9
Southland Park	2.7
Traynham Park	3.2
Tredway Park	1.6
Woodland West	0.4
Subtotal Neighborhood Parks	*49.3*
Community Parks	
Crawford Park	10.0
Ferns Park	10.0

Jack Slaven Park is the first to be developed in the Spring Lake Specific Plan area and features a water play feature.

TABLE 5.1-1 PARKS AND RECREATION FACILITIES INVENTORY

PARK OR RECREATION FACILITY NAME	ACREAGE
Pioneer Park	10.0
Woodside Park	10.0
Subtotal Community Parks	*40.0*
Community Sports Parks	
Buchignani Field	1.5
Camarena/Pedroia Field	3.5
Clark Field	3.4
Harris Field	3.1
Klenhard Park	7.0
Subtotal Community Sports Parks	*18.5*
Recreational Facilities	
Woodland Community and Senior Center (20 acres, including dog park), Sports Park (28 acres), Undeveloped (12 acres)	60.0
C. Brooks Community Swim Center	3.4
Subtotal Recreational Facilities	*63.4*
Total Developed Parkland	**171.2**
Open Space and Trail Areas	
Regional Park[1]	160.0
Detention Basins	
Douglas Park/Pond	15.0
Streng Pond Park	2.2
Dubach detention pond/Velocity Isla.	n/a
Total Undeveloped Parkland	**177.2**
Other	
Woodland Cemetery	22.0
Hiddleson Pool (Closed)	3.4

Note: Some totals may not add due to rounding.

1 The Regional Park has the remnants of an old waste fill site and is populated with Special Status species. It is unclear at this time whether the site will be used as park space for the city. It may in the future be designated as habitat through a conservation easement.

Source: City of Woodland, 2013.

Community sports parks, such as the Woodland Sports Park developed adjacent to the Woodland Community & Senior Center, provide space for youth athletic teams and tournaments.

Recreation Programs

The Community Services Department provides recreation programs to more than 50,000 Woodland residents annually. Examples of programs include youth sports, adult sports, youth and adult aquatics classes, senior services, youth enrichment, and various other programs. Priorities for recreation programs in the coming years include: (1) increasing use of existing programs and facilities; (2) expanding contract classes; (3) expanding art classes; (4) adding teen programs; and (5) increasing recreational facilities, including new soccer/baseball fields and tennis courts.

Standards

Woodland's current General Plan defines an overall parkland standard of 6 acres per 1,000 residents. At an estimated population of 55,694 in January 2013, Woodland's ratio of developed parkland per 1,000 residents is 3.1, well below the General Plan parkland standard of 6.0.

The City's Parks Master Plan also establishes a citywide parkland requirement of 10 acres per 1,000 residents for new master planned areas. The parkland requirement for new master planned areas per 1,000 is broken down as follows: (1) two acres for neighborhood parks; (2) one acre for community parks; (3) three acres for regional parks; and (4) four acres for special use/sports fields.[2] In the case of Spring Lake, the City permitted a lower parkland standard of 5 acres per 1,000 residents.

Deficiencies and Planned Improvements/Match with Community Needs

As discussed above, Woodland does not currently meet its General Plan parkland standard for population. Furthermore, parkland is not evenly distributed throughout the city. As a general rule of thumb, every residence should be within a quarter-mile (5 minute walking distance) of a neighborhood park. Figure 5-2 shows the quarter-mile and half-mile walk-sheds from neighborhood, community and community-sports parks, and highlights existing residential areas that do not fall into that area. Residential neighborhoods with poor access to parkland include residential areas primarily in the southwest (along West Street and California Street between Cross Street and the southern boundary of the Planning Area) and central (to the north and southwest of the State Route 113 and E Gibson Road interchange) parts of the Planning Area, as well as smaller areas scattered throughout the northwest and southeast (Spring Lake) parts of the city.

2 Park and Recreation Element, Spring Lake Specific Plan. City of Woodland (2001).

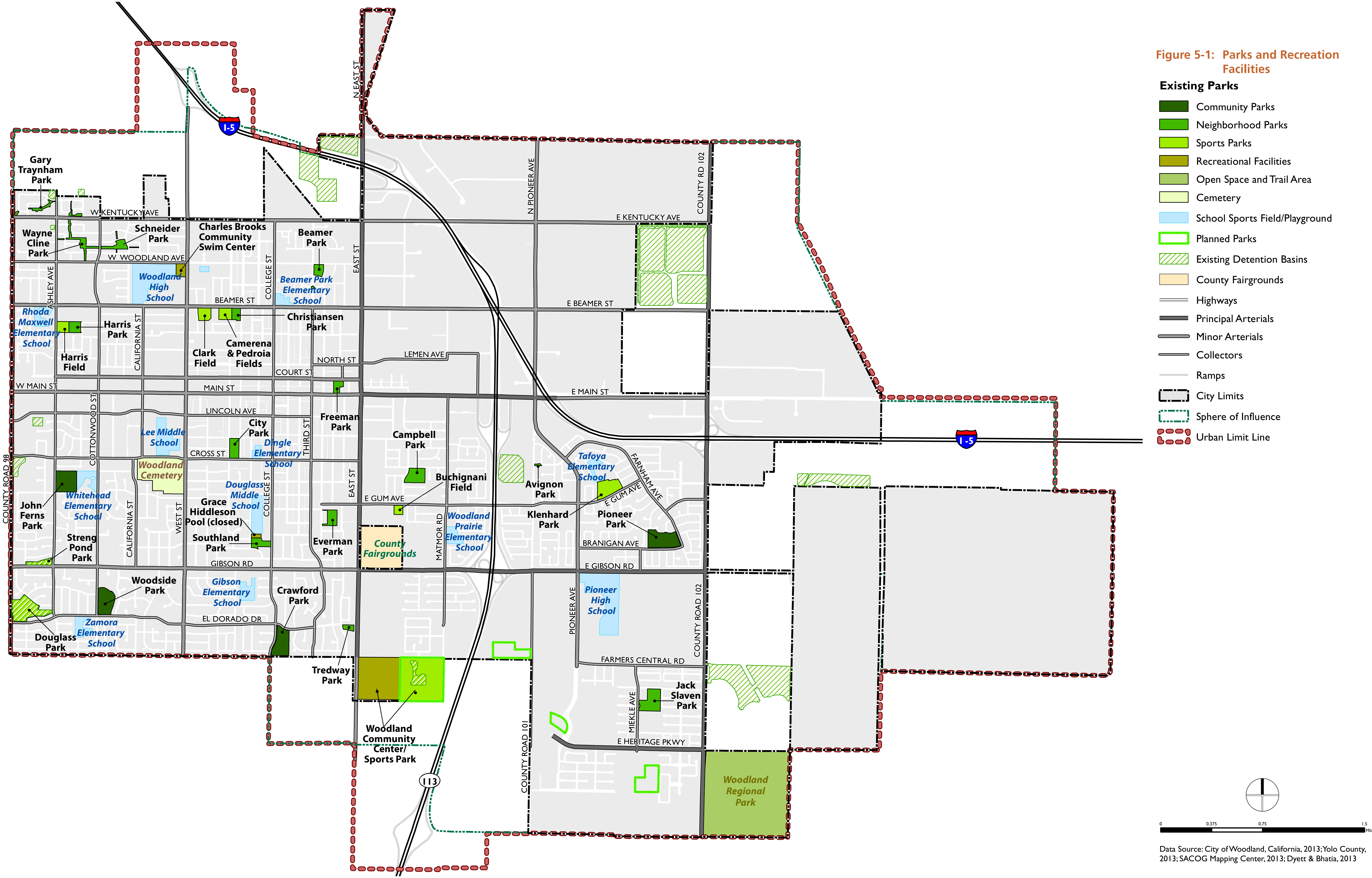
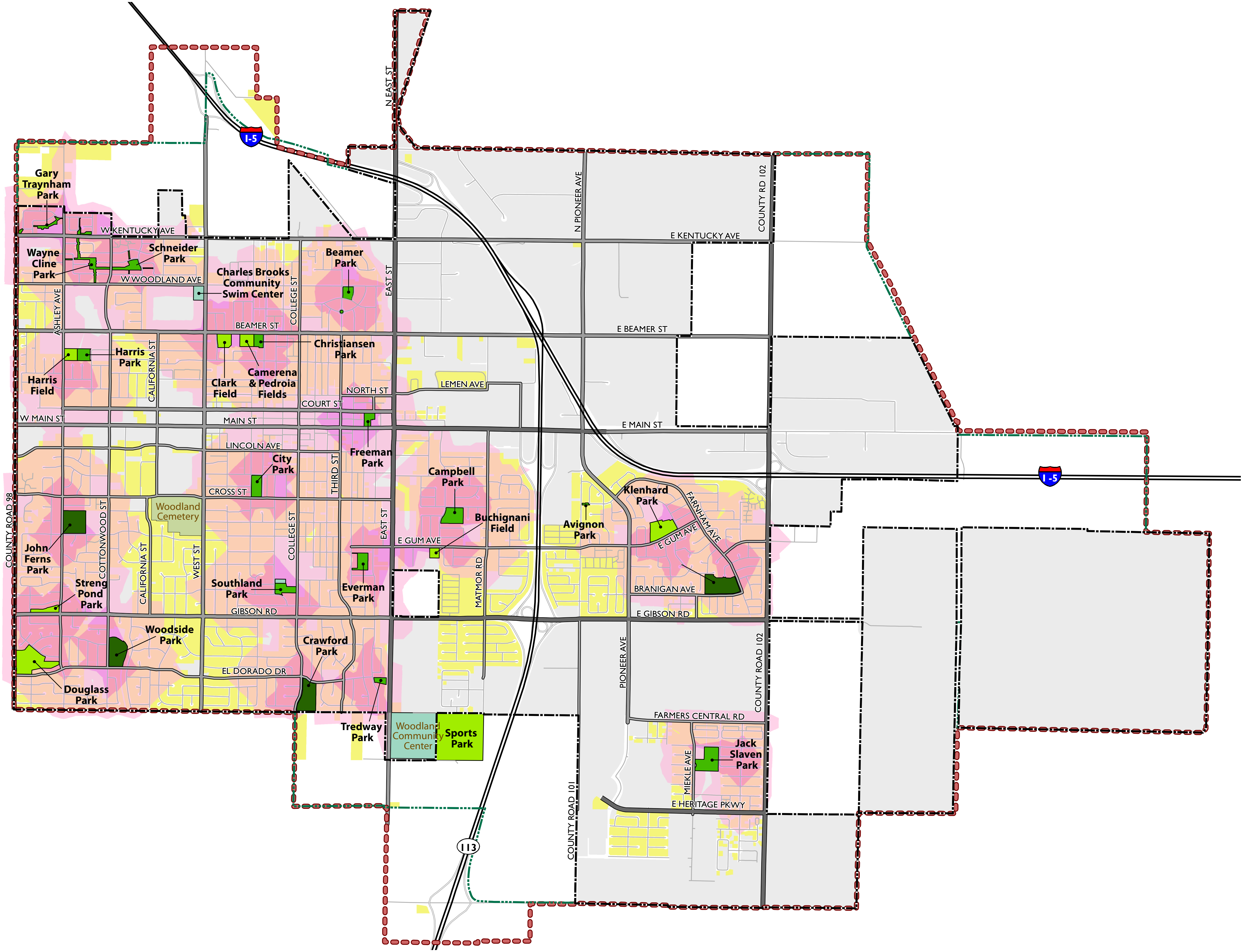


Figure 5-1: Parks and Recreation Facilities

Figure 5-2: Access to Parks



Parks Walkshed*

- 5 min walking distance (1/4 mile)
- 10 min walking distance (1/2 mile)

Existing Parks

- Neighborhood Parks
- Community Sports Parks
- Community Park
- Cemetery
- Recreational Facilities
- Residential Areas
- Highways
- Principal Arterials
- Minor Arterials
- Collectors
- Local Streets
- Ramps
- City Limits
- Sphere of Influence
- Urban Limit Line

*Walksheds are calculated for only neighborhood parks, community parks and community sports park.

0 0.375 0.75 1.5 Miles

Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013

Through 2035, Woodland's population is projected to grow to about 67,000. If the City's parkland standard remains the same, the City would need to add about 232 acres of parkland by 2035 to overcome the existing deficiency as well as accommodate new population growth. If the City were to develop the Woodland Regional Park with trails and park facilities and count it towards its public park inventory, the City would still need to add about 72 acres of parkland by 2035.

New neighborhood and community parks are built in new residential areas to serve and support growth. The new Woodland General Plan will establish a standard for parkland per population that serves community needs and that can be realistically maintained by the City.

Identifying a sufficient quantity and quality of park and recreation land, including determining methods to pay for design, construction and operation of the facilities, will be a key component of the General Plan Update progresses. City staff has cited the need for new facilities and funding for new park development and land set-asides. Please refer to Chapter 6, Planning Opportunities and Challenges, for more discussion on the need to support new facilities with sufficient funding for maintenance and appropriate level of service standards. But also, importantly, the City will need to evaluate park service standards, both in terms of providing the physical places, but in consideration of the City's ability to afford the on-going mainenance and operation costs. As mentioned before, the General Plan can also be considered the business plan for the City and assessment of the fiscal realities of providing amenities and services is vitally important.

5.2 Schools

Existing Facilities and Planned Improvements

Woodland Joint Unified School District (WJUSD) provides public education from kindergarten through 12th grade to residents in the Planning Area, as well as nearby unincorporated areas of Knight's Landing, Yolo, and Zamora. The district includes 10 elementary schools, one charter elementary school, two middle schools, two comprehensive senior high schools for grades 9-12, and one continuation high school. Additionally, there are three alternative education programs, six pre-schools, three infant-toddler programs, and an adult education center. Two of the district's elementary schools and one of the district's high schools are located outside the Planning Area. Altogether, just over 10,100 students attend public schools in WJUSD, 9,400 of which attend school in the Planning Area. Public schools and enrollment for all schools are detailed in Table 5.2-1 and are mapped on Figure 5-3.

Accredited in 2008, Woodland Community College (WCC) is a two-year community college located at 2300 East Gibson Road in Woodland on a 112-acre parcel in the northeast corner of SLSP area. WCC provides a number of academic, transfer, and enrichment programs to students throughout

Woodland Community College serves approximately 3,000 students from across Yolo County, offering programs in liberal arts, humanities, social sciences, and technology.

Yolo County. In 2007, WCC completed a new 72,000 square foot learning resource center, doubling the existing footprint of the college. The new center provides 25 lecture and classrooms, an expanded library, math and writing labs, and a large community events room. WCC also completed a newly remodeled student services center in 2010. During the 2011-12 school year nearly 3,000 students attended WCC.

Private schools located in Woodland include Woodland Christian School (preschool and K-12) and Holy Rosary Parish School (preschool and K-8). The Woodland Christian School has two campuses, the West Campus (K-8) located at 1515 West Street and the Matmor Campus (9-12) located at 1787 Matmor Road. The Holy Rosary Parish School is located at 505 California Street. Additionally, Woodland Polytechnic, a public charter high school that serves students in grades 9-12, is located at 1250 East Gum Avenue. Woodland Polytechnic opened in September 2011 with an enrollment of 150 students. All three schools are accredited by the Western Association of Schools and Colleges.

Planned Improvements

WJUSD conducted facility assessments on 17 WJUSD facilities in 2011 as part of the long range facility master planning process. The 2011 Facilities Master Plan estimates that approximately $72 million is needed for modernization and new construction of schools within the district in order to support the education needs of students for the next 10 to 15 years. According to district staff, building structures, roofs, and grounds are receiving basic care, but are in dire need of rehabilitation. WJUSD is currently meeting immediate needs using deferred maintenance funds. The WJUSD School Board discussed potentially seeking a General Obligation measure at a June 6, 2013 special board meeting, however the timing of the measure is still unknown. Currently, the District has plans to replace the roof and chiller on the F wing of the Adult Education Center.

WJUSD foresees new school development within the SLSP based on new residential growth, however the District does not currently plan to open any new schools in the near term. The City has allocated land for new school construction within SLSP, which provides for three small-scale (600-student) elementary school sites. However, due to declining enrollment and operation/maintenance costs, the school district has released two of those sites for other development. Both sites have now had residential development entitlements approved in place of school use. One elementary school site, located south of Heritage Parkway, remains and is owned by the School District. The school site located south of Pioneer High School could possibly be developed as a combined middle/elementary school site in the future.

Preliminary plans for the Master Plan Remainder area also include two additional 10-acre elementary sites, however as this area has not been annexed nor does it have a formal Specific Plan approved, therefore these sites are not guaranteed. In 2002 WJUSD began construction of Pioneer High School on the 50-acre high school site, which opened in 2003. Enrollment during the 2012-13 school year was 1,557 students.

TABLE 5.2-1 EXISTING PUBLIC SCHOOLS IN WOODLAND JOINT UNIFIED SCHOOL DISTRICT

SCHOOL	TOTAL ENROLLMENT 2012-2013	STATE LOADING CAPACITY		DISTRICT LOADING CAPACITY	
		Total Capacity[2]	Percent Under-utilized	Total Capacity[3]	Percent Under-utilized
Elementary Schools (K-6)					
Beamer	504	550	8%	704	28%
Dingle	406	525	23%	672	40%
Freeman	485	600	19%	768	37%
Gibson	631	725	13%	928	32%
Maxwell	501	675	26%	864	42%
Plainfield[1]	313	450	30%	576	46%
Tafoya	831	875	5%	1,120	26%
Whitehead	423	575	26%	736	43%
Woodland Prarie	645	750	14%	960	33%
Zamora	575	550	-5%	704	18%
Sci-Tech[1]	252	275	8%	352	28%
Subtotal Elementary	*5,566*	*6,550*	*15%*	*8,384*	*34%*
Middle Schools (7-8)					
Douglass	865	1,107	22%	1,312	34%
Lee	673	1,134	41%	1,344	50%
Subtotal Middle Schools	*1,538*	*2,241*	*31%*	*2,656*	*42%*
High Schools (9-12)					
Cache Creek[1]	149	297	50%	352	58%
Pioneer	1,557	1,944	20%	2,304	32%
Woodland	1,297	2,187	41%	2,592	50%
Subtotal High Schools	*3,003*	*4,428*	*32%*	*5,248*	*43%*
Total	**10,107**	**13,219**	**24%**	**16,288**	**38%**
Total Within Planning Area	**9,393**	**12,197**	**23%**	**15,008**	**37%**

1 Schools located outside Planning Area.

2 Total capacity based on a 25 student loading factor for elementary and 27 student loading factor for middle and high school.

3 Total capacity based on a 24 student loading factor for kindergarten and first grade, 32 student loading factor for grades 2-6, and a 36 student loading factor for grades 7-12.

Source: Woodland Joint Unified School District, 2013; Jack Schreder & Associates, 2011; California Department of Education, 2013; CDE Data quest.

Standards, Student Generation Rates

The District calculates school capacities for each school based on the number of permanent classrooms, the number of portable classrooms, the number of classrooms used for programs other than classroom instruction, and loading standards. The District currently uses a 24 student per classroom loading factor for kindergarten and first grade, a 32 student per classroom loading factor for grades 2-6, and a 36 student per classroom loading factor for grades 7-12, which are the permitted class sizes per union contract language. By comparison, State standards for student loading factors are 25 students per classroom for elementary schools and 27 students per classroom for middle and high schools.

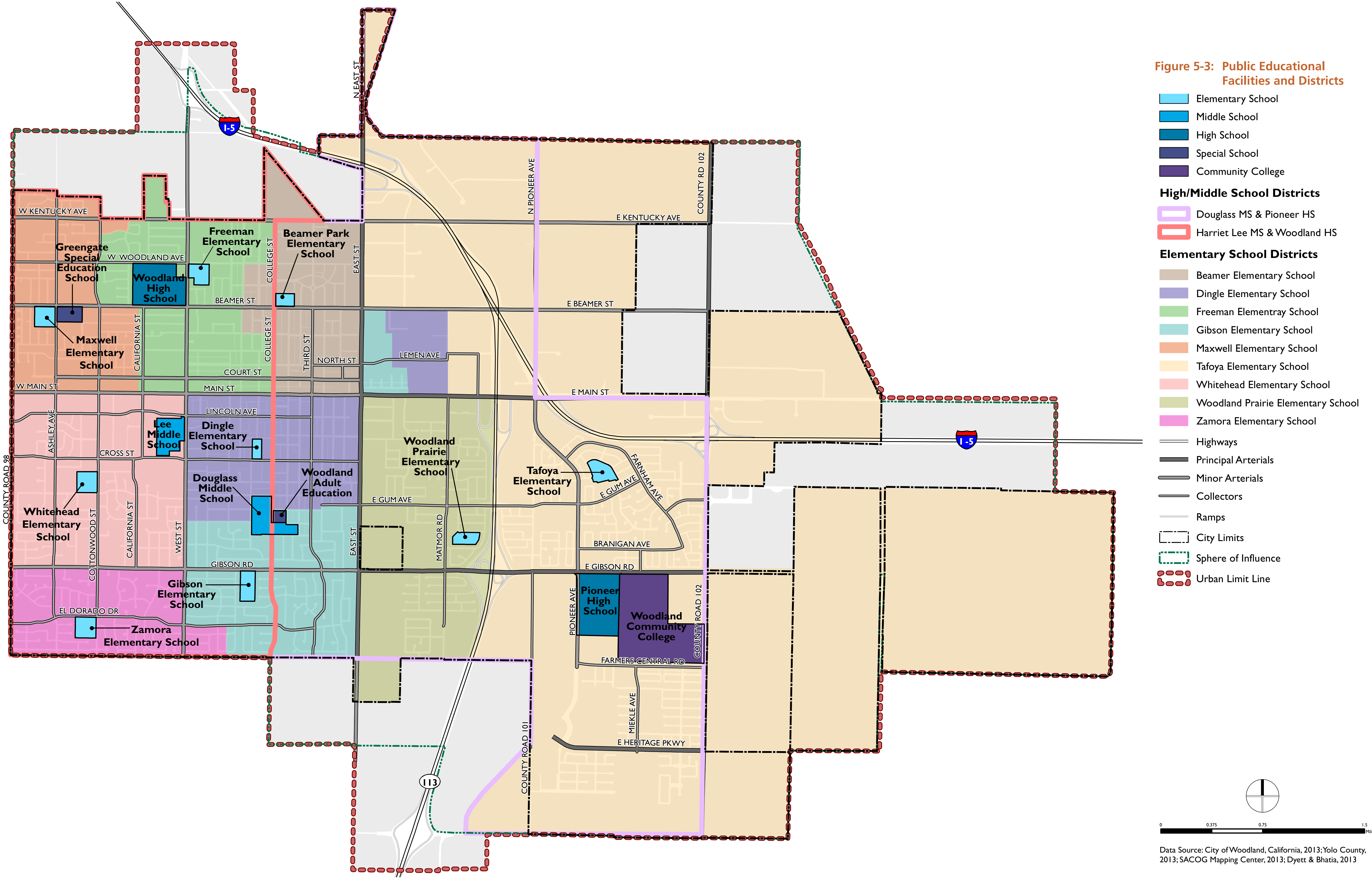
The District projects an ongoing decline of 0.5 percent in student enrollment in the near term, based on projections made in January 2013. The District uses student generation factors (students per new dwelling units) for single- and multi-family development in order to project student enrollment. Table 5.2-2 summarizes the student generation factors used by the District.

TABLE 5.2-2 STUDENT GENERATION FACTORS USED BY WJUSD

UNIT TYPE	ELEMENTARY (K-6)	MIDDLE SCHOOL (7-8)	HIGH SCHOOL (9-12)	TOTAL RATE (K-12)
Single-Family Unit	0.3174	0.1250	0.1809	0.6233
Multi-family Unit	0.1820	0.0599	0.0922	0.3341

Source: Woodland Joint Unified School District, 2013.

Many of Woodland's public schools are underutilized based on State and District loading factors, meaning that there is capacity in existing schools to serve new population growth in Woodland.



Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013

Current Unmet Facility Needs

Sacramento Area Council of Governments (SACOG) projects that the Woodland will add 4,268 dwelling units between 2013 and 2035. Assuming that multi-family dwelling units continue to account for approximately 28 percent of all dwelling units citywide, it is estimated that the district will add 2,320 new student enrollments by 2035, based on the student generation factors provided in Table 5.2-2 above. Using the District's classroom loading factors for determining school capacity, existing facilities appear to be able to accommodate student enrollment growth generated by new development (see Table 5.2-3). However, when using the State's classroom loading factors of 25 for elementary and 27 for middle and high schools the margin is much smaller.

Aging Facilities

According to the WJUSD Facilities Master Plan, the district's aging facilities are in need of renovation and modernization, as they were designed for the educational needs of over 50 years ago. Of the district's 18 school facilities, 50 percent were constructed prior to 1960, and an additional two facilities were constructed prior to 1930. The District reports that the aging infrastructure can no longer be patched and pipes, heating units, electrical wiring, fire alarms and other life safety systems need to be replaced. The cost to replace and upgrade existing facilities is estimated to be in the millions, well beyond what the District's operating fund can provide.

Current unfunded and urgent construction/renovation needs include: (1) fire alarm replacement at Woodland High School, (2) roof replacements for buildings B and C at Douglas Middle School, and (3) roof replacements for the administration building and classrooms at Lee Middle School.

TABLE 5.2-3 ENROLLMENT AND CAPACITY IN WJUSD

	2012-2013					2035
		State Loading Capacity		District Loading Capacity		
GRADE	WJUSD Enrollment	*Existing Total Capacity*[1]	*Available Capacity*	*Existing Total Capacity*[2]	*Available Capacity*	Projected New Enrollment[3]
K-6	5,566	6,550	984	8,384	2,818	1,195
7-8	1,538	2,241	703	2,656	1,118	457
9-12	3,003	4,428	1,425	5,248	2,245	668
Total	**10,107**	**13,219**	**3,112**	**16,288**	**6,181**	**2,320**

1 Total capacity based on state standards of 25 students per classroom for elementary and 27 students per classroom for middle and high schools.

2 Total capacity based on a 24 student loading factor for kindergarten and first grade, 32 student loading factor for grades 2-6, and a 36 student loading factor for grades 7-12.

3 Based on SACOG projected construction of 4,268 new dwelling units in Woodland by 2035. Assumes that multi-family dwelling units will continue to account for 27.6 percent of all dwelling units citywide. Calculated using WJUSD student generation factors provided in Table 6.2-2.

Source: Woodland Joint Unified School District, 2011; Jack Schreder & Associates, 2011; California Department of Education, 2013; Dyett & Bhatia, 2013.

Pioneer High School and Woodland High School both exceeded the District's target graduation rate of 90 percent in the 2011-2012 school year.

WJUSD Demographics and Performance

For the 2012-13 school year, approximately 10,100 students were enrolled in WJUSD schools. According to the District approximately 66 percent of the student population was Latino, 25 percent white, 5 percent Asian, 1 percent Black, 1 percent American Indian, and two percent some other ethnicity.

Each year the State of California assigns schools and districts an Academic Performance Index (API) score. The API is the State's accountability system for meeting state standards. Scores are assigned from 0 to 1,000. In 2012, WJUSDs combined API was 765, an increase of 5 percent over 2009 when the score was 731. However, the District's score of 765 is still below the State's target of 800 or above. For 2012, white students received the highest combined API score (824), followed by Asian students (816), Latino students (736), American Indian students (734), and Black students (715). Of these ethnic groups, American Indian was the only group to see a decline in their API score between 2009 and 2012.

Elementary schools seeing the greatest improvement in API in 2012 included Sci-Tech Elementary, Whitehead Elementary, Woodland Prarie Elementary, and Dingle Elementary. Both Tafoya Elementary and Freeman Elementary saw their scores decline. For secondary schools, Cache Creek High School saw the greatest improvement, more than triple of the next secondary school, which was Douglass Middle School. Compared to other local school districts, WJUSDs API score is about equivalent, with the exception of the Davis Joint Union School District, which has maintained a substantially higher API score than other local school districts in recent years. This is likely attributable to the difference in demographics and funding between Davis and Woodland.

The District's target graduation rate is either 90 percent or a fixed growth target rate. The rate is computed using the number of first-time grade nine students in the class of 2007-08, plus students that transferred into the cohort, minus students who transferred out, emigrated, or died during the four-year cohort period. For the 2011-12 school year, WJUSD high schools were well above both the County (86 percent) and State (78 percent) averages. Woodland High School had a graduation rate of 94 percent, followed by Pioneer High School (91 percent) and the district as a whole (88 percent). The district-wide graduation rate was lower due to the inclusion of all students including those on independent study and the continuation high school.

5.3 Public Safety Services (Police, Fire)

Police Services

Existing Facilities and Planned Improvements

The City of Woodland Police Department is located at 1000 Lincoln Avenue (see Figure 5-4). The Department has a staff of 74 paid employees, 60 of whom are sworn patrol officers and 14 of whom are non-sworn support personnel. Table 5.3-1 shows the breakdown of employees by unit.

The Police Department does not presently have any planned improvements, as existing facilities are currently adequate to maintain a sufficient level of service for anticipated future population growth.

TABLE 5.3-1 WOODLAND POLICE DEPARTMENT PERSONNEL

PERSONNEL	NUMBER
Sworn Officers	60
Administration	3
Investigations	13
Patrol	41
Traffic Officers	3
Non-Sworn Support Personnel	14
Administrative	3
Records	7
Parking	2
Investigations	2
Total Paid Employees	**74**

Source: City of Woodland Police Department, 2013.

Current police department facilities are adequate to serve Woodland's current population and anticipated future growth; however, additional beats may need to be added to account for workload and meet response time standards.

Facility and Response Time Standards

Response Time

The Police Department dispatches police personnel based on priority level, priority one being the highest. Priority One calls are felony crimes that are in progress and require immediate dispatch. Priority Two calls are misdemeanor crimes that are in progress or just occurred. Priority Three calls are felony crimes that are not in progress. Priority Four calls are misdemeanor calls that are not in progress. Priority Four calls are property crimes that have already happened. Lastly, Priority Five calls are the lowest priority call (e.g. follow up on a cold case) that police personnel deal with as time permits.

Standards for response times are based on the dispatch time (measured from the start of the call) until the first unit's arrival. The Police Department's response time standard is four minutes for Priority One calls; five minutes for Priority Two calls; 10 minutes for Priority Three calls; 10 minutes for Priority Four calls; and 10 minutes for Priority Five calls.

For 2012, the Police Department's average actual response time for Priority One and Two calls were about 3.5 minutes longer than the Police Department's standard. The Department's average actual response time (in minutes and seconds) was 7:30 for Priority One calls; 8:24 for Priority Two; 20:52 for Priority Three; 25:30 for Priority Four, and 5:35 for Priority Five.

Service Ratios

The Police Department does not have service ratio standard based on population. Rather, the department determines staffing needs based on the amount of uncommitted time per officer, number of calls for service per officer per day, and number of major crimes assigned to detectives per day. Patrol officers are to average a minimum of 50 percent of unobligated patrol time per shift and the average number of call for service per patrol officer per day are not to exceed seven calls. According to Police Department staff, they are not currently meeting these service ratio standards.

Current Unmet Facility Needs

As stated above, according to the Police Department, existing facilities are adequate to maintain a sufficient level of service. However, the Police Department acknowledges that as new development occurs, it will need to add additional beats to account for workload and to meet response time standards. Beats require a minimum of six officers for around-the-clock policing. Additionally, the Police Department noted that Woodland's aging radio infrastructure will need to be upgraded in order to continue to provide reliable and consistent radio communication for public safety services.

Fire Services

Existing Facilities and Planned Improvements

In 1982 the City of Woodland Fire Department merged with the Springlake Fire Protection District and now protects an area in excess of 60 square miles. In addition to the approximately 15 square miles of city area, the Fire Department contracts with the Springlake Fire Protection District to protect an additional 41 square miles of rural area located north, east, and south of the city limits. The Fire Department is staffed with 45 operations personnel and is assisted by a part-time administrative staff person. All personnel assigned to Fire Operations are divided into three shifts. Each shift works a 48-hour period on a rotating schedule. Table 5.3-2 shows the breakdown of personnel at the Department.

TABLE 5.3-2 WOODLAND FIRE DEPARTMENT PERSONNEL

PERSONNEL	NUMBER
Public Safety Chief	1
Battalion Chiefs	3
Fire Prevention Officers	2
Fire Captains	12
Fire Engineers	12
Fire Fighters	15
Total Paid Employees	**45**

Source: City of Woodland Fire Department, 2013.

The City of Woodland Fire Department operates three fire stations, with an engine company at each one: 101 Court Street (Station #1), 1619 West Street (Station #2), and 1550 Springlake Court (Station #3). The Department operates a ladder truck out of Station #3 that is utilized for suppression activities, air support, technical rescue, and light support. Figure 5-4 maps the location of the fire stations.

Planned Improvements

In 2004, City Council approved a fourth fire station planned for the Spring Lake Specific Plan area upon construction and occupancy of 1,010 single-family dwelling units. As of April 2013 approximately 1,000 units had been constructed in Spring Lake. The new station will be located on a one-acre site as part of the Spring Lake Center that will adjoin the Central Park.[3] There are also plans to construct a fifth station on the northeast side of Woodland, which is an underserved area with the highest concentration of high-hazard property. Presently, the City has not committed funding for construction of either facility.

3 Public Facilities and Services, Spring Lake Specific Plan. City of Woodland (2001).

Facility and Response Time Standards

Response Time

The Fire Department's standards for dispatch and response times are one minute for information gathering, one minute for completion of dispatch, four minutes for the first arriving unit capable of providing service, and eight minutes for arrival of the complete first alarm assignment. Response time is measured from the time the unit leaves the station to the time the unit arrives at the scene. NFPA 1710 standards require that the Fire Department meet the response time standard 90 percent of the time.

According to Fire Department staff, they are currently meeting this standard. For 2012,the Fire Department's average response time (in minutes and seconds) was 5:33 for fire calls and 4:49 for emergency medical service calls.

Service Ratios

The following are service ratios established by the Woodland Fire Department:[4]

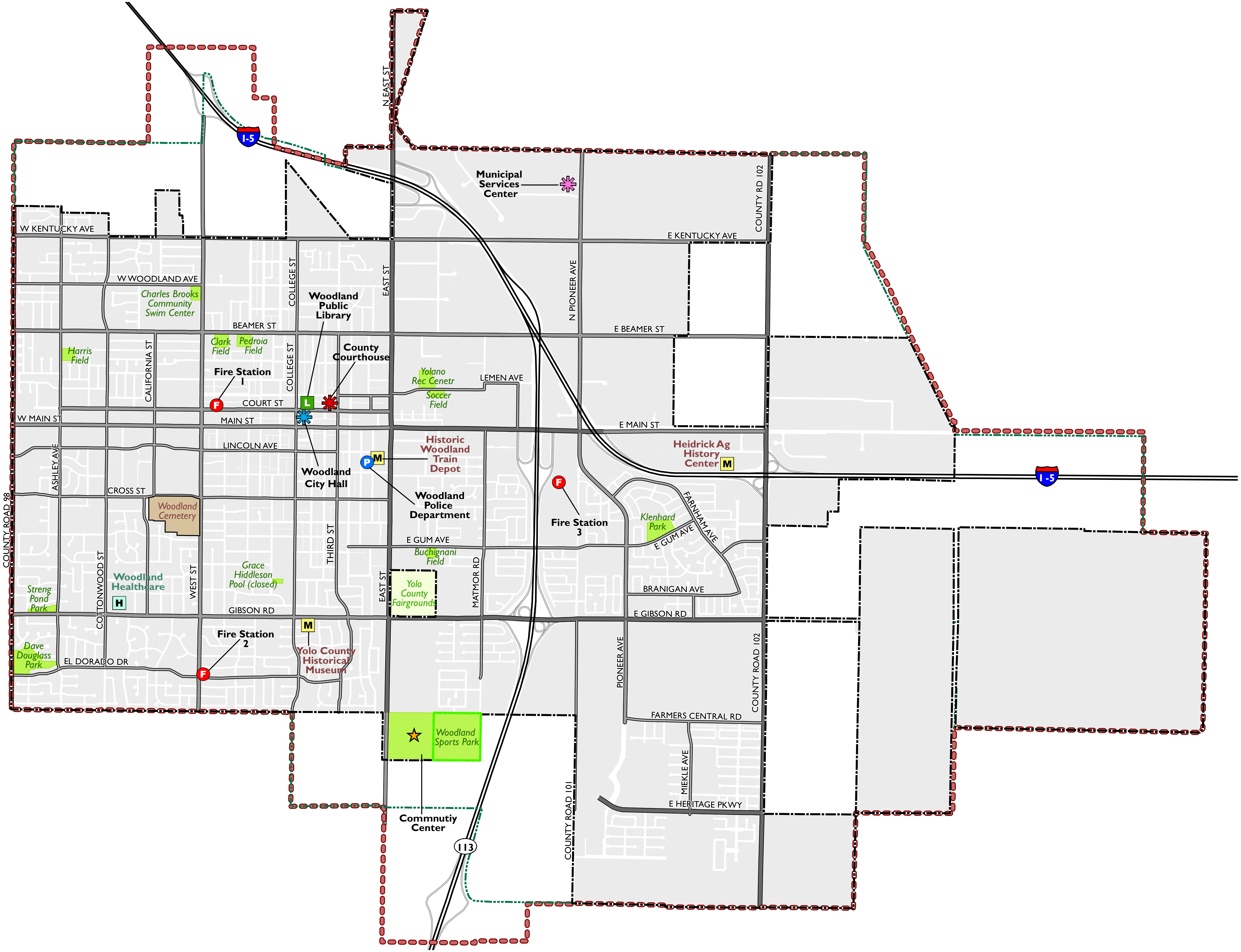
- One operations personnel per 1,000 residents;
- One fire prevention officer with new vehicle and related support equipment for every 20,000 persons served;
- One Chief Officer for every major division and every operational shift;
- One Administrative Division Chief for every eight sworn personnel; and
- One clerical employee for every two Division Chiefs.

According to Fire Department staff, they are not currently meeting any of their service ratio standards.

4 Appendix D: Level of Service Guidelines, 2002 Woodland General Plan.

The City of Woodland Fire Department has been able to meet response time standards. New facilities may need to be developed in order to serve new growth.

Figure 5-4: Community Facilities



P Police Station
F Fire Stations
L Library
H Hospital
M Museums
Community Center
City Hall
Yolo County Courthouse*
Municipal Services Center
Sports & Recreational Facilities**
County Fairgrounds
Cemetery
Highways
Principal Arterials
Minor Arterials
Collectors
Ramps
City Limits
Sphere of Influence
Urban Limit Line

** Current Location. Courthouse is being relocated to 1000 Main Street.*
*** Only Park Facilities providing significant recreational amenities are shown.*

Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013

ISO Rating

Fire departments are rated by ISO's Public Protection Classification (PPC) program. The program uses the Fire Suppression Rating Schedule (FSRS), which is comprised of a long list of elements a community may use to fight fires effectively. Each element is given a point score. Using the point scores and various formulas, ISO derives a PPC rating. On a scale of 1 (exemplary fire protection) to 10 (not meeting minimum criteria) Woodland scored a 3 for areas inside the city and 8B for areas in the Springlake Fire Protection District.

Current Unmet Facility Needs

Fire Department staff report that existing facilities will not allow the Department to meet response time standards as future growth continues in the Spring Lake area. The Fire Department currently provides service to the Springlake Fire Protection District from the three existing fire stations located in Woodland. In a study completed several years ago, the Department has identified a need for two additional fire stations to help maintain adequate response times in the city; however, there is presently no funding allocated for construction of either station. Further, assessment of station needs in new areas that are fully sprinklered should be taken into consideration when evaluating needs and station construction and operation. The Fire Department is only staffed to meet National Fire Protection Association (NFPA) standards for low hazard fires and rely heavily on their mutual aid partners for support to meet NFPA standards for higher risk fire incidents. Other areas of consideration include the provision of medical response and ambulance services. Coordination of interjurisdictional services will be essential.

5.4 Utilities

Water

The City of Woodland Public Works Department currently provides municipal water to residents in the city. Groundwater is the primary source of drinking water within the Planning Area, which means that Woodland's drinking water currently comes from large, underground aquifers, rather than surface water sources such as rivers, lakes, or reservoirs.

The city is located in the Lower Cache-Putah Subbasin, which is part of the Yolo Subbasin of the Sacramento Valley Groundwater Basin. The Yolo Subbasin is bounded by Cache Creek on the north, the Sacramento River on the east, Putah Creek on the south, and the Coast Range on the west, and encompasses the cities of Woodland and Davis, and the University of California, Davis (UC Davis). The Department of Water Resources estimates that the Lower Cache-Putah Subbasin has a total storage capacity of about 2.7 million acre-feet of water.[5]

5 City of Woodland, Municipal Service Review/Sphere of Influence Update. Yolo Local Agency Formation Commission (March 2011).

Supply and Demand

Woodland's drinking water is currently pumped from 16 out of 20 groundwater wells located throughout the city. Of the 20 wells owned and operated by the City, 70 percent have been in operation for 30 years or longer. The typical life of a well is between 30 and 50 years.[6] Historically, groundwater elevations in the region have ranged from roughly -20 feet to 50 feet mean sea level (msl). Groundwater elevations generally declined from the 1950s to the 1970s, however in response to regional water supply projects implemented by Yolo County Flood Control and Water Conservation District groundwater elevations have increase since that time. In the vicinity of Woodland, the base of fresh groundwater occurs at a depth of approximately 2,500 feet below msl.[7] According to the City of Woodland Utilities Division the average static groundwater elevation in May 2013 was -33 feet.

The distribution system consists of 160 miles of transmission and distribution lines, and a 400,000 gallon elevated storage tank, which is generally sufficient for peak demands and to regulate water pressure. The groundwater supply is filtered naturally by sand and gravel as it passes through the aquifers, and receives minimal treatment at each well site (0.2 parts per million liquid chlorine) for disinfection. Figure 5-5 shows Woodland's municipal water infrastructure.

In 2010, the city's water demand was approximately 4.5 billion gallons per year (12.4 million gallons per day or mgd), down from 5 billion gallons per year (13.6 mgd) in 2005. From 2008 to 2010, California experienced drought conditions that resulted in increased water conservation and water use awareness. The economic downturn across California also contributed to reduced water usage as a result of numerous unoccupied homes and closed business within the city's service area.[8] According to City staff, current wells are meeting demand; however there is little room for pumping reserve capacity. In 2012 single family residential uses accounted for more than half of demand, following by multifamily (17 percent), commercial (10 percent), and industrial (7 percent) uses.

Future water demand in Woodland is expected to grow moderately. According to the City of Woodland's 2010 Urban Water Management Plan, demand is expected to grow to 5.3 billion gallons per year (14.6 mgd) by 2015 and 6 billion gallons per year (16.5 mgd) by 2035. Projections are based on projected service area populations and the city's per capita water use targets.

6 Ibid.

7 Groundwater Management Plan, City of Woodland. West Yost Associates (April 2011).

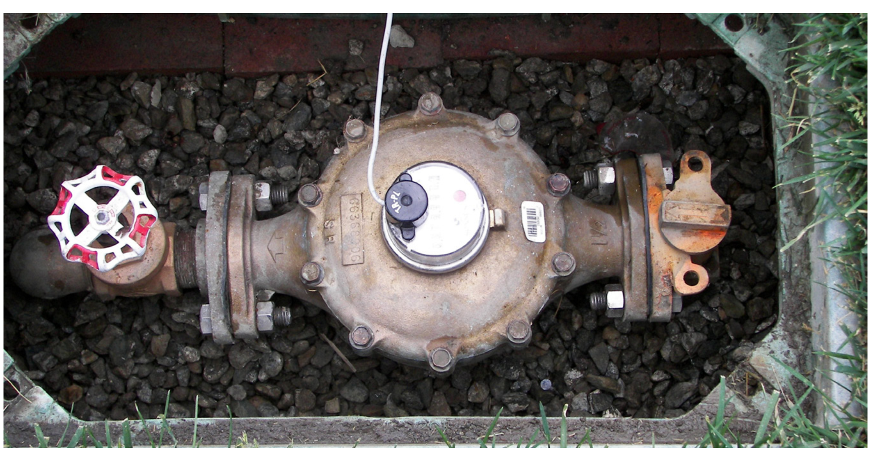
8 City of Woodland, 2010 Urban Water Management Plan. West Yost Associates (July 2011).

Planned Improvements

One new well—well 28—is a replacement well scheduled for completion in 2013. The City also plans to install new pumps on wells 14, 21, and 15, which will improve those well capacities by approximately 35 percent. A new ground-level tank and pump station are also scheduled to begin construction in 2014 that will improve system pressure and supply. Currently four wells are not pumping into the distribution system due to maintenance and water quality issues, which will require modifications to reduce their nitrate concentration.

In compliance with State law, as of Fall 2012 the City has installed water meters in almost every home in Woodland. Phase III of the Water Meter Implementation program was scheduled to begin in April 2013 and will be completed sometime in 2014. Phase III, the final phase of the project, will include mostly condominium communities and several meter installations that were missed during phases I and II. When fully implemented, the City's Water Meter Implementation program is estimated to reduce demand by about 15 percent per year.[9] Reduced water demand as a result of the Water Meter Implementation program will help the City to meet the state's Senate Bill 7 (SB 7) goals of reducing urban water use by 10 percent by January 2016 and 20 percent by January 2021. Urban retail water suppliers that do not meet water conservation requirements of SB 7 are not eligible for state water grants or loans. According to City staff, the city is already meeting or exceeding the water conservation requirements required by SB 7.

9 City of Woodland, Municipal Service Review/Sphere of Influence Update. Yolo Local Agency Formation Commission (March 2011).



In 2011, water meters were installed at every home in Woodland in order to comply with State law. Water customers are now billed based on how much water they use, which is anticipated to reduce demand and help conserve water supplies.

Woodland-Davis Clean Water Agency (WDCWA) Project

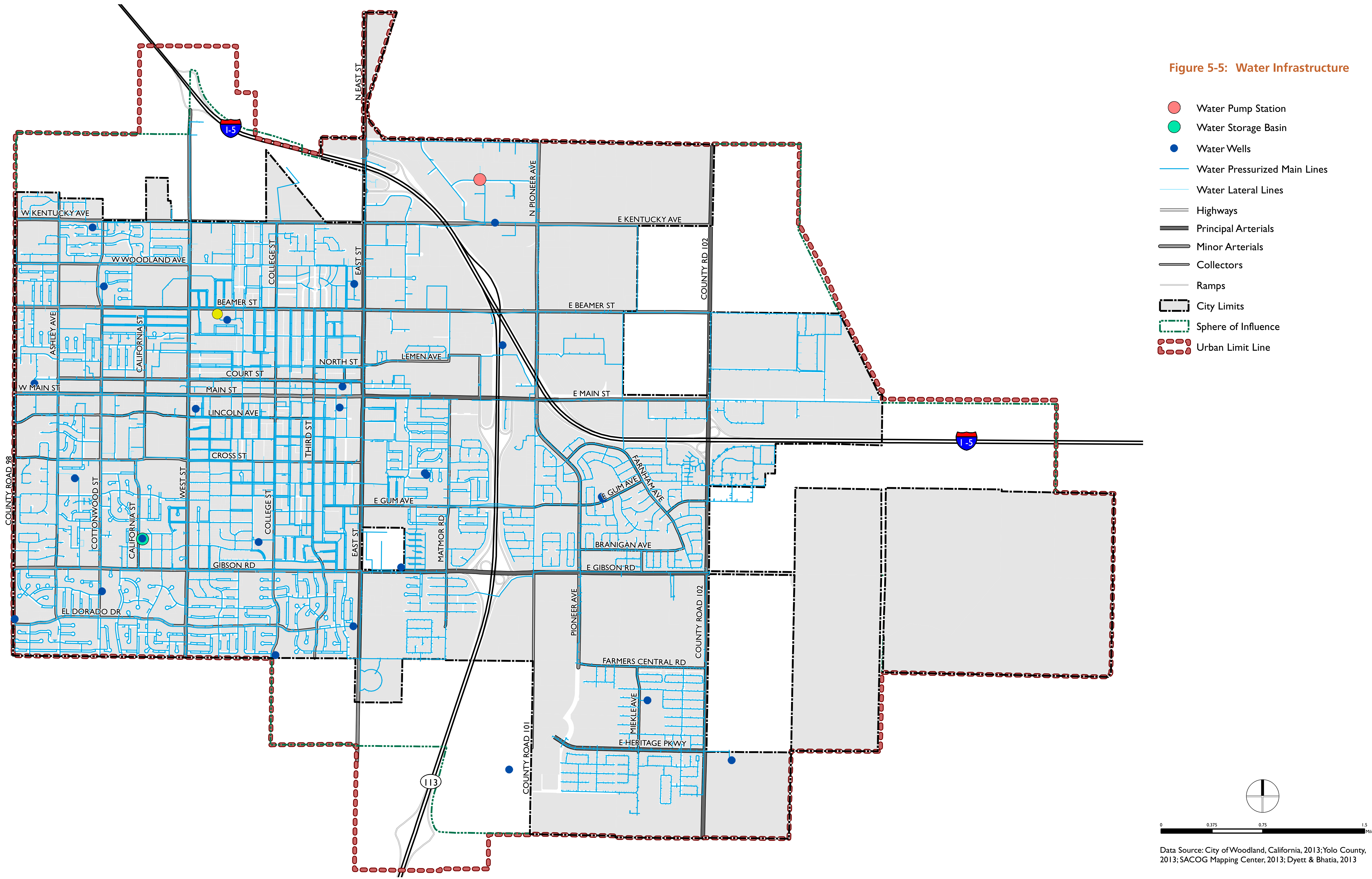
In recent years, groundwater in Woodland and Davis has had an increasing amount of salts and other minerals. When combined with additional salts from consumer uses—such as water softeners—the discharge of highly saline wastewater poses a threat to the environment and public health. As a result, the Central Valley Regional Water Quality Control Board has been aggressively pursuing requirements for reductions in salt discharges to protect the environment and to meet more stringent salinity standards in the future.

The concentration and amount of selenium in the city's wastewater discharge is also of great concern. According to City staff, the facility does not currently meet standards for selenium and has received plant violations because of it.

Faced with meeting anticipated water quality, reliable water supply needs, and wastewater discharge regulations, in September 2009, the cities of Woodland and Davis established the Woodland-Davis Clean Water Agency (WDCWA). The WDCWA project is a regional surface water supply project to supplement local ground water supplies in the region. The project will divert up to 45,000 acre-feet of water per year from the Sacramento River and serve more than two-thirds of the urban population of Yolo County, as well as UC Davis as a project partner. Groundwater from Woodland and Davis will continue to supplement water supplies when local water demand cannot be met, particularly during summer months and other dry periods when Term 91 and Shasta Critical Year Reductions may limit WDCWA's water diversions from the Sacramento River.

Upon completion, it is estimated that Woodland's groundwater will continue to account for up to 30 percent of total demand. WDCWA has also secured a more senior Sacramento River water right for 10,000 acre-feet from the Conaway Preservation Group that is limited to the months of April through October. The WDCWA project includes a newly constructed river water intake structure and pipeline that will transport "raw" water 5.1 miles from the Sacramento River to a new 30 mgd water treatment plant located 1.4 miles south of Woodland. Initially, the facility will supply up to 30 mgd to WDCWA. Of that amount, Woodland's share will be 18 mgd, which exceeds the city's projected water needs through 2035. The project is scheduled to begin construction sometime in 2013 and begin supplying water to WDCWA in 2016.

In July of 2013 draft limits on hexavalent chromium will be issued. Those limits will likely limit the number of wells that can be used due to hexavalent chromium limits. The City is planning on treating some of the surface water and injecting the treated higher quality water into wells that are called aquifer storage and recovery (ASR) wells during the winter months that will then allow the City to extract higher quality water during the summer months.



Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013

Wastewater Collection and Treatment

The City of Woodland's Public Works Department is the community's wastewater service provider. The city wastewater collection system conveys wastewater by gravity pipelines to the Water Pollution Control Facility (WPCF) located east of the city along County Road 103 (CR 103), where it is treated and then discharged to a large unimproved channel. Treated wastewater eventually drains to the Tule Canal on the east side of the Yolo Bypass.

Woodland's wastewater collection system consists of 175 miles of sewer main, 80 miles of service line and has more than 14,000 wastewater service connections and serves the city of Woodland as well as a small area north of the city—Barnard Court. Figure 5-6 shows the city's existing wastewater infrastructure system.

Current Capacity

The City constructed the WPCF in 1989. Since that time, the City has upgraded the facility twice—once in 1999 and a second time in 2006, when the City expanded and upgraded the treatment plant's hydraulic capacity from 7.8 mgd to 10.4 mgd. Wastewater treatment plant capacity is measured in two ways: (1) hydraulic capacity, which is the maximum inflow/outflow (gallons per day) that a plant can treat; and (2) solids (biological oxygen demand) capacity, which are the maximum biological solids (pounds per day) that a plant can adequately treat. In recent years hydraulic inflows to WPCF have gone down from 6.4 mgd to 5.2 mgd due to water conservation. However, biological solids have remained the same, or have slightly increased. According to City staff, WPCF is reaching the limit of solids that the plant can process and still meet permit limits.

WPCFs current solids capacity is 10,300 pounds per day (lb/d) for the maximum month. The City has approved conversion of three of the WPCFs oxidation ditches to the Modified Ludzack-Ettinger (MLE) process, which enhances nitrogen removal in addition to solids capacity. The upgrades to the oxidation ditches will result in a higher solids capacity of 13,300 lb/d. This capacity would be sufficient to serve a residential population of 70,000 (at 0.19 pounds BOD 5 per capita day). With conversion of a fourth oxidation ditch to MLE the WPCF can treat up to 19,900 lb/day. The WPCF has a "practical" limit of about 26,000 lb/day, with various additional upgrades and modifications to the plant, like the addition of primary treatment and anaerobic digestion. Given water conservation, California Green Building Standards, and the present WPCF permitted hydraulic capacity this decision could be included in future General Plan Updates.

According to City staff, historically, wastewater flows and biological loads have been linked. However, water conservation has resulted in lower flows to WPCF with the same biological load. In the future, hydraulic capacity will not be the limiting system factor. Rather, the ability for WPCF to treat higher amounts of biological solids will determine overall wastewater system capacity.

Woodland Water Pollution Control Facility

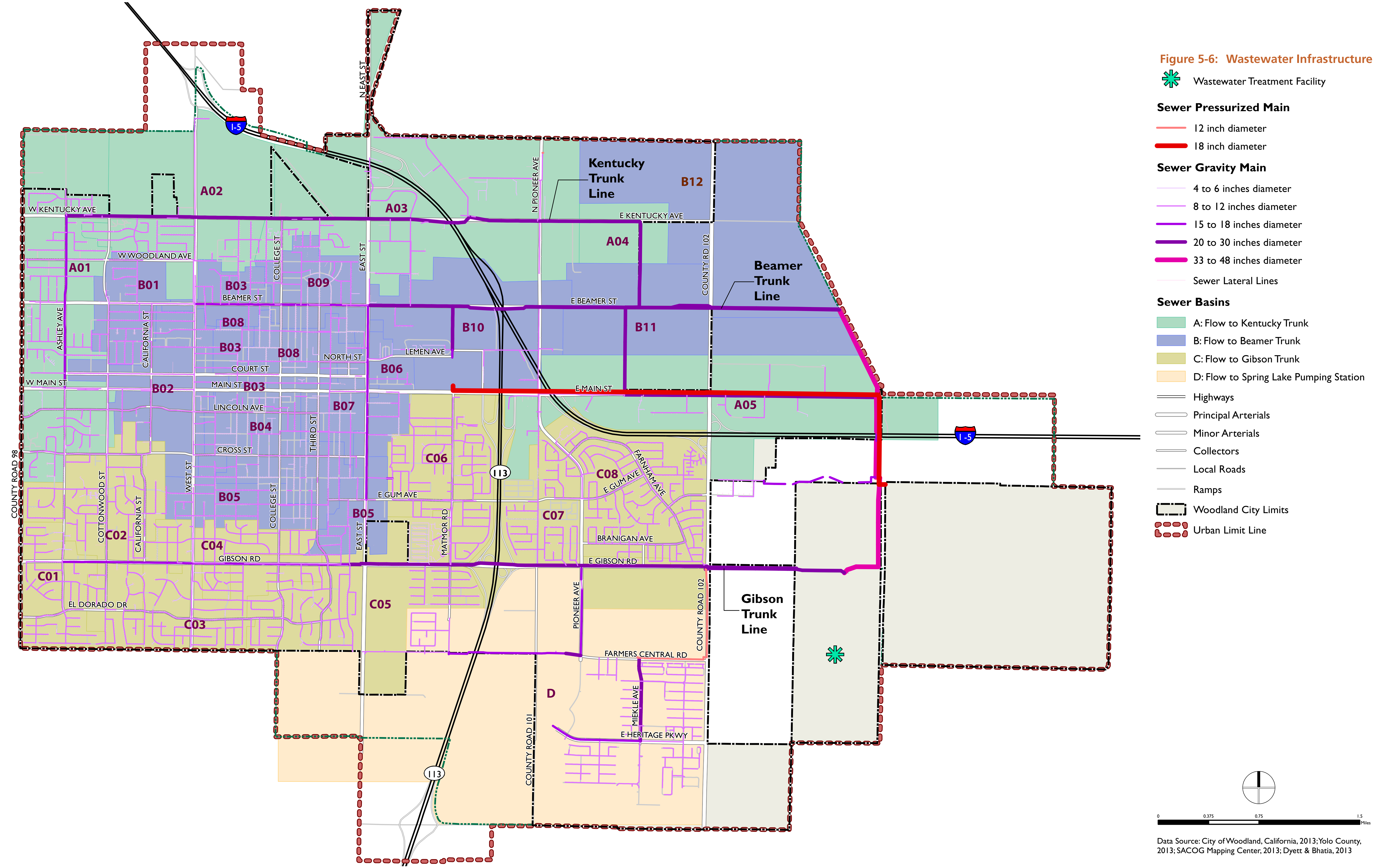
The average dry weather flow to WPCF is currently about 5.2 mgd. Future average dry weather flow to WPCF is expected to grow moderately. According to the City of Woodland's 2010 Urban Water Management Plan, wastewater influent is expected to grow to 6.6 mgd by 2015 and 7.4 mgd by 2035 using SACOG high growth assumptions.

The WPCF includes the following processes: (1) mechanical treatment—bar screens and grit removal, (2) oxidation ditches, (3) secondary clarification, (4) polymer chemical addition, (5) cloth media filtration, (6) UV disinfection, and (7) discharge. The City also leases 800 acres to Pacific Coast Produces, which operates an Industrial Wastewater Treatment Process that is used to treat wastewater from a tomato processing facility located adjacent to the wastewater treatment facility. The City and Pacific Cost Producers are co-permitted and are jointly responsible for maintaining wastewater discharge standards.

Treated wastewater is discharged to a large unimproved channel which eventually drains to the Tule Canal on the east side of the Yolo Bypass. The Tule Canal is used by farmers to irrigate crops, however due to the high Electrical Conductivity (EC) in the effluent, the wastewater is not presently being directly used for purposes of recycled water reuse.

EC indicates the amount of salts or salinity of water. Salts that dissolve in water break into positively and negatively charged ions. Because dissolved ions increase salinity as well as conductivity the two measures are related. High water salinity can limit the growth of certain crops.[10] As discussed in the previous section, the city's groundwater has historically had high naturally occurring EC levels. Water softeners, general water consumption, and effluent contribute to increased salt content, which can make the wastewater unsuitable for beneficial agricultural or other beneficial uses. Rather than pursue costly alternatives such as reverse osmosis or desalinization, the City recently partnered with the City of Davis to obtain surface water from the Sacramento River, which has a lower EC compared to Woodland's groundwater. This mitigation measure is expected to bring Woodland's wastewater EC (and selenium) levels to within standards sought by the Central Valley Regional Water Quality Control Board.

10 City of Woodland, Municipal Service Review/Sphere of Influence Update. Yolo Local Agency Formation Commission (March 2011).



Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013

Planned Improvements

The City has approved (currently 90 percent of design) retrofitting three existing oxidation ditches with a new solids aeration system that would raise the solids capacity to match the existing hydraulic capacity of 10.4 mgd. The project is estimated to cost $15 million and will save the City an estimated $160,000 per year in electric costs when WPCF is operating at present capacity.

The Woodland Water Pollution Control Facility, located in the southeastern portion of the Planning Area, will have ample capacity for treating wastewater when upgrades to address solids treatment are complete (underway; anticipated completion in 2016).

Stormwater

The Environmental Services Division in the City of Woodland Public Works Department provides stormwater management services for the city. The Utilities Division is responsible for stormwater maintenance services. The city's stormwater system includes 84 miles of storm sewer pipe, 14 miles of drainage channel, 1,600 catch basins, 1,874 drain inlets, nine detention ponds, and nine stormwater pumps located in three stormwater pumping stations. The stormwater infrastructure is mapped in Figure 5-7.

Existing Conditions

The City Storm Drain system collects water through gutters, ditches, and catch basins, and conveys that water generally west to east by gravity through canals and four main trunk lines 30 to 84 inches in diameter. The trunk lines discharge into open channels which convey the flow to three pump stations located at the East Main Street lift Pump Station. It is then pumped into a canal along the south side of Cache Creek Settling Basin and then flows into the Yolo Bypass, the Tule Canal, and Sacramento River. The City also has several retention/detention basins around the city to slow and divert storm water from larger storms.

Flooding

City streets are subject to flooding during periods of heavy rainfall. According to City staff, the storm drain system is not adequately sized for the flows that it must handle. Older parts of the city, particularly west of East Street, do not have a system of under-street storm drain pipes. Rather, runoff is instead conveyed through intersections in valley gutters, gutter culverts, or inverted siphons, and must travel long distances to reach a drain inlet. In these areas, when capacity of drain inlets and pipes is exceeded, localized street flooding occurs and remains for three to four hours after rainfall has subsided.

Significant problem areas where localized street flooding occurs include Browns Corner (West Main Street and County Road 98) and West Street (South of Del Mar).

Browns Corner. Browns Corner has experienced significant flooding problems during the last several years from overland flows from unincorporated areas west of Woodland. The City is currently exploring alternatives to a multi-million dollar project to install a larger storm drain main across the center part of the city.

West Street. West Street is experiencing problems with flows from fields south of Woodland that flow north on West Street and flood Del Mar Street and Miramonte Drive. The City is currently working with farmers and the Yolo County to divert the flows south to Road 25.Woodland also experiences shallow sheet flooding from surface water runoff (Cache Creek) during large rainstorms with depths generally less than two feet. For discussion of the flood risk associated with the Cache Creek 100-year floodplain see Section 3.5.

Other areas that experience issues with localized flow include urban and agricultural edges where agricultural runoff can be a concern. These areas are generally along the westerly side of the city and include Coloma Street, near the City Cemetery, and Wendell Way as examples.

Planned Improvements

In 1988, City Council requested a study of the street flooding in the older parts of the city. At that time, a Blue Ribbon Committee determined that it would cost $10 million to bring the older areas up to a two-year design storm capacity. The City plans to continue to review the flooding issue, which will be studied in the pending Storm Drain Master Plan update.

Natural Gas

Natural gas in Woodland is provided by Pacific Gas & Electric (PG&E). As shown in Figure 5-8, several major PG&E gas transmission pipelines extend through the Planning Area—roughly following I-5 to the northwest and Fairham Avenue to the southwest; along Bourn Drive from East Beamer Street south to I-80; Main Street and Gleason Street between Bourn Drive and East Street; and Pedrick Road from I-5 to West Main Street.

The transmission and distribution of natural gas is regulated by the state. The City of Woodland is not responsible for the siting, design, construction, or operation of these transmission facilities. PG&E has a comprehensive inspection and monitoring program to ensure the safety of its natural gas transmission pipeline system. PG&E monitors system status in real time on a 24-hour basis, and regularly conducts leak inspections, surveys, and patrols of all its natural gas transmission pipelines. Issues identified as a threat to public safety are immediately addressed.[11]

Rising demand associated with population and employment growth will necessitate additional transmission facilities. It is important that these new facilities and services be provided in a manner that minimizes impacts on the built and natural environments and on the health and safety of Woodland residents and businesses.

11 http://www.pge.com/myhome/edusafety/systemworks/gas/transmissionpipelines/. Accessed on 8/29/2013.

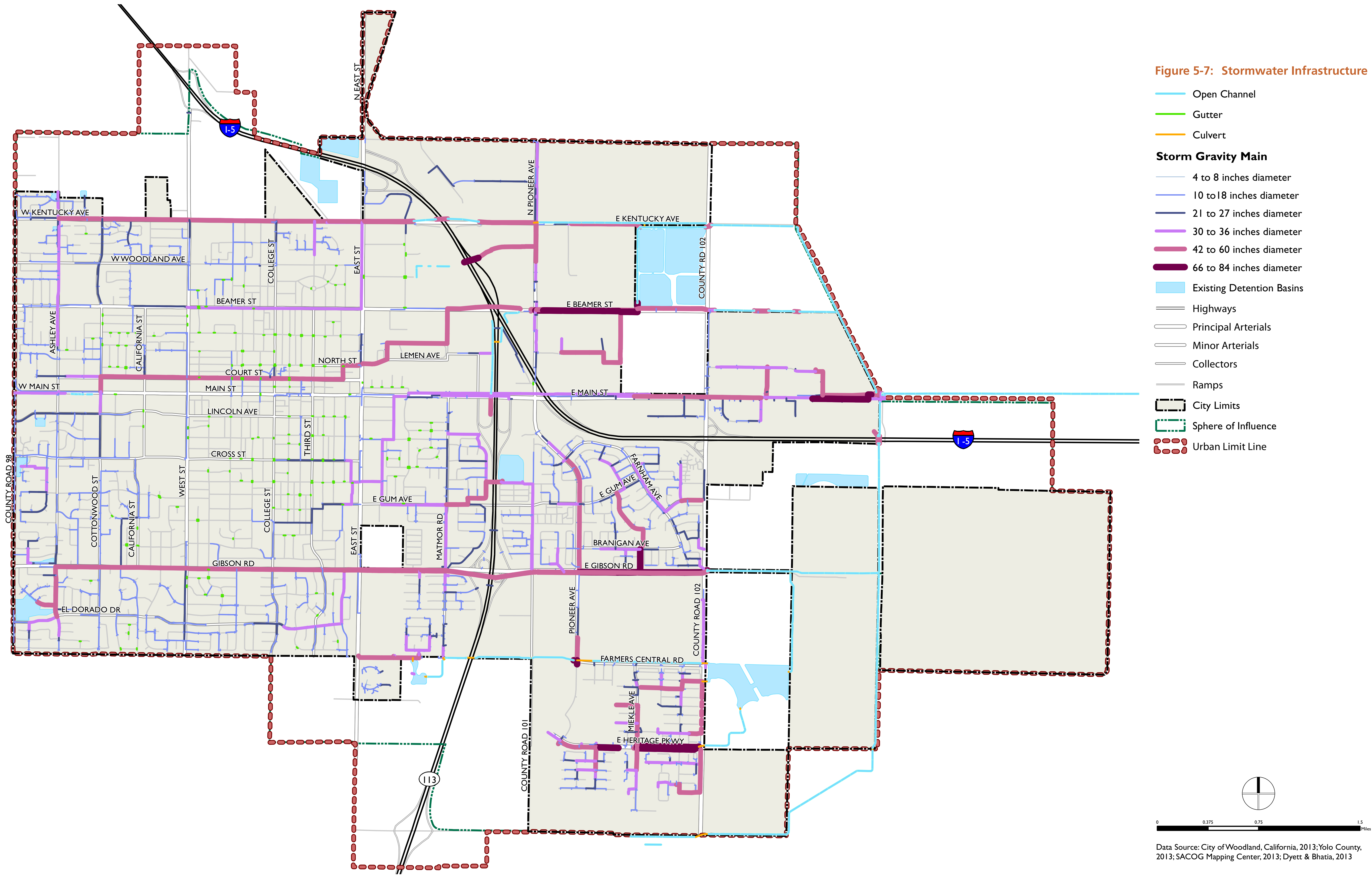
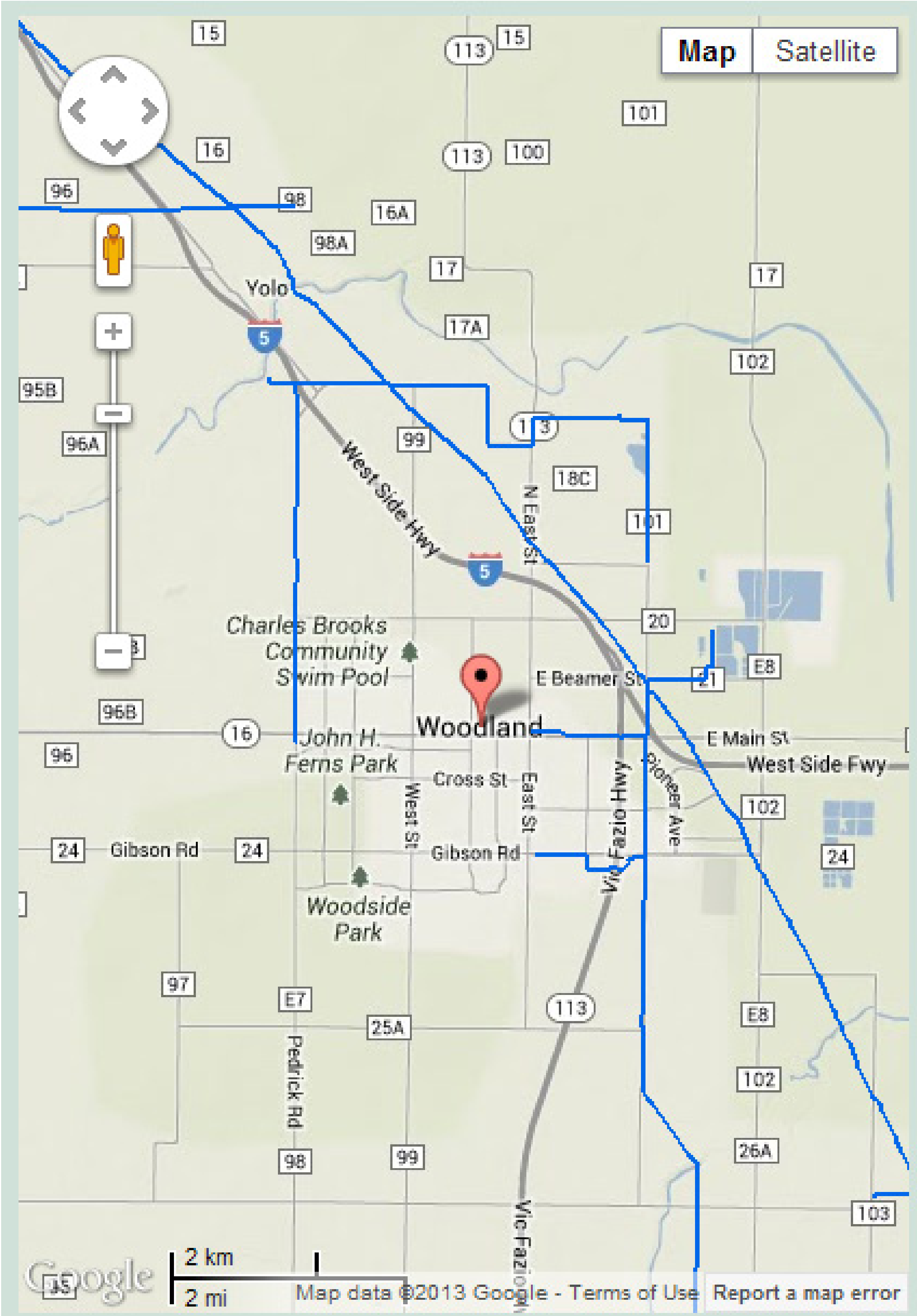


Figure 5-7: Stormwater Infrastructure
Open Channel
Gutter
Culvert
Storm Gravity Main
4 to 8 inches diameter
10 to18 inches diameter
21 to 27 inches diameter
30 to 36 inches diameter
42 to 60 inches diameter
66 to 84 inches diameter
Existing Detention Basins
Highways
Principal Arterials
Minor Arterials
Collectors
Ramps
City Limits
Sphere of Influence
Urban Limit Line
W KENTUCKY AVE
W WOODLAND AVE
BEAMER ST
ASHLEY AVE
CALIFORNIA ST
COURT ST
NORTH ST
LEMEN AVE
W MAIN ST
MAIN ST
LINCOLN AVE
CROSS ST
THIRD ST
COLLEGE ST
EAST ST
N EAST ST
N PIONEER AVE
E KENTUCKY AVE
COUNTY RD 102
E BEAMER ST
E MAIN ST
E GUM AVE
FARNHAM AVE
BRANIGAN AVE
E GIBSON RD
GIBSON RD
COUNTY ROAD 98
COTTONWOOD ST
WEST ST
MATMOR RD
EL DORADO DR
PIONEER AVE
COUNTY ROAD 102
FARMERS CENTRAL RD
MIEKLE AVE
E HERITAGE PKWY
COUNTY ROAD 101
I-5
113
0
0.375
0.75
1.5
Miles
Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013

Figure 5-8: Natural Gas Transmission Pipelines



Source: PG&E, 2013. Available online at http://www.pge.com/myhome/edusafety/systemworks/gas/transmissionpipelines/.

Underpasses and other low points can be subject to localized flooding during periods of heavy rainfall.

5.5 Opportunities and Challenges

The following section briefly describes opportunities and challenges related to community facilities and services to be considered as part of the General Plan Update.

In general, the most significant challenge the City faces with regards to public facilities and services of all kinds is meeting specified service standards in the face of limited funding for capital improvements, operations, and maintenance. The General Plan is a long-range planning document that considers how to accommodate and serve new growth; at the same time, it must plan cumulatively and address existing deficiencies in service provision for the current population. The ability of a city to provide high quality amenities and services—from quality schools and recreational opportunities to low crime rates—has broad implications, including the city's ability to attract new employers. These services, facilities, and amenities are important to creating and maintaining a high quality of life, which residents and prospective employers value. High quality schools and job training opportunities create a more educated and attractive workforce. The extent and available capacity of infrastructure is also critical to prospective large industrial users as well as developers interested in infill parcels. As such, providing quality services becomes an economic development incentive and is crucial to the City's ability to attract and retain high income generating employees. However, providing a level of service that the City can afford from a long term fiscal standpoint is significant as well.

The General Plan update provides the following major opportunities pertaining to public facilities and services:

- Assess its assets and their status (parks, schools, other community facilities)
- Determine whether current service standards are being met; if not, determine what needs to be done to achieve them or reassess whether the current standards are still appropriate
- Plan for how to provide adequate services and facilities for the current and projected future population, including exploring possible funding mechanisms
- With community input, determine appropriate and achievable service standards for the planning period

Parks and Open Space

The City is not currently meeting its General Plan standard of 6 acres of parkland per 1,000 residents. Furthermore, it is estimated that the City would need to add about 232 acres of parkland by 2035 to overcome the existing deficiency as well as accommodate new population growth. Identifying a sufficient quantity and quality of park and recreation land will be a key component of the General Plan Update progresses. City staff has cited the need for new facilities and funding for new park development and land set-asides.

Additionally, according to City staff, parks operation and maintenance staff are severely limited. Any discussion of increasing the number of public parks and recreation facilities must be accompanied by a strategy for their ongoing operation and maintenance. The City must focus on maintaining what it currently has, maintaining what is being proposed, and securing a revenue source for both of those efforts. It is crucial that the City evaluate the park service levels in order to assess what the community can afford. New development will be responsible for providing amenities to serve their plan areas, but the City and residents must be able to afford to pay to maintain and service these areas. Providing these types of amenities, parks and open space, paths and greenbelts, are part of the slate of improvements that regional companies may consider in location decisions when they evaluate not only cost to build, but quality of life available for employees. Today's research and development based companies and those that have higher wage jobs, tend to seek places that offer high quality of life amenities.

Schools

WJUSD's aging facilities are in need of renovation and modernization. The cost to replace and upgrade existing facilities is estimated to be in the millions, well beyond what the District's operating fund can provide. While the WJUSD foresees new school development within SLSP, it does not currently plan to open any new schools in the near term. As build out of SLSP proceeds, there will be greater need to for new school construction closer to this growing population center. A challenge for the District and City will be to improve the reputation and perception concerning the quality of the public schools. This is a quality of life feature that many companies consider when deciding where to locate. Decisions on employment location are multi-faceted.

Opportunities exist for better coordination between District staff, City staff and decision-makers through the sharing of data and alignment of long-range planning goals. Additionally, implementation of Complete Street and Safe Routes to Schools will enable safer access for all users and modes of transportation.

Public Safety Services (Police and Fire)

With respect to public safety, the police and fire departments have the opportunity to reconsider their service standards and look for ways to increase their efficiency and quality of service. The General Plan Update also presents the opportunity to reevaluate triggers for when new facilities are needed. However, existing deficiencies in response times must be addressed—and service must be able to be maintained—before (or in conjunction with) considering how to serve additional growth.

Infrastructure and Flooding

Sewer and stormwater systems are at capacity in the Downtown, which places a limitation on that area's ability to intensify and accommodate more development, particularly in the short term. Similarly, the flooding issues and stormwater fees in the northeastern industrial area are serious deterrents to new industrial development. See Section 3.5 for additional information on the challenges posed by flood risks in the Planning Area.

The city also has an aging well infrastructure. Sixteen of the City's wells have been in operation for 30 years or longer and five wells for 40 years or longer. The typical life of a well is between 30 and 50 years. The Davis-Woodland Water Supply project will allow Woodland to secure surface water supplies for current and future demand. However, because the City will continue to supplement surface water diversions from the Sacramento River with well water, the City will need to invest in new well construction, particularly to meet demand during summer months when water rights are limited.

4 TRANSPORTATION SYSTEMS AND CIRCULATION

The City of Woodland transportation network includes a variety of facilities serving multiple travel modes carrying people and goods. This chapter describes the physical and operational conditions of the following components of the city's transportation system: bikeways, pedestrian facilities, transit services, local and regional roadways, and railways.

4.1 Bikeways

Introduction

The 2002 City of Woodland Bicycle Transportation Plan identifies existing and planned bicycle facilities within the city. The primary purpose of the Bicycle Transportation Plan is to identify on-street and off-street bicycle facilities to serve the needs of recreational and commute riders. Fulfilling this purpose is expected to encourage greater levels of bicycling that will contribute to reductions in air pollution, noise pollution, and traffic congestion. The plan also presents the appropriate design features of bikeways, such as physical dimensions, signs, and markings.

Woodland's small size, good climate, and flat topography make it an ideal environment for travel by bicycle.

Class III bicycle routes, in which bicyclists share the roadway with vehicles without a bike lane, are marked with signage.

Existing Conditions

Bikeways are classified according to the following three types:

- Class I - off-street bike paths;
- Class II - on-street bike lanes marked by pavement striping and signage; and
- Class III - on-street bike routes that share the road with motorized vehicles.

Existing and proposed bicycle facilities in the Planning Area are displayed in Figure 4-1. As shown, many roadways have on-street bike lanes (Class II) or are signed as a bicycle route (Class III). There are also a few Class I bicycle facilities located along Pioneer Avenue, County Road 102, Heritage Parkway and throughout the Spring Lake Specific Plan area.

Regulatory Context

Federal and State

The California Complete Streets Act of 2008 (AB 1358) requires the legislative body of a city or county, upon revision of the circulation element of their general plan (after January 1, 2011), to identify how the jurisdiction will provide for the routine accommodation of all users of the roadway (i.e., complete streets) including motorists, pedestrians, bicyclists, individuals with disabilities, seniors, and users of public transportation.

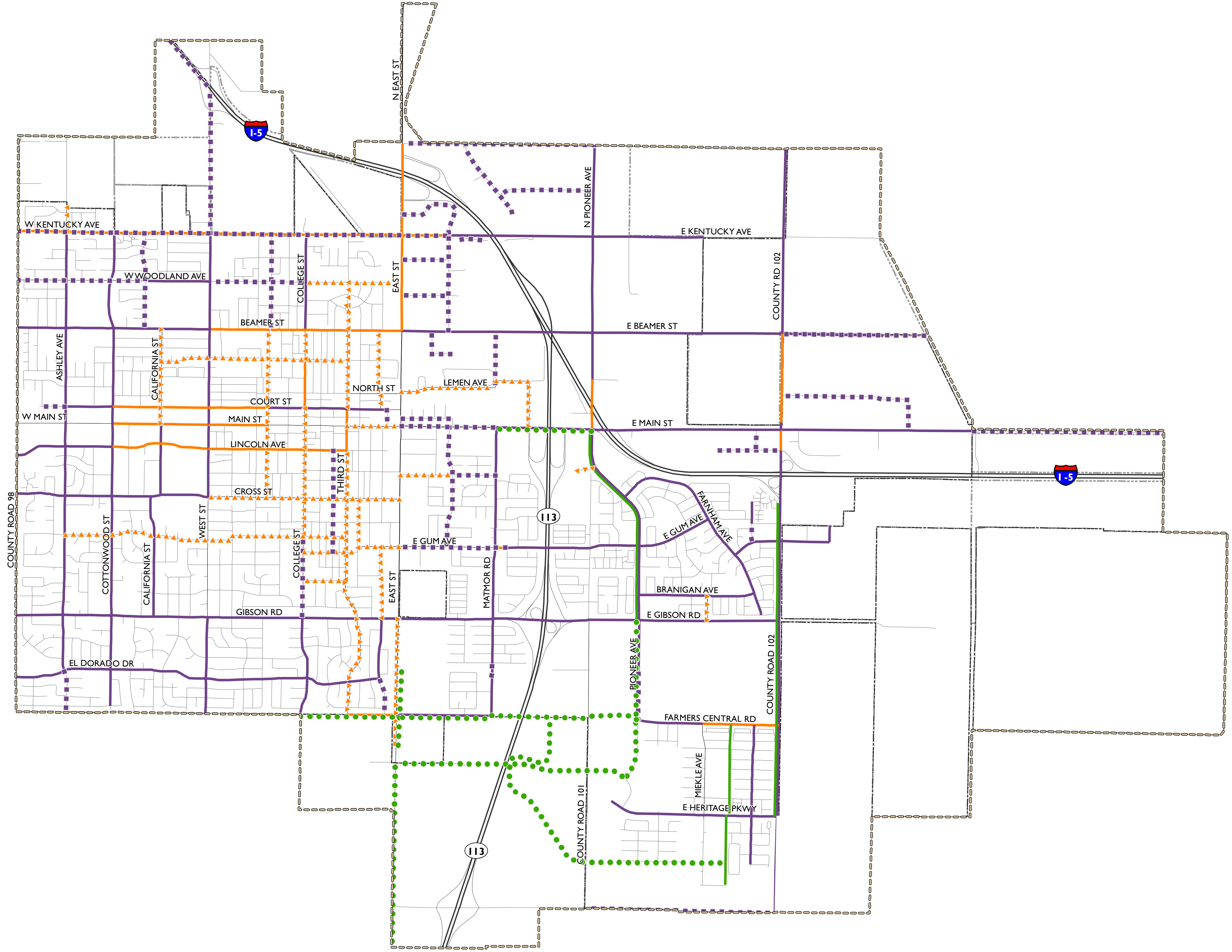
Local

Goals, objectives, and policies adopted by the City of Woodland that influence bikeway planning, design, and operation are contained in the following plans.

- The City of Woodland's current General Plan;
- The 2002 City of Woodland Bicycle Transportation Plan; and
- The 2001 Spring Lake Specific Plan (SLSP).

In general, these plans support the development of a complete network for bicycling.

Figure 4-1: Bicycle Facilities



Existing Bicycle Facilities

- Class I Bike Path
- Class II Bike Lane
- Class III Bike Route

Proposed Bicycle Facilities

- Class I Bike Path
- Class II Bike Lane
- Class III Bike Route
- Urban Limit Line
- Sphere Of Influence
- City Limits

0 0.375 0.75 1.5 Miles

Data Source: City of Woodland, California, 2013; SACOG Mapping Center, 2013

4.2 Pedestrian Facilities

Introduction

In California, 2.8 percent of commuters walk to work (U.S. Census Bureau, 2007-2011 American Community Survey). In Woodland, 2.6 percent of commuters walk to work, which is less than the state average, and less than the Yolo County percentage of 2.9. The above percentages likely underrepresent the share of trips made by pedestrians, as the surveys did not account for walking to transit, workers who walk occasionally, and children walking to school.

Conditions for walking vary across the city, from industrial neighborhoods with little pedestrian infrastructure to the denser, walkable grid of Downtown Woodland. For example, Census block groups nearest the downtown core had a reported 5.6 percent pedestrian mode share in the 2000 Census[1], well above the city's average. Pedestrian mode share generally increases as destinations become closer and as safety and other conditions for walking improve. School sites (e.g. Pioneer High) also have high pedestrian volumes.

The City has emphasized pedestrian travel by enhancing facilities including crosswalks, pedestrian count-down signals, new sidewalks, and traffic calming measures. Figure 4-2 illustrates select pedestrian facilities commonly found on various roadway classifications, and in different neighborhoods within the city.

Existing Conditions

The majority of roadway miles within the city have adjacent sidewalks, as shown in Table 4.2-1. Most minor arterials, collectors and residential streets have coverage on both sides of the street, while principal arterials, especially those on the periphery of the city, typically have sidewalks on one side of the street only. Sidewalks are included on all roadways within the city's newer planned communities and downtown grid.

1 The 2010 Census did not offer the "long" form questionnaire which included additional information to produce mode choice estimates.

Figure 4-2: Photos of Existing Sidewalk Conditions

Principal Arterial - Sidewalk on One Side

Collector Sidewalk

Downtown Core Sidewalk

Enhanced Crossing with Median Refuge

Enhanced Crossing with Beacon

Recreational Park Path

Source: Fehr & Peers, 2013.

TABLE 4.2-1 EXISTING SIDEWALK COVERAGE BY FUNCTIONAL CLASSIFICATION

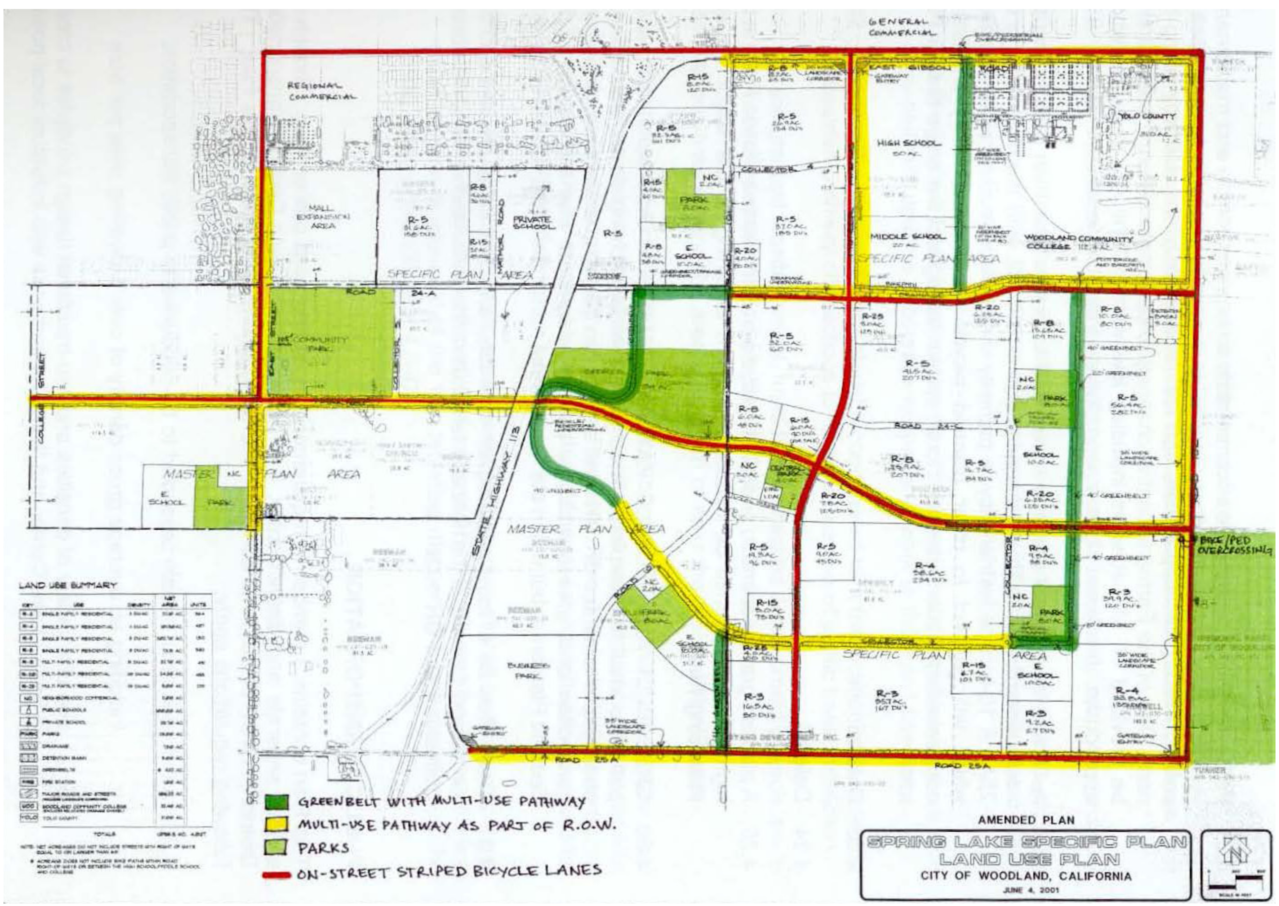
FUNCTIONAL CLASSIFICATION	SIDEWALK ON ONE SIDE OF THE STREET ONLY	SIDEWALK ON BOTH SIDES OF THE STREET	TOTAL SIDEWALK COVERAGE
Principal Arterial	67%	11%	78%
Minor Arterial	12%	56%	68%
Collector	5%	87%	92%
Residential[1]	6%	89%	95%

1 Percentage based on random sample of local roadways within residential neighborhoods. This does not include residential streets in industrial areas.

Source: Fehr & Peers, 2013.

The City of Woodland also has off-street facilities for pedestrian travel. Most of these pathways are located in city parks and serve residents who walk for recreation. The off-street facilities typically do not provide direct access to key destinations like commercial centers and schools, and are therefore not likely used for utilitarian trips.

Notable off-street facilities include the William Crawford Senior Park cut-through and a multi-use path that accesses the Woodland Community & Senior Center. There are also a number of proposed multi-use paths within the Spring Lake community as shown on the map below.



The City has implemented community programs and adopted guidelines to enhance the pedestrian environment. The current General Plan Policy Document outlines several policies to improve conditions for non-motorized transportation in the City, including requirements for developers to finance and install pedestrian facilities. The City also receives $100,000 per year from Community Development Block Grant (CDBG) for curb ramp updates and has developed the Traffic Safety Commission to advise and make recommendations to the City Council on all traffic safety matters within Woodland.

Regulatory Context

Federal and State

The Americans with Disabilities Act (ADA) establishes requirements to accommodate disabled persons in all settings, including transportation facilities. These requirements include maximum sidewalk grades, minimum sidewalk widths, curb cut locations, and number/location of accessible parking facilities.

The California Complete Streets Act of 2008 (AB 1358) requires the legislative body of a city or county, upon revision of the circulation element of their general plan (after January 1, 2011), to identify how the jurisdiction will provide for the routine accommodation of all users of the roadway (i.e., complete streets) including motorists, pedestrians, bicyclists, individuals with disabilities, seniors, and users of public transportation.

Local

The City of Woodland's current General Plan contains goals and policies related to pedestrian facilities.

4.3 Transit Services

Introduction

The Yolo County Transportation District (YCTD) operates Yolobus and provides local and intercity bus service within the City of Woodland, Yolo County, and to Downtown Sacramento and Sacramento International Airport. The agency's role extends beyond just providing service, as stated in their vision.

> *"Coordinate transportation planning and funding, provide transit service and advocate for transportation issues and services."* [2]

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2 Yolobus – Organizational Profile, http://www.yolobus.com/aboutyctd/organizationalprofile.php, 2013

The twelve-member YCTD Board of Directors, made up of local and county elected officials as well as representatives from Caltrans and UC Davis, is charged with implementing this vision and oversees the agency's $25.3 million budget (proposed for FY 2012/2013).[3]

Yolobus provides local routes within the City of Woodland, as well as intercity connections to downtown Sacramento, the Sacramento Airport, and other Yolo County destinations.

Existing Conditions

Bus Service

Figures 4-3A and 4-3B show the 10 Yolobus routes serving the City of Woodland, which include eight Regular Bus Service routes, one Express Bus Service route, and one Commute Bus Service route.

Fixed-route bus routes connect 132 bus stops while the County Fair Mall Transit Center accommodates transfers between routes 42A, 42B, and 215.

Service for Patrons with Limited Mobility

Although Yolobus public fixed-route services are accessible to the disabled community, the agency also offers door-to-door service for patrons unable to travel on fixed-route bus lines, as required by the ADA. The Complementary Paratransit Service operates within the same times and places as the fixed-route buses. It is provided by Yolobus Special and Davis Community Transit on a prearranged basis for any trips within the designated service area.

Span and Frequency of Bus Services

A detailed description of each route's span and frequency is provided below:

- **Routes 42A and 42B** provide hourly intercity service, seven days a week. 42A travels clockwise, beginning in downtown Sacramento, passing through West Sacramento and Davis, and arriving at Woodland. It then continues to the Sacramento International Airport and returns to downtown Sacramento. 42B travels counterclockwise passing through the same locations.
- **Route 45** is an express route alternative to Routes 42A and 42B, providing five morning and four afternoon trips between Woodland and downtown Sacramento. It operates on weekdays only (Monday to Friday).
- **Route 209** provides one morning and one afternoon trip between the Spring Lake community located in southeast Woodland and the County Fair Mall Transit Center. It operates weekly from Monday to Friday.
- **Route 210** provides local hourly service, Monday to Friday, to west Woodland.
- **Route 211** provides local hourly service, seven days a week, to west Woodland.

3 Yolo County Transportation District Proposed Preliminary Budget, April 30, 2012.

- **Route 212** provides local hourly service, seven days a week, to east Woodland.
- **Route 214** provides local hourly service, Monday to Friday, to east Woodland.
- **Route 215** provides six morning, six afternoon, and five evening round trips between Woodland and Cache Creek Casino Resort. It operates seven days a week.
- **Route 216** provides one morning and one afternoon round trip between Woodland and Knights Landing. It operates weekly on Monday, Wednesday, and Friday. Weekend service is also provided on the second Saturday of each month.
- **Route 217** provides one morning and one afternoon round trip between Woodland and Dunnigan. It operates on Tuesdays and Thursdays each week.
- **Route 242** is a commuter service providing one morning and one afternoon trip between Woodland and Davis. It operates weekly from Monday to Friday.

Ridership

In the month of March 2013, Yolobus served an average of 3,560 passenger trips per weekday, 2,500 passenger trips per Saturday, and 2,220 passenger trips per Sunday. Table 4.3-1 lists the weekday, Saturday, and Sunday ridership by route.

TABLE 4.3-1 YOLOBUS RIDERSHIP BY ROUTE

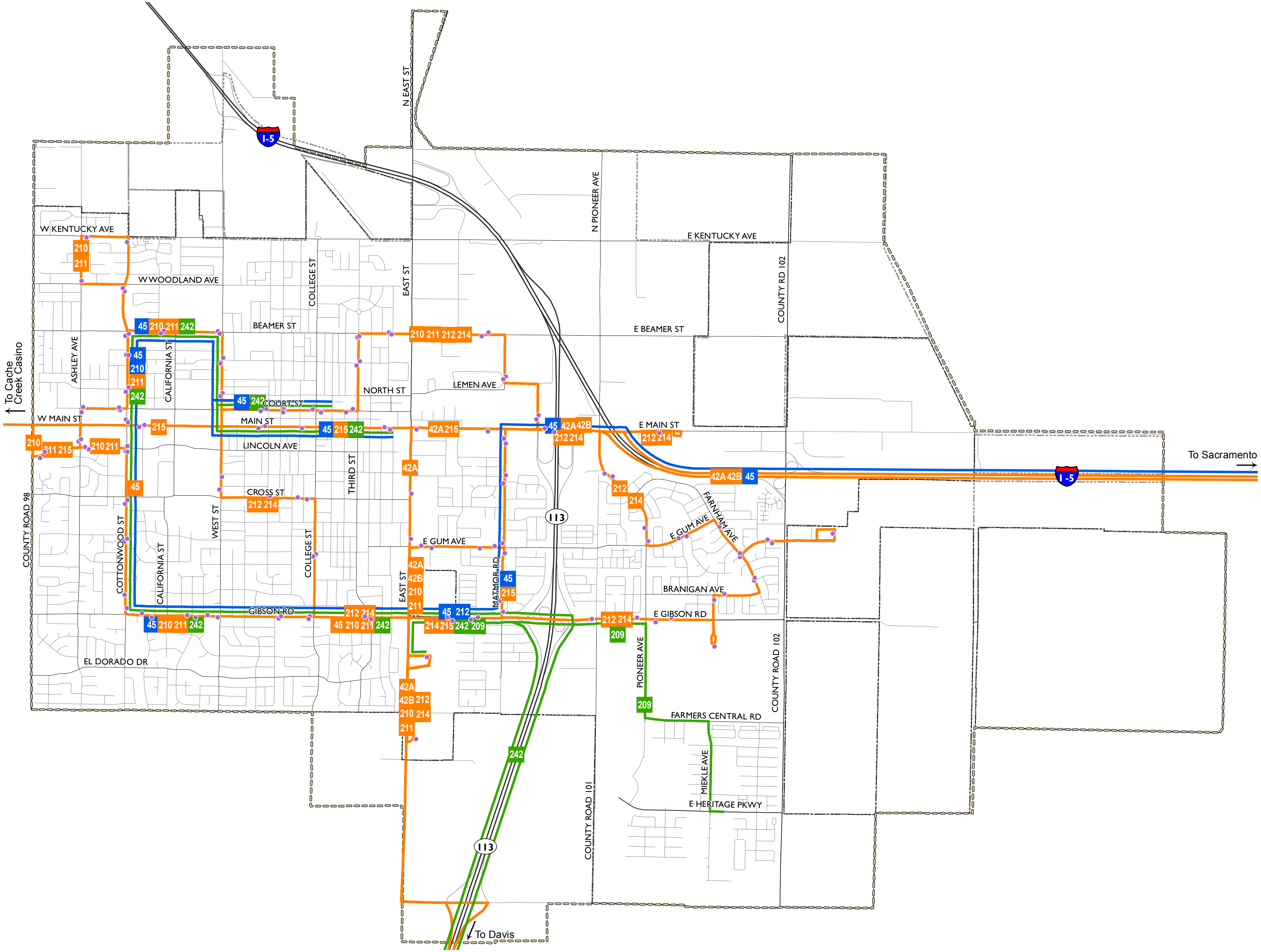
BUS ROUTE	WEEKDAY RIDERSHIP	SATURDAY RIDERSHIP	SUNDAY RIDERSHIP
42A & 42B	1,861	1,470	1,229
45	25	n/s	n/s
209[1]	2	n/s	n/s
210	137	n/s	n/s
211	212	138	101
212	172	91	83
214	150	n/s	n/s
215	745	823	804
216	8	n/s	n/s
217	4	n/s	n/s
242	33	n/s	n/s
Total	**3,560**	**2,522**	**2,217**

1 New route. Service began on March 4, 2013.

n/s – No Service.

Source: Yolobus Riders Report, March, 2013

Figure 4-3A: Transit Routes and Stops – Weekday Routes



Bus Stop

Bus Route

20 Minute Headway

60 Minute Headway

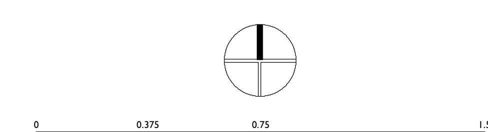
2 Trips Per Day

Urban Limit Line

City Limits

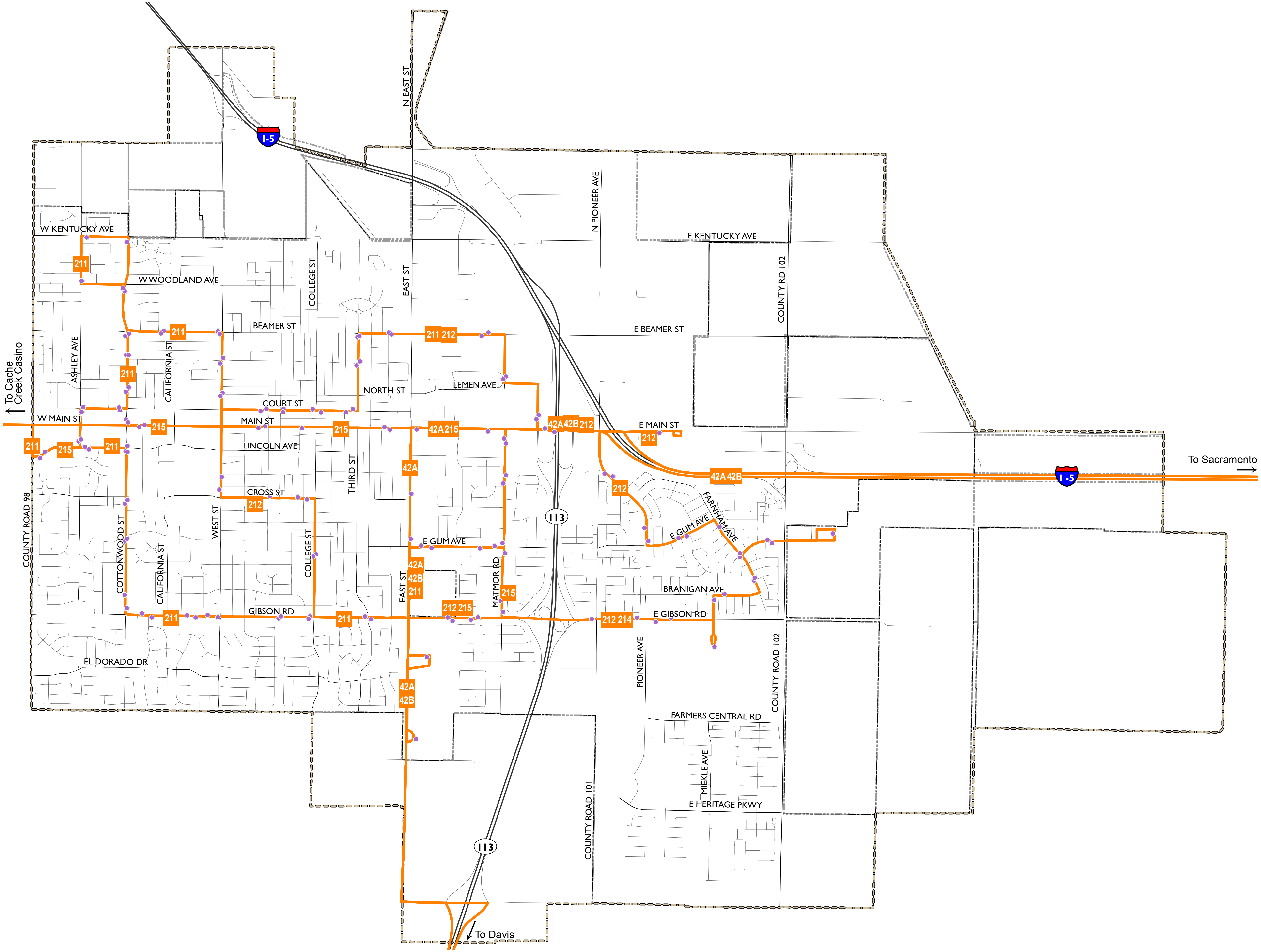
Sphere Of Influence

Note: Routes 42A and 42B have the highest weekday ridership.



Data Source: General Transit Feed Specification, 2013; YoloBus, 2013

Figure 4-3B: Transit Routes and Stops – Weekend Routes



Bus Stop

Bus Route

60 Minute Headway

Urban Limit Line

City Limits

Sphere Of Influence

Note: Routes 42A and 42B have the highest weekend ridership.

Data Source: General Transit Feed Specification, 2013; YoloBus, 2013

Routes 42A and 42B experience the highest weekly ridership, serving nearly 55 percent of all transit riders. On weekdays, many segments along these routes, including between Woodland and Davis and between West Sacramento and Downtown, experience ridership at or over capacity. Route 215 serving patrons and workers of Cache Creek Casino Resort, also accommodates a large portion of the weekly ridership.

Regulatory Context

Federal and State

The Federal Transit Act, approved in 1976, provides policy and guidance for Federal involvement in public transit.

The State's recently developed California Transportation Plan (CTP) provides guidance on inter-regional transit issues.

The California Sustainable Communities and Climate Protection Act of 2008 (SB 375) requires each Metropolitan Planning Organization in the state, including the Sacramento Council of Governments (SACOG), to develop a Sustainable Communities Strategy (SCS) that integrates planning for transportation – including public transit – with land use and housing policies to ensure achievement of transportation-related greenhouse gas emissions reduction targets established by the California Air Resources Board (CARB).

The California Complete Streets Act of 2008 (AB 1358) requires the legislative body of a city or county, upon revision of the circulation element of their general plan (after January 1, 2011), to identify how the jurisdiction will provide for the routine accommodation of all users of the roadway (i.e., complete streets) including motorists, pedestrians, bicyclists, individuals with disabilities, seniors, and users of public transportation.

Local

The development of local and regional transit facilities, provision of transit services, and related policies are guided by the vision, goals, and strategies articulated in the following plans:

- *Yolo County Transportation District Short Range Transit Plan, 2006.* This plan identifies immediate actions to meet near-term needs in a fiscally constrained environment.
- *Sacramento Area Council of Governments Metropolitan Transportation Plan/Sustainable Communities Strategy for 2035, April, 2012.*

Interstate 5 runs east to northwest through Woodland's Planning Area and is a principal statewide connector. Proximity to I-5 is a key asset for Woodland's industrial area.

4.4 Roadways

Introduction

The Planning Area's roadway network consists of a combination of California State highways, a federal interstate highway, and city streets (arterial, collector, and local streets). This roadway network is used extensively for personal vehicle travel. According to the 2007-2011 American Community Survey conducted by the U.S. Census Bureau, approximately 89 percent of all city residents travel from home to work by automobile, of which 15 percent travel in a carpool of two or more persons.

Existing Conditions

Regional Roadway System

The following three major State and Interstate highways are present within the Planning Area and maintained by Caltrans:

- **Interstate 5 (I-5)** is a principal north/south route that extends the length of California into Oregon and Washington. Spanning from Mexico to Canada, it is one of the more significant goods movement routes between the two countries and serves a number of long distance truck trips. Within the City of Woodland, it provides for the transportation of goods from local agricultural and warehousing trucking centers. It also serves as a major commute route between Woodland and Sacramento and is the only freeway in the region providing access to the Sacramento International Airport. I-5 has four travel lanes within the city.
- **State Route 113 (SR 113)** is a north/south route extending from west of Rio Vista to south of Yuba City. The segment between Davis and Woodland is a four-lane freeway and serves as a connection between I-80 and I-5. SR 113 is also an alternative to SR 99 for regional travel between the San Fransisco Bay Area and the rural communities north of Woodland. It continues from I-5 in Woodland to SR 99 as a two-lane conventional highway.
- **State Route 16 (SR 16)** is an east/west route extending from SR 20 in Colusa County to SR 49 in Amador County. It approaches the City of Woodland west limit as a two-lane conventional highway and then continues north along Pedrick Road to I-5. It provides a connection between Woodland and the Cache Creek Resort Casino located near the town of Brooks.

This system of highways handles the bulk of the long-distance trips that cross through the City of Woodland on the way to other destinations, but it also handles large volumes of commute trips between residential neighborhoods and employment-rich locations in Yolo County and the Sacramento region.

City Roadway System

The City of Woodland currently uses a functional classification system to describe and plan its roadway system. The term 'functional classification' refers to the expected function of roadways from a driver's perspective related to mobility (ability to move easily between origins and destinations) and property access (ability to directly access land parcels and uses on those parcels). This is a conventional method for determining the number of lanes required on a roadway and what level of access control should be provided. Since roadways are also public space and serve multiple modes with in varying land use contexts, the current functional classification system will be evaluated during the general plan update. Street systems today are often evaluated considering all modes and user abilities along with modal priorities given land use contexts.

Woodland's system of arterials, collectors, and local streets provide connectivity between neighborhoods, employment centers, and other destinations.

Figure 4-4 displays the existing functional classification and the number of travel lanes on roadways and freeways within the city as well as within the ULL and Table 4.4-1 lists the arterial and collector streets within the city. The roadways and freeways are divided into the following classifications:

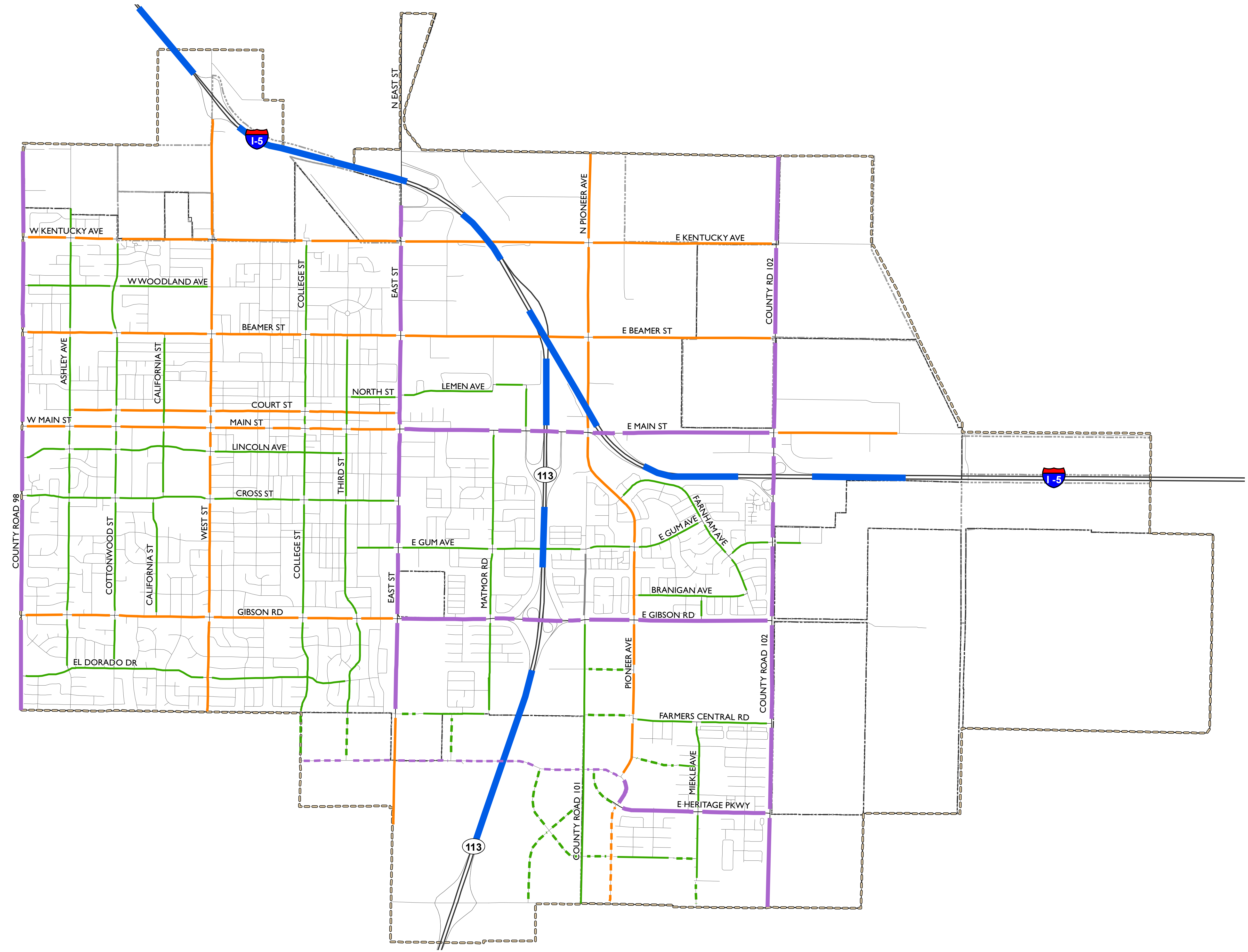
- **Freeways:** Provide mobility between Woodland and regional destinations. Freeways are linked to the city roadway system via ramps. They are fully access controlled, divided highways providing at least two lanes in each direction.
- **Major Two-Lane Highways:** Provide mobility between Woodland and regional destinations. They generally have two travel lanes with passing and climbing lanes provided periodically. They have partial access control, with periodic interruptions occurring at intervals greater than two miles.
- **Principal Arterial Streets:** Provide mobility for high traffic volumes between various parts of the city. They typically link freeways to collector streets and local streets and generally have higher speeds and more access control. Principal arterials within the city may have up to four travel lanes.
- **Minor Arterial Streets:** Provide mobility for high traffic volumes between various parts of the city. They typically have lower speeds and less access control than a Principal Arterial street due to the intensity of the development in the urban environment. Minor arterials within the city may have up to four travel lanes.
- **Collector Streets:** Provide for relatively short distance travel between and within neighborhoods, and generally have lower speeds and traffic volumes than arterials. Driveway access to collectors is limited less than on arterials, but may still be discouraged. Collectors within the city have two travel lanes.
- **Local Streets:** Provide direct roadway access to abutting land uses and serve short distance trips within neighborhoods. Traffic volumes and speed limits on local streets are low, and these roadways have no more than two travel lanes.

TABLE 4.4-1 CITY OF WOODLAND ARTERIAL AND COLLECTOR STREETS

FUNCTIONAL CLASSIFICATION	ROADWAY SEGMENT
Principal Arterials	County Road 98
	East Street (County Road 24A to I-5)
	County Road 102
	Main Street (East Street to I-5)
	Gibson Road (East Street to County Road 102)
Minor Arterials	West Street
	Pioneer Avenue
	Kentucky Avenue
	Beamer Street
	Court Street
	Main Street (County Road 98 to East Street & I-5 to County Road 102)
	Gibson Road (County Road 98 to East Street)
	East Street (South of County Road 24A)
Collectors	Ashley Avenue
	Cottonwood Street
	California Street
	College Street
	Cross Street
	Third Street
	Matmor Road
	Lincoln Avenue
	Maxwell Avenue
	East Gum Avenue
	El Dorado Drive
	Farnham Avenue
	Branigan Avenue
	Ogden Street
	County Road 101 South of Gibson Road
	Farmers Central Road
	Miekle Avenue
	Lemen Avenue
	W. Woodland Avenue

Source: Fehr & Peers, 2013

Figure 4-4: Roadway Lanes and Functional Classification



2 Existing Number of Lanes

Existing Roadway Funtional Classification

- Freeway
- Principal Arterial
- Minor Arterial
- Collector
- Local

Planned Roadway Functional Classification

- Principal Arterial
- Minor Arterial
- Collector
- Urban Limit Line
- City Limits
- Sphere Of Influence

Notes:

* Northbound Auxiliary Lane

** Auxiliary Lane in Both Directions

0 0.375 0.75 1.5 Miles

Data Source: City of Woodland, California, 2013;
Dyett & Bhatia, 2013;

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Roadway Capacity and Level of Service

Utilization of the roadway network was measured by conducting a capacity analysis of major roadway segments. The roadway segment capacity utilization used the concept of vehicle level of service (LOS) to grade the quality of traffic operating conditions for a typical weekday. This methodology uses report card style grades ranging from A (the best) to F (the worst) and is used in this study to describe the relationship between traffic demand and roadway capacity. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving. Since this study relies on the daily LOS analysis, it is intended to gauge the need for potential roadway capacity expansion and does not provide an accurate assessment of peak period traffic operations when traffic volumes are at their highest and drivers tend to notice the effects of congestion. It is important to note that daily LOS is only one input to the potential need for roadway capacity expansion since it does not consider the perspective of other roadway network users such as bicyclists and pedestrians. The LOS grades are generally defined in Table 4.4-2.

TABLE 4.4-2 LEVEL OF SERVICE DEFINITIONS, TRANSPORTATION RESEARCH BOARD, 2010

LOS	DESCRIPTION
A	LOS A describes primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at the boundary intersections is minimal.
B	LOS B describes reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant.
C	LOS C describes stable operation. The ability to maneuver and change lanes at midsegment locations may be more restricted than at LOS B. Longer queues at the boundary intersection may contribute to lower travel speeds.
D	LOS D indicates a less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the boundary intersections.
E	LOS E is characterized by unstable operation and significant delay. Such operations may be due to some combination of adverse progression, high volume, and inappropriate signal timing at the boundary intersections.
F	LOS F is characterized by flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing.

Source: Transportation Research Board 2010, Highway Capacity Manual, Volume 3, pp. 16-7 – 16-8.

LOS was determined by comparing existing traffic volumes against daily LOS capacity thresholds, which take into account the functional classification and capacity of each roadway segment. Table 4.4-3 displays the thresholds used for the analysis. The traffic volumes were collected in March and April of 2013, and represent an average of the volume measured during two mid-week 24 hour time periods. Traffic count data for all freeway segments was provided by Caltrans, and obtained through the Caltrans Performance Measurement System (PeMS). The traffic count data should be considered an estimate of current volumes as it is based on a small sample of data and not a full year of continuous counts.

TABLE 4.4-3 DAILY LEVEL OF SERVICE CAPACITY THRESHOLDS FOR CITY ROADWAY SEGMENTS

OPERATIONAL CLASS	NUMBER OF LANES	A	B	C	D	E
Principal Arterial	2	-	-	12,800	20,800	23,200
	4	-	-	24,500	43,900	47,800
	6	-	-	41,000	67,300	72,500
Minor Arterial	2	-	-	10,900	18,900	21,700
	4	-	-	22,700	40,000	44,500
Collector	2	-	6,300	9,200	10,400	11,100
	4	-	13,700	19,600	21,400	22,800
Local Road	2	-	-	4,500	6,000	6,600
Freeway	4	22,200	40,200	57,600	71,400	80,200
	6	34,000	61,600	88,000	108,200	121,200
Four Freeway Lanes + Auxiliary Lane in One Direction	5	25,200	45,600	65,200	80,600	90,450
Four Freeway Lanes + Auxiliary Lanes in Both Directions	6	28,200	51,000	72,800	89,800	100,700
Six Freeway Lanes + Auxiliary Lane in One Direction	7	37,100	67,200	95,800	117,600	131,600
Six Freeway Lanes + Auxiliary Lanes in Both Directions	8	40,200	72,800	109,600	127,000	142,000

1 '-' indicates that LOS is not achievable.

Source: Fehr & Peers, 2013.

City Facilities

Figure 4-5 graphically displays the resulting roadway LOS analysis results. As shown, the majority of roadway segments in the Planning Area have volumes below the LOS C or threshold. While these conditions are consistent with the current General Plan LOS policy, which is stated below, another way of viewing the results is that existing roadway capacity in the city is underutilized with a majority of city streets having daily utilization levels below 50 percent.

3.A.2. The City shall develop and manage its roadway system to maintain LOS "C" or better on all roadways, except within one-half mile of state or federal highways and freeways and within the Downtown Specific Plan area. In these areas, the City shall strive to maintain LOS "D" or better. Exceptions to these level of service standards may be allowed in infill areas where the City finds that the improvements or other measures required to achieve the LOS standards are unacceptable because of the right-of-way needs, the physical impacts on surrounding properties, and/or the visual aesthetics of the required improvement and its impact on community character.

Some exceptions to LOS C are allowed in Policy 3.A.2 and a recent General Plan amendment for the Gateway II project amended Policy 3.A.2 to allow LOS D operations in additional locations of the city as identified in Resolution #6032:

#6032 General Plan Amendment to Modify the Acceptable Level of Service (LOS) from C to D from CR 102 from Maxwell Avenue south to the City Limits.

Table 4.4-4 lists all city roadway locations currently operating at LOS D or worse. All of the locations listed are located within the one-half mile of state or federal highways and freeways or within the Downtown Specific Plan area. Therefore, all six roadway segments currently operating at LOS D are considered acceptable according to current General Plan policies.

The majority of Woodland's roadways operate at the LOS C threshold or better. Vehicle traffic flows smoothly, and the current roadway system is capable of handling increased capacity.

TABLE 4.4-4 ROADWAY SEGMENTS OPERATING AT LOS D OR WORSE

ROADWAY	SEGMENT	NUMBER OF LANES	DAILY VOLUME	EXISTING LOS
Main Street	Walnut Street to College Street	2	15,000	D
Main Street	College Street to 3rd Street	2	13,650	D
Main Street	3rd Street to East Street	2	15,580	D
E. Main Street	Matmor Road to Industrial Way	4	25,000	D
E. Main Street	SR 113 SB Ramps to SR 113 NB Ramps	4	28,890	D
E. Main Street	SR 113 NB Ramps to Pioneer Avenue	4	31,000	D

Source: Fehr & Peers, 2013.

Regional Facilities

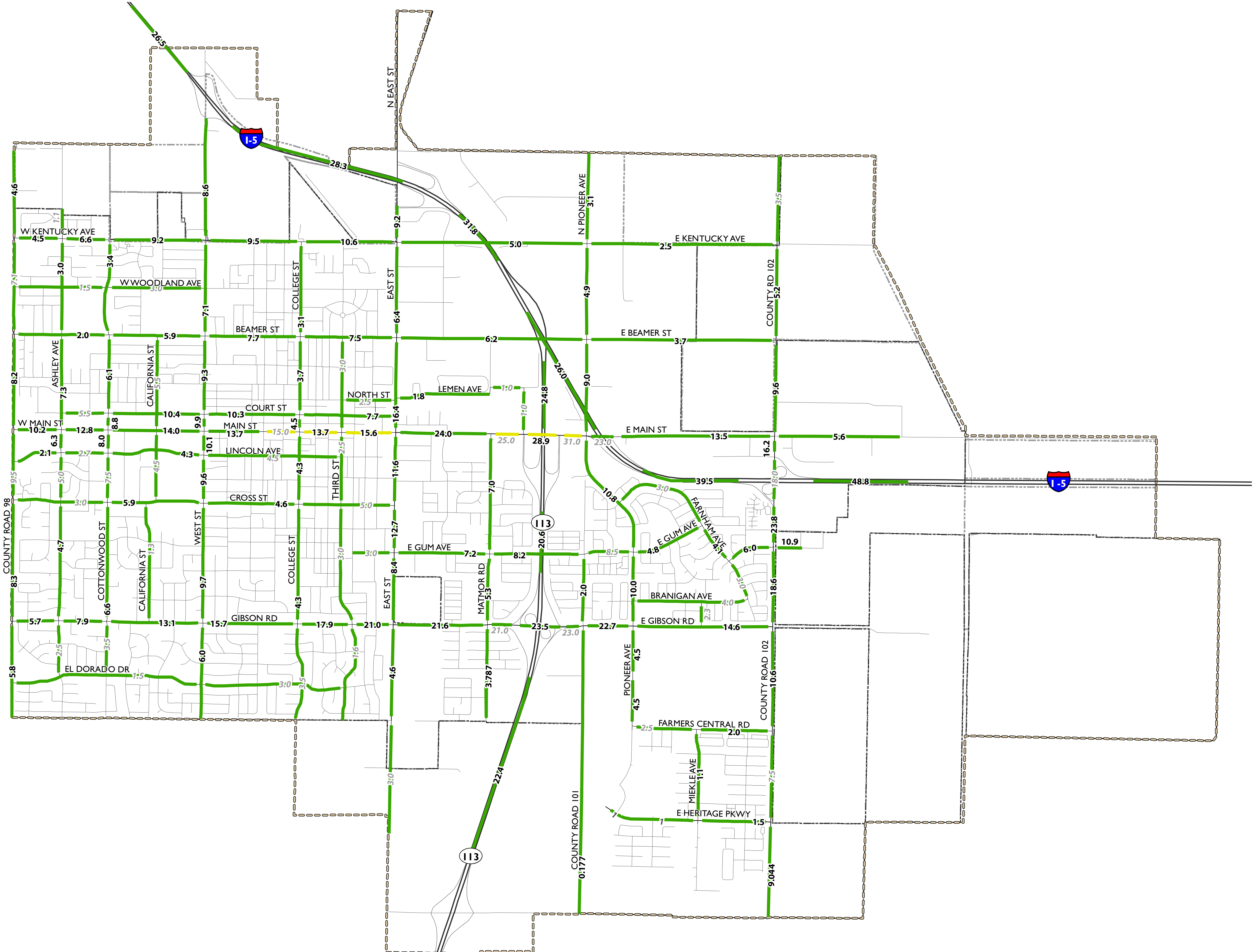
Table 4.4-5 shows the results of the LOS Analysis for nine freeway segments in the Planning Area. The freeway system within the City of Woodland is the responsibility of Caltrans. However, this information is provided for informational purposes because freeway operations on can directly affect roadway facilities within the city. All nine segments operate at LOS C or better under daily conditions.

TABLE 4.4-5 FREEWAY SEGMENTS LOS

ROADWAY	SEGMENT	DAILY VOLUME	EXISTING LOS
Interstate 5	State Route 16 to West Street	26,500	B
Interstate 5	West Street to East Street	28,280	B
Interstate 5	East Street to State Route 113	31,760	B
Interstate 5	State Route 113 to E. Main Street	26,000	B
Interstate 5	E. Main Street to County Road 102	39,510	B
Interstate 5	East of County Road102	48,840	C
State Route 113	Interstate 5 to E. Main Street	24,760	B
State Route 113	E. Main Street to E. Gibson Road	20,590	A
State Route 113	South of E. Gibson Road	22,440	B

Source: Fehr & Peers, 2013.

Figure 4-5: Roadway Volumes and Level of Services



1.0 Average Daily Traffic Volume (x 1,000)

1.0 Estimated Daily Traffic Volume (x 1,000)

Level of Service

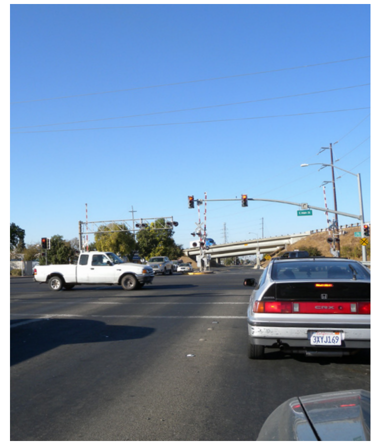
- A - C
- D
- E
- Urban Limit Line
- City Limits
- Sphere Of Influence

0 0.375 0.75 1.5 Miles

Data Source: City of Woodland, California, 2013; Fehr & Peers, 2013

Caltrans provides a series of planning documents that identify existing and future deficiencies on the state highway system. These reports also establish the "concept" or desired LOS for specific corridor segments. Long-range improvements are identified to bring the existing facility up to the design concept expected to adequately serve 20-year traffic forecasts. In addition, the ultimate design concept for the facility is also identified for conditions beyond the immediate 20-year design period.

- *The Transportation Corridor Concept Report, Interstate 5* (Caltrans 2010) contains the 20-year improvement concept for I-5 north of SR-113. For this segment, the concept service level is LOS D. The 20-year concept is a four-lane freeway and the ultimate facility concept is a six-lane freeway.
- *The I-5 Corridor System Management Plan* (Caltrans 2009) contains the 20-year improvement concept for I-5 between the Yolo County line and SR 113. For this segment, the concept service level is LOS C. Therefore, I-5 east of County Road 102 operates acceptably under existing conditions. The 20-year concept is a four-lane freeway with a high occupancy vehicle (HOV) lane in each direction, and the ultimate facility concept is a six-lane freeway with an HOV lane in each direction.
- *The Transportation Corridor Concept Report, State Route 113* (Caltrans 2010) contains the 20-year improvement concept for SR 113. From I-80 to I-5, the concept service level is LOS E. The 20-year concept for the corridor is a four-lane freeway and the ultimate facility concept is a six-lane freeway.



Similar to the roadway segments, the majority of Woodland's intersections perform at acceptable levels of service with minimal delays.

Intersection Operations and Level of Service

Intersection traffic operations analysis was conducted to supplement the roadway capacity utilization evaluation for five key intersections. Intersections are often the constraints in a roadway network due to the conflicts created by the turning movements and can cause drivers to experience undesirable delays especially during peak hour conditions. For this purposes of this study, the intersection analysis focused on PM peak hour conditions. Intersection LOS is based on control delay, which is delay associated with the interruption to traffic flow caused by traffic control devices at the intersections. The traffic operations analysis used methodology contained in the Highway Capacity Manual (HCM), Transportation Research Board, 2010. The operations analysis results were compared against the City of Woodland's current General Plan LOS threshold to identify any existing deficiencies. Table 4.4-6 describes the LOS thresholds from the HCM for signalized intersections.

Table 4.4-7 shows the LOS and control delay at the study intersections under existing conditions. Figure 4-6 displays the existing PM peak hour traffic volumes. The PM peak hour intersection LOS results indicate that all intersections operate at LOS C or better. Therefore, all the study intersections operate acceptably.

TABLE 4.4-6 LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

LEVEL OF SERVICE	DESCRIPTION	AVERAGE CONTROL DELAY (SEC/VEH)
A	Operations with very low delay occurring with favorable traffic signal progression and/or short cycle lengths.	< 10
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10 to 20
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20 to 35
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35 to 55
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	> 55 to 80
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	> 80

Source: Transportation Research Board 2010, Highway Capacity Manual, Volume 3, pp. 18-5 – 18-6.

TABLE 4.4-7 EXISTING (2013) PM PEAK HOUR INTERSECTION OPERATIONS

	INTERSECTION	TRAFFIC CONTROL	LOS / DELAY[1]
1	E. Main Street / East Street	Signal	C / 28
2	E. Main Street / Pioneer Avenue	Signal	C / 23
3	E. Main Street / County Road 102	Signal	C / 23
4	Maxwell Avenue / County Road 102	Signal	C / 27
5	E. Gibson Road / East Street	Signal	C / 22

1 The LOS and average delay in seconds per vehicle are reported. Intersection delay is based on the average intersection control delay for signalized and all-way stop controlled intersections.

Source: Fehr & Peers, 2013.

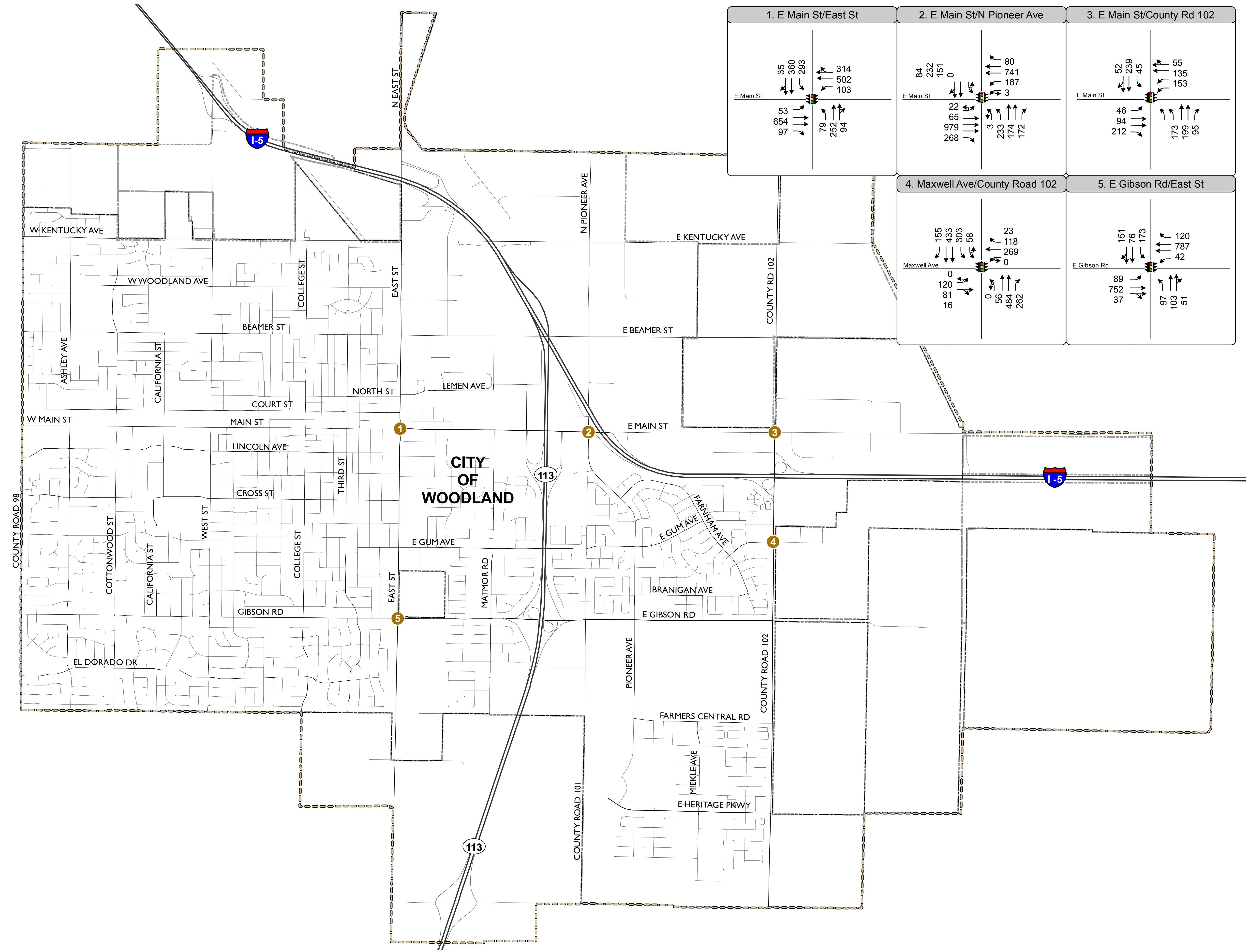


Figure 4-6: PM Peak Hour Traffic Volumes and Lane Configurations

Turn Lane

XX PM Peak Hour Traffic Volume

Study Intersection

Traffic Signal

0 0.375 0.75 1.5 Miles

Data Source: City of Woodland, 2013; Fehr & Peers, 2013

Vehicle Miles of Travel

In transportation planning, Vehicle Miles of Travel (VMT) is an important measure of network performance. In addition to measuring overall travel amounts and efficiency, it also serves as key input to mobile emissions analysis for greenhouse gases (GHG) and air pollutants. Total VMT generated by residents, workers, and visitors traveling within, to, and from Woodland was about 1,463,400 per weekday in 2008 as shown in Table 4.4-8 below. This estimate is based on the origin-destination (OD) method for measuring VMT. This method isolates trips originating or ending in the city and tracks their total trip length within the greater Sacramento region using a modified version of the regional SACMET travel forecasting model that has been developed for the City of Woodland General Plan update. Comparatively, the cities of Folsom and Rancho Cordova, with similar population sizes to Woodland in 2005, generated an estimated 1,399,600 and 1,819,000 VMT, respectively, in that year. In addition to providing a total estimate of OD VMT, Table 4.4-8 stratifies VMT by time of day and by the range of speed, or speed bin, in which the VMT occurs. The VMT allocation into speed bins is used in the calculation of vehicle emissions.

TABLE 4.4-8 BASE YEAR (2008) CITY OF WOODLAND VMT SUMMARY BY SPEED (ORIGIN-DESTINATION METHOD)

VMT SPEED BINS (MPH)	AM PEAK PERIOD	MIDDAY PERIOD	PM PEAK PERIOD	EVENING PERIOD	DAILY
0 – 5	180	2	181	2	365
5 – 10	202	17	403	6	628
10 – 15	1,188	122	3,710	26	5,046
15 – 20	20,318	24,947	24,531	23,403	93,199
20 – 25	9,377	10,346	10,878	9,308	39,909
25 – 30	23,135	26,206	29,258	25,347	103,946
30 – 35	26,683	35,825	33,961	33,609	130,078
35 – 40	18,877	18,958	21,358	17,015	76,208
40 – 45	35,696	37,480	42,311	38,435	153,922
45 – 50	46,099	12,183	49,845	12,711	120,838
50 – 55	60,193	13,632	75,286	14,346	163,457
55 – 60	61,712	143,041	49,869	75,040	329,662
60 – 65	13,272	52,301	13,797	135,279	214,649
65 – 70	8,775	6,558	9,657	6,479	31,469
70 – 75	0	0	0	0	0
>75	0	0	0	0	0
Total	**325,707**	**381,618**	**365,045**	**391,006**	**1,463,376**

Source: SACMET 2008 Regional Travel Demand Forecasting Model, Fehr & Peers, 2013.

Table 4.4-9 is another estimate of VMT but this version is calculated using the boundary method, where all vehicle travel that occurs within city limits is captured regardless of whether a trip had an origin or destination in the city. This method includes freeway travel on I-5 that often does not have a stop in the city but does cross through the city. Capturing this travel is important for air pollution analysis since these vehicles are generating air pollution that affects people within the city limits. Table 4.4-9 also includes the time of day and speed stratification for emissions calculations purposes.

TABLE 4.4-9 BASE YEAR (2008) CITY OF WOODLAND VMT SUMMARY BY SPEED (CITY BOUNDARY METHOD)

VMT SPEED BINS (MPH)	AM PEAK PERIOD	MIDDAY PERIOD	PM PEAK PERIOD	EVENING PERIOD	DAILY
0 – 5	0	0	0	0	0
5 – 10	276	0	454	0	730
10 – 15	1,266	0	1,891	0	3,157
15 – 20	15,589	19,856	19,565	18,455	73,465
20 – 25	7,276	8,533	8,191	7,124	31,124
25 – 30	24,241	27,630	29,497	27,341	108,710
30 – 35	27,254	41,018	32,688	40,503	141,464
35 – 40	12,409	17,675	12,504	16,090	58,678
40 – 45	12,565	17,584	14,923	17,927	63,000
45 – 50	50,755	1,184	47,224	1,129	100,292
50 – 55	1,014	1,258	42,187	1,197	45,656
55 – 60	65,979	81,781	39,678	30,971	218,409
60 – 65	30,264	96,711	28,730	150,674	306,379
65 – 70	0	0	0	0	0
70 – 75	0	0	0	0	0
>75	0	0	0	0	0
Total	**248,890**	**313,229**	**277,532**	**311,412**	**1,151,062**

Source: SACMET 2008 Regional Travel Demand Forecasting Model, Fehr & Peers, 2013.

To provide a context for these VMT estimates that may be useful to planners, decision makers, and the public, it is often helpful to express the VMT estimates on a per capita basis. This is a simple ratio where the VMT estimate is divided by the city's population to allow comparisons to future forecasts to gauge how travel demand and network efficiency are likely to change. The OD VMT per capita ratio is 28.9 and the Boundary VMT per capita ratio is 22.7. In 2005, the OD VMT per capita ratios for the cities of Folsom and Rancho Cordova were 22.8 and 31.5, respectively.

Truck Routes

The Surface Transportation Assistance Act of 1982 (STAA) allows large trucks, classified by STAA and commonly called STAA trucks, to operate on designated routes within the STAA Network. The STAA Network includes the following routes:

- **National Network (NN) Routes:** The National System of Interstate and Defense Highways, also known as the interstates.
- **Terminal Access (TA) Routes:** Designated state highways or local roads that can accommodate STAA trucks.

I-5 is designated as a National Network route and SR 113 is designated a Terminal Access route. The City of Woodland has also designated local roads within the city to be used as truck routes. Figure 4-7 displays the roadways designated as National Network and Terminal Access routes as well as local truck routes. The designation of roadways as STAA routes promotes their use by larger trucks and connects key local industrial facilities to the State and federal system. Unless explicitly prohibited by local ordinance, the California Vehicle Code allows trucks on all streets if they are along a reasonable route to the intended destination.

The percentage of truck traffic on freeways and highways in the city is summarized in Table 4.4-10. With I-5 serving as a major corridor for goods movement between Mexico and Canada, its high truck percentage through the city is expected. SR 113 also has a relatively high truck percentage since it serves as a connecting route between I-5 and I-80.

An efficient goods movement system is critical to supporting the warehousing and distribution centers located in Woodland's industrial area.

TABLE 4.4-10 TRUCK PERCENTAGES ON FREEWAYS

ROADWAY	SEGMENT	PERCENTAGE OF TRUCKS
Interstate 5	State Route 16 to West Street	22%
Interstate 5	West Street to East Street	18%
Interstate 5	East Street to State Route 113	23%
Interstate 5	State Route 113 to E. Main Street	21%
Interstate 5	E. Main Street to County Road 102	21%
Interstate 5	East of County Road 102	16%
State Route 113	Interstate 5 to E. Main Street	10%
State Route 113	E. Main Street to E. Gibson Road	13%
State Route 113	South of E. Gibson Road	8%

Source: Average Annual Daily Truck Traffic on the California State Highway System, Caltrans, 2011 (pp. 24, 48, 183).

Traffic Safety

Collision data is used to identify locations where the combination of traffic controls, physical geometrics, and driver behavior may contribute to safety issues and helps determine appropriate safety treatments. Figure 4-8A displays the geographical distribution of accident data maintained by the City. The most frequent collision type involves property damage. The next most frequent are collisions involving an injury, and collisions involving a pedestrian.

Tables 4.4-11 and 4.4-12 summarize collision data for state freeways from the Traffic Accident Surveillance and Analysis System (TASAS) provided by Caltrans. This data is provided for information purposes. The identification and implementation of safety countermeasures on the state highway system is the responsibility of Caltrans.

TABLE 4.4-11 BASE YEAR (2008) CITY OF WOODLAND VMT SUMMARY BY SPEED (CITY BOUNDARY METHOD)

HIGHWAY LOCATION/ SECTION	TOTAL ACCIDENTS	TOTAL FATALITIES	ACTUAL COLLISION RATE[1]			AVERAGE COLLISION RATE[1]		
			F	F&I	Total	F	F&I	Total
I-5: County Road 102 to SR-16	131	1	0.003	0.14	0.36	0.007	0.17	0.50
SR-113: County Road 25A to I-5	22	2	**<u>0.028</u>**	0.14	0.31	0.005	0.14	0.41

1 The collision rate is accidents per million vehicle-miles. "F" refers to the fatality rate, and "F&I" refers to the fatality and injury rate. Total number of accidents includes non-injury accidents, which are not included in the table.

Bold and underline font indicate actual accident rates that are higher than the statewide average for similar facilities.

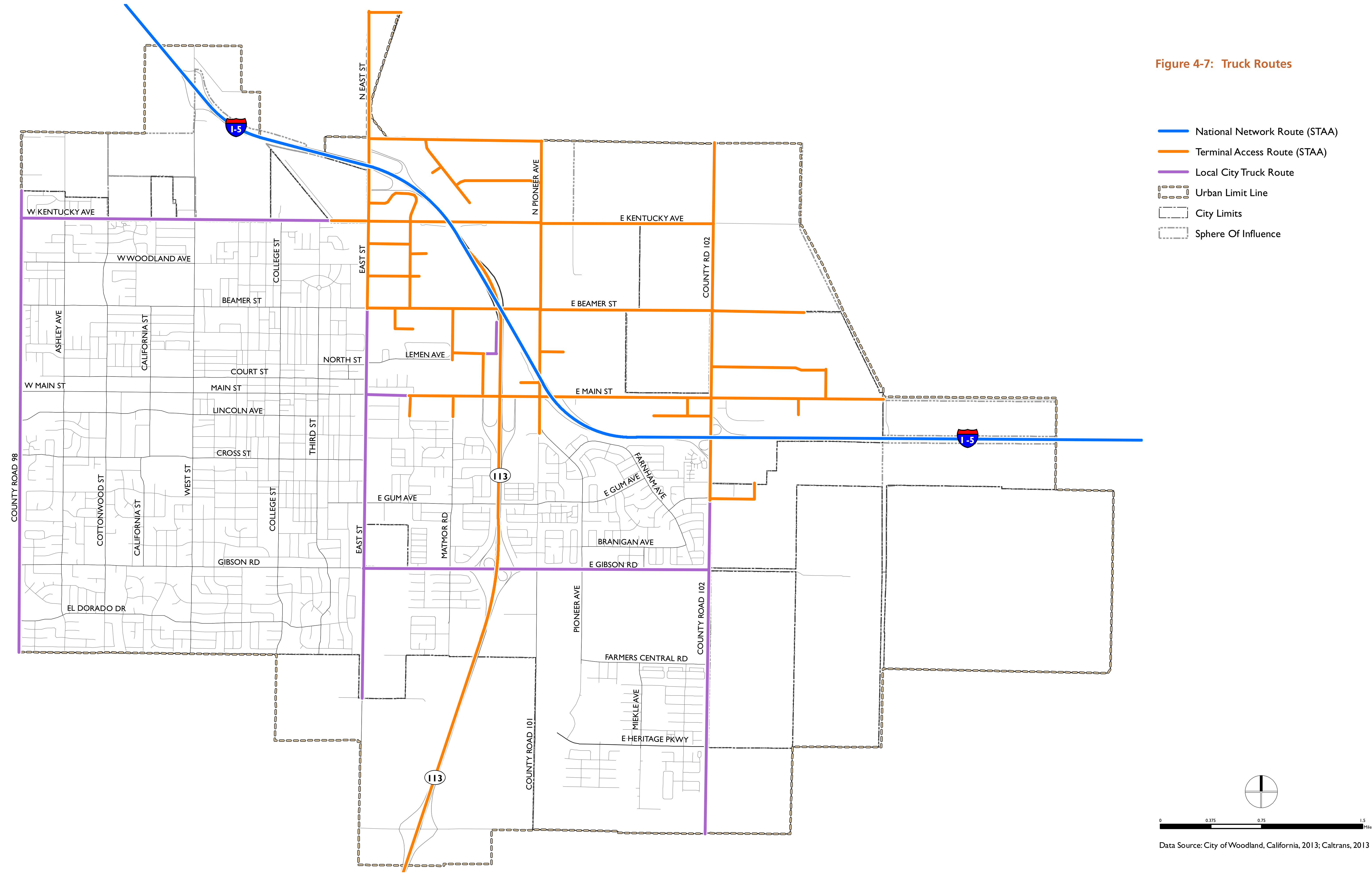
Source: Caltrans District 3 TASAS Table B, July 1, 2008 – June 30, 2011.

TABLE 4.4-12 FREEWAY COLLISIONS BY TYPE

HIGHWAY LOCATION/ SECTION	HEAD ON	SIDE-SWIPE	REAR END	BROAD-SIDE	HIT OBJECT	OVER-TURN	OTHER
I-5: County Road 102 to SR 16	1	21	29	0	64	13	3
SR 113: County Road 25A to I-5	1	4	4	1	8	2	2

Source: Caltrans District 3 TASAS Table B, July 1, 2008 – June 30, 2011.

Figure 4-7: Truck Routes



Data Source: City of Woodland, California, 2013; Caltrans, 2013

Figure 4-8A: Collisions on City Streets

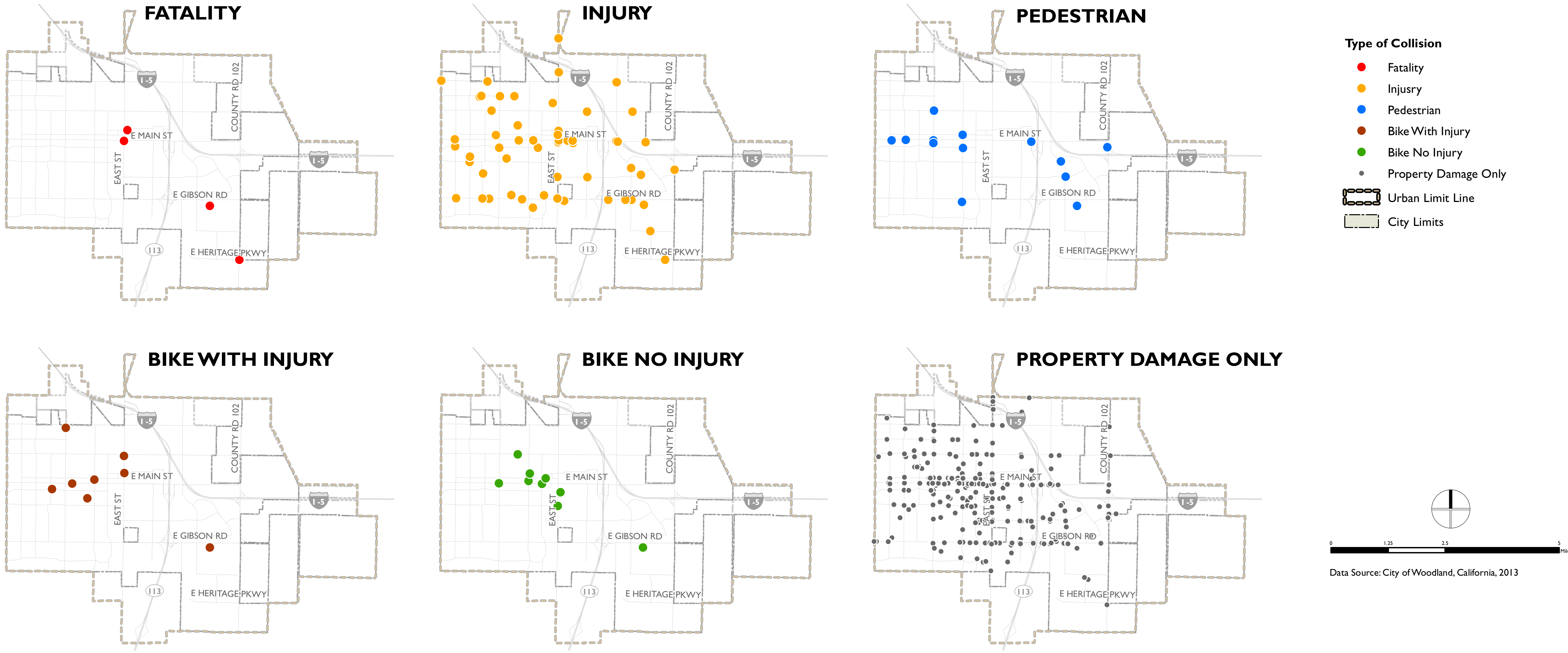
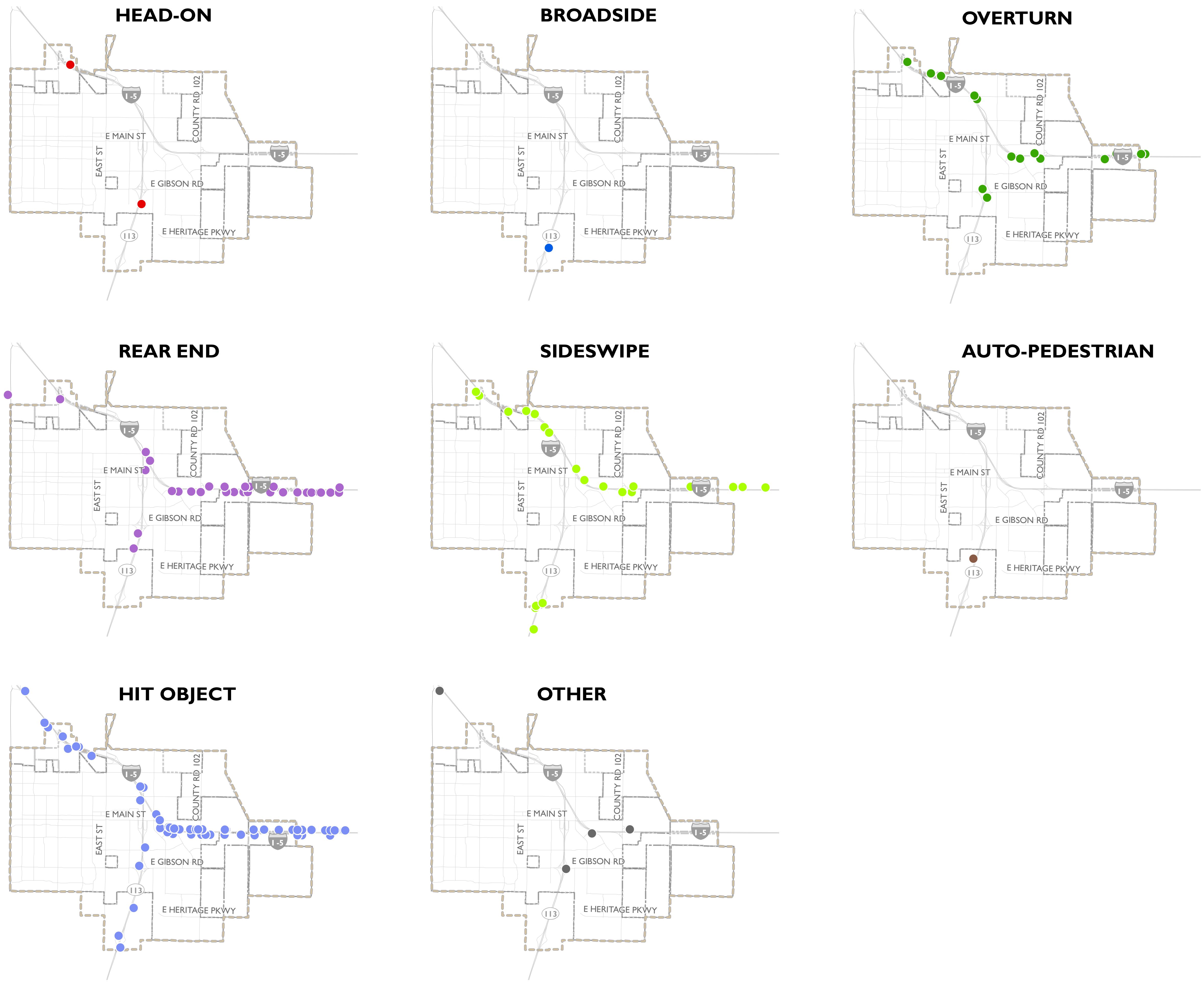


Figure 4-8B: Collisions on Freeways



Type of Collision

- Head-On
- Broadside
- Overturn
- Rear End
- Sideswipe
- Auto-Pedestrian
- Hit Object
- Other

0 1.5 3 6 Miles

Data Source: Caltrans Traffic Accident Surveillance and Analysis System (TASAS) Data, 2013

SR 113 had a higher fatality rate per million vehicle miles than the average fatality rate on similar roadway facilities. The TASAS Table B report notes that many of the accidents along SR 113 occurred during dark or wet conditions.

On I-5, the most frequent collision types are hit object, rear end, and sideswipe. On SR 113, the most frequent collision type is a hit object. Figure 4-8B shows the geographical distribution of collisions on the freeways by type.

Regulatory Context

Federal

There are a number of federal laws and regulations related to goods movement, homeland security, street maintenance, traffic safety, and transportation funding. Moving Ahead for Progress in the 21st Century (MAP-21), approved in 2012, established the framework for transportation planning at the federal level.

State

The California Transportation Plan (CTP) for 2025, developed by Caltrans, provides broad system concepts, strategies, and performance measures for the State facilities (all modes).

Caltrans' Transportation Concept Reports and Corridor Systems Management Plans identify long-range improvements for specific State highway corridors and establish the concept or desired LOS for specific segments. Long-range improvements are identified to improve the existing facility up to the design concept expected to adequately serve 20-year traffic forecasts.

The State of California has adopted the following pieces of legislation with major implications for transportation planning, in addition to an executive order issued by the Office of the Governor:

- **SB 375 (2008):** Required MPOs to develop sustainable community strategies to achieve AB 32 GHG reduction targets established through the regional targets advisory committee and provides potential CEQA relief for select development projects. SACOG adopted their SCS in May 2012.
- **AB 1358 (2008):** Required the legislative body of a city or county, upon revision of the circulation element of their general plan (after January 1, 2011), to identify how the jurisdiction will provide for the routine accommodation of all users of the roadway (i.e., complete streets) including motorists, pedestrians, bicyclists, individuals with disabilities, seniors, and users of public transportation.
- **B 226 (2011):** Required Office of Planning & Research (OPR) to modify the CEQA Guidelines to set forth a streamlined review process for infill projects.

Regional

SACOG is responsible for the preparation of, and updates to, the Metropolitan Transportation Plan (MTP)/SCS[4] and the corresponding Metropolitan Transportation Improvement Program (MTIP).[5] The MTP/SCS provides a 20-year transportation vision and corresponding list of projects. The MTIP identifies short-term projects (seven-year horizon) in more detail. The 2035 MTP/SCS was adopted by the SACOG board in 2012. There are 23 projects listed in the 2035 MTP/SCS for the City of Woodland totaling just over $90.5 million.

SACOG is also responsible for the oversight and distribution of most Federal and State transportation funding, and develops the air quality plans and compliance measures, which incorporate mobile (vehicular) pollution sources.

Local

The Transportation and Circulation section of the City of Woodland's current General Plan contains goals and policies related to the city's roadway network.

The City's Community Design Standards document (2004) contains street design standards for city roadways.

The City of Woodland completed an update of the Streets Master Plan in 2009. The document includes an assessment of existing (2002) conditions as well as future roadway needs for the 2020 and 2030 horizon years. The update includes recommendations for the number of future travel lanes on major roadways as well as changes in functional classification. The document also identifies candidate locations for future traffic signals based on the projected volumes.

4 SACOG 2035 Metropolitan Transportation Plan/Sustainable Communities Strategy, http://www.sacog.org/2035/draft-final-mtpscs/, 2013.

5 SACOG 2013/2016 Metropolitan Transportation Improvement Program, http://www.sacog.org/mtip/2013-2016/adoption/pdf/2013%20MTIP%20Transmittal%209-26-12.pdf, 2013.

Woodland's active freight rail lines are critical to attracting and serving large industrial operations.

4.5 Railways

Introduction

Railways within the Planning Area serve as a vital component of goods movement. Woodland's industrial sector relies on the robust railway system to connect it to regional destinations.

Existing Conditions

Rail is a vital component of the city's transportation system as it connects the industrial and warehousing sector to destinations across California. The city is served by two freight railways including the Sierra Northern Railway and the California Northern Railroad. These main railways and additional rail spurs have approximately 29 at-grade crossings of public roads in the city, including 15 crossings adjacent to East and North East Streets. Rail spurs have been essential for industrial operations in the City of Woodland and have been cited as a key factor when evaluating site locations. Rail cars often are stored in the area northeast of the intersection of Main and East streets.

The California Northern Railroad operates approximately 261 miles of track within California linking freight customers in Northern California with the Union Pacific Railroad. The 110-mile West Valley line extends from Davis, CA to Tehama, CA. Transported commodities include tomato products, olives, rice, cheese, frozen foods, beer, wine, petroleum products, and chemicals.

The Sierra Northern Railway (formerly the Sierra Railroad Company and the Yolo Shortline Railroad) operates approximately 75 miles of track in Northern California including a 17-mile line between the Port of Sacramento in West Sacramento and Woodland. Transported commodities include lumber, particle board, wallboard, wood chips, bulk gypsum, bulk limestone, bulk plastics, canned goods, food and food products, chemicals and steel. Trains operate from 6:00 AM to 6:00 PM Monday through Friday, with additional weekend service according to customer needs.

Historically, the Yolo Shortline Railroad connected Woodland to Sacramento. Here, the historic depot of the Southern Pacific is being restored in conjunction with the Sacramento Valley Historical Railways nonprofit association.

The Sierra Northern Railway is considering a potential realignment of railways in Yolo County. The new railroad would run on the west side of the Yolo Bypass and connect with the existing alignment north of Woodland. The project, a regional effort involving Yolo County, Davis, and Woodland, would allow for the removal of rail running parallel to East Street from the southern Woodland city limits to north of Beamer Street, which could improve street access for properties with frontage on East Street. This would also remove grade crossings at North Street, Court Street, Main Street, Oak Avenue, Cross Street, Pendegast Street, Gum Avenue, Gibson Road and County Road 24.[6]

Figure 4-9 displays railways and at-grade railroad crossings in the Planning Area.

Regulatory Context

Federal and State

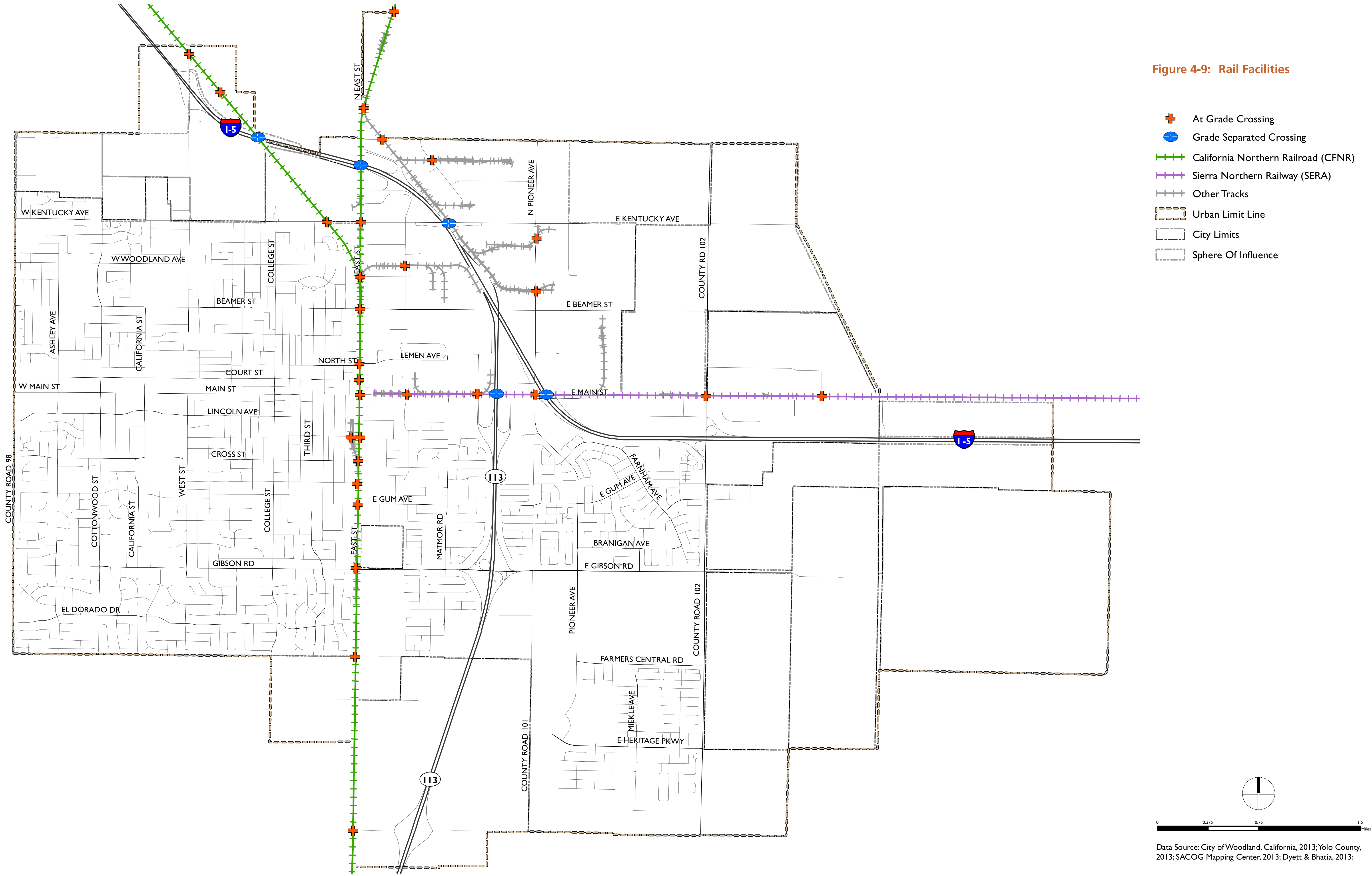
The California Public Utilities Commission (CPUC) is the regulatory agency responsible for enforcing state rules and regulations related to railroad and rail crossing safety. It is partnered with the Federal Railroad Administration (FRA) to also enforce federal laws and regulations related to rail transportation.

Local

The City of Woodland's current General Plan contains goals and policies related to railways.

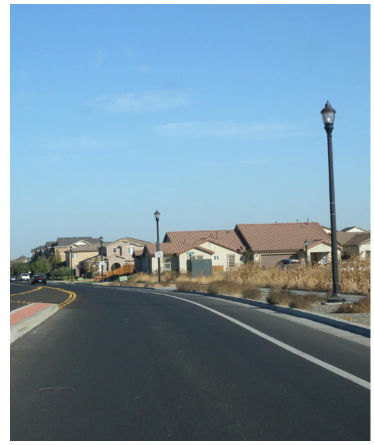
6 Sierra Northern Railway. Yolo Rail Relocation Project Description, 2011

Figure 4-9: Rail Facilities



Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013;

4.6 Transportation Network Operations and Maintenance



New roadways are needed to serve new development as it occurs. As new facilities are added to the city's inventory, they must also be maintained over time.

Existing Conditions

The City owns and operates over 200 centerline miles of roadway and over 400 lane-miles. A lane-mile accounts for some roadways having more than two lanes. Table 4.6-1 below shows a summary of the total centerline and lane-miles in the city and provides a measure of current pavement conditions using the pavement condition index (PCI). Figure 4-10 maps current pavement conditions, as of January 2014.

TABLE 4.6-1 EXISTING PAVEMENT CONDITIONS

FUNCTIONAL CLASS	CENTERLINE MILES	LANE MILES	PCI
Principal Arterial	20.0	40.0	77
Minor Arterial	27.6	55.2	57
Collector	27.6	55.1	70
Local	121.7	243.3	70
Alley	8.3	16.6	16
Mileage Totals	206.2	412.4	
Network PCI			68

Source: Fehr & Peers, 2013.

The PCI should be maintained above 70 to consider pavement to be in good condition. Ratings below 70 indicate pavement at risk of failure and a rating below 25 denotes pavement failure. A PCI of 68 means that overall the city's roadways have slipped into the at risk category and will already be more costly to maintain than had routine maintenance occurred and the rating stayed above 70. Costs to maintain, repair, or rehabilitate pavement increase significantly with lower PCI ratings. Currently, the City has a backlog of pavement maintenance projects that would require a onetime cost of approximately $52 million. In addition to this onetime cost, the City still has an annual obligation of about $3.25 million to maintain pavement. This does not include additional investment required to cover the costs of sidewalks, bikeway facilities, traffic signals, signs, and street lighting. As of 2008, the city had approximately 350 miles of sidewalk, 50 miles of bike lanes, 3,500 street lights, 65 traffic signals, nine signalized crosswalks, and 10,000 signs.[7] Sustaining this complete network will require higher levels of investment in the future as these network components age and reach the end of their lifecycles, requiring major rehabilitation or replacement.

7 City of Woodland, Public Works Infrastructure Infographic, 2008.

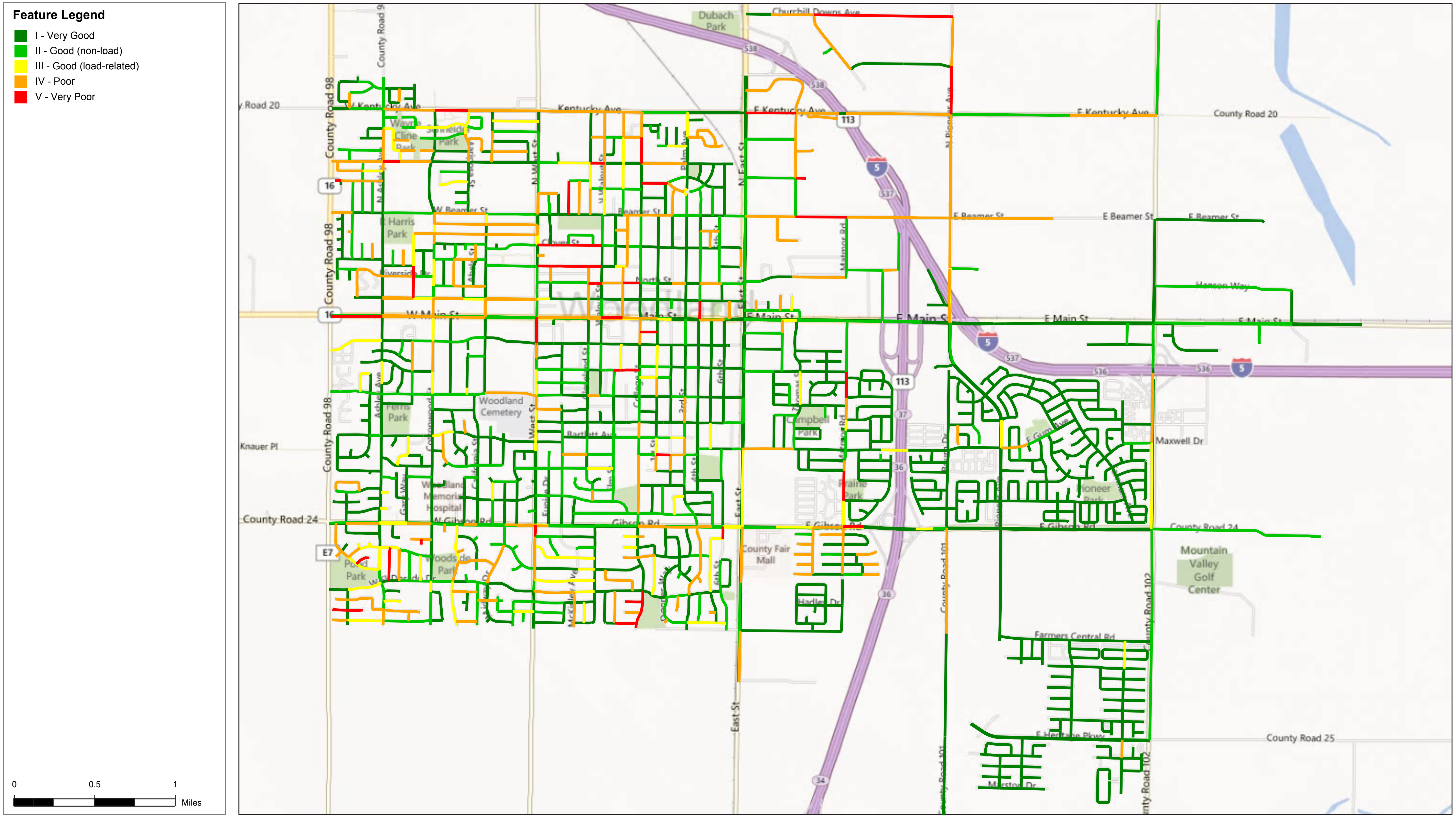
4.7 Transportation Opportunities and Challenges

Current transportation revenue streams are insufficient to cover all the costs of operating and maintaining (O&M) the City of Woodland's transportation network. As a result, the City has a backlog of pavement maintenance projects. To eliminate the backlog requires a onetime cost of approximately $60 million. In addition to this initial cost, the City would still have an annual obligation of about $3.25 million to maintain pavement. Additional investment would also be required to cover the costs of sidewalks, bikeway facilities, traffic signals, signs, and street lighting.

Compounding the O&M funding problem is the potential need for roadway expansion to accommodate planned population and employment growth. The City also has a desire to improve the connectivity of the bicycle and pedestrian network and provide a roadway network that has limited delays for motorists as expressed through the general plan policy on vehicle level of service (LOS). Unfortunately, existing funding mechanisms are insufficient to cover the cost of both O&M and long-term expansion needs based on current performance expectations. This suggests that either revenues will need to increase, or expectations about network performance (both physical and operational) will need to change.

Public transportation funding in the city largely relies on federal and state gas taxes, a portion of state sales tax, plus Measure E sales tax. Current annual estimates of total revenue for the City are about $3.3 million from sales and gas taxes. These sources have not kept pace with inflation and are not expected to increase in the near or mid-term due to political resistance to new revenue sources and increasing competition for scarce public resources, such as public safety, education, and social programs. The $3.3 million would cover annual pavement O&M costs if the network is not expanded and the current $52 million backlog of maintenance projects was funded.

Other revenue mechanisms such as grants and transportation impact fees in the city provide only a portion of the cost for capacity expansion projects. The City expects to receive about $14 million between 2013 and 2018 in grant funding but this is already dedicated to the major rehabilitation of Kentucky Avenue between West Street to Paddock Place and pavement maintenance for East Main Street between East Street and Pioneer Avenue. The transportation impact fee program will generate future revenue but impact fee levels have consistently been set below the maximum allowed fee levels due to sensitivity over how fees affect development.


Feature Legend
I - Very Good
II - Good (non-load)
III - Good (load-related)
IV - Poor
V - Very Poor
0
0.5
1
Miles
Churchill Downs Ave
Dubach Park
Kentucky Ave
E Kentucky Ave
County Road 20
W Beamer St
E Beamer St
W Main St
E Main St
Hanson Way
Woodland Cemetery
Maxwell Dr
County Road 24
Gibson Rd
E Gibson Rd
County Fair Mall
Mountain Valley Golf Center
Farmers Central Rd
E Heritage Pkwy
County Road 25
County Road 98
East St
County Road 101
County Road 102
Knauer Pl
Pioneer Park
Campbell Park
Prairie Park
Harris Park
Ferns Park
Woodland Memorial Hospital

The performance of the city's transportation network directly affects the travel choices, travel costs, and the quality of life for residents, workers, and visitors. Any decisions about transportation network investment and performance should consider this important relationship and what it means for the type of community the city is striving to become. Further, the General Plan must align expectations about network performance with funding realities. The General Plan Update is an opportunity for the city to reflect on these issues and to decide whether to pursue additional revenue or lower performance expectations. Either path will involve resolving the inherent tradeoffs between network performance and available resources. While this is a fundamental requirement for a general plan there are direct benefits for subsequent development projects through CEQA streamlining provided by the general plan EIR, SB 226, and SB 375. This streamlining would reduce the time and cost for entitlement review and CEQA compliance for those development projects that are consistent with the updated general plan.

Choices about network performance will also involve tradeoffs between modes and other community values. The bicycle and pedestrian network competes for space within roadway rights-of-way and the current network has gaps and barriers. Further, the use of vehicle LOS and a functional classification system that does not consider land use context has limited sensitivity to modal priorities in different parts of the city. This combination results in network planning and impact studies that largely focus on accommodating vehicle travel. Evolving to a street typology and expanded set of multi-modal performance metrics would help to establish clear modal priorities that recognize different expectations based on the surrounding land use context. The role transit plays in the future will also involve choices given that the current system has limited frequency in many parts of the city and does not have the land use density or intensity to justify greater levels of service given current funding constraints. As the City considers new general plan alternatives, opportunities exist to integrate land use and transportation planning decisions to respond to the issues outlined above. One objective should be to align land use decisions with desired transportation outcomes such that sufficient revenue is generated to plan, operate, maintain, and expand the transportation network.

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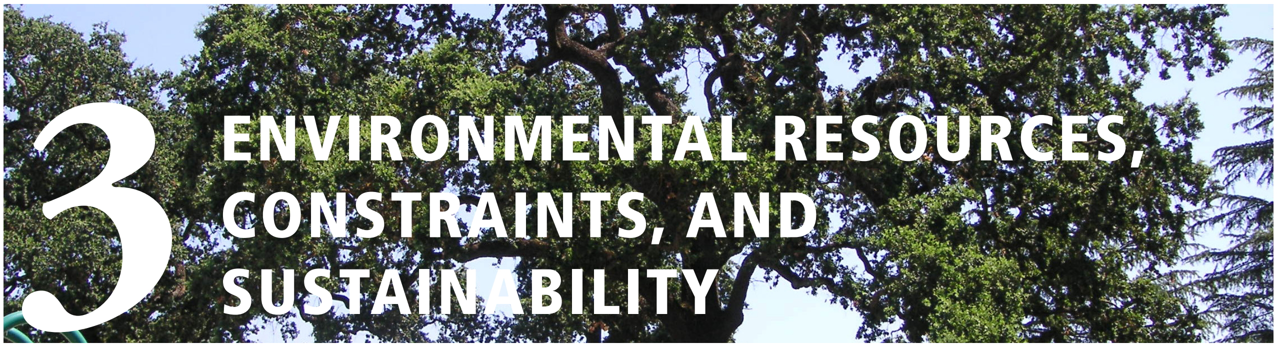


3 ENVIRONMENTAL RESOURCES, CONSTRAINTS, AND SUSTAINABILITY

Woodland's natural setting and its environmental assets are an important part of Woodland's identity. This chapter introduces the concept of sustainability as a land use and environmental planning framework, identifies environmental resources and hazards within the Planning Area, and discusses their implications for growth and development.

3.1 Overview of Sustainability

One of the challenges of the General Plan Update is how to ensure sustainability over the long-term. The Opportunities and Challenges, Issues and Options Report provides the basis for a discussion of policy issues related to sustainability, compiling information for the community, Steering Committee, and decision-makers to use in the planning process and increasing awareness and knowledge to inform choices and clarify tradeoffs.

This section of the report introduces the concept of sustainability and how it would apply to the General Plan Update. It introduces the Environmental Resources and Constraints section, but is broadly applicable to many more topics that the General Plan will address, such as transportation and land use. In this context, sustainable development is not only about the "natural" environment, but also about the "built" environment; it is not only about animals and plants, but also about people; it is not about making buildings cost more, but about designing systems so Woodland's quality of life can be assured over the long term.

Becoming a sustainable community will require an integrated approach to planning and development that fully examines all costs (long- and short-term) and balances those against the long-term environmental and social needs of the community.

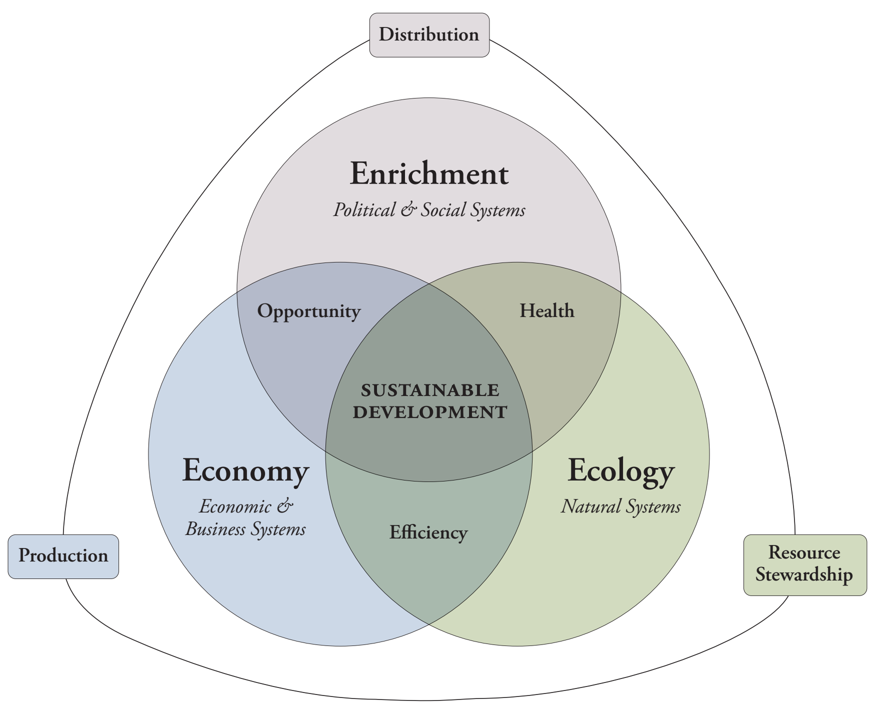
The purpose of sustainability in Woodland—and its incorporation throughout the General Plan—is to take responsibility for the urban development and population growth projected during the planning period and the resulting potential impact on the environment. By implementing sustainable design measures and policies, Woodland can reduce its contribution to global climate change, minimize its reliance on foreign oil and other fossil-fuel sources, and decrease consumption of natural resources.

The Three-legged Stool

One of the most enduring ideas emanating from the formative years of the sustainable development movement is the "three-legged stool" metaphor. In this simple construct, each leg of the stool needs to be the same size and given the same level of attention, in order to ensure the stool is balanced. The premise is that the stool needs three even legs to function. Similarly, sustainability cannot be achieved by focusing on one "leg" to the detriment of the others. All three legs must be addressed in a balanced manner. Over time, most definitions of sustainability have come to include some variation of the following three spheres of influence, sometimes called the "three Es of sustainability" or the "triple E" approach: ecology, economy, and equity.

The "3 E's" of sustainability also provide a framework in which to discuss General Plan goals and policies. Figure3-1 describes the interrelationship between these items. Ecology refers to the natural systems, such as species, habitats, and water, and the need for stewardship of these resources. The economic component refers to the production of goods and services, and the need to integrate sustainability into the management of economic and business systems. Finally, equity refers to the distribution of costs and benefits, reflecting a fundamental human rights issue as well as a holistic perspective that sustainability can only be achieved when all segments of the community are included.

Figure 3-1: The "3 E's"



The very same policies that dictate more sustainable development also enhance quality-of-life and public health: increased energy efficiency, waste diversion and reduction, mixed land uses, convenient access to parks and open spaces, alternative transportation networks, local and organic food sources, stormwater management, and many more initiatives that will be incorporated into the General Plan. General Plan policies can be expanded to encourage ecological conditions that enhance the city's economy and provides greater opportunities, in terms of access to housing, transportation, jobs, education and recreation for all residents.

Key Concepts of Sustainability

Concepts relating to sustainability are found in each topic in this report, just as each element of Woodland's new General Plan will contain policies that enhance sustainability. This section identifies the interrelatedness of sustainability concepts described in subsequent sections of this chapter as well as other chapters of this report.

Land Use and Development Potential

The land use section explores the current mix, location, and intensity of uses in Woodland, and identifies areas where new development may occur in the future. Managing future growth within the city's established Urban Limit Line (ULL) will be a key task for the General Plan Update, and it has a direct relationship to sustainability: ensuring that Woodland can grow thoughtfully and efficiently, making the best use of limited land resources, while ensuring that a high quality of life and adequate economic opportunities are maintained.

Environmental Resources and Constraints

The Environmental Resources and Constraints analysis examines various topics of ecological concern, including biological resources, air quality, climate change, hydrology, flooding, and geology/soils. It also includes environmental impact areas that are products of the built environment, such as noise and cultural resources. Ultimately, Woodland's General Plan will provide strategies to maintain environmental quality within an urban environment, preserving environmental resources and protecting residents from environmental hazards.

Transportation

The transportation analysis will look at ways to enhance mobility and alternative transportation options, allowing for more connectivity and walkability between jobs, shopping and other activity centers. Making alternative transportation more pleasant, convenient, and accessible, can reduce vehicle trips and therefore greenhouse gas emissions. Enhancing the walkability of the street network, by adding additional streets and paths, amenable to pedestrians and bicyclists can potentially reduce the number of vehicle trips and vehicle miles traveled. Sustainable transportation, though, also addresses equity: by making sure that everyone can get where they need to go, regardless of their age, income, or ability. A sustainable transportation strategy focuses on how best to help all people do the things they want to do.

Community Design

A critical aspect of community sustainability is the ability of a place to attract, retain, and satisfy residents and visitors. This satisfaction is sometimes difficult to measure, but often relates to a diverse combination of experiences that include the character, or "look and feel," of the built environment—the way in which people experience a place. More tangibly, good urban design can create walkable streets, appropriate building massing, and attractive landscaped streetscapes that invites pedestrians, allows for solar access, and creates a connected street grid.

Community Facilities and Services

Provision of adequate community facilities and services—including parks, schools, public safety, and utilities—is critical to achieving and maintaining sustainability in Woodland. Parks and open spaces provide spaces for passive and active recreation, while improving air quality and managing stormwater runoff. Access to quality public education, safety services, clean water and sanitation are hallmarks of an equitable society. This section assesses Woodland's current infrastructure and service provision; the existing General Plan sets citywide service standards, which will be re-evaluated to ensure that they are still appropriate and can be met.

Economic Development

Economic development, equity, and opportunity are critical to an overall program for sustainability because they speak to the basic economic and social conditions under which all community members—families, employees, business owners, property owners, and others—make decisions for their lives and experience what Woodland has to offer. Without economic opportunity, people and businesses migrate elsewhere; without access to a good education, affordable housing, safe and well-paying jobs, and basic community services, community members struggle to contribute to their own families' well-being and that of the community at large. The accompanying Economic & Fiscal Background Report assesses Woodland's existing economic conditions and implications for the General Plan Update.

3.2 Biological Resources

The majority of the land within the city limits is urbanized, although there are undeveloped properties and designated open spaces, including parks maintained by the City. Parks and other open space within urban settings provide habitat for a number of native plant and wildlife species. However, diversity and abundance is generally lower compared to natural habitats, which are not present within the city limits, except for in the Woodland Regional Park.

The Woodland Regional Park is a 160-acre property located on the east side of County Road 102 (CR 102), just south of County Road 25 (CR 25), in the southeastern portion of the Planning Area (Figure 3-2). Unique alkali soils in the Regional Park provide habitat for a suite of rare native plants. The eastern edge of this property connects to the Conway Ranch, which reaches into the Yolo Bypass. The lands to the east of the Regional Park are privately-owned, but those in the northeastern corner are part of a conservation easement managed by the Center for Natural Lands Management.[1] The Center for Natural Lands Management also manages the City of Woodland Preserve, which is located on the north side of CR 25.[2]

In areas directly surrounding the city limits and within the city's ULL, there are small remnant patches of natural habitat that support relatively high biological diversity. Agricultural land provides important habitat value for certain wildlife species, including foraging habitat for the Swainson's hawk (Buteo swainsoni), a state-listed threatened species.

Just outside the city's ULL and west of the Sacramento River, there are a number of important biological resources, including sensitive habitats and special-status species related to agricultural land, waterways, and wetlands. Many of the sensitive biological resources, which are described in more detail below, are associated with Willow Slough, Cache Creek, and the Yolo Bypass.

General Land Cover in the Planning Area

Land use on over 66 percent of the 12,772-acre Planning Area is currently developed and 28 percent is agricultural (Table 3.2-1). Mapped annual grassland habitats and open water habitats each cover approximately 4 percent of the Planning Area. Other land cover types represent less than 1 percent of the total acreage.

1 Dean, Ellen. 2009 (July). Woodland Regional Park Special-Status Plants Survey. In cooperation with Tuleyome 607 North Street, Woodland, CA 95695. Available online at: http://herbarium.ucdavis.edu/pdfs/plantlists/woodland%20regional%20park%20report%20aug%2013.pdf.

2 ibid.

TABLE 3.2-1 LAND COVER TYPES IN THE PLANNING AREA

LAND COVER TYPE	ACRES
Developed	8,427
Agriculture	3,540
Water	501
Annual Grassland	499
Other	97
Total	**12,772**

Source: YCNHP, 2013.

Developed and Agricultural Lands

Developed and agricultural areas are highly modified areas that generally support a low number of native plant species. Within the Planning Area, agricultural lands are concentrated in the vicinity of State Route (SR 113) and in the southeastern portion of the Planning Area in the vicinity of Interstate 5 (I-5), east of County Road 103 (CR 103). Agricultural land is also found north of Kentucky Avenue and East Main Street.

Annual Grasslands

Annual grasslands are dominated by nonnative grasses and broad-leaved plants, including Mediterranean annual grasses, including mouse barley (Hordeum murinum), Mediterranean barley (H. marinum ssp. gussoneanum), rip gut brome (Bromus diandrus), soft chess (B. hordeaceous), Italian rye grass (Festuca perrenis), and oat (Avena spp.).

Grasslands in the Planning Area are generally subject to some level of regular maintenance or other type of disturbance including disking, mowing, and grazing by cattle or other domestic animals. A few scattered parcels of annual grassland are found along Kentucky Avenue in the northern portion of the Planning Area and along CR 102 in the southeastern portion of the Planning Area.

Sensitive Habitat Types in the Vicinity of the Planning Area

Sensitive habitats are defined as habitats with particularly high ecological values or functions, of limited distribution, or otherwise of concern to federal, state, and/or local resource agencies.[3] Sensitive habitats mapped in the vicin-

3 Sensitive habitats are often designated because they are declining regionally or statewide. Sensitive habitats are of special concern because they have high potential to support special-status plant and animal species and can provide other important ecological functions, such as enhancing flood and erosion control and maintaining water quality. Sensitive habitats include Natural Communities of Special Concern (NCSC) that are identified by the California Department of Fish and Wildlife (CDFW) (e.g., having a high priority for inventory by the California Natural Diversity Database [CNDDB]) or those afforded specific consideration through CEQA, Section 1602 of the California Fish and Game Code, or Section 404 of the Clean Water Act (CWA).

ity of the Planning Area by the YCNHP (2013) include freshwater marsh, alkali sink, riparian forest, freshwater wetlands, drainages, riverine, and lake (Figure 3-2). Sensitive habitats present at the Woodland Regional Park include northern claypan vernal pools, valley sink scrub, and alkali meadow; however, these habitats were not mapped by the YCNHP and are not shown on Figure 3-2 because they cover areas smaller than the minimum map unit and would not be discernible at this level of detail. Most sensitive habitats in the Planning Area are also considered jurisdictional wetlands. In total, freshwater marsh, freshwater wetlands, and other wetland habitats cover roughly 166 acres of wetlands within the Planning Area.

Freshwater Marsh

Freshwater marsh and associated wetlands form in permanently flooded or saturated soils in depressions or at the edges of streams, rivers, ponds, and lakes, as well as ditches and canals. Freshwater marsh habitat does not occur within the Planning Area, but has been mapped adjacent to the southern edge of the Planning Area boundary, north of Willow Slough (Figure 3-2).

Alkali Sink

Alkali sink habitat is a shrub dominated community that occurs on alkaline soils. This habitat supports six special-status plant species known to occur within the Planning Area. Roughly 95 acres of Alkali sink habitat is located in the southeastern portion of the Planning Area, occurring both east and west of CR 102 in undeveloped areas south of the City's wastewater treatment plant and north of Willow Slough (Figure 3-2).

Riparian Forest

Riparian forests are structurally diverse, tree-dominated habitats that occur along the margins of perennial water bodies. In the Planning Area, riparian forest is present in the Woodland Regional Park site and adjacent to the south end of the Woodland Water Quality Control Facility. It is also mapped north of I-5 near the northeastern edge of the Planning Area boundary and along the Cache Creek levee system and Cache Creek Settling Basin. Willow Slough, located south of the southeastern edge of the Planning Area boundary, supports a narrow band of riparian forest (Figure 3-2). A small area of riparian forest is also located at the Woodland Regional Park.

Freshwater Wetlands

Freshwater wetlands form in seasonally flooded or saturated soils in depressions or at the edges of streams, rivers, ponds, and lakes, as well as ditches and canals. Freshwater wetlands may also be artificially created depressions in the landscape designed to impound stormwater in urban or agricultural areas. Freshwater wetlands occur within the eastern portion of the Planning Area (Figure 3-2).

Drainages, Riverine, and Lake

Sensitive habitats mapped in the vicinity of the Planning Area by the YCNHP also include drainages, riverine, and lake. Riverine and lake habitat in the Planning Areas is limited to areas east of the Planning Area, where it is primarily associated with Cache Creek and Willow Slough. Agricultural drainages within the Planning Area include South Fork Ditch and Farmer's Central Ditch (Figure 3-2). The Maple Canal (South Fork Ditch) enters the Planning Area from the west at Road 98 in a residential area located in the southwestern portion of the Planning Area. The Maple Canal flows east upon entering the Planning Area before turning south in a residential area located in the southwestern portion of the Planning Area. The Maple Canal flows south and out of the Planning Area south of El Dorado Drive and west of Amherst Way. Farmer's Central Ditch receives water from the South Fork Ditch at the location where South Fork Ditch flows south out of the Planning Area. Farmer's Central Ditch follows the southern edge of the Planning Area boundary, and then flows south in the vicinity of Sports Park Drive, east of SR 113. The City-owned "trestle property", located east of the Planning Area, abuts the Tule Canal. The open outflow channel from the wastewater treatment plant flows across the trestle property and discharges into the Tule Canal.

Perennial streams in close proximity, but outside the Planning Area include Cache Creek, which is located along the northern and eastern boundary, and Willow Slough located to the south. These streams support mature riparian forest habitat along the stream banks. Both streams are highly constrained. Outside the riparian corridor, agricultural lands abut Willow Slough and the stream has been impounded along the northwestern edge to create a reservoir. Willow Slough flows in a northeasterly direction and is tributary to the western toe drain of the Yolo Bypass system. Cache Creek, constrained by levees, generally flows south and is also tributary to the western toe drain of the Yolo Bypass system.

The only waterways located within Woodland's Planning Area are agricultural drainages. Cache Creek and Willow Slough are located north and south of the ULL, respectively.

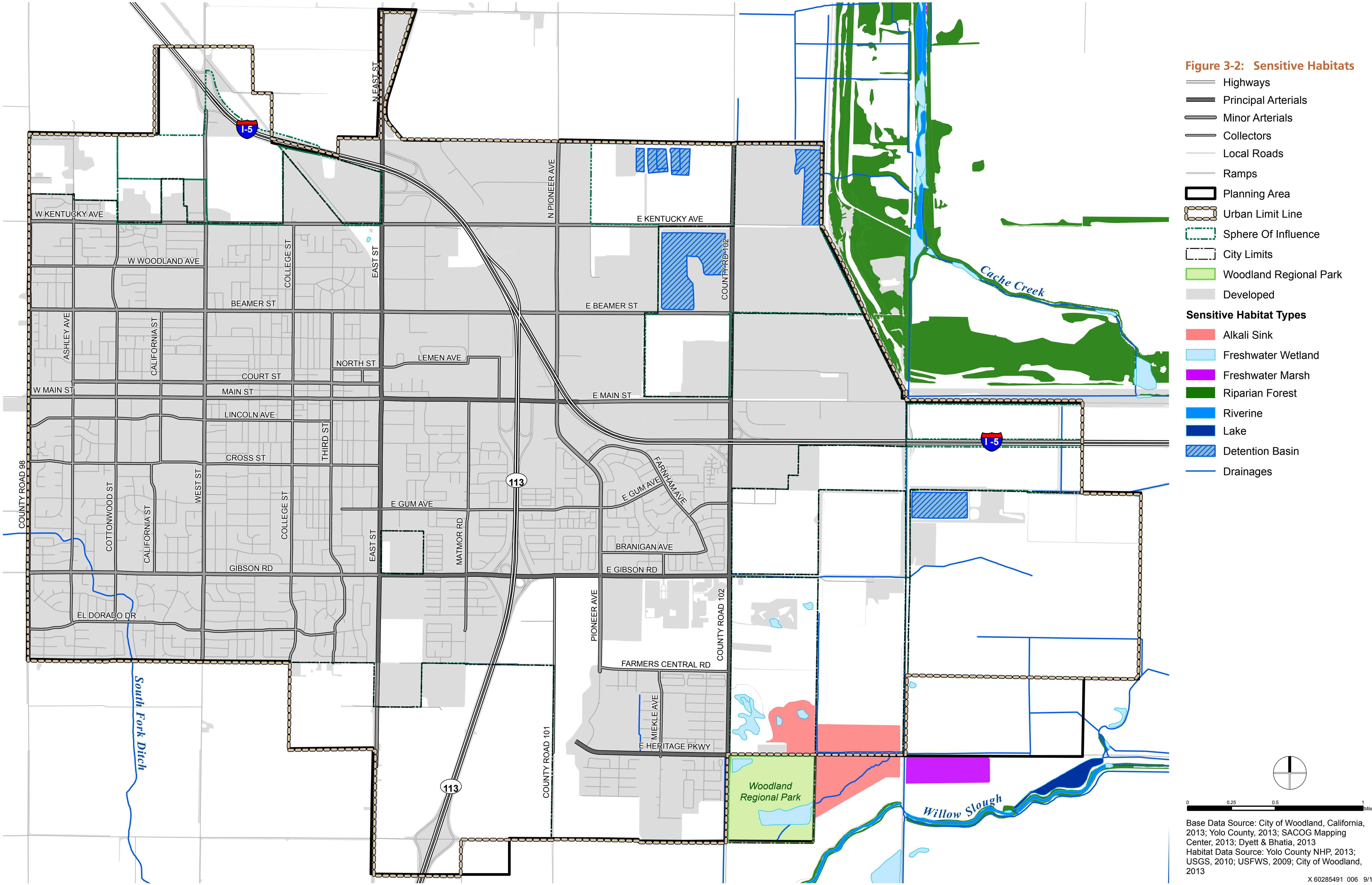


Figure 3-2: Sensitive Habitats
Highways
Principal Arterials
Minor Arterials
Collectors
Local Roads
Ramps
Planning Area
Urban Limit Line
Sphere Of Influence
City Limits
Woodland Regional Park
Developed
Sensitive Habitat Types
Alkali Sink
Freshwater Wetland
Freshwater Marsh
Riparian Forest
Riverine
Lake
Detention Basin
Drainages
Cache Creek
Willow Slough
South Fork Ditch
Woodland Regional Park
W KENTUCKY AVE
W WOODLAND AVE
BEAMER ST
E KENTUCKY AVE
E BEAMER ST
NORTH ST
LEMEN AVE
COURT ST
MAIN ST
W MAIN ST
E MAIN ST
LINCOLN AVE
CROSS ST
E GUM AVE
BRANIGAN AVE
GIBSON RD
E GIBSON RD
EL DORADO DR
FARMERS CENTRAL RD
E HERITAGE PKWY
N EAST ST
EAST ST
N PIONEER AVE
PIONEER AVE
COUNTY RD 102
COUNTY ROAD 102
COUNTY ROAD 101
COUNTY ROAD 98
ASHLEY AVE
CALIFORNIA ST
COLLEGE ST
THIRD ST
WEST ST
COTTONWOOD ST
MATMOR RD
FARNHAM AVE
MIEKLE AVE
I-5
113
0 0.25 0.5 1 Miles
Base Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013
Habitat Data Source: Yolo County NHP, 2013; USGS, 2010; USFWS, 2009; City of Woodland, 2013
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Special-Status Species

Six special-status plants have been documented in the Planning Area (Table 3.2-2 and Figure 3-3). One species, palmate-bracted bird's beak, is federally and state listed as endangered. The other five special-status species have California Rare Plant Ranks (CRPR) of 1B indicating that these species are considered rare or endangered and tracked by CNPS. These species are listed below in Table 3.2-2 along with their status, habitat, and potential to occur in the Planning Area.

Special-Status Wildlife

A total of six special-status wildlife species are known to occur, or have the potential to occur, in the Planning Area. Two species are listed as federally threatened and two are listed as state threatened. Four are listed as state species of special concern. There are no special-status fish species that are known to occur in the Planning Area. No critical habitat for special-status species is found in the Planning Area or the surrounding radius of two miles (USFWS 2013b).

These species are listed below in Table 3.2-3, along with their status, habitat, and potential to occur in the Planning Area. The locations of special-status wildlife documented in the CNDDB within two miles of the Planning Area are shown in Figure 3-3.

Alkali milk-vetch, palmate-bracted bird's beak, and San Joaquin spearscale are three of the six special-status plant species with potential to occur in the Planning Area.
Photos: Yolo Natural Heritage Program.

TABLE 3.2-2 SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR WITHIN THE PLANNING AREA

SPECIES	FEDERAL[1]	STATE[2,3]	HABITAT	POTENTIAL FOR OCCURRENCE IN THE PLANNING AREA
Alkali milk-vetch *Astragalus tener var. tener*	—	1B.2	Alkaline soils within playas, vernal pools, and adobe clay valley and foothill grassland habitats; 0 to 196 foot elevation. Bloom: March–June	**Known to occur.** Two occurrences documented within the Planning Area.
Brittlescale *Atriplex depressa*	—	1B.2	Alkaline clay soils within chenopod scrub, meadow and seeps, playas, vernal pools, and valley and foothill grassland habitats; 0 to 1,050 foot elevation. Bloom: April–October	**Known to occur.** Four occurrences documented within the Planning Area.
San Joaquin spearscale *Atriplex joaquinana*	—	1B.2	Alkaline soils on chenopod scrub, meadow and seeps, playas, and valley and foothill grassland; 3 to 2,740 foot elevation. Bloom: April–October	**Known to occur.** Three occurrences documented within the Planning Area and one occurrence documented within two miles of the Planning Area.
Heckard's pepper-grass *Lepidium latipes*	—	1B.2	Alkaline flats in valley and foothill grassland; 6 to 656 foot elevation. Bloom: March–May	**Known to occur.** Two occurrences documented within the Planning Area and one occurrence documented within two miles of the Planning Area.
Palmate-bracted bird's beak *Chloropyron palmatum*	E	E,1B.1	Alkaline chenopod scrub and valley and foothill grassland; 16 to 510 foot elevation. Bloom: May–October	**Known to occur.** Three occurrences documented within the Planning Area.
Saline clover *Trifolium hydrophilum*	—	1B.2	Marshes and swamps, vernal pools, and mesic, alkaline valley and foothill grassland; 0 to 984 foot elevation. Bloom: April–June	**Known to occur.** One occurrence documented within the Planning Area.

Notes:

1 Federal: E = Listed as endangered under ESA.

2 State: E = Listed as endangered under CESA.

3 California Rare Plant Ranks and extensions

1B = Rare or endangered in California and elsewhere.

.1 = Seriously endangered in California (>80 percent of occurrences are threatened and/or high degree and immediacy of threat).

.2 = Fairly endangered in California (20 to 80 percent of occurrences are threatened).

Sources: USFWS 2013a, CNDDB 2013, CNPS 2013.

TABLE 3.2-3 SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR WITHIN THE PLANNING AREA

SPECIES	LISTING STATUS		HABITAT	POTENTIAL FOR OCCURRENCE IN THE PLANNING AREA
	Federal[1]	State[2,3]		
Giant garter snake *Thamnophis gigas*	T	T	Cultivated rice, freshwater marsh, and slow moving streams or canals.	**Likely to occur.** Nine occurrences documented within two miles of the Planning Area.
Burrowing owl *Athene cunicularia*	—	SSC	Nests in mammal burrows, rock cavities in grassland and scrub.	**Could occur.** One occurrence documented within 2 miles of the Planning Area.
Mountain plover *Charadrius montanus*	—	SSC	Forages in short grasslands and plowed agricultural fields where vegetation is sparse and trees are absent.	**Likely to occur.** One occurrence documented within the Planning Area.
Swainson's Hawk *Buteo swainsoni*	—	T	Nests in riparian forest and isolated trees, open woodlands, and woodland margins; nests and forage in grasslands and agricultural fields.	**Known to occur.** Numerous occurrences documented throughout Planning Area.
Tricolored Blackbird *Agelaius tricolor*	—	SSC	Forages in agricultural lands and grasslands; nests in marshes, riparian scrub, and other areas that support cattails or dense thickets of shrubs or herbs.	**Likely to occur.** Two occurrences documented in the Planning Area.
Western snowy plover *Charadrius alexandrinus nivosus*	T	SSC	Nests and forages on sandy and gravelly beaches along the coast and the shores of inland alkali lakes.	**Could occur.** One occurrence documented in the Planning Area.

Notes:

1 Federal:

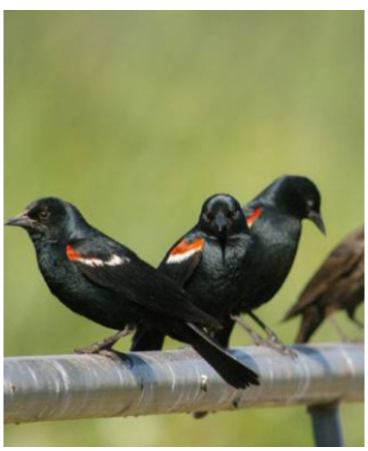
T = Listed as threatened under ESA

2 State:

T = Listed as threatened under CESA

SSC = Considered a species of special concern by CDFW

Source: CNDDB and USFWS data compiled by AECOM in 2013.



The giant garter snake, Swainson's hawk, and the tri-colored blackbird are special-status wildlife species that have been known to occur in or within two miles of the Planning Area.
Photos: Yolo Natural Heritage Program.

Biological Resources Opportunities and Challenges

There are a few issues and opportunities related to biological resources that the City may wish to consider as a part of the 2035 General Plan.

Conservation, Recreation, and Environmental Education

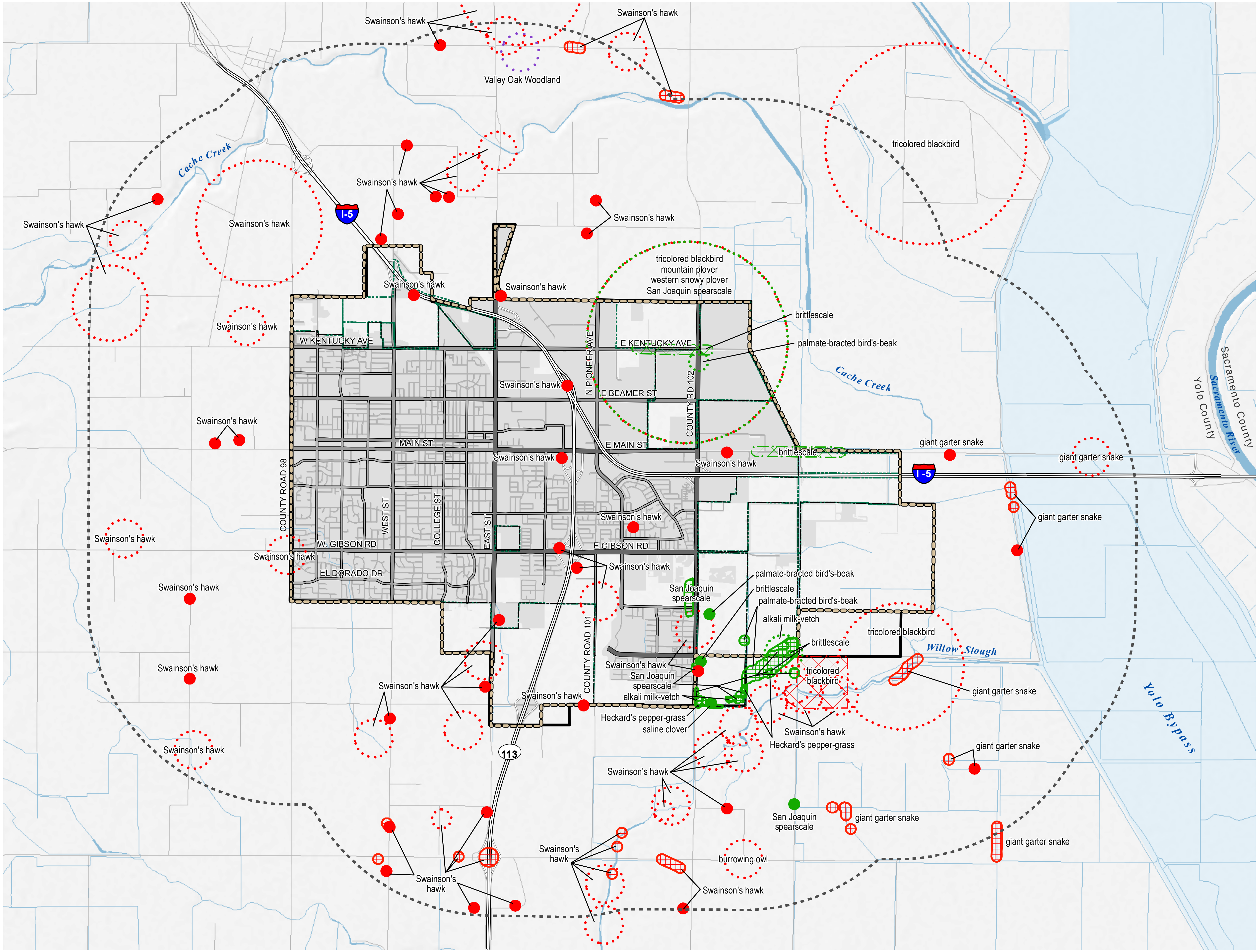
Well-developed remnants of the valley sink scrub/alkali meadow and northern clayplan vernal pool vegetation that was once widespread in Yolo County are still present at the Woodland Regional Park. This remnant vegetation provides habitat for four special-status plants: alkali milk-vetch, Heckard's pepper-grass, San Joaquin spearscale, and the federally- and state-listed palmate-bracted bird's beak. Conservation of the Woodland Regional Park is addressed in the Draft Yolo County Natural Heritage Program Plan (YCNHP 2013). The City could consider integrating the regional park into other open space planning efforts including recreation and transportation (e.g., bikeway beltway) provided that habitat conservation is adequately addressed as part of those efforts.

There are high-value habitat areas near Woodland, which represent opportunities for outdoor environmental education and for low-impact recreation such as bird watching. There are several examples of development of such combined conservation and recreational amenities, including local examples. Opportunities for environmental education wildlife viewing currently found elsewhere in Yolo County include the Davis Wetland and Yolo Basin Wildlife Area; both of these examples attract visitors from regions outside of Yolo County and thus provide economic benefits and contribute to local tourism. The City may wish to explore opportunities to incorporate public access and appropriate recreational opportunities in publicly-owned land near Woodland that is being managed for some biological resource purpose. Of course, the strategy for enhancing access and recreational use would need to avoid adverse effects to habitat or species, and should be consistent with the goals and objectives of other regional planning efforts including the Yolo County Natural Heritage Plan.

Urban Forestry

The city is known as the "the City of Trees" and images of trees appear prominently on as part of the city's logo and branding. Given the city's focus on trees, it may be appropriate to consider a proactive urban forest management that increases habitat potential of the city's urban tree canopy and also provide co-benefits of moderating urban heat island effect, carbon sequestration (supportive of the Climate Action Plan), and enhanced aesthetics.

Figure 3-3: Special Status Species Occurrence within a 2-mile Search Radius



- Plant - Accuracy Class 1
- Plant - Accuracy Class 2
- Plant - Accuracy Class 3
- Plant - Accuracy Classes 4-9
- Animal - Accuracy Class 1
- Animal - Accuracy Class 2
- Animal - Accuracy Class 3
- Animal - Accuracy Classes 4-9
- Terrestrial Community - Accuracy Classes 4-9
- Highways
- Principal Arterials
- Minor Arterials
- Collectors
- Local Roads
- Ramps
- Study Area
- Urban Limit Line
- Sphere Of Influence
- City Limits

CNDDB Accuracy Class 1: Reported occurrence is a point; location considered accurate to within the minimum mappable unit of 80 meters.

CNDDB Accuracy Class 2: Reported location is an area with defined boundaries.

CNDDB Accuracy Class 3: Reported location is a non-specific area; buffer added to represent degree of uncertainty in reported location.

CNDDB Accuracy Classes 4-9: Reported location considered accurate within the radius shown.

0 0.375 0.75 1.5 Miles

Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013; CDFW, 2013; USGS, 2010
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3.3 Historic and Cultural Resources

This section covers cultural resources found in the Planning Area. Cultural resources include sites, buildings, structures, or objects that may have archaeological, historical, or cultural significance. The General Plan Update will take the city's cultural heritage into account in development alternatives and policy formation.

Environmental Setting

Prehistoric Context and Resources

The prehistoric occupation of the central districts of the North Coast Ranges can be interpreted using the Paleo-Archaic-Emergent chronological sequence (Fredrickson, 1974). The sequence consists of three broad periods: The Paleo-Indian period (12,000 – 8000 Before Present or B.P.); the Archaic period (8000 – 1500 B.P.); and the Emergent period (1500 to 150 B.P.). The entry and spread of people into California dates to the Paleo-Indian period. No prehistoric resources have been formally recorded in Woodland.

Historic Context

Settlement

Among other distinguishing features, Woodland is known for is large stock of historic residences, and was called the "City of Homes" as far back as the early 1900s. Factors contributing to Woodland's prosperity have been a rich soil and good climatic conditions, the relocation of the County Seat to Woodland in the 1860s, and the establishment of good transportation systems. A brief history of Woodland helps in understanding the natural and man-made influences that created the unique character of the city.

In the winter of 1853, Henry Wyckoff settled in a dense grove of oak trees and opened a small store in Yolo City (now Woodland). Within a couple of years, other businesses were established in the area. The favorable soil attracted other settlers who found farming a profitable venture.

Among the early settlers was Major F.S. Freeman, who also opened a store. Later Major Freeman offered free lots to persons who would clear the land and build a home. Before long, the settlement of Yolo City grew around what is now Main Street. In 1858, Major Freeman gained permission for a Federal Post Office to be built in the town and Yolo City was renamed Woodland.

In 1862, the Yolo County Seat was transferred due to flooding from Washington (now a neighborhood within the City of West Sacramento) to Woodland. The courthouse was first located in Henry Wyckoff's store. In 1862, a combination courthouse and jail was built. This was damaged by an earthquake in 1902. A new courthouse was completed in 1918 and still stands today. A new courthouse facility is under construction and the re-use of the historic courthouse, which is owned by Yolo County, remains to be determined.

Incorporation and Development

On June 25, 1863, Major Freeman recorded the first plat of the city. The northern portion of present-day Woodland was divided into blocks, lots, and streets and this plat was the basis for future locations of buildings and streets. Sixth Street was designated as the eastern boundary; College Street was the western; North Street was the northern border and South Street (now Main Street) was the southern city limit. By 1870, the population of Woodland was estimated to be 1,600 residents, but most of the oaks for which the town was named had disappeared. The City was incorporated in 1871.

Wood was the primary building material until approximately 1870. Two local brickyards began production of a soft brick in the mid-1860s. This resulted in a changeover of major building materials from lumber to brick as builders found it less expensive to use than imported lumber.

By 1854, the Union Church building had been built in the cemetery. Little is known about this building except that it served as a meeting place for several churches and schools. The Christian Church, which organized in 1854, met in the Union Church until they dedicated the first church within the city limits in 1866. A Roman Catholic Church was consecrated in 1869.

The Union Church building also served from 1855 to 1858 as the first public school. In 1858, a permanent school was built near the Southern Pacific Depot. The upper story of the school served as the Masonic Hall. In 1871, a new six-room brick school was started where Freeman Park now stands. The high school was located in the Hesperian College building until 1912 when a bond issue was passed to build a new high school. The Holy Rosary Academy was founded in 1884 and served as a boarding and a day school for girls in the primary and secondary grades.

Woodland was incorporated in 1871, with a population of around 1,600.
Photo: University of California.

Founders of the Christian Church also established Hesperian College in 1860. It was originally located south of Main Street on what is now Bush Street then later moved to a new facility near the northeast corner of College Street and Marshall Avenue. In its prime, it was a highly regarded institution of higher learning. The school, today known as Chapman College, is located in Southern California.

California Pacific Railroad

In September 1869, the California Pacific Railroad Company completed the construction of a rail line between Davisville and Marysville with a Woodland station in the vicinity of College Street and Lincoln Avenue. The rail line was later moved to its present location along East Street and became a part of the Southern Pacific Railroad System (now Union Pacific).

Sacramento Northern Electric Railroad

The Sacramento Northern Electric Railroad Company began direct freight and passenger service to Sacramento from Woodland in 1912. In the 1920s, this line was acquired by Western Pacific. The depot was located at the corner of Main and Second Streets until it was demolished in the 1960s. The building was replicated in 1987. Through mergers and acquisitions, today, the Union Pacific and Sierra Northern provide freight service to the industrial areas of Woodland and the Sacramento River Train provides tourist excursions.

Infrastructure Development

The period between 1880 and 1890 saw the initiation of city and utility improvements. The construction of an electric lighting plant and the installation of a locally-run telephone system occurred during this decade. Five gas lights were installed along Main Street and an official grade for streets and sidewalks was adopted to provide for level streets within the city. A contract was negotiated with R.H. Beamer for the construction of a municipal building to be used for city offices, the Fire Department, and a jail. The City Hall, located at First and Court Streets, was completed in 1891. The building was reconstructed in 1936, enlarged in 1960 and 1975, and still serves the City.

The City of Woodland acquired the water works system and built a sewer system in 1891. In the mid-1950s, sewer capacity was reached. This resulted in a moratorium on all new building from 1957 to 1958. A bond issue was passed in 1959, which extended the sanitary and storm sewer system to serve the southern portion of the city. A similar bond issue was approved in 1963 to serve the northern part of Woodland.

The first City Library in Yolo County was built with funds from the Carnegie Foundation. The Library, which was privately organized in 1874, was given to the City in 1891. The present library, designed by George A. Dodge and J. Walter Dolliver, was built in 1905 with Carnage Funds, with subsequent additions in 1915, 1927 and 1988.

1890s

The 1890s began with the worst storm the city had experienced in 30 years. This started a series of misfortunes. In 1892, a fire destroyed two business blocks, including the Opera House, the Exchange Hotel, and one block of homes. The property loss amounted to $200,000. In the early 1890s, some local businessmen felt a streetcar line along Main Street to carry those who disliked the muddy street would be profitable. The system was one-mile long and the streetcars were drawn by horses. The operation failed in 1896. A depression occurred between 1894 and 1896 causing other business failures and bringing the start of a railroad strike. This depression caused a decline in population from 4,523 to 4,392. By 1910, the population had climbed to 4,589.

During 1896, a new Opera House was opened on the same street as the one that was destroyed by fire in 1892. This turn-of-the-century valley theater was the source of great local pride and became the center for recreation and culture in the Woodland area.

Early 1900s to Present

The early 1900s were years of unusual building activity. In 1916, a building to house both the Bank of Woodland and the Yolo County Savings Bank was built at the northwest corner of College and Main Streets. This building, with its Italian marble entry still stands, but now houses a restaurant. Between 1909 and 1911, it has been estimated that about 200 homes were built in Woodland. A number of commercial and community buildings were also built. The Roth Building and St. Luke's Episcopal Church were constructed. The Physician's Building at Main and First Streets and the First National Bank Building were remodeled. The First National Bank was demolished in 1970 and is on the site of the present Opera House addition and Opera House Intermission Garden.

Left: Downtown Woodland rebounded from economic depression and fire in the late 1890s.
Right: Built in the early 1900s, the First National Bank was demolished in 1970. It stood on the site of the present Opera House addition.
Photos: CAGenWeb 2013.

After the filing of a personal injury suit in 1913, the Opera House was closed and stood dormant for almost 60 years. It was purchased by the Yolo County Historical Society and reopened in 1971, serving as a part-time community center and theater. From 1980 to 1983, the Opera House went through partial restoration. It has since reopened and operates on a temporary basis providing local community theater. The final phase of restoration, completed in 1989 has enabled the theater to attract varying types of performing groups, from local as well as regular resources. It is now a part of the State Park System and is maintained and operated by the Woodland Opera House Board of Trustees.

Agriculture and Farming Equipment

Woodland has benefited greatly from the success of the agricultural industry by serving as a center for banking, shops, education, and in some instances by housing farmers and their workers.

Another important impact on the community and industry has been the invention and manufacturing of farming equipment. Local inventions included the centrifugal pump in the late 1800s and the Marvin Landplane in 1936 (Knights Landing). The Best Tractor was developed by the Best family who lived in Woodland, although the tractor was actually manufactured in Oakland. Today, several farm equipment dealers are located within Woodland and provide employment and tax revenues for the City, while serving the outlying farms.

Irrigation was and still is a major contributor to the agricultural success of the area. The first irrigation canal was developed by James Moore in 1856 who owned exclusive water rights to Cache Creek.

Money earned in the gold fields of California financed the purchase of much of the farmland around Woodland. A variety of crops were grown. These included: tobacco, peanuts, grapes, rice, sugar beets, various grains and row crops. Several wineries were located in the county producing wine, vinegar, and brandy. The livestock industry also had an important role in the area. The Woodland Creamery was organized in the 1880s by citizens who recognized the local need for dairy products.

The opportunity for farming brought many nationalities to the area. The native Patwin Indian provided the first labor on the farms. They were replaced by Chinese laborers, who came to Woodland in the 1860s during the building of the transcontinental railroads. After work on the railroads stopped, the Chinese labored on levee construction, fence building, and truck farming. Some Chinese settled in Woodland and became prominent in the culinary and laundry services. Dead Cat Alley became the site of the Chinese community's homes and businesses. By the early 1900s, employment opportunities for the Chinese began to disappear and the Chinese population declined.

Woodland's unique historic building stock is a source of community pride. Eleven properties are on the National Register, and many others may be eligible.

Japanese workers were first brought to Byron Jackson's Yolano Ranch in the late 19th century as farm laborers, but eventually both Japanese men and women were employed as laborers throughout the county. Some Japanese started businesses in town, such as barber shops and secondhand stores, but laws and public attitudes made it difficult for them to own land or become citizens. Land was acquired by some Japanese who purchased it in their children's names. World War II saw the internment of Japanese families and their land leased to other people. For some Japanese, many years passed before they returned to Yolo County. Others never returned.

Filipinos also provided farm labor and later the Bracero Program brought many Mexican Nationals into the area to work on the farms. Today, the Hispanic population has grown to approximately 47 percent of the City's residents.

Historic Resources

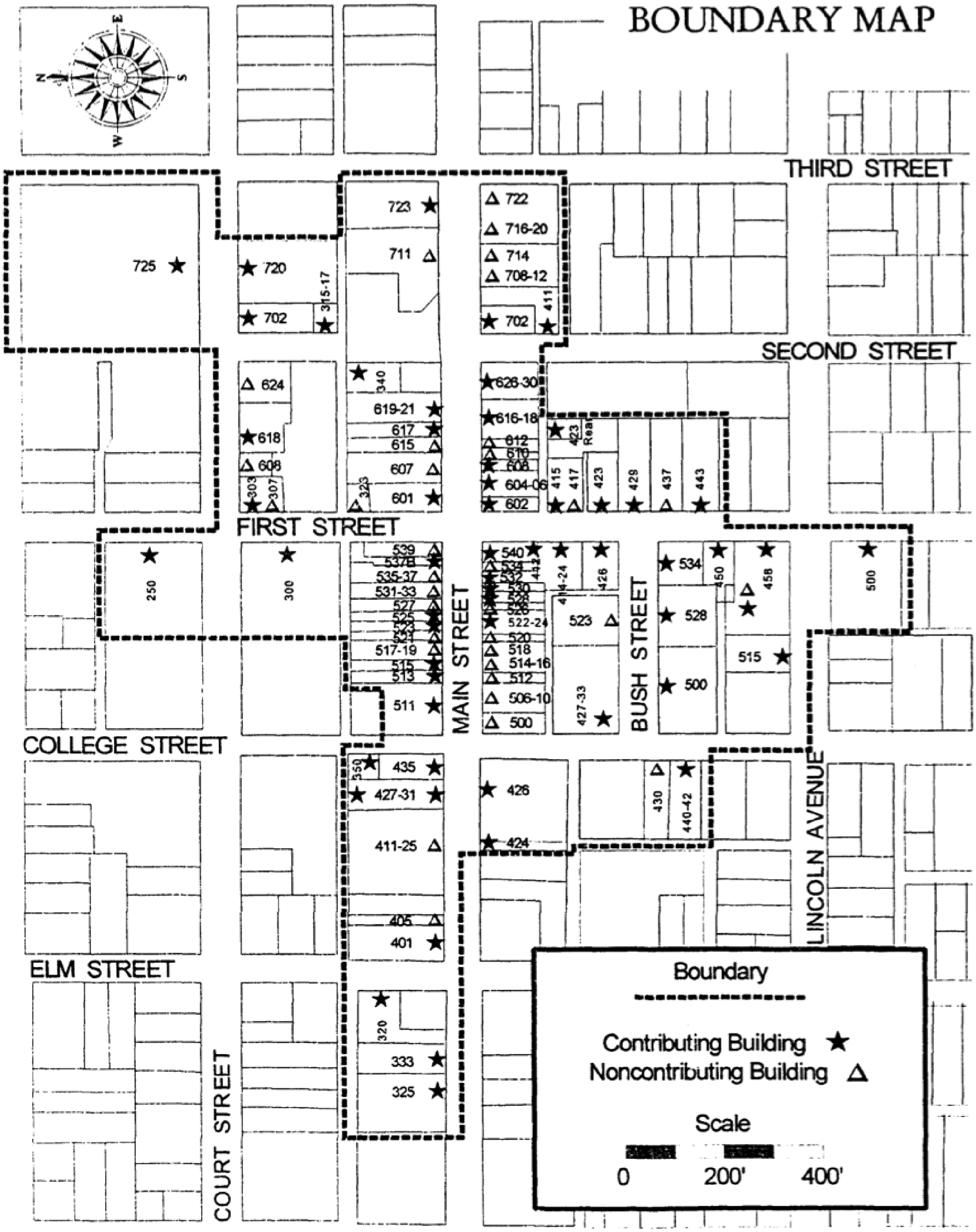
In Woodland, there are three City Historic Districts, three City Historic Landmarks, two State Historical Landmarks, three California Points of Historical Interest, 11 individually listed National Register properties, a National Register historic district, the Downtown Woodland Historic District with 56 contributing buildings, two properties determined eligible for the National Register as contributors to a district determined eligible for the National Register, 27 properties that appear eligible for the National Register, 18 properties that appear eligible as a contributor to a National Register eligible district, and 241 properties that are recognized by the City of Woodland as historically significant.[4] Figure 3-4 shows the Downtown Woodland Historic District. The Downtown Historic District and all of the historic resources citywide are mapped in Figure 3-5.

The Preservation Commission has instituted a program of awarding Heritage Home Awards to individuals who do an outstanding job of maintaining and/or restoring their historic homes. While historic characteristics may contribute to selection of up to five homes a year for this City program, the award is honorary and should not be confused with the more formal historic designation processes described under the City Code or State regulations.

In 1981, the City obtained a Federal grant through the California Office of Historic Preservation to prepare a historical resource inventory of structures in Woodland built prior to 1940. The inventory was completed in 1982 and 1,000 sites were surveyed and photographed. A detailed survey was prepared for 364 sites. In 1993, the City authorized the completion of a historical resource inventory of commercial and industrial structures within the Redevelopment District.

4 Office of Historic Preservation. 2004. Directory of Properties in the Historic Property Data File for Yolo County.

Figure 3-4: Downtown Historic District



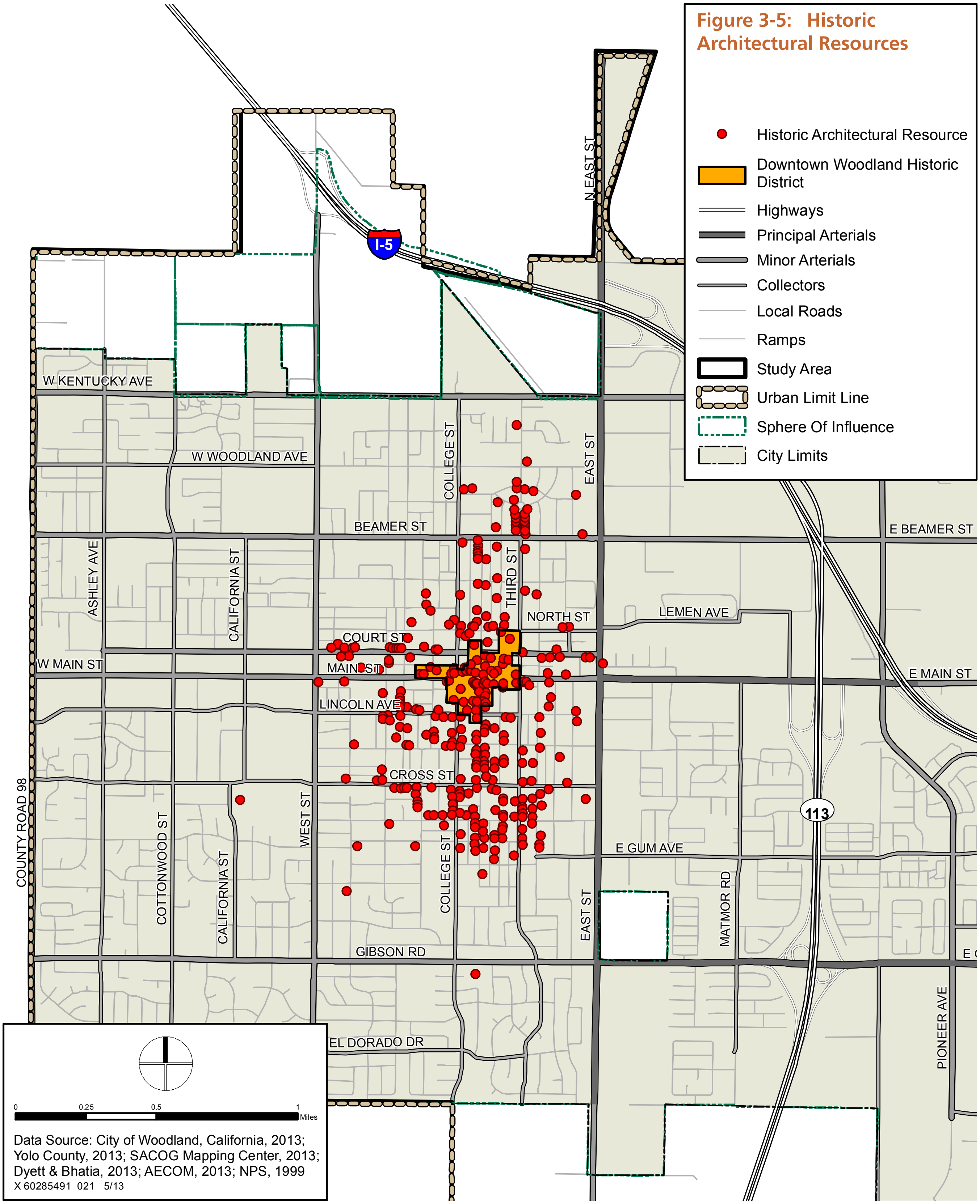


Figure 3-5: Historic Architectural Resources
Historic Architectural Resource
Downtown Woodland Historic District
Highways
Principal Arterials
Minor Arterials
Collectors
Local Roads
Ramps
Study Area
Urban Limit Line
Sphere Of Influence
City Limits
I-5
113
N EAST ST
W KENTUCKY AVE
W WOODLAND AVE
COLLEGE ST
EAST ST
BEAMER ST
E BEAMER ST
ASHLEY AVE
CALIFORNIA ST
THIRD ST
NORTH ST
LEMEN AVE
COURT ST
W MAIN ST
MAIN ST
E MAIN ST
LINCOLN AVE
CROSS ST
COUNTY ROAD 98
COTTONWOOD ST
WEST ST
E GUM AVE
MATMOR RD
GIBSON RD
EL DORADO DR
PIONEER AVE
0
0.25
0.5
1
Miles
Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013; AECOM, 2013; NPS, 1999
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Historic and Cultural Resources Opportunities and Challenges

Following are key cultural resource issues and opportunities that may be worth considering for the 2035 General Plan.

Historic Preservation and Economic Development

Woodland has a unique and rich history that is tied to the overall history of Yolo County and California as a whole. The City also retains its own historic character as represented by existing historic property types related to early settlement, agriculture, and transportation. The City has the distinction of featuring resources that have been elevated to the level of California Landmark status (Opera House). Some of the-se resources have been previously listed or determined to appear eligible for listing on the NRHP / CRHR (e.g. the Downtown Woodland, Historic District, the Yolo County Courthouse, Woodland Library, etc.) (State Office of Historic Preservation 2004). The City is very fortunate to have many surviving structures that are representative of an important period in the development of Woodland, the region, and the state as a whole. The heritage resources are a source of local community pride, but also regional, statewide, and national importance. The City has the opportunity with the 2035 General Plan to create more explicit ties between historic preservation efforts and the City's economic development strategy, particularly tourism.

Should the General Plan be revised to communicate the City's updated goals with respect to historic preservation? Should the General Plan have policies that provide a decision-making guide for land use changeChapter 12A of the City's Municipal Code provides guidance for review of changes to historic properties by the Historic Preservation Commission and the Commission's guidelines refer back to the City's General Plan and Downtown Specific Plan, as well as the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings (City of Woodland 2007).[5] Is the review process efficient and effective? Should the General Plan guidance be revised for projects involving buildings or sites of potential historic significance?

Protection of Unknown Sites

Unknown archaeological sites and paleontological resources can be at risk of loss through development, utility repair/ construction, or other ground-disturbing activities. Cultural and paleontological resources found in surface and subsurface contexts can be preserved and studied by applicable specialists. Interpretive educational opportunities can be explored.

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5 The Downtown Specific Plan provides extensive guidance for historic properties. This plan, originally adopted in 1993 and then updated in 2003 was developed based on extensive input not only from the City Council and Planning Commission, but also a Redevelopment Citizens Advisory Committee, the Historical Preservation Commission, and many residents, business owners, and other interested parties.

Although existing regulatory requirements require analysis and mitigation of impacts to significant prehistoric resources, should the updated General Plan address this issue in a more proactive way so that landowners, developers, and the public are aware of the need to protect such resources?

Partnerships and Financial Incentives

The City of Woodland could investigate the potential for partnering with State and federal preservation entities. The existing General Plan directs the City to develop incentives for City Historic Landmark designation and inclusion in a City Historic District (Policy 6.A.3), consider waiving building permit fees for properties with historic significance (Policy 6.B.4), and provide technical assistance for rehabilitation (Policy 6.B.13). The 2035 General Plan could be revised to identify other potential incentives that could be helpful for owners of historic properties.

The National Historic Preservation Act of 1966, as amended, provided for the establishment of a Certified Local Government (CLG) program to encourage the direct participation of local governments in the identification, evaluation, registration, and preservation of historic properties and promote the integration of local preservation interests and concerns into local planning and decision-making processes. The CLG program is a partnership among local governments, the State of California-OHP, and the National Park Service (NPS), which is responsible for administering the National Historic Preservation Program. The City coordinated with State representatives in 2006 and 2007 to explore the CLG program, but certification was not completed. The requirements for participation in the CLG include many of the current practices and are in line with the current General Plan. These include:

- Enforce appropriate state and local laws and regulations for the designation and protection of historic properties;
- Establish an historic preservation review commission by local ordinance;
- Maintain a system for the survey and inventory of historic properties;
- Provide for public participation in the local preservation program; and
- Satisfactorily perform responsibilities delegated to it by the state.

Easements can be another tool used to further historical preservation purposes. An easement does not affect the ownership of property but only certain rights that go along with it. For example, there are façade or architectural easements by which the exterior of a structure may be controlled by the holders of the easement.

Several tax relief benefits are available for preservation activities. Charitable contributions to preservation programs are tax deductible, as is the value of a dedicated historic or façade easement. The California Revenue and Taxation Code, Sections 50280 – 50289 (Mills Act) provides for a reduction in local tax assessments for locally designated landmarks under authority of participating jurisdictions. To qualify for the reduced assessment, the owners of landmarks must agree to maintain the site. In some areas, non-profit groups have purchased and restored historical structures and then, prior to their sale, placed deed restrictions on the property that prevent demolition or significant alterations of the structure.

Local programs and incentives for continued revitalization of the commercial downtown area could be adapted from the National Main Street Four Point Approach, which emphasizes organization, promotion, design, and economic restructuring. Incentives can be developed to allow mixed uses of the interior of buildings restored to their former condition. The Historic Preservation Commission, working in cooperation with many of Woodland's private businesses, could explore new uses that can be made of the older commercial buildings in the downtown area.

A number of private and public groups provide incentives for historical preservation, including the National Trust for Historic Preservation, the National Endowment for the Arts, and the State Office of Historic Preservation.

Local assistance is an effective means of furthering a historical preservation program. Although funds may be limited, in addition to funding the ongoing façade improvement grants, the City of Woodland could consider additional financial assistance through a number of programs. A revolving fund could be used to purchase and restore historical structures. Once restored, these structures could be sold with appropriate deed restrictions and the funds used in other restoration projects. Other possible methods include fix-up loans, tool loans, and similar self-help assistance.

Throughout Woodland numerous small projects are undertaken each year by owners of older houses to maintain their beauty and utility. In the end, it is this private effort that can be the most meaningful because it is uncomplicated and direct. The City's current Heritage Home Award, walking tour booklets (such as "Explore Historic Woodland"), and collaboration with the non-profit Stroll Through History programs are good examples of celebrating preservation successes and promoting historic preservation as a community value. The City may wish to explore feasible means to encourage additional private historic rehabilitation (for example, educational and promotional programs, streamlining entitlement review processes) and update the framework policy guide in the 2035 General Plan. The City's Historical Preservation Commission could assist in this process by encouraging groups to provide funding, loans, and/or other forms of assistance to these individual efforts.

The presence of numerous historic features offers a great opportunity to interpret Woodland's past. The combination of commercial, agricultural, civic and other historic sites throughout the city is a reminder of how various phases of history blend together and interact across the landscape. The further development of historic districts could improve the interpretive value of these unique landscapes to even include relevant portions of the prominent agriculture that surrounds the city, thus promoting preservation and enhancing those important resources as part of the general city landscape.

3.4 Hydrology and Water Quality

This section describes existing conditions related to surface water, groundwater, and water quality.

Environmental Setting

Woodland is located in in the eastern portion of Yolo County within the Sacramento River Hydrologic Region. The city is largely surrounded by agricultural lands. Two miles to the east are the Yolo Bypass and the Sacramento River. To the south of the city are Willow Slough and Putah Creek. Cache Creek is approximately one-half mile northeast of the city's ULL.

Climate

Woodland has a Mediterranean climate and typically experiences hot, dry summers and temperate, rainy winters. Winter precipitation in Woodland comes from the North Pacific storm track, averaging 20 inches per year. Woodland's annual precipitation falls from October to April, with the majority falling between the months of November and March (Yolo County, 2009).

Surface Water Resources

Surface water in Yolo County and the Woodland area generally drains to the Yolo Bypass on the eastern edge of the county. Woodland lies within portions of four major watersheds, including the Sacramento River, Cache Creek, Putah Creek, and Willow Slough watersheds. Much of the surrounding agricultural land is irrigated through a series of canals and drainage ditches connected to these waterways.

While water from the Sacramento River, Cache Creek, and Putah Creek supplies drinking water to urban areas throughout Yolo County and the Central Valley, Woodland currently relies entirely on groundwater to meet its current potable water demand. Due to potential issues with subsidence and aquifer water quality, however, the City will begin to use surface water from the Sacramento River in the future, as discussed in Section 5.4.

Figure 3-6 illustrates the major waterways near the Planning Area.

Sacramento River

The Sacramento River is the largest river in California. It drains 26,300 square miles of the northern Central Valley and carries nearly one-third of the total annual runoff of all California streams. The river and its associated reservoirs provide California with two-thirds of its annual water supply. Water in the Sacramento River primarily comes from the melting of the Sierra Nevada snowpack, the drainage of several connecting tributaries, and flows from Shasta Lake and Lake Oroville, two of California's largest reservoirs and major components of the Federal Central Valley Project and State Water Project. The river flows south from the Klamath Mountains, down through the Sacramento Valley to Suisun Bay, then San Francisco Bay, and eventually the Pacific Ocean.

Cache Creek

Cache Creek flows through the counties of Lake, Colusa, and Yolo and is diverted through a series of canals to provide water for agricultural irrigation. The south fork of Cache Creek serves as the primary outfall of the Clear Lake and Cache Creek Dam, while the north fork diverts water via the Indian Valley Dam and Reservoir project. The north and south forks of Cache Creek flow to the Capay Diversion Dam where they are diverted for distribution throughout Yolo County. Water is diverted and flow only reaches the Yolo Bypass during years of heavy rainfall.

Putah Creek

Water flowing through Putah Creek originates in the southwestern portion of Lake County, from natural springs on the east side of Cobb Mountain and other flows in the Mayacammas Mountains. The water flows to the east into Lake Berryessa, through the Monticello Dam and hydroelectric power plant, across the valley, and eventually into the Yolo Bypass.

Cache Creek originates northwest of Woodland. The waterway terminates at the Cache Creek settling basin, just northeast of the Woodland Planning Area.
Photo: Yolo County.

Willow Slough

The Willow Slough was constructed in order to divert waters to the Yolo Bypass through a shorter route. It drains water from Cache Creek, beginning near the foothills southwest of Woodland, across the valley floor and ultimately discharges in the western toe drain of the Yolo Bypass system, southeast of the city.

Yolo Bypass

The Yolo Bypass was constructed as part of the Sacramento River Flood Control Project (1917-1925) to convey flood flows from the Sacramento Watershed. The Bypass includes 59,000 acres of floodplain that can convey as much as 490,000 cubic feet per second (cfs). Much of the Bypass is farmed, while some of the land has been dedicated as a managed wetland and wildlife area.

Tule Canal

Tule Canal is part of the Yolo Bypass and receives the City of Woodland's Stormwater discharge and is also the discharge point for the City's Water Pollution Control Facility.

Cache Creek Settling Basin

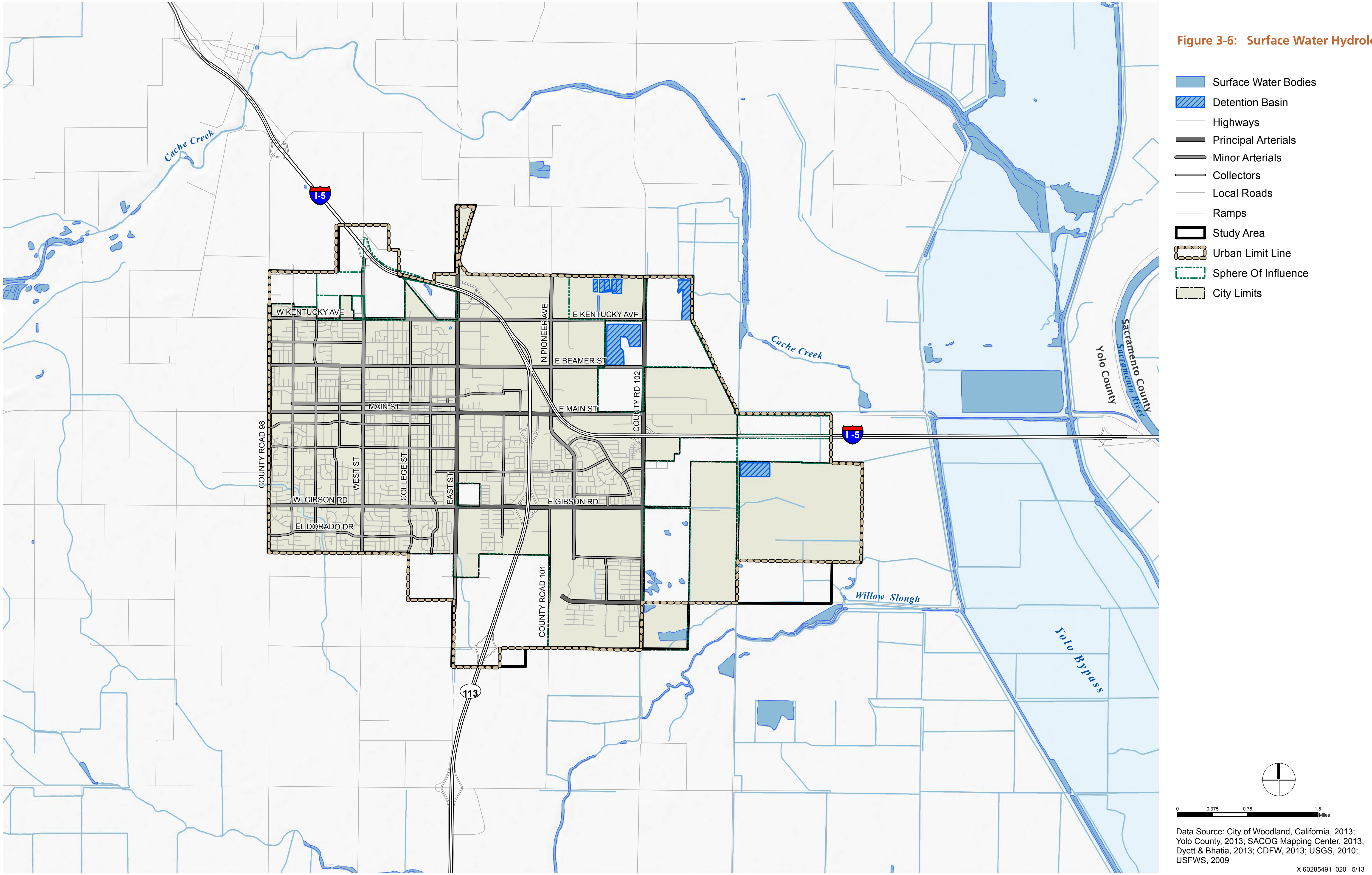
The Cache Creek Settling Basin was constructed in 1937 as a flood control facility intended to preserve the floodway capacity of the Yolo Bypass by entrapping sediment from Cache Creek before this water would reach the Yolo Bypass.[6] Please see Section 3.5 of this report for information on flooding and flood protection facilities.

Water Distribution Channels

There are more than 175 miles of irrigation and drainage facilities in Yolo County that transport water from the Capay Diversion Dam to irrigated lands surrounding Woodland. Most are managed by the Yolo County Flood Control and Water Conservation District. There are also several ditches constructed and maintained by private landowners. While these canals and ditches typically serve irrigation uses, they are also used to manage rainfall runoff during the winter.

6 Meeting of the Central Valley Flood Protection Board. March 22, 2013. Staff Report Resolution 2013 – 05. Approval of Letter to USACE requesting Section 905(b) / Reconnaissance Study for Cache Creek Settling Basin, Yolo County, Woodland Area, California. Available online at: http://www.cvfpb.ca.gov/meetings/2013/03222013_Item7B_Request_to_USACE_Section905(b)_Cache%20Creek%20Settling%20Basin.pdf.

Figure 3-6: Surface Water Hydrology



Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013; CDFW, 2013; USGS, 2010; USFWS, 2009

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Groundwater Resources

The Sacramento Valley Groundwater Basin is the major groundwater basin in the Sacramento River hydrologic region. This groundwater basin has 18 groundwater subbasins. The Yolo subbasin encompasses approximately 400 square miles in the southern portion of the Sacramento Valley Groundwater Basin, primarily in Yolo County (DWR 2003). This subbasin is bounded on the east by the Sacramento River, on the west by the Coast Range, on the north by Cache Creek, and on the south by Putah Creek. Woodland is located in the Lower Cache-Putah Subarea within the eastern portion of the Yolo Subbasin, or East Yolo Subbasin.

Two main aquifers are present, an intermediate, unconfined aquifer at depths of approximately 200 to 700 feet, and a deep confined aquifer at depths of approximately 700 to 2,700 feet. The City of Woodland operates 18 wells, which pump from the intermediate aquifer at 200 to 600 feet below ground (LTD Engineering, 2004).

Woodland currently relies entirely on groundwater as its sole source of potable water (City of Woodland, 1996; City of Woodland 2009). It is estimated that water storage below the surface ranges from between 20 and 420 feet and that the Lower Cache-Putah Subarea has an estimated storage capacity of 2.7 million acre-feet (Yolo County, 2005).

The natural gradient of the aquifer runs from west to east, following the valley topography, and draining into the Sacramento-San Joaquin Delta. Subsurface groundwater outflow sometimes occurs from the Yolo subbasin into the Solano subbasin to the south. Subsurface outflow and inflow may also occur beneath the Sacramento River to the east with the South and North American subbasins. Subsurface groundwater inflow may occur from the west out of the Capay Valley Basin.

Groundwater pumping has altered the natural gradient in some areas by creating localized depressions in the water table and has contributed to land subsidence that caused the aquifer to experience a decline in capacity from 1950 to 1976 and led to the development of the Indian Valley Dam and Reservoir. Groundwater levels are impacted by periods of drought due to increased groundwater pumping and less surface water recharge (e.g. in the late 1970s and early 1990s), but groundwater levels have recovered quickly in "wet" years. Long-term trends do not indicate any significant decline in water levels, with the exception of localized pumping depressions in the vicinity of the Davis, Woodland and Dunnigan/Zamora areas. Past studies (Scott and Schalmini, 1975) have concluded that the Yolo subbasin is subject to overdraft. However, completion of Indian Valley Reservoir provided significant relief in the form of additional available surface water (YCFCWCD, 2000). Recent evaluation of groundwater levels indicates current conditions are stable in all groundwater zones (YCFCWCD 2004).

Water Quality

Groundwater

Groundwater in the Yolo Subbasin is characterized by a sodium magnesium bicarbonate, calcium magnesium bicarbonate, and magnesium carbonate chemistry. Groundwater quality is generally considered adequate for agricultural and municipal uses, although it tends to be "very hard" (Yolo County, 2005). There are some localized areas throughout the basin that have been recorded to have high concentrations of boron. Electrical conductivity, an indicator of salinity has continued to increase in the county, at least in some areas. Groundwater near Cache Creek has been noted to contain higher concentrations of selenium, nitrate, and boron and other areas just east of Woodland have been identified as having high levels of nitrates (Yolo County, 2006).

The City of Woodland prepares annual water quality reports. Results from the shallow and intermediate depths of the aquifer have indicated some areas with contaminant levels that nearly meet maximum concentration levels (MCLs) for nitrates, salts, and other elements. In some cases, these levels were reported to exceed MCLs, at which point wells were abandoned or taken off line. The Central Valley Regional Water Quality Control Board (RWQCB) is likely to enforce more stringent standards for groundwater in the future, which may not be met locally without additional treatment.

City wells have been found to contain hexavalent chromium (Chromium-6). Hexavalent chromium is a naturally occurring metal in soil and water. Currently, there is no federal or state MCL specific to the hexavalent form of chromium. Hexavalent chromium is regulated in drinking water through the establishment of total chromium MCL (hexavalent chromium is one of the forms of chromium making up total chromium). In California, the total chromium MCL is 50 parts per billion (ppb), while the federal MCL is 100 ppb. At the time total chromium MCLs were established, ingested hexavalent chromium associated with consumption of drinking water was not considered to pose a cancer risk, as is now the case (CDPH 2012). The California Department of Public Health is expected enact an MCL for hexavalent chromium that will likely restrict by 2018 the use of many of the City's existing wells. Because remediation is prohibitively expensive, new surface water supplies and improved aquifer recovery and recovery wells will be important to offset issues with affected wells.

The shallow and intermediate zones are an important source of supply for private domestic and irrigation purposes. With limited resources and the expectation that municipal costs would increase, private domestic uses are expected to increase. Municipal supplies have been largely developed from the intermediate zone. Since 1990, there has been an increased interest in the exploration and development of the deep zone for municipal uses.

Deep zone test wells beneath Woodland have shown high concentrations of arsenic, among other contaminants, and therefore, this is not expected to be a viable supplemental municipal supply.

Surface Water

The primary surface water resources in the area are the Sacramento River and the Yolo Bypass. Others resources include Cache Creek, Putah Creek, Willow Slough, and Clear Lake. Surface water quality for water bodies in the Woodland area is generally good. However, several water bodies are identified on a list of impaired water bodies and established Total Maximum Daily Loads (TMDL) maintained by the state pursuant to the Clean Water Act Section 303(d).

Surface water resources near the Woodland Planning Area generally have good water quality. However, some, such as Willow Slough, has exceeded the Total Maximum Daily Load for various contaminants.
Photo: www.bphod.com.

The Sacramento River, from Knight's Landing through the Sacramento-San Joaquin Delta, is listed as impaired by mercury and pesticides and a TMDL was established in 2012. These chemicals are found at their highest concentrations at discharge points along the creeks that receive run-off from agricultural fields and abandoned mines and associated waste materials transported from upstream areas.[7]

7 The potential health risks associated with mercury include neurological dysfunction, particularly in children. It is ingested by humans mainly through fish and food consumption. It is persistent in the environment, and will bioaccumulate (i.e., greatly magnify its concentration from water and sediments up the food chain to fish and other organisms). Diazinon, one of the most widely used pesticides in the United States, can be toxic at high exposures, as described above. Group A pesticides, some of which are no longer manufactured in the United States, are classified as known, probable or possible human carcinogens.

TABLE 3.4-1 WOODLAND AREA TMDLS

WATER BODY	POLLUTANT	CATEGORY	AFFECTED MILES
Sacramento River (Knight's Landing to the Delta)	Chlordane	Pesticides	16
	DDT (Dichlorodiphenyl-trichloroethane)	Pesticides	16
	Dieldrin	Pesticides	16
	Mercury	Metals/Metalloids	16
	PCBs (Polychlorinated biphenyls)	Other Organics	16
	Unknown Toxicity	Toxicity	16
Cache Creek	Boron	Metals/Metalloids	96
	Mercury (South Fork)	Metals/Metalloids	96
	Unknown Toxicity	Toxicity	96
	Mercury (North Fork)	Metals/Metalloids	14
Putah Creek	Boron	Metals/Metalloids	27
	Mercury	Metals/Metalloids	27
Willow Slough	Boron	Metals/Metalloids	10
	Boron	Metals/Metalloids	6
	Escherichia coli (E. coli)	Pathogens	6
	Fecal coliform	Pathogens	6

Source: 2010 USEPA approved 303d List.

Water Supply

Today, the City relies entirely on groundwater to meets its municipal water demands. Outside of the city limits, several privately owned well systems exist, while some areas rely on surface water from the Sacramento River.

Municipal and industrial uses in Yolo County (including both incorporated and unincorporated areas) account for approximately 5 percent of total water use, while agriculture accounts for approximately 95 percent of total water use (see Table 3.4-2). For agriculture, approximately 68 percent of the water comes from surface water while the remaining 32 percent is pumped from the underground aquifer. For municipal and industrial users, approximately 19 percent is from surface water supplies, while 81 percent is from groundwater.

Water demand within the city is expected to grow to 18,500 af/year (6 billion gallons per year) by 2035 (City of Woodland, 2010).

TABLE 3.4-2 EXISTING COUNTYWIDE WATER DEMAND BY USER TYPE

USER CATEGORY	WATER DEMAND (THOUSAND ACRE-FEET/ YEAR)	PERCENTAGE
Municipal and Industrial	49	5%
Agricultural	866	95%
Total	**915**	**100%**

Source: Water Resources Association of Yolo County. 2005 (May). Integrated Regional Water Management Plan Background Data & Information Appendix. Available online at: http://www.yolowra.org/irwmp_documents_a.html.

Subsidence

Land subsidence in the aquifer, or the reduction of the land-surface elevation, has decreased the capacity of the aquifer by as much as four feet since the 1950s due to groundwater withdrawal (Yolo County, 2005).[8] Subsidence monitoring suggests continuing subsidence in the Davis to Zamora corridor, with relatively stable groundwater levels in the Woodland area (Yolo County 2006). While subsidence is currently not an issue in the Woodland area, an increase in groundwater demand, along with climate change concerns, or just the possibility of consecutive low water years could have an effect on subsidence in the Woodland area. The City of Woodland, City of Davis, and the University of California, Davis have partnered on the Davis-Woodland Water Supply Project to secure use of surface water from the Sacramento River in order to avoid overdrafting the aquifer from the expected increase in demand. The project is in the final design and planning stages, having secured approvals and water rights, and should be in operation by the year 2016.

Refer to Section 5.4 for further discussion of this project and Woodland's water supply.

Climate Change

Climate change is anticipated to result in greater proportions of precipitation occurring as rain rather than snow, along with sea level rise. Water resources in the Central Valley could be adversely affected by overall declines in precipitation, increased temperatures, and more frequent sustained droughts associated with climate change, coupled with modest growth in urban water demand. For groundwater, climate-related effects may include significant changes in recharge, discharge, and groundwater withdrawals. Increased demands for irrigation water would be met by increased groundwater pumping. Overall model results for indicate a likely change from a surface-water to groundwater-dominated system in the Central Valley (USGS 2012).

8 Subsidence occurs when the demand for water is such that the aquifer is overdrafted and loose sediments in the aquifer become consolidated, such as during periods of drought. Subsidence creates hazards, including increased pressure on levees, increases in relative floodwater depths and area, and damage to underground utilities.

Hydrology and Water Quality Opportunities And Challenges

Several key water resource issues and opportunities that could be considered in development of the 2035 General Plan are discussed below.

Central Valley RWQCB Basin Plan Amendments

The Central Valley RWQCB Groundwater Quality Protection Roadmap describes how recent amendments to the Sacramento San Joaquin Basin Plan and future actions will improve groundwater quality, as well as water quality in surface water bodies. Amendments include a salinity management program, Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS), which will enforce more stringent salt and nitrate limits on wastewater discharges. The Central Valley RWQCB is also in the process of developing a drinking water policy for the Central Valley that will create limits for current constituents of concern that have not been addressed by any plans or programs. Additional amendments are related to various TMDL's for 303(d) listed impaired water bodies. The General Plan Update will need to address the effect of the changing regulatory environment on City policy related to water quality, wastewater demand and treatment, and long-term public investments.

Compliance with the New Statewide Storm Water Construction General Permit requirements

In order to improve the compliance with permit provisions, the new General Permit differs from the previous one in a number of important ways. The General Permit identifies requirements according to three risk levels. Soil type, site slope, rainfall, receiving water sensitivity, and timing of grading determine risk level. All risk levels have required minimum best management practices. The medium- and high-risk level sites will now be required to collect water quality samples. For medium-risk sites, pH or turbidity results outside or above action levels will require site operators to examine and improve their best management practices. For high-risk sites, pH or turbidity results outside or above effluent limitations will be permit violations. The new permit requirements provide an opportunity for the City to address these risk level criteria and provide more proactive guidance for erosion and sediment control for both new development and ongoing storm water management operations in developed areas.

Low Impact Development Methods

Taking a site-by-site approach to comply with the general permit requirements using low impact development (LID) methods can create conflicts with other planning objectives, such as compact and infill development. Some of the more cost-effective LID methods can be land consumptive, which may be an issue in areas where the City wishes to promote relatively dense development that uses more of the subject site for buildings and other improvements. It is possible that a site-by-site approach to LID could introduce a cost barrier for infill developments in areas of Woodland where the 2035 General Plan may identify opportunities for infill, compact, mixed-use development. In addition, it can be difficult to manage, monitor and maintain a dispersed LID system, which may lead to the failure of system components.

In areas where the City is planning for infill and compact development, an in-lieu fee could serve to relieve projects of the cost of installing site-by-site LID measures while ensuring proper management of storm water runoff off-site. Areas providing for stormwater for multiple sites could also be designed for joint-use to accommodate public recreation during dry times. The City may want to embrace a more holistic approach to stormwater management through natural drainage, conventional engineering infrastructure, and innovative infiltration practices used jointly at the sector, neighborhood, and block scale. The City may wish to consider providing proactive guidance for these innovative techniques, and vetting this approach in advance with representatives from the Regional Water Quality Control Board, in order to both facilitate infill development and meet evolving water quality requirements.

3.5 Flooding

Flood risk is a consequence of rainfall characteristics, topography, water features, vegetation and soil coverage, impermeable surfaces, and the city's urban stormwater management infrastructure. This section discusses the Planning Area's watershed characteristics and various flood hazards, the city's capacity to address these issues, and the implications of flood-related legislation passed by the State in 2007 on Central Valley communities such as Woodland. Providing for a flood solution is essential to strengthening Woodland's Economic Development position within the region. Flooding impacts the desirability for development within the industrial sector and looming concerns over insurance liabilitiy is of great concern.

Environmental Setting

The City of Woodland is surrounded by waterways that periodically flood. Waterways include Cache Creek to the north and northwest and the Yolo Bypass/Sacramento River system to the east. In the 100-year flood condition, Cache Creek spills south and east towards Woodland, as a result of a series of modifications to the levees in the system, none of which are currently certified by FEMA as adequate to provide the required flood protection for the area. The Cache Creek Settling Basin is also located just northeast of the Planning Area, the levees of which act as a dam and impede the west to east conveyance of Cache Creek floodwaters. This can result in flood depths of 10 to 12 feet in part of the Planning Area that includes commercial and residential development, as well as on I-5. Typical flood hazards in Woodland generally consist of shallow sheet flooding from surface water runoff from large rainstorms with depths generally less than two feet.[9] However, in larger storm events, there are significant areas within the Planning Area on the north and east sides that would have historically experienced flood depths of three feet to more than 10 feet if the conditions of the waterway/flood-related infrastructure described above had been present at that time.

The Federal Emergency Management Agency (FEMA) and the California Department of Water Resources (DWR) have published floodplain maps showing areas that would be inundated by the 200-year flood. As shown in Figure 3-8, 45 percent of the Planning Area is located in the Cache Creek 200-year floodplain and subject to a 0.5 percent probability of flooding in any given year. In addition to presence in the floodplain, another important consideration is the flooding depths that properties could experience. This data provides some indication of the ease or difficulty of mitigating flood hazards on current or future development. For instance, a parcel whose historic flood depth is less than one foot presents a more attractive development opportunity than one that can flood to levels of three feet or more. DWR typically views three feet as the threshold for what constitutes "deep" flooding, but there are no specific legislative requirements tied to this number.

Table 3.5-1 illustrates the percentage of the Planning Area that is located within the 200-year floodplain, broken out by existing land use. The table also shows how many acres of each land use have historic flood depths of greater than three feet. **Approximately 45 percent of the total Planning Area is within the 200-year floodplain. Of that area, over half (56 percent or 3,229 acres) experienced flooding depths of over three feet. These 3,229 acres that experienced deep flooding constitute 25 percent of the Planning Area overall.**

Formation Commission (March 2011).

Due to inadequate flood infrastructure, major storms can result in significant flooding in the Woodland Planning Area—including in areas that are have commercial, industrial, and residential development.

Woodland's industrial area, located in the northeastern section of the Planning Area, is particularly susceptible to flooding. **Eighty-four percent of the current industrial acreage (over 1,300 acres) is located within the 200-year floodplain, and 563 of those acres can experience deep flooding (greater than three feet). This condition places Woodland at a competitive disadvantage relative to its peer and neighboring cities, as its risk level and insurance costs are higher.** In turn, the city's economic base suffers, making it more difficult for the City to fund necessary flood protection projects.

TABLE 3.5-1 EXISTING LAND USES IN THE 200-YEAR FLOODPLAIN

	Within 200-Year Floodplain		Historical Flood Depth > 3 Feet		
Existing Land Use	**Acres**	**Percent of Land Use Category**	**Acres**	**Percent of Land Use within Floodplain Area**	**Percent of Land Use Category Overall**
Vacant	1,763	78%	1,308	74%	58%
Industrial	1,305	84%	563	43%	36%
Agricultural	1,142	51%	776	68%	35%
Right-of-Way	500	25%	167	33%	9%
Public/ Institutional	648	50%	348	54%	27%
Residential	207	8%	6	3%	<1%
Park and Open Space	146	37%	49	34%	12%
Commercial and Office	74	14%	11	15%	2%
Total	**5,785**	**45%**	**3,229**	**56%**	**25%**

Source: Dyett & Bhatia, 2013.

City streets—even those outside of the floodplain—are also subject to localized flooding during periods of heavy rainfall. According to City staff, the city's storm drain system is not adequately sized for the flows that it must handle. Older parts of the city, particularly west of East Street, do not have a system of under-street storm drain pipes. Rather, runoff is instead conveyed through intersections in valley gutters, gutter culverts, or inverted siphons, and must travel long distances to reach a drain inlet. In these areas, when capacity of drain inlets and pipes is exceeded, localized street flooding occurs and remains for three to four hours after rainfall has subsided. See Section 5.4 for further discussion of the city's stormwater infrastructure and areas subject to localized street flooding.

Requirements for Sacramento-San Joaquin Valley Jurisdictions

In 2007, the State Legislature passed five bills aimed at addressing problems related to flooding and helping direct the use of bond funds for this purpose (SB 5, SB 17, AB 5, AB 70, and AB 156). A sixth bill, also passed in 2007 (AB 162) provided additional guidance and requirements for local land use planning with respect to flooding and flood risk. Some of the provisions in these bills apply statewide; others are specific to jurisdictions located within the Sacramento-San Joaquin Valley, which has historically seen major flood events since the early 1800s. Woodland is one of these jurisdictions.

SB 5 directed the California Department of Water Resources (DWR) and the Central Valley Flood Protection Board (boards) to prepare and adopt a comprehensive Central Valley Flood Protection Plan (CVFPP). This document was completed and adopted in June 2012, and contains the following:

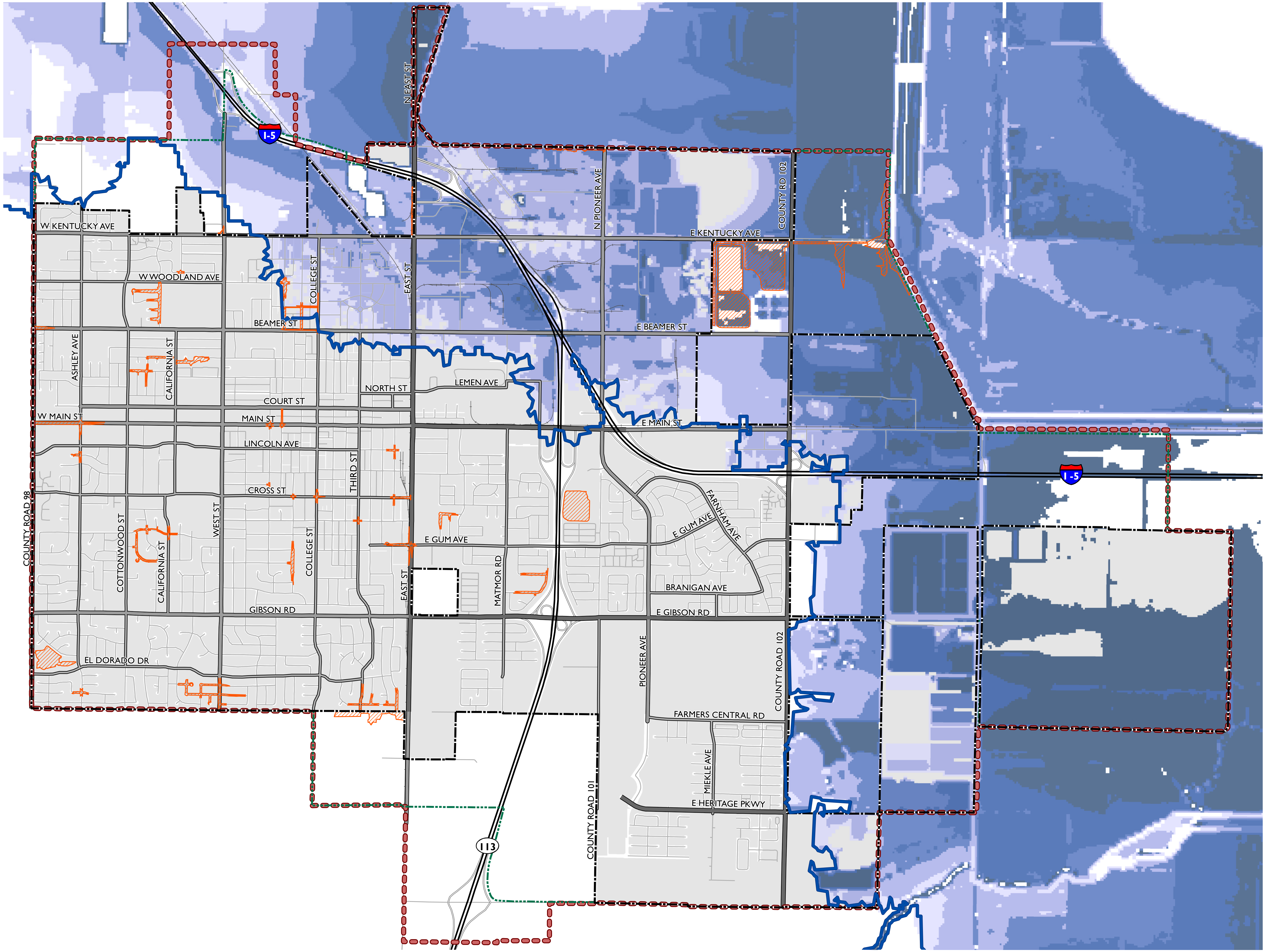
- A systemwide approach to improving flood management in areas currently receiving protection from the State Plan of Flood Control
- A list of recommended strategies (structural and nonstructural) for improving the performance of flood management facilities
- Address ecosystem and other water-related issues associated with flood management

SB 5 also establishes the 200-year flood event (a flood with a 1 in 200 chance of occurring in a given year) as the minimum level of flood protection to be provided in urban and urbanizing areas (defined as those with greater than 10,000 residents). This standard also applies to Woodland.

Among the various planning requirements for local jurisdictions that result from this package of legislation is one with significant consequences for Woodland: following the next update to the city's General Plan and Zoning Ordinance, the City will not be allowed to approve new development agreements, discretionary permits, discretionary entitlements, ministerial permits, or tentative maps in areas subject to the 200-year flood without demonstrating that adequate flood protection measures are in place (for the deep flood areas).

While compliance with FEMA-specified flood insurance rate maps was always required of proposed developments in the 100-year floodplain in order to qualify for federal flood insurance, **another consequence of the 2007 California flood legislation is the shift of liability for property damage due to inappropriately approved development from the State to the local jurisdiction** (liability is now shared). Given that a large percentage of Woodland's Planning Area is within the 200-year floodplain, including many large parcels that would otherwise present significant development opportunity, **this requirement has serious implications for Woodland from a future develoment standpoint, in that it may be cost prohibitive without a flood solution**.

Figure 3-7: 200 Year Floodplain and Historic Flooding Depths



Historic Flood Areas
200 Year Flood Line

Flood Depth

0.00 - 1.00
1.01 - 3.00
3.01 - 5.00
5.01 - 7.00
Above 7.00

Highways
Principal Arterials
Minor Arterials
Collectors
Local Roads
Ramps
Railroads
City Limits
Sphere of Influence
Urban Limit Line

0 0.375 0.75 1.5

Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013

Flooding Opportunities and Challenges

Woodland's geography and flooding history present serious challenges for the new General Plan and for new development in the floodplain moving forward. At the same time, the timing of the city's General Plan Update—closely following adoption of the CFVPP—does present an opportunity for Woodland to think critically about a comprehensive flood solution, interim solutions, and policies and strategies for allowing development to move forward in some areas of the floodplain where hazards can be adequately mitigated. The City must also carefully consider how to limit its liability for impacts of flooding now that that burden has been transferred as a result of the State legislation.

The 200-year floodplain boundary, and the historical flooding depths within it, will become a critical data point as the public, stakeholders, and decision-makers consider land use alternatives and proceed with environmental analysis as the plan is crafted. While the City of Woodland has partnered with the Yolo County Flood Control and Water Conservation District to design and implement a two-year pilot flood management program. The updated Plan must contemplate interim solutions and strategies to allow development in Woodland to move forward where it is safe and appropriate, while still supporting and advocating for a permanent solution for the region. While the City does not have a specific flood solution in place, it should be known by the end of 2014 if there is a viable and fundable project, with construction to follow in a few years. A key challenge for the City will be to either develop a flood solution, or to determine how to mitigate potential flood insurance costs to businesses, residents and the City.

3.6 Geology, Soils, and Seismicity

The geologic setting of the Planning Area determines both the hazards associated with potential earthquake risk, as well as the nature of the soil resources on the Planning Area's surface. This section covers Woodland's underlying geology, seismic profile, and soils.

Environmental Setting

Geology

Regional Geology

Woodland is located in the Great Valley geomorphic province of California, and consists of gently sloping to level alluvial plains. The geologic parent material within the region was formed from erosion of mountain ranges to the east and geologic uplift along the western shore of the North American continent. Two hundred and forty-five million years ago, the Great Valley province began forming as deposition of sediment-laden runoff. Eventually, the sediment deposits known as the Great Valley sequence accumulated to a depth of almost six miles. Large amounts of sediment continued to be added to the Great Valley sequence until approximately 30 million years ago. All of these processes occurred beneath the sea, and the water captured in the pores of the deeply buried rock is saline.

Geologic units in the Great Valley area generally consist of Holocene alluvium or basin deposits, and the Quaternary Modesto and Riverbank Formations, both of which consist of somewhat older alluvium. Elevations near Woodland range from 30 to 75 feet above mean sea level (msl). Figure 3-8 illustrates the geologic units within and surrounding the Planning Area.

Holocene Alluvium (Qa and Qb)

The Holocene basin deposits (occurring within the last 11,000 years) consist of fine-grained silt and clay derived from the nearby mountain ranges and deposited by the Sacramento and American Rivers (Helley and Harwood 1985, Wagner et al. 1987). In general, these deposits consist primarily of unconsolidated sand and silt. Holocene alluvial deposits overlie an older alluvial fan system composed of Pleistocene-age sediments.

Riverbank and Modesto Formations (Qm, Qr, Qmr)

In the Sacramento Valley, the Modesto Formation represents the lowest alluvial deposits that occur topographically just above the Holocene deposits along streams and valleys. It is composed of unconsolidated gravel, sand, silt and clay. The Modesto Formation is Pleistocene in age. Estimates place the age of this formation at approximately 12,000–42,000 years Before Present (BP) by Marchand and Allwardt (1981) and 9,000–73,000 years BP by Atwater (1982).

Sediments in the Riverbank Formation consist of weathered reddish gravel, sand, and silt that form alluvial terraces and fans. In the Sacramento Valley, this formation contains more mafic rock fragments than the San Joaquin Valley and thus tends toward stronger soil-profile developments that are more easily distinguishable from the Modesto Formation (Helley and Harwood 1985).

The Riverbank Formation is Pleistocene in age and is older than the Modesto Formation. Estimates place the age of the Riverbank Formation between 130,000 and 450,000 years BP (Helley and Harwood 1985).

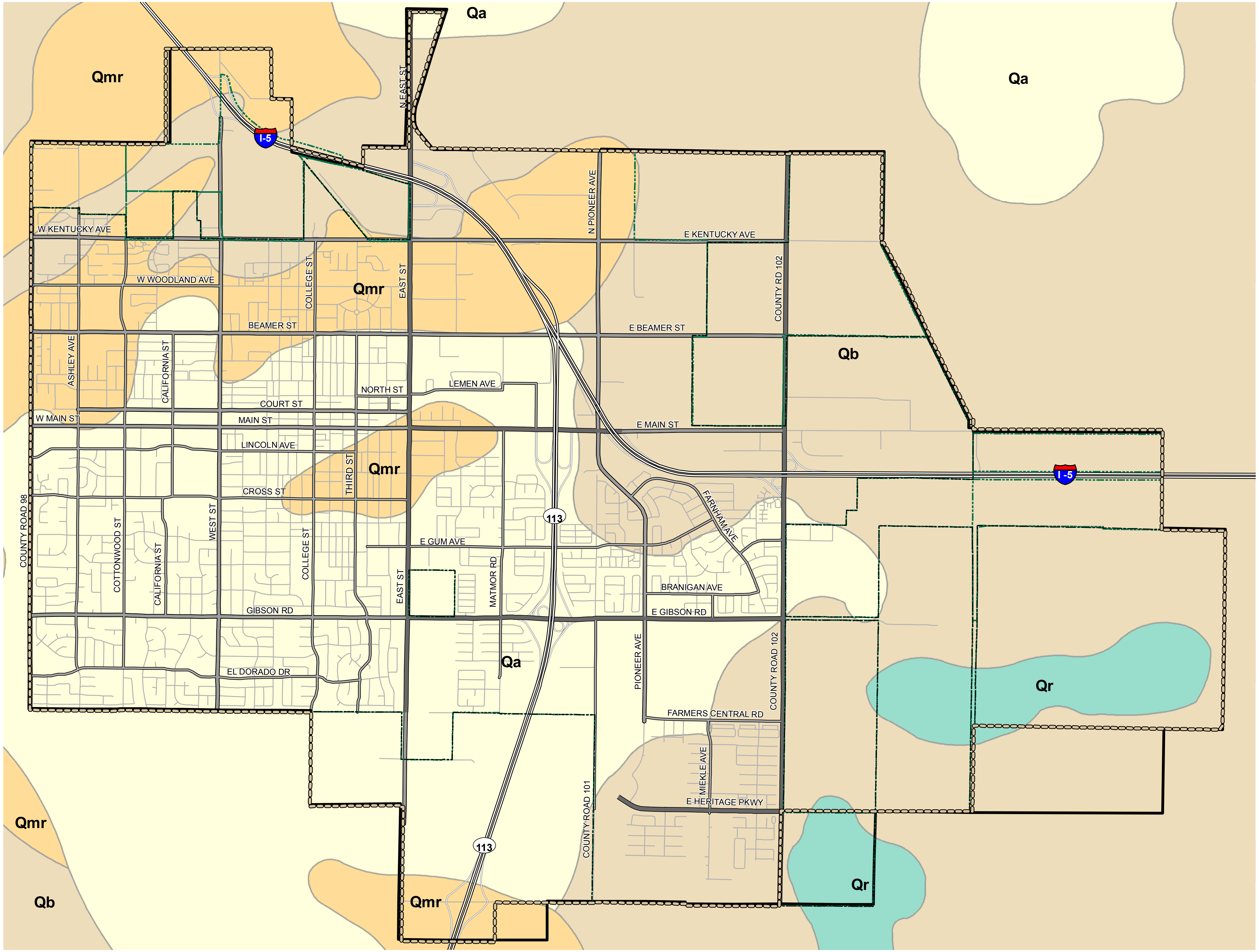


Figure 3-8: Geologic Map

Qa	Levee and channel deposits
Qb	Basin deposits (Alluvium)
Qr	Riverbank Formation (Alluvium)
Qmr	Modesto-Riverbank Formations (Arkosic alluvium)
	Highways
	Principal Arterials
	Minor Arterials
	Collectors
	Local Roads
	Ramps
	Study Area
	Urban Limit Line
	Sphere Of Influence
	City Limits

0 0.25 0.5 1 Miles

Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013; California Geologic Survey, 1981

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Regional Faults and Seismicity

Faults

The nearest fault zones exhibiting historic displacement (activity within the last 200 years) to the Planning Area are the Concord-Green Valley, Marsh Creek-Greenville, and Hayward fault zones, located approximately 27 miles west, 40 miles west, and 54 miles southwest of Woodland, respectively (Jennings 1994). Other active faults within 70 miles of Woodland are the Dunnigan Hills (10 miles northwest), West Napa (36 miles southwest) Healdsburg- Rodgers Creek (57 miles southwest), and San Andreas (66 miles west).

A seismically-active, concealed (blind) fold and thrust fault belt situated within the Coast Range-Central Valley (CRCV) Geomorphic Boundary is located approximately 10 miles west of the Planning Area. Earthquakes associated with this fault system include the 6.1 magnitude (Mw) Kettleman Hills and 6.5 (Mw) Coalinga events (Wakabayashi and Smith 1994). Published estimates of the CRCV slip rate derived from previous studies range from 1 to 10 mm/year, and estimated reoccurrence intervals of the Coalinga-type events range from 200 to 2,000 years. The concealed CRCV thrust is thought to have produced the Vacaville-Winters earthquake of 1892 (estimated 6.75 Mw intensity; Wakabayashi and Smith, 1994).

Geologic and Seismic Hazards

The Planning Area could experience the effects of a major earthquake from one of the active or potentially active faults located within 60 miles of Woodland. The four major hazards associated with earthquakes are fault surface rupture (ground displacement), ground motion (or ground shaking), ground failure (e.g., liquefaction), and differential settlement.

Surface Fault Rupture

Surface rupture is the actual cracking or breaking of the ground along a fault during an earthquake. Structures built over an active fault can be torn apart if the ground ruptures. Surface ground rupture along a fault generally is limited to a linear zone a few yards wide. The Alquist-Priolo Earthquake Fault Zoning Act was enacted to prohibit structures designed for human occupancy from being built across the traces of active faults, thereby reducing the loss of life and property from an earthquake.

The Concord-Green Valley and Marsh Creek-Greenville fault zones are the closest active faults zoned under the Alquist-Priolo Earthquake Fault Zoning Act to the Planning Area. These fault zones are situated more than 25 miles southwest of Woodland. There are no Alquist-Priolo Earthquake Fault Zones in the Planning Area. Therefore, the risk of surface fault rupture within the Planning Area is considered low (Bryant and Hart, 2007).

Ground Shaking

Ground shaking is motion that occurs as energy is released during faulting. Depending on the magnitude of the earthquake, its epicenter, the character and duration of the ground motion, and the type of soil and/or rock formation, ground shaking has the potential to result in the damage or collapse of buildings, and to cause landslides, subsidence, liquefaction, or seiches.

The California Geological Survey has determined the probability of earthquake occurrences and their associated peak ground accelerations throughout the State of California. The seismic hazard assessment determines the earthquake hazard that geologists and seismologists agree could occur in California. Current maps produced by the California Geological Survey are based on 10 percent exceedance in 50 years. The peak ground acceleration based on a 10 percent exceedance in 50 years within the Planning Area could range between 0.20 g to 0.30 g (g is force of gravity, wherein ground motion is rated in comparison against acceleration by gravity) (Peterson, et. al, 1996). This range of potential ground acceleration is considered moderate (USGS, 1996).

Liquefaction

Liquefaction is the sudden temporary loss of strength in saturated, loose to medium dense, granular sediments subjected to ground shaking. Liquefaction can cause foundation failure of buildings and other facilities due to the reduction of foundation bearing strength.

The Planning Area is characterized by shallow groundwater, with standing water generally encountered between zero to three feet below the ground surface. Additionally, a review of local well records indicates that the Planning Area is underlain by stratified layers of silt, silty clays, and isolated lenses of gravel and/or sand. Therefore, portions of the Planning Area may be prone to liquefaction resulting from ground shaking.

Earthquake-Induced Settlement

Settlement of the ground surface can occur as a result of the relatively rapid compaction and settling of subsurface materials (particularly loose, non-compacted, and variable sandy sediments) during prolonged ground shaking. Typically, areas underlain by artificial fills, unconsolidated alluvial sediments, and slope wash, and areas with improperly engineered construction fills are susceptible to settlement. Although the general parent material of the soil resources in the Planning Area may indicate a higher risk of earthquake-induced settlement, the potential for earthquake-induced settlement in Woodland is considered low due to the distance to major active faults.

Slope Instability and Landslides

Slope failure, commonly referred to as landslide, include many phenomena that involve the downslope displacement and movement of material, either triggered by static (i.e., gravity) or dynamic (i.e., earthquake) forces. Exposed rock slopes undergo rockfalls, rockslides, or rock avalanches, while soil slopes experience shallow soil slides, rapid debris flows, and deep-seated rotational slides.

Engineered slopes have a tendency to fail if not properly designed, constructed or compacted. Because the Planning Area is generally level, hazards associated with landslides are generally limited to embankments along creek and drainage ways within the Planning Area.

Seiche

Earthquakes may affect open bodies of water by creating seismic sea waves and seiches. Seismic sea waves (often called "tidal waves" or tsunamis) are caused by abrupt, usually vertical ground movements on the ocean floor in connection with a major earthquake. Because of the acquisition area's long distance from the Pacific Ocean and the intervening mountainous topography, seismic sea waves are not be a factor.

A seiche is a sloshing of water in an enclosed or restricted water body such as a basin, river, or lake, caused by earthquake motion; the sloshing can occur for a few minutes or several hours. No bodies of water that are large enough for destructive seiche action to occur are located either within or adjacent to the Planning Area.

Volcanism

There is no known volcanism near the City of Woodland. However, regions of known volcanic activity surround the Sacramento Valley, in which Woodland is located. The Cascades Mountain range extends for more than 700 miles from Fraser River in southern British Columbia, Canada to Lassen Peak in northern California. Most of the summits are extinct volcanoes, but Lassen Peak and several others have erupted in the recent past.

Three episodes of volcanism have occurred in the vicinity of the Lassen volcanic center in the past 1,100 years. These eruptions occurred at Chaos Crags, Cinder Cone, and lastly at Lassen Peak in 1914-1917. The most destructive explosion in this recent sequence at Lassen occurred on May 21, 1915 when a pyroclastic flow devastated forests as far as 4.1 miles northeast of the summit and lahars swept down several valleys radiating from the volcano. An ash plume rose more than 5.5 miles above the peak, and the prevailing winds scattered the ash across Nevada as far as 300 miles to the east. Lassen Peak is approximately 120 miles to the north-northeast of the county; a similar eruption with southerly winds could produce ash fall in Yolo County. Lassen Peak continued to produce smaller eruptions until about the middle of 1917.

The Clear Lake volcanic field is the westernmost site of recent volcanism in California, and is far to the west of the Cascade Range. The Clear Lake volcanic field contains lava domes, cinder cones, and maars (shallow, flat-floored craters). Mount Konocti, about 20 miles west-northwest of Yolo County, is the largest volcanic feature. Clear Lake volcanism has been largely non-explosive, with the latest eruptive activity ending about 10,000 years ago. South of Clear Lake in the Mayacamas Mountains, a large silicic magma chamber provides the heat source for the Geysers, an actively producing geothermal field. The Long Valley Caldera, located near Mammoth Lakes in Mono and Inyo Counties, formed as a result of an eruption about 760,000 years ago, with the last eruptions about 50,000 years ago. The caldera remains active, with many hot springs and fumaroles (USGS 2012).

Soils

In general, soils in the Planning Area are characterized by deep, poorly drained, fine-grained materials that may contain a high percentage of organic materials. Figure 3-10 provides data on soil types found in the Woodland Planning Area.

Soil-Related Hazards

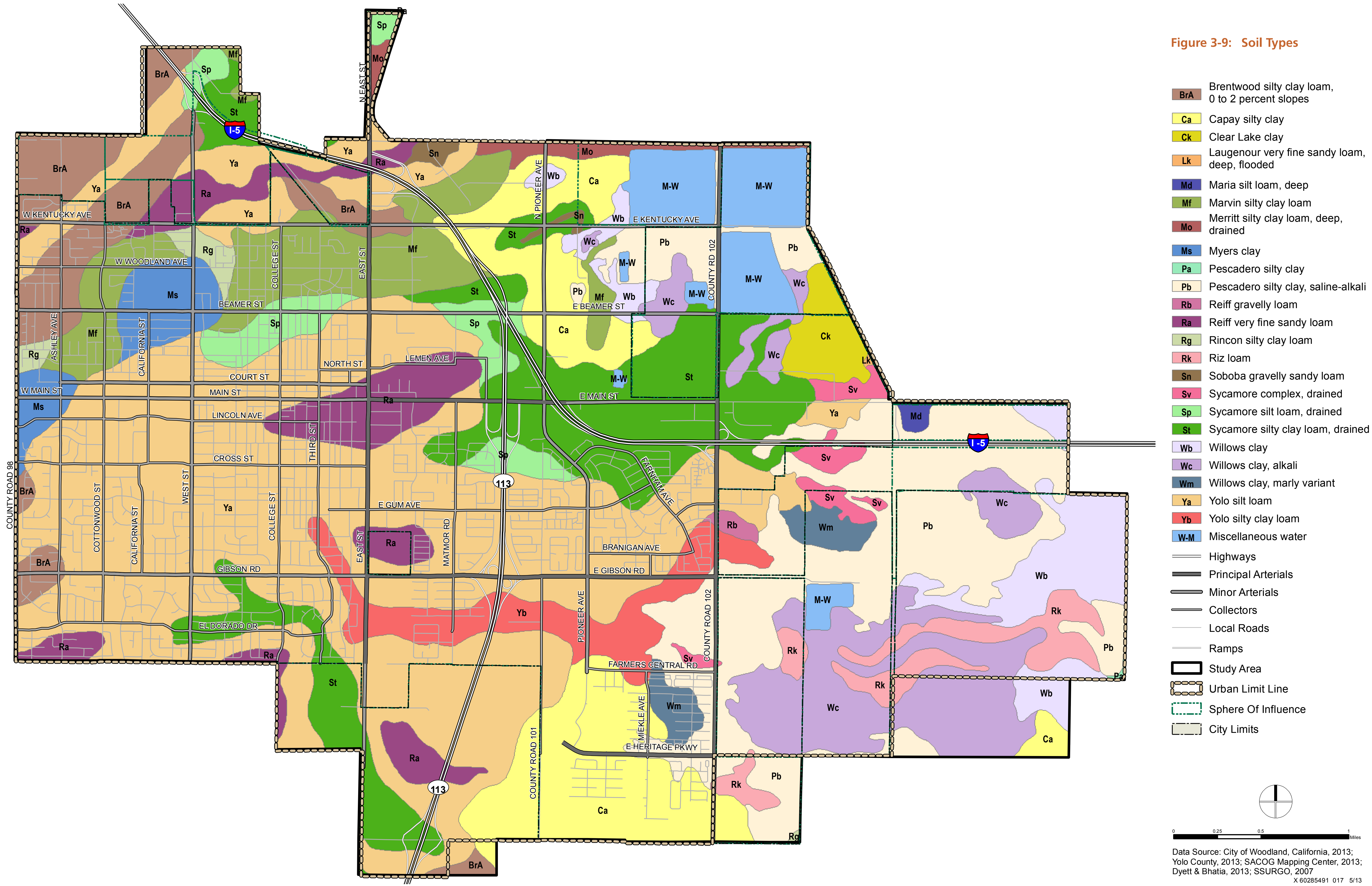
Seismic-related soil hazards, including liquefaction and landsliding, are discussed under "Geologic and Seismic Hazards," above. The following discussions address subsidence, lateral spreading, erosion, and expansive soil hazards.

Land Subsidence and Lateral Spreading

Subsidence is the gradual lowering of the land surface due to loss or compaction of underlying materials. Lateral spreading is the horizontal movement or spreading of soil toward an open face, such as a stream bank, the open side of fill embankments, or the sides of levees. The potential for failure from subsidence and lateral spreading is highest in areas where there is a high groundwater table, where there are relatively soft and recent alluvial deposits, and where creek banks or levees are relatively high.

Pumping from intermediate depth aquifers in Yolo County has caused about three to four feet of subsidence in and near Woodland over the last several decades. Subsidence can occur as the result of groundwater, gas and oil extraction, or the decomposition of highly organic soils. The Yolo County Subsidence Network (a joint regional effort) was established in 1999 to provide the opportunity for Yolo County agencies, including the City of Woodland, to periodically monitor and measure local subsidence.

Figure 3-9: Soil Types



Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013; SSURGO, 2007

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Erosion

Erosion is the detachment and movement of soil materials through natural processes or human activities. In general, rates of erosion can vary depending on the soil resource's capacity to drain water, slope angle and length, extent of groundcover, and human influence.

Topography in the Planning Area is generally level, and the erosion potential for soils is therefore generally low.

Expansive Soils

Expansive soils are composed largely of clays, which greatly increase in volume when saturated with water and shrink when dried. Because of this shrink-swell effect, structural foundations may rise during the rainy season and fall during the dry season. If this expansive movement varies beneath different parts of a structure, the foundation may crack and portions of the structure may become distorted. Retaining walls and underground utilities may be damaged for the same reasons.

Soils within the Planning Area are composed of silty clay loams, loams, silty clays, clays and sandy loams, some of which contain expansive clays (Figure 3-9).

Due to soils issues, the City typically requires post tension slabs.

Corrosive Soils

Many of the soil types found in the Planning Area (silty clay loams, silty clays, silt loams, clays, etc) are corrosive to uncoated steel.

Mineral Resources

Aggregate

Cache Creek and its floodplain is a source of aggregate resources. The State of California has mapped the aggregate resources along lower Cache Creek, including MRZ-1, MRZ-2, and MRZ-3 areas, but all of these resource areas are located outside the Planning Area.

Six aggregate mines are currently operational along Cache Creek, including Teichert Aggregates and Schwarzgruber & Sons, both of which are located about two to three miles west of the Planning Area.

Natural Gas

In recent years, natural gas has become more important to the regional economy. According to the California Department of Conservation Division of Oil, Gas, and Geothermal Resources (DOGGR), there are approximately 25 gas fields located within Yolo County, including several located in the Planning Area and within the city limits (DOGGR 2001). Figure 3-10 illustrates gas fields in the Planning Area. Gas-bearing formations are generally located far beneath the earth's surface; nearby wells are generally in excess of a 2,000 feet deep, and range to more than a mile in depth (DOGGR 2013). There are no active natural gas wells within the City limits, although there are natural gas wells within the Planning Area (DOGGR 2010, DOGGR 2013). The City allows oil and gas wells only in the Industrial (I) and Entryway Overlay Zone (EOZ) zone districts, and only with a conditional use permit. Oil and gas wells also require a permit from DOGGR, which requires CEQA review and applies permit conditions to protect water quality, prevent blowouts, and ensure proper spacing of wells (DOGGR 2009).

For information regarding natural gas pipelines in Woodland, please refer to Chapter 5: Community Facilities and Services.

Paleontological Resources

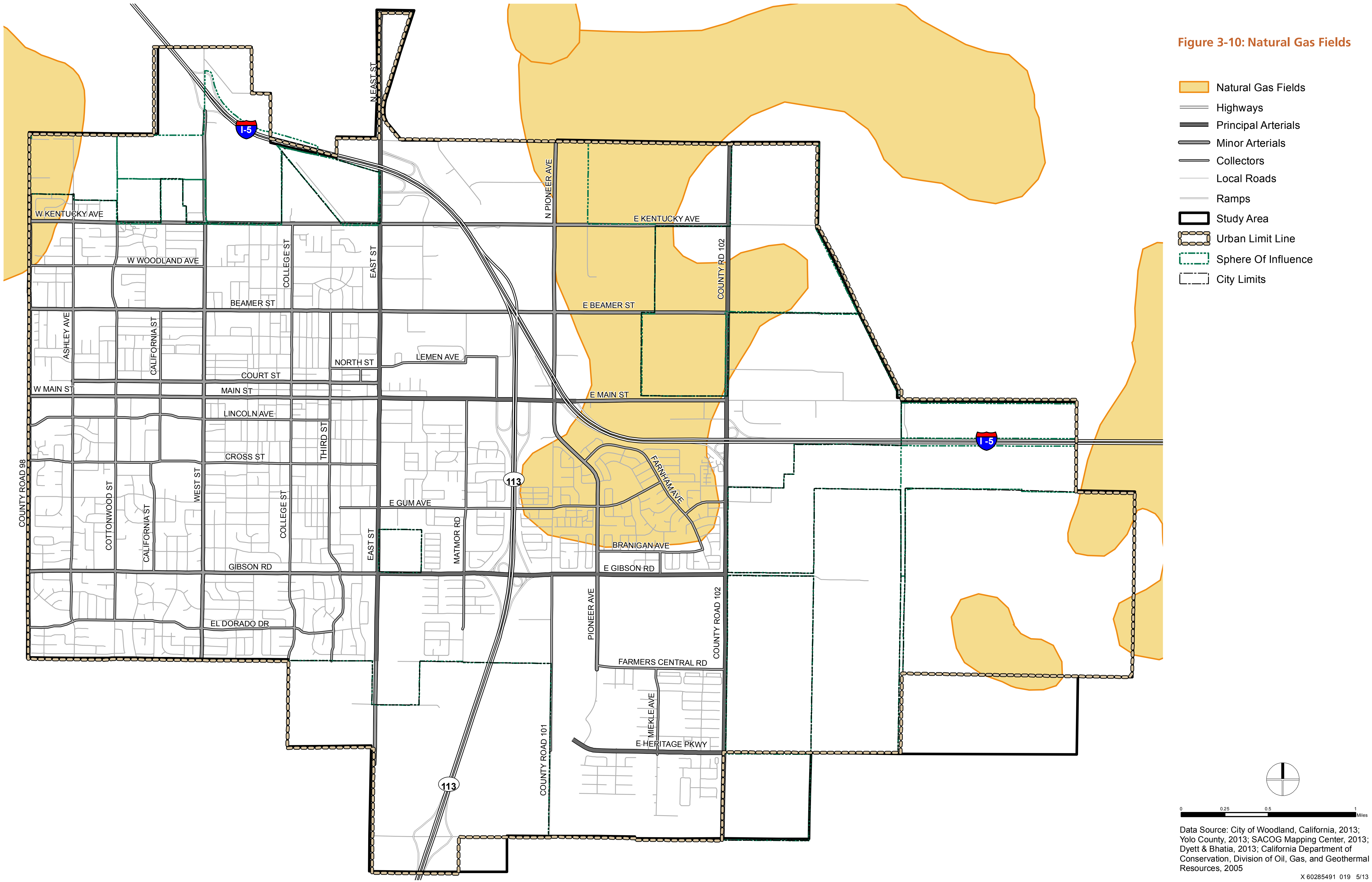
Paleontological Resource Inventory

Holocene Alluvium (Q, Qa, Qb)

By definition, to be considered a fossil, an object must be more than 11,000 years old. Therefore, Holocene alluvium in the Planning Area would not contain paleontological resources. These units account for the majority of the Planning Area and are not considered to be paleontologically sensitive.[10]

10 The Society of Vertebrate Paleontology (SVP) (1995) has established standard guidelines for paleontological resource assessments and surveys. The guidelines include three categories of sensitivity for paleontological resources: high, low, and undetermined. Areas where fossils have been found previously are considered to have high sensitivity and high potential to produce fossils. Areas that are not sedimentary in origin and that have not been known to produce fossils in the past typically are considered to have low sensitivity. Areas without any previous paleontological resource surveys or fossil finds are considered to be of undetermined sensitivity until surveys and mapping are performed to determine their sensitivity. After completion of reconnaissance surveys, observation of exposed cuts, and possibly subsurface testing, a qualified paleontologist can determine whether the area should be categorized as having high or low sensitivity. In keeping with the significance criteria of SVP (1995), all vertebrate fossils are generally categorized as being of potentially significant scientific value. A sensitive rock unit is one that is rated high for potential paleontological productivity and is known to have produced unique, scientifically important fossils. The potential paleontological sensitivity rating of a rock unit exposed in the Planning Area refers to the abundance and densities of fossil specimens, previously recorded fossil sites, or both in exposures of the unit in and near the Planning Area. Exposures of a specific rock unit in the Planning Area are most likely to yield fossil remains representing particular species in quantities or densities similar to those previously recorded from the unit in and near the Planning Area.

Figure 3-10: Natural Gas Fields



Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013; California Department of Conservation, Division of Oil, Gas, and Geothermal Resources, 2005

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Modesto and Riverbank Formations (Qr, Qm, Qmr)

The Modesto and Riverbank formations, which underlie portions of the existing developed city and undeveloped areas in the Planning Area, are paleontologically sensitive.

A records search of the UCMP paleontology collections database yielded information regarding a number of vertebrate fossil localities referable to either the Modesto or the Riverbank Formation. UCMP Localities V-91247, V-91204, and V-3402 west of the Woodland City limits yielded Rancholabrean-age horse and mammoth specimens from mixed sediments containing both the Modesto and Riverbank Formations. UCMP Localities V-5430, V-6911, and V-76199 west of Davis yielded Rancholabrean-age Harlan's ground sloth and saber-toothed cat specimens also from mixed sediments containing both the Modesto and the Riverbank Formations. UCMP Locality V-96015 between Davis and Woodland yielded eight specimens of Rancholabrean-age rodents and reptiles from sediments of the Modesto Formation. UCMP Localities V-6846, V-68141, V-74086, V-69129, V-6747, V-69129, and V-75126, all in Sacramento, yielded specimens of bison, camel, coyote, horse, Harlan's ground sloth, mammoth, packrat or woodrat, Sacramento blackfish, mole, garter snake, and gopher from sediments of the Riverbank Formation. In addition, fossil specimens recovered from excavation activities in the North Natomas area of Sacramento in the Riverbank Formation included specimens of Harlan's ground sloth, bison, coyote, horse, camel, squirrel, antelope or deer, mammoth, and several types of plants (Hilton, Dailey, and McDonald 2000).

Geology, Soils, and Paleontological Resources Opportunities and Challenges

Woodland and the Planning Area face generally minimal geologic and seismic hazards. Most hazards related to seismic shaking or ground failure, erosion, or soil conditions are addressed through required implementation of the CBC.

Natural Gas Resources

Aggregate resources in lower Cache Creek are outside the Planning Area. However, the Planning Area includes several natural gas fields, with natural gas wells in operation nearby. The City may wish to consider the continued availability of these natural gas resources, as well as safety and compatibility issues associated with active gas drilling.

Paleontological Resources

The Modesto and Riverbank formations have high sensitivity for paleontological resources, and vertebrate fossils have been found in these formations near the Planning Area. Where future earthmoving and excavation activities occur in these formations, the City may wish to consider requiring that a qualified paleontologist or archaeologist be retained to train construction personnel about the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction, and proper notification procedures should fossils be encountered. If excavations do encounter fossils, construction crews should halt earthmoving activities to allow a qualified paleontologist to evaluate the resource and prepare a recovery plan, if necessary.

3.7 Noise

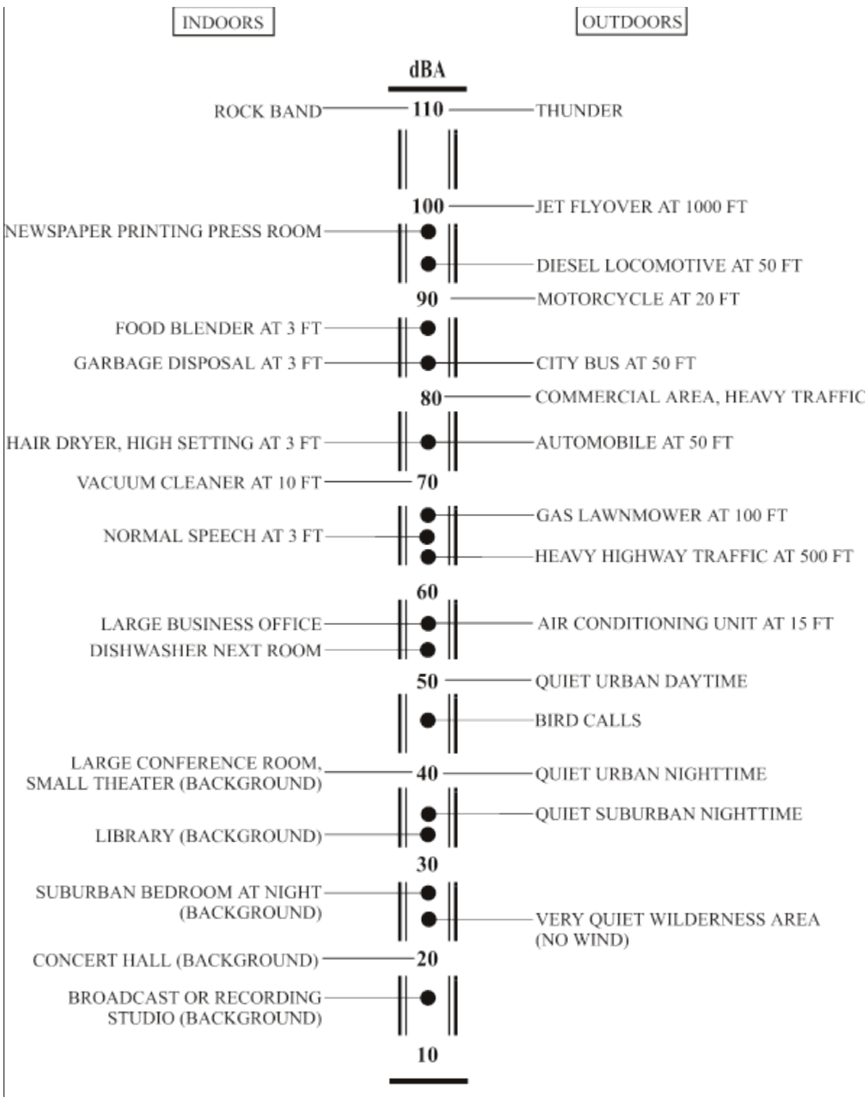
This section provides an assessment of the existing noise environment in Woodland, including estimates of existing noise levels from major noise sources; identification of existing land uses that are sensitive to noise; and a summary of conflicts between existing noise sources and noise-sensitive uses.

Some of the primary noise sources in Woodland include I-5, SR 113, and the California Northern Railroad (CFNR), which run north to south. The Sierra Northern Railway and a section of I-5 split the northeast and southeast quadrants of the city, running west to east.

Figure 3-11 illustrates sound levels associated with common sound sources. The perceived loudness of sounds is dependent on many factors, including sound pressure level and frequency content. However, within the usual range of environmental sound levels, perception of loudness is relatively predictable, and can be approximated by frequency filtering using the standardized A-weighting network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard descriptor for environmental noise assessment and noise levels reported in this report are A-weighted.

Prominent mobile noise sources in Woodland include freight rail activity and vehicle traffic on freeways and major roads.

Figure 3-11: Decibel Scale



Source: Caltrans TeNS, 2009.

Human Response to Changes in Noise Levels

Under controlled conditions in a laboratory setting, the trained, healthy human hearing is able to discern 1 dB changes in sound levels when exposed to steady, single-frequency ("pure-tone") signals in the mid-frequency range (1,000 Hz-8,000 Hz). In typical noisy environments, changes in noise level of 1-2 dB are generally not perceptible. However, it is widely accepted that people are able to begin to detect sound level changes of 3 dB in typical noisy environments. A 5-dB change is generally perceived as distinctly noticeable, and a 10-dB change is generally perceived as a doubling or halving of loudness. Therefore, a doubling of sound energy that would result in a 3-dB increase in sound pressure level is considered barely detectable under typical environmental conditions. Please refer to Table 3.7-1.

TABLE 3.7-1 APPROXIMATE RELATIONSHIP BETWEEN INCREASES IN ENVIRONMENTAL NOISE LEVEL AND HUMAN PERCEPTION

EXISTING LAND USE	ACRES
up to about 3	not perceptible
about 3	barely perceptible
about 6	distinctly noticeable
about 10	twice as loud
about 20	four times as loud

Source: Egan, 1988.

Noise-Sensitive Land Uses

Noise-sensitive land uses are those where people reside or where noise could adversely affect the use of the land. Noise-sensitive land uses typically include residences, hospitals and other healthcare facilities, schools, libraries, places of worship, theaters and other similar facilities, museums, lodging, and certain types of recreational uses. These uses are found throughout Woodland. It is important to note as well however, that hospitals rarely allow open windows and typical construction techniques, as well as standards in that industry ensure indoor environmental well-insulated from exteriors sources of noise. Schools and many recreational facilities are significant generators of noise, as well as having transient sensitivity to certain exterior noise sources.

Noise Descriptors

Noise in our daily environments fluctuates over time. Some fluctuations are minor, but some are substantial. Some noise levels occur in regular patterns, but others are random. Some noise levels fluctuate rapidly, but others slowly. Some noise levels vary widely, but others are relatively constant. Various noise descriptors have been developed to help describe noise exposure as it relates to time:

- **Equivalent Sound Level (L_{eq}):** The L_{eq} represents an average of the sound energy occurring over a specified time period. In effect, the L_{eq} is the steady-state sound level containing the same acoustical energy as the time-varying sound that actually occurs during the same period. The 1-hour, A-weighted equivalent sound level (L_{eq}[h]) is the energy average of A-weighted sound levels occurring during a 1-hour period, and is the basis for noise abatement criteria (NAC) used by the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA).
- **Percentile-Exceeded Sound Level (L_n):** The Ln represents the sound level exceeded "n" percentage of a specified period.[11]

11 For example, L_{10} is the sound level exceeded 10 percent of the time, and L_{90} is the sound level exceeded 90 percent of the time.

- **Maximum Sound Level (L_{max}):** The L_{max} is the highest instantaneous sound level measured during a specified period.
- **Day-Night Average Level (L_{dn}):** The L_{dn} (or DNL) is the energy-average of A-weighted sound levels occurring over a 24-hour period, with a 10 dB penalty applied to A-weighted sound levels occurring during nighttime hours (10 p.m.-7 a.m.).
- **Community Noise Equivalent Level (CNEL):** Similar to L_{dn}, CNEL is the energy-average of the A-weighted sound levels occurring over a 24-hour period, with a 10 dB penalty applied to A-weighted sound levels occurring during the nighttime hours (10 p.m.-7 a.m.), and a 5 dB penalty applied to the A-weighted sound levels occurring during evening hours (7 p.m.-10 p.m.). The CNEL is usually within 1 dB of the L_{dn}, and the two are basically interchangeable. As it is easier to compute and of more common use, the L_{dn} is used as the long-term noise measure in this study.

Local Guidelines

Noise is addressed in the City's Health and Safety Element, which provides guidance for new development to avoid adverse impacts through sound planning, as well as those that must be addressed through mitigation.

The existing General Plan prohibits the development of noise-sensitive land uses in areas where the maximum noise level attributable to non-transportation noise sources exceeds 70 dB during the day or 65 at night, or where the hourly noise level exceeds 50 during the day and 45 at night (see Table 3.7-2).

TABLE 3.7-2 EXISTING GENERAL PLAN NOISE STANDARDS, NEW PROJECTS AND NON-TRANSPORTATION SOURCES

NOISE LEVEL DESCRIPTOR	DAYTIME (7 AM TO 10 PM)	NIGHTTIME (10 PM TO 7 AM)
Hourly L_{eq}, dB	50	45
Maximum Level (Lmax), dB	70	65

Notes:

Each of the noise levels specified above shall be lowered by 5 dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).

For the purposes of compliance with the provisions of this section, the City defines transportation noise sources as traffic on public roadways, railroad line operations, and aircraft in flight. Control of noise from these sources is preempted by Federal and State regulations. Other noise sources are presumed to be subject to local regulations. Non-transportation noise sources may include industrial operations, outdoor recreation facilities, HVAC units, and loading docks.

Source: City of Woodland General Plan, Noise Element (2002).

Transportation Noise

The Element also addresses transportation noise by providing standards for noise-sensitive land uses in both outdoor gathering areas and interior spaces, with exceptions for the Southeast Area Specific Plan area, where a 5-dB increase in outdoor activity areas will be permitted (Table 3.7-3).

TABLE 3.7-3 EXISTING GENERAL PLAN TRANSPORTATION NOISE STANDARDS

	OUTDOOR ACTIVITY AREAS[1]	INTERIOR SPACES	
LAND USE	L_{dn}/CNEL, dB	L_{dn}/CNEL, dB	L_{eq}, dB[2]
Residential	60[3]	45	—
Transient Lodging	60[3]	45	—
Hospitals, Nursing Homes	60[3]	45	—
Theaters, Auditoriums, Music Halls	—	—	35
Churches, Meeting Halls	60[3]	—	40
Office Buildings	—	—	45
Schools, Libraries, Museums	—	—	45
Playgrounds, Neighborhood Parks	70	—	—

Notes:

1 Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use. For residential uses with front yards facing the identified noise source, an exterior noise level criterion of 65 dB L_{dn} shall be applied at the building facade, in addition to a 60 dB L_{dn} criterion at the outdoor activity area.

2 As determined for a typical worst-case hour during periods of use.

3 Where it is not possible to re duce noise in outdoor activity areas to 60 dB L_{dn}/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

Source: City of Woodland General Plan, Noise Element (2002).

The existing General Plan also provides criteria for roadway improvement projects (City of Woodland 2002):

- Where existing traffic noise levels are less than 60 dB Ldn at the outdoor activity areas of noise-sensitive uses, a +5 dB Ldn increase in noise levels due to a roadway improvement project will be considered significant; and
- Where existing traffic noise levels range between 60 and 65 dB Ldn at the outdoor activity areas of noise-sensitive uses, a +3 dB Ldn increase in noise levels due to a roadway improvement project will be considered significant; and

- Where existing traffic noise levels are greater than 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a + 1.5 dB L_{dn} increase in noise levels due to a roadway improvement project will be considered significant.

Approach to Mitigation

Approaches to noise mitigation in urban environments have evolved since the development of the current General Plan. There is increasingly recognition that noise is generated at higher levels in active and dense urban environments, and that unrealistic expectations and/or regulation of noise in those environments can preclude attainment of desired urban form.

The current General Plan establishes the City's preference for land use planning, site design, and other proactive measures to reduce adverse impacts related to noise over barriers. As noted in the General Plan (City of Woodland 2002):

"Where mitigation measures are required to achieve the standards of Tables 3-2 and 3-3, the emphasis in such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered as a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project."

Agricultural Protections

The City has also indicated support for ongoing agricultural operations that otherwise could be adversely affected by noise-sensitive land uses abutting the unincorporated area. Policy 8.H.3 indicates that the "City shall support the County's right-to-farm ordinance, especially as it relates to noise emanating from the agricultural operations adjacent to urban uses" (City of Woodland 2002).

Environmental Setting

Noise-Sensitive Land Uses

Noise-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Places where people live, sleep, recreate, worship, and study are generally considered to be sensitive to noise because intrusive sound can be disruptive to these activities. Noise-sensitive land uses typically include residences, hospitals and other healthcare facilities, schools, libraries, places of worship, theaters and other similar facilities, museums, lodging, and certain types of recreational uses. Figure 3-12 shows general noise sources and noise-sensitive uses within Woodland.

Residences and Non-Residential Uses

Residential neighborhoods are located throughout Woodland, while large-scale commercial and industrial uses are somewhat concentrated in the north-eastern portion of the City, in an area that is largely separated from most residences. Other commercial areas are along Main Street, East Street, and West Street, with other commercial uses interspersed throughout the community.

Noise conflicts can occur when larger-scale commercial and industrial uses are located near or adjacent to residential neighborhoods, but recreational and other non-residential land uses can also create conflicts. Whether or not the juxtaposition of different land uses creates a noise conflict depends on the design, scale, character, and operation of both the noise-generating use and the noise-sensitive use.

Healthcare facilities, public parks, wildlife areas, and other recreation areas, including campgrounds and picnic areas are also identified in Figure 3-12.

Ambient Noise Level Measurements

A community noise survey was conducted on March 21-25, 2013 to document noise exposure in areas with noise-sensitive land uses.[12] Noise measurement sites are shown in Figure 3-13. Short-term ambient noise level measurements were conducted at 11 sites.[13] The measurement duration was 15-minutes, and at three different times of the 24-hour day in order to best estimate the 24-hour, day-night average noise level (L_{dn}). Three continuous 96-hour ambient noise level measurements were completed to record day-night statistical noise level trends. Noise measurement sites, measured noise levels, and estimated L_{dn} levels for each site are summarized in Table 3.7-4.

The community noise survey results indicate that typical noise levels in noise-sensitive areas range from 51 dB to 69 dB L_{dn}. Traffic on local roadways and I-5, distant industrial activities, and neighborhood activities are the controlling factors for background noise levels in the majority of the Planning Area.

The Leq values presented in Table 3.7-4 represent the average measured noise levels during the sample periods (15 minutes). The L_{eq} values were the basis of the estimated L_{dn} values. L_{max} values show the maximum noise levels observed during the samples. The values in parentheses show sound levels measured in 1995 for the previous background noise study.

12 For the purposes of this analysis, noise-sensitive land uses include residential areas, parks, and schools. Noise measurement sites were selected to be representative of typical residential conditions. The community noise survey was conducted at three of the same sites which were previously selected (in 1995) to support the 1996 General Plan, in order to understand any changes over time.

13 Noise level measurements were completed using Larson Davis Laboratories (LDL) Model 820 and 824 precision integrating sound level meters. The meters were calibrated prior to the measurements using an LDL Model (CAL 200) acoustical calibrator. The equipment used complies with all pertinent requirements of the American National Standards Institute for Class 1 sound level meters (ANSI S1.4).

Figure 3-12: Noise Sources and Receivers

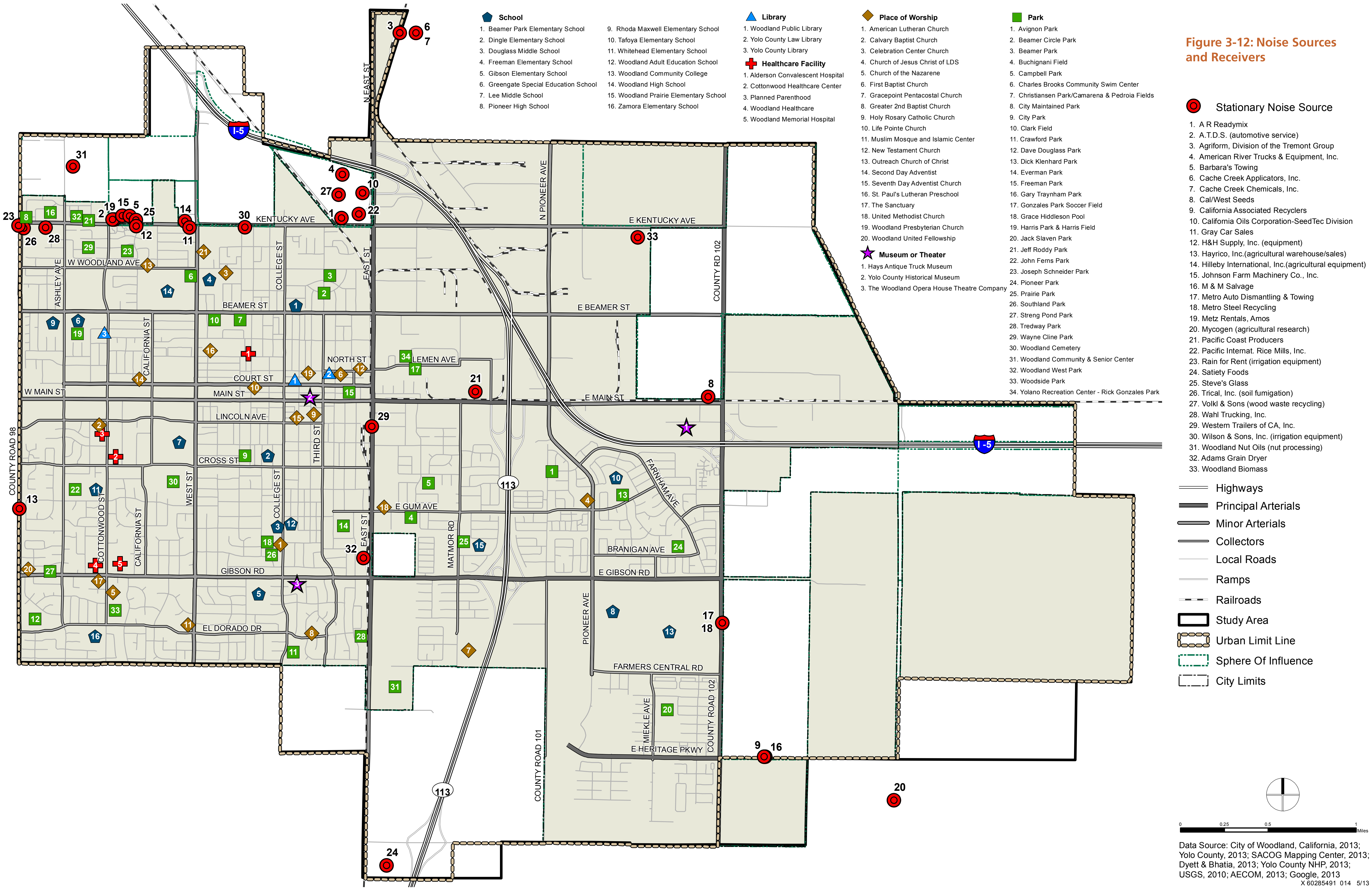


TABLE 3.7-4 SUMMARY OF SHORT-TERM AMBIENT NOISE LEVEL SURVEY RESULTS

SITE	LOCATION	TIME PERIOD	MEASURED SOUND LEVEL, DB 2013 (1995)		
			L_{eq}	L_{max}	L_{dn}
ST-01	Campbell Park	L_{d1}	57 (49)	75 (65)	56 (53)
		L_{d2}	56 (52)	73 (64)	
		L_n	45 (46)	63 (63)	
ST-02	Tredway Park	L_{d1}	54	77	58
		L_{d2}	54	66	
		L_n	51	76	
ST-03	Woodside Park	L_{d1}	55 (49)	68 (62)	63 (55)
		L_{d2}	58 (53)	70 (64)	
		L_n	57 (48)	77 (62)	
ST-04	133 E Heritage Pkwy (Spring Lake Area)	L_{d1}	52	74	51
		L_{d2}	51	71	
		L_n	41	63	
ST-05	Northwest Corner of Kentucky Ave & Walnut St	L_{d1}	67	82	69
		L_{d2}	66	77	
		L_n	61	79	
ST-06	Private Ranch, South of I-5, East of Hwy 102	L_{d1}	52	73	54
		L_{d2}	49	61	
		L_n	46	69	
ST-07	Beamer Park	L_{d1}	51 (49)	64 (61)	58 (54)
		L_{d2}	55 (50)	75 (59)	
		L_n	52 (48)	74 (59)	
ST-08	Pool, Americas Best Value Inn & Suites	L_{d1}	58	68	61
		L_{d2}	61	73	
		L_n	53	75	
ST-09	Ramon S Tafoya Elementary School	L_{d1}	49	61	56
		L_{d2}	50	63	
		L_n	50	72	
ST-10	Southwest Corner of Co Hwy E8 (102) & Kentucky Ave	L_{d1}	67	82	68
		L_{d2}	66	79	
		L_n	59	82	
ST-11	Downtown, Southeast corner of Main St & 5th St	L_{d1}	65	76	66
		L_{d2}	64	72	
		L_n	58	73	

Notes:
L_d = Average measured sound level during daytime hours (7:00 am – 10:00 pm)
L_n = Average measured sound level during nighttime hours (10:00 pm – 7:00 am)

As shown in Table 3.7-5, ambient noise levels have increased by approximately 3 to 8 dB (L_{dn}) since 1995. The continuous noise level measurement data, summarized in Table 3.7 5, shows that ambient noise levels at the measurement sites ranged from 55 to 63 dB L_{dn}. These results are consistent with the estimated L_{dn} values presented in Table 3.7-4.

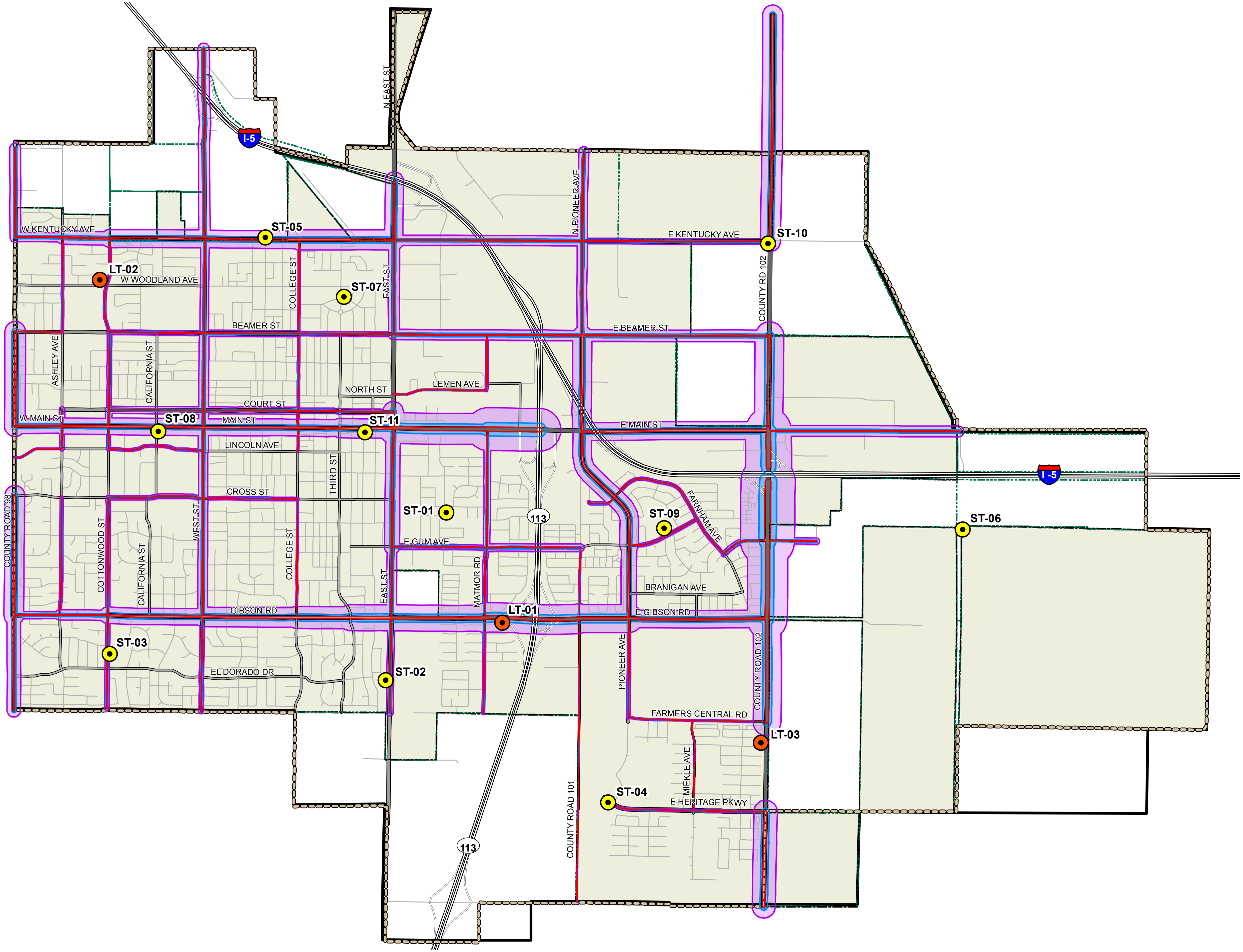
TABLE 3.7-5 SUMMARY OF LONG-TERM AMBIENT NOISE LEVEL SURVEY RESULTS

SITE	LOCATION	MEASURED SOUND LEVEL, DB MARCH (21 - 25), 2013				
		DAY (7A.M. - 10P.M.)		NIGHT (10P.M. - 7A.M)		
		Avg. $_{Leq}$ (Range)	Avg. L_{max} (Range)	Avg. L_{eq} (Range)	Avg. L_{max} (Range)	EST. L_{DN}
LT - 01	1435 Roosevelt Dr	62 (57 - 66)	78 (70 - 84)	54 (51 - 57)	68 (65 - 73)	63
LT - 02	213 Glacier Pl	54 (42 - 59)	73 (59 - 84)	47 (39 - 50)	57 (52 - 65)	55
LT - 03	2795 Ortiz Ave	54 (51 - 56)	69 (62 - 73)	49 (47 - 51)	64 (61 - 68)	56

Existing Sources of Noise

Major transportation routes are dominant sources of noise in the city. These include traffic on I-5, SR 113, and other local arterials and streets; aircraft overflights from Sacramento International Airport, Yolo County Airport, and Watts-Woodland Airport; and train operations on the California Northern Railway and Sierra Northern Railway. Stationary sources in the city include construction sites, farming activities, and commercial and industrial facilities. These noise sources are discussed individually below.

Figure 3-13A: City Road Noise Measurement Sites and Contours



Noise Contours

- 70 db Ldn
- 65 db Ldn
- 60 db Ldn

Noise Monitoring Locations

- Long-term
- Short-term
- Highways
- Principal Arterials
- Minor Arterials
- Collectors
- Local Roads
- Ramps
- Study Area
- Urban Limit Line
- Sphere Of Influence
- City Limits

0 0.25 0.5 1 Miles

Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013; AECOM, 2013

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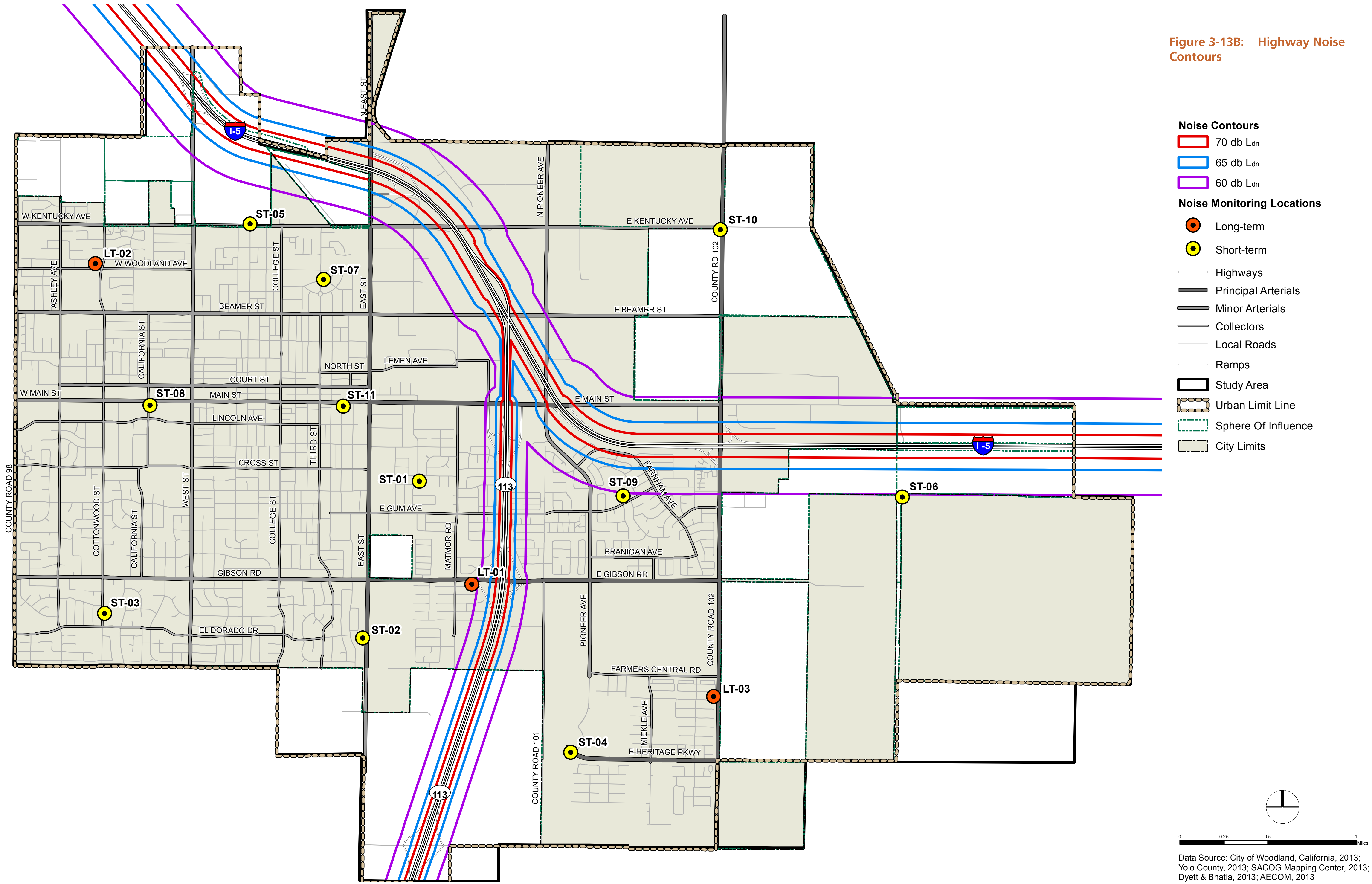
Figure 3-13B: Highway Noise Contours



Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013; AECOM, 2013

Traffic

Traffic operations data was used to estimate existing traffic noise levels at a distance of 50 feet from the centerline of the studied roadways.[14] Additionally, the 60 dB L_{dn}, 65 dB L_{dn}, and 70 dB L_{dn} traffic noise contour distances were determined.[15]

Traffic noise contours prepared using the FHWA Model for I-5, SR 113, major and minor arterials, and collector roadway segments are shown in Figures 3-13A and 3-13B. The contour distances may be used to estimate the distance to the 60 dB L_{dn} traffic noise contour for existing Average Daily Traffic Volume (ADT) volumes and the posted speed limit.[16]

Railroads

Woodland has two active rail lines: The California Northern and the Sierra Northern Railway (Yolo County General Plan, 2009). Following is additional information on each rail line.

- **California Northern Railway.** The California Northern Railway is a freight line that runs through Woodland and Davis, and along I-5 past the City of Corning. The freight line schedule varies depending on agricultural/seasonal demands. The rail line carries an average of two trains daily, using between one and 50 rail cars and one or two locomotives, traveling at an average speed of 15 miles per hour. The estimated railroad noise level at 100 feet from the railway centerline is approximately 45 dB L_{dn}. The estimated distances to the 65 and 60 dB L_{dn} contours are 11 and 22 feet from the rail line, respectively.

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14 Existing noise levels in the City have been characterized thru traffic noise modeling. The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108), existing traffic volumes, and posted traffic speed, day/night traffic distribution, and assumption regarding the traffic fleet mix (i.e., percentage of automobiles, medium trucks, and heavy trucks) were used to assess existing traffic noise exposure for both highways and major roadways in the City of Woodland General Plan Planning Area. Traffic volumes and truck percentages for I-5 and SR 113 were obtained from Caltrans 2011 Traffic counts, and are Annual Average Daily Traffic (AADT) values. The FHWA Model is the standard model recommended by the FHWA and is the analytical method presently favored for traffic noise prediction by most state and local agencies, including Caltrans. The current version of the Model is based upon the CALVENO noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver and the acoustical characteristics of the site. The FHWA Model predicts day-night average noise levels (L_{dn}), and hourly L_{eq} values for free-flowing traffic conditions, and is generally considered to be accurate within 1.5 dB of the measured condition. Traffic data representing average daily traffic volumes for existing conditions were obtained from Caltrans and Fehr & Peers Associates. Day/night traffic distribution for all studied roadways was based upon the day-night average daily traffic volumes. Posted traffic speeds, and vehicle mixes provided by Caltrans (for highways) and observed during the Model calibration noise level measurements, were assumed for the traffic noise modeling effort.

15 In some cases, the actual distances to noise level contours may vary from the distances predicted by the FHWA Model. Factors such as roadway curvature, roadway grade, shielding from local topography or structures, roadway elevations, or elevation of receivers may affect actual sound propagation. Therefore, the distances reported in Table 3.7-7 are estimates of noise exposure along roadways in the City of Woodland.

16 The L_{dn} contours shown in Figure 3-13 and Table 3.7-7 are only indicators of potential noise conflicts, requiring more detailed analysis to determine traffic noise levels at any given location.

- **Sacramento River Train.** The Sacramento River Train is operated by the Sierra Northern Railroad Company as an entertainment passenger train that runs from Woodland to West Sacramento. According to Sierra Northern Railroad personnel, there is typically one River Train round trip per day. The trains typically have between two and 25 rail cars with one or two locomotives, traveling at an average speed estimated at 15 miles per hour. Assuming two daily train passes, each with 25 cars and two locomotives traveling at 15 miles per hour, the estimated railroad noise levels at 100 feet from the railroad centerline is approximately 44 dB L_{dn}. The estimated distances to the 65 and 60 dB L_{dn} contours are 10 and 20 feet from the rail line, respectively.

Train noise levels and contours distances were calculated following Federal Transportation Administration guidelines (FTA, 2006). Noise is associated with the engines and wheel/track interaction, road crossing alarm bells, and horn blasts. The use of the railroad warning horns at the roadway crossings results in brief periods of elevated noise levels near the tracks. The Federal Railroad Administration regulates locomotive horns under Code of Federal Regulations Parts 222 and 229. CFR Part 222 states that locomotive horns must be sounded by the lead locomotive of any passenger or freight train traveling over 15 miles per hour within 15–20 seconds of crossing any public roadway. Any train traveling over 60 mph may not sound their horn until it is within ¼-mile of the approaching crossing. Trains are not required to sound their horn if there is no at-grade crossing.[17] CFR Part 229 states that lead locomotive horns shall be equipped with a horn that produces a minimum of 96 dBA and a maximum of 110 dBA at 100 feet. Should regional efforts to relocate the California Northern Railway line be successful, noise issues related to this track would be alleviated.

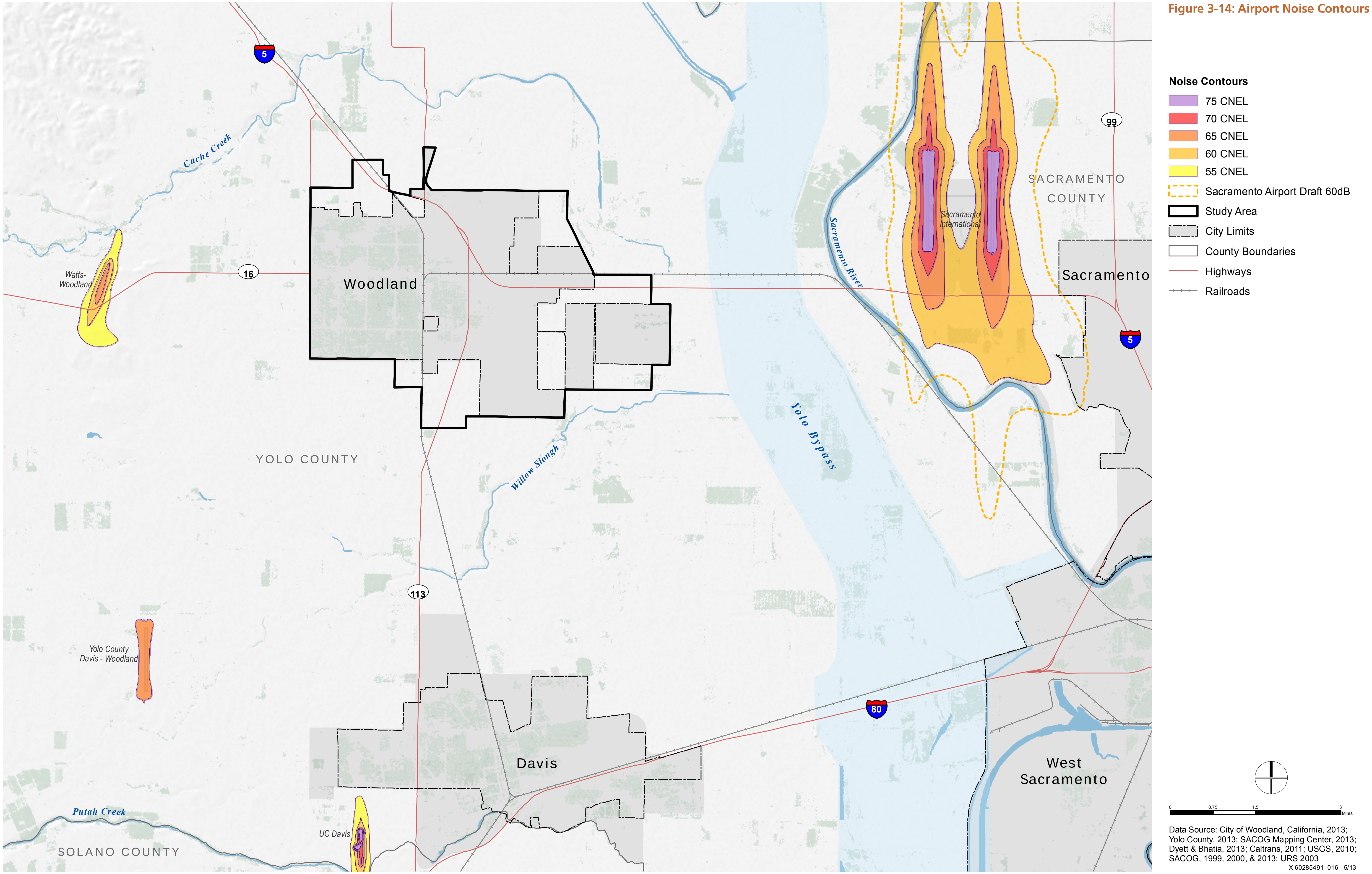
Aircraft

Aircraft operations in the vicinity of an airport can be a significant source of noise. As identified in Figure 3-10 above, the nearest airport is Watts Woodland Airport, which is located 3.7 miles from the western City limits. The Sacramento International Airport is located approximately five miles northeast and Yolo County Airport approximately five miles southwest of of the City limits. Noise contours for the Sacramento International Airport, Watts-Woodland airport, and Yolo County Airport are depicted in Figure 3-14. Areas within the City's ULL are located outside of the 60 dB CNEL contours.[18]

17 Code of Federal Regulations. 2006 (August 17). 49 CFR Parts 222 and 229 Use of Locomotive Horns at Highway-Rail Grade Crossings; Final Rule. Washington, D.C.

18 Contours from two departure tracks associated with runways 16R and 16L come within close proximity of the northeastern corner of the ULL.

Figure 3-14: Airport Noise Contours



Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013; Caltrans, 2011; USGS, 2010; SACOG, 1999, 2000, & 2013; URS 2003

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Other Fixed Noise Sources

Commercial and industrial facilities are also a source of noise within Woodland. Mechanical equipment and trucking are the primary sources of noise associated with these facilities. Industrial processes can generate noise, even when the best available noise control technology is applied.[19]

From a land use planning perspective, fixed-source noise control issues focus on (1) limiting the introduction of new noise-producing uses in noise-sensitive areas, and (2) limiting encroachment of noise-sensitive uses upon existing noise-producing facilities. The first goal can be achieved by applying noise level performance standards to proposed new noise-producing uses. The second goal can be met by requiring that new noise-sensitive uses in near proximity to noise-producing facilities include mitigation measures to ensure compliance with noise performance standards.

Fixed noise sources which are typically of concern include, but are not limited to, the following:

- HVAC Systems
- Pump Stations
- Emergency Generators
- Steam Valves
- Generators
- Air Compressors
- Conveyor Systems
- Pile Drivers
- Drill Rigs
- Welders
- Outdoor Speakers
- Cooling Towers/Evaporative Condensers
- Lift Stations
- Boilers
- Steam Turbines
- Fans
- Heavy Equipment

19 Noise exposure within industrial facilities are controlled by federal and State employee health and safety regulations (OSHA and Cal-OSHA), but exterior noise levels can be guided with local standards. These noise sources can be continuous and may contain tonal components that may be annoying to individuals who live nearby. In addition, noise generation from fixed noise sources may vary based upon climatic conditions, time of day, and existing ambient noise levels.

- Transformers
- Grinders
- Gas or Diesel Motors
- Cutting Equipment
- Blowers

These noise sources may be found in all kinds of industrial facilities, trucking operations, tire shops, auto maintenance shops, metal fabricating shops, shopping centers, drive-up windows, car washes, loading docks, public works projects, batch plants, bottling and canning plants, recycling centers, electric generating stations, race tracks, landfills, sand and gravel operations, and athletic fields.

Numerous industrial facilities are dispersed throughout the Planning Area. The locations of these facilities are also shown in Figure 3-12, above.

Farming Activities

The primary sources of noise related to farming activity include tractors, harvesters, and crop-dusting aircraft. Noise is a concern for growing communities when sensitive uses are proposed in areas with ongoing agricultural activities and complaints from new residents create pressure to convert agricultural properties to urban use. There are various strategies for addressing this potential conflict, including but not limited to site and building orientation and design, agricultural buffers, providing notice to prospective residents regarding ongoing agricultural activities.

Typical noise levels from tractors, as measured at a distance of 50 feet, range from about 75 dB to 95 dB with an average of about 84 dB (Toth 1979). These noise levels should be reasonably representative of noise levels from other wheeled and tracked farm equipment. Using a source level of 84 dB at 50 feet, and assuming nominal point-source attenuation of 6 dB per doubling of distance, the distance to noise level contours are as shown in Table 3.7-6. Most noise-generating activities on agricultural lands are seasonal and therefore a noise policy approach that focuses on average daily noise may not be appropriate for this type of land use/noise conflict. To address the special case of residential development and other sensitive uses being introduced into agricultural areas, the City has established that ongoing agricultural uses shall not be considered a nuisance, for the purposes of Code enforcement (see Chapter 14D of the City's Municipal Code).

TABLE 3.7-6 NOISE EXPOSURE FROM OPERATION OF TYPICAL FARMING EQUIPMENT (TRACTOR)

DISTANCE FROM SOURCE (FEET)	CALCULATED NOISE LEVEL (DB)
50	84
100	78
200	72
400	66
800	60
1,600	54

Other Noise Sources

Other miscellaneous and intermittent noise sources include those associated with residential uses (e.g., children at play, barking dogs); sources associated with property maintenance (e.g., lawn mowers, edgers, blowers, pool pumps, power tools, etc.); safety, warning and alarm devices, including house and car alarms, and other warning devices; operation of schools typically consisting of classes and other school-sponsored activities, such as school bands and school athletic events; and emergency response.

Noise Opportunities and Challenges

Noise policies should consider current conditions, appropriate noise levels in different land use environments, and the balancing of noise issues against other community values including environmental, economic, and social objectives.

The updated Noise Element of the General Plan will be designed to provide sufficient information concerning the community noise environment so that noise may be effectively considered in the land use planning process. Part of the Noise Element will also involve developing strategies for abating excessive noise exposure through intelligent planning and site design, reducing or eliminating the need for sound walls. The City's existing General Plan already has established that noise barriers should be used only as a last resort. If promoting infill development is a priority in certain areas, the City may wish to relax noise standards, as appropriate, such as in the Downtown, to avoid internal inconsistencies in the General Plan. The noise standards contained in the current General Plan are appropriate to low density, suburban environments. With the 2035 General Plan Update, the City may wish to change noise policies to better balance goals regarding the community's noise environment with other environmental goals, economic and social goals, and goals for fiscal sustainability and urban development, including redevelopment and revitalization.

Some of the potential key issues and opportunities for the 2035 General Plan are outlined below.

Roadways

As the main roadways of the City continue to carry more traffic, the surrounding areas may be affected by additional noise. I-5 has 60 dB L_{dn} contours that extend up to 9,767 feet and are expected to increase in the future. SR 113 will continue to carry more traffic in the future, which may affect land uses in the surrounding areas. This highway has 60 dB L_{dn} contours that extend roughly 1,023 to 3,370 feet today. Other major roadways will be primary noise sources in the future, as well.

The 2035 General Plan should define criteria for critical roadway segments (e.g., I-5 in northern portion of the city, and SR 113 in the center of the City from north to south) and provide policies to ensure that strategies are used to ensure an appropriate noise environment along these corridors, considering other planning objectives. As noted elsewhere, in order to avoid community division that can result from installation of noise barriers and in order to remove constraints to infill development, it may be necessary to relax the City's existing noise policies in areas targeted for reinvestment, such as downtown along major corridors.

Key questions that will be addressed in the update include some of the following: What steps might City of Woodland take to anticipate potential issues related to increased traffic noise? How can the City's approach to land use and transportation planning reduce traffic noise exposure for existing and future residents? How should the City balance objectives for environmental noise with objectives for economic development and redevelopment? If the 2035 General Plan identifies certain areas where infill development will be encouraged, should the Plan relax noise standards in these same areas, in recognition of the relatively more "urban" environment in these places, and to ensure that stringent noise requirements do not create a barrier to infill development?

Railways

Currently, railroad operations are a contributor to noise in the City that may become an issue if noise sensitive land uses encroach on railroad corridors. The 2035 General Plan will define the existing railway noise contours and address land use change near the railroad corridors.

How should the City regulate land use along railroad corridors to promote an acceptable noise environment? If targeted reinvestment areas are located near the City's railroad lines and could involve noise-sensitive land uses, should noise standards be relaxed in order to create the right balance between objectives for environmental noise objectives for reinvestment, economic development, and other issues? Rather than a fixed noise standard, perhaps the City should consider use of feasible measures such as strategic location and shielding of outdoor activity areas (such as yards, common play areas, and other areas intended for gathering and recreation etc.) to reduce noise exposure; use of acoustical glazing (thicker glass or increased air space between panes) in frames with low air infiltration rates; using fixed (nonmovable) acoustical glazing; increasing wall mass (using stucco or brick in lieu of wood siding); isolating wall members by the use of double or staggered stud walls, mounting interior walls on resilient channels, reducing door area; using solid-core doors; acoustically sealing door perimeters with suitable gaskets, roof treatments; and/or other feasible and effective means? Or, if infill development already has substantial challenges related to development and land costs, should the City set aside such potential mitigation techniques, since they may add to the cost of development?

Stationary Sources

Currently, there are no known planning concerns associated with stationary noise sources and surrounding noise-sensitive land uses within the City of Woodland. However, depending on how future urban development is planned, these issues could arise. The 2035 General Plan could direct urban development into areas not affected by stationary noise sources. The 2035 General Plan could have more specific standards for various land uses and noise sources that would control and contain future sources and sensitive receptors.

What steps should the City of Woodland take to anticipate potential issues land use compatibility with respect to stationary noise sources?

Airports

Watts Woodland's 60 dB CNEL noise contour does not reach any lands within Woodland's Urban Limit Line. Similarly, Sacramento International Airport's 60 dB CNEL noise contour does not include any lands within Woodland's Urban Limit Line.

Would flights increase in the future here? How should the City guide land use directly adjacent to the airport and in the surrounding vicinity?

Construction Noise

The City may wish to consider adding a clearly defined construction policy to alleviate unacceptable short-term noise exposure for nearby noise-sensitive receptors. There are no policies or standards in the current General Plan that address construction noise separately from operational noise associated with transportation or stationary sources. In order to reduce barriers to development in the future, the City may wish to consider clearly defining construction noise standards and mitigation approaches. The City may wish to consider establishing in the General Plan and General Plan EIR that the standard mitigation approach, from the City's perspective, addresses short-term, construction-related noise impacts. This could help to streamline environmental review for future projects that are consistent with the General Plan (CEQA Guidelines Section 15183). Currently, there is no such integrated planning and environmental analytical approach. The City does have Construction Noise Guidelines limiting construction to the hours between 7:00 a.m. and 6:00 p.m. on weekdays and between 9:00 a.m. and 6:00 p.m. on Sundays, but there is no clearly outlined approach relative to CEQA for proposed new development.

Other Noise Sources

Noise associated with ongoing operation of uses, such as children at play, barking dogs, and landscape maintenance is less related to the General Plan and more related to the City's Noise Ordinance (Section 15-26 of the Municipal Code). The Noise Ordinance addresses disruptive noise associated with motor vehicles, yelling and shouting, pile drivers and other noisy equipment, musical instruments, and animals. Permits are required for amplified sound and noise-sensitive hours are established for enforcement. Should the City reconsider the approach as outlined in the Noise Ordinance?

3.8 Greenhouse Gases

"Climate" is the accumulation of daily and seasonal weather events over a long period of time, whereas "weather" is the condition of the atmosphere at any particular time and place (Ahrens 2003:16). Woodland is in a climatic zone characterized as dry-summer subtropical or Mediterranean (abbreviated Cs) on the Köppen climate classification system. The Köppen system's classifications are based primarily on annual and monthly averages of temperature and precipitation.

Attributing Climate Change

GHGs play a critical role in determining the earth's surface temperature. When high-frequency solar radiation (such as visible light) enters the earth's atmosphere from space (the sun), a portion of the radiation is absorbed by the earth's surface and a smaller portion is reflected back toward space. However, the reradiated energy by the earth is not the same high-frequency solar radiation that was received. It is lower frequency infrared radiation (thermal energy). When infrared radiation comes into contact with GHGs in the atmosphere, a portion of that thermal energy can be absorbed by the GHG molecule, re-radiated back toward the earth's surface, or both. In either case, heat is "trapped" within the earth's atmosphere. This phenomenon, known as the "greenhouse effect," is responsible for maintaining a habitable climate on Earth.

Anthropogenic (human-caused) emissions of these GHGs have led to atmospheric levels of GHGs exceeding natural ambient concentrations, thus intensifying the greenhouse effect. Such emissions have led to a trend of unnatural warming of the earth's atmosphere and oceans, with corresponding effects on global circulation patterns and climate (IPCC 2007:665). Carbon dioxide emissions associated with fossil fuel combustion for energy-related activities are the primary contributors to human-induced climate change (EPA 2012).

Burning fossil fuels accounts for a large percentage of greenhouse gas emissions in areas such as Woodland.

Prominent GHGs contributing to the earth's greenhouse effect are carbon dioxide (CO_2), methane, nitrous oxide, and high–global warming potential (high-GWP) GHGs. High-GWP gases are typically emitted at lower rates than CO_2, methane, and nitrous oxide, but these gases could substantially contribute to climate change since they are comparatively more effective at absorbing infrared radiation.

The concept of CO_2-equivalency (CO_2e) is used to account for the different potentials of GHGs to absorb infrared radiation. This potential, known as the global warming potential (GWP) of a GHG, depends on the lifetime or persistence of the gas molecule in the atmosphere, its ability to absorb/trap infrared radiation, and the spectrum of light energy (range of wavelengths and frequencies) absorbed by the gas molecule. Every GHG's GWP is measured relative to CO_2, which has a GWP of 1. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one year to several thousand years). GHGs persist in the atmosphere for a long enough time to be dispersed around the globe, continually contributing to the greenhouse effect. The exact lifetime of any particular GHG molecule depends on multiple variables and cannot be pinpointed, but more CO_2 is currently emitted into the atmosphere than is sequestered.

Carbon dioxide sinks or reservoirs include vegetation and the ocean, which respectively absorb CO_2 through photosynthesis and dissolution, two of the most common processes of CO_2 sequestration. Of the total annual human-caused CO_2 emissions, approximately 54 percent is sequestered through ocean uptake, Northern Hemisphere forest regrowth, and other terrestrial sinks within a year, and the remaining 46 percent remains stored in the atmosphere (Seinfeld and Pandis 1998:1091).

Greenhouse Gas Emissions

Emissions of CO_2 are byproducts of fossil fuel combustion. Emissions of methane, a highly potent GHG, result from off-gassing—the release of chemicals from nonmetallic substances under ambient or greater pressure conditions. These off-gassing processes typically occur during the decomposition of materials under anaerobic conditions (lack of oxygen) found in natural resources (e.g., wetlands), agricultural practices, and landfills. Nitrous oxide emissions are generated by agricultural practices and soil management activities.

GHGs emissions contributing to global climate change are attributable, in large part, to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural emissions sectors (ARB 2011). In California, the transportation sector is the largest emitter of GHGs (38 percent of statewide emissions in 2010), followed by electricity generation (ARB 2013). In Woodland, as is typical for cities in California, transportation emissions are an even more dominant part of the inventory, representing approximately 68 percent of communitywide emissions (UC Davis 2012). Yolo County's total vehicle miles traveled (VMT) were allocated using the City's proportion of the total County's population (Woodland accounts for approximately 28 percent of the County's total population). A portion of the transportation-related GHG emissions are from vehicles traveling through the City along Interstate 5 and Highway 113 (i.e., pass-through trips), which are not directly under the operational control of the City. Future GHG inventories that use travel demand analysis of VMT focused on land uses within Woodland (rather than a "top down" approach based on a proportion of countywide emissions) will allow the City to understand and develop reduction measures keyed to local transportation characteristics.

Land use decisions affect the rate at which GHGs are emitted from several sectors (e.g., transportation, energy consumption, water, and waste). In particular, land use patterns and transportation facilities that reduce dependence on automobile travel and reduce the length of vehicle trips have major implications for improvements to air quality and reduction of GHG emissions.

In addition, activities associated with the long-term operation of development projects can directly or indirectly generate GHG emissions. Direct emissions occur at the site of consumption. For example, using natural gas for space or water heating generates direct GHG emissions because the natural gas is combusted at the site where the heat is used. Using electricity generates indirect GHG emissions because although the consumer may use the electricity at his or her home, the generation of that electricity and subsequent emissions of GHGs (if fossil fuels are used for generation) are likely occurring off-site. The following sections describe the major GHG emission sectors and their associated emissions at the state and local levels.

Greenhouse Gas Emission Sectors

The Assembly Bill (AB) 32 Scoping Plan (the Scoping Plan) identifies the main GHG emission sectors that account for the majority of GHG emissions generated within California and within Woodland. A brief description of each of the GHG emission sectors is provided below.

- **Transportation:** This sector represents the GHG emissions associated with on-road motor vehicles, recreational vehicles, aviation, ships, and rail.
- **Electricity:** This sector represents the GHG emissions associated with use and production of electrical energy. Approximately 25 percent of electricity consumed in California is imported, thus, GHG emissions associated

with out-of-state electricity production are also included as part of this sector.

- **Industry:** This sector represents the GHG emissions associated with industrial land uses (e.g., manufacturing plants and refineries). Industrial sources are predominately comprised of stationary sources (e.g., boilers and engines) associated with process emissions.
- **Commercial and Residential:** Commercial and residential GHG emission sources include area sources such as landscape maintenance equipment, fireplaces, and natural gas consumption for space and water heating.
- **Agriculture:** This sector represents the GHG emissions associated with agricultural processes. Agricultural sources of GHG emissions include off-road farm equipment, irrigation pumps, residue burning, livestock, and fertilizer volatilization.
- **High Global Warming Potential:** This sector represents the generation of high global warming potential (GWP) GHGs. Examples of high GWP GHG sources include refrigerants (e.g., hydrofluorocarbons [HFCs], chlorofluorocarbons [CFCs]) and electrical insulation (e.g., sulfur hexafluoride). Although these GHGs are typically generated in much smaller quantities than CO_2, their high GWP results in considerable CO_2e.
- **Recycling and Waste:** This sector represents the GHG emissions associated with waste management facilities and landfills.

Inventory of Greenhouse Gas Emissions

In order to better understand the sources and magnitude of GHG emissions, public and private entities at the federal, State, and local level are developing GHG inventories. The City worked with UC Davis to develop an estimate of communitywide emissions. GHG inventories represent one of the first steps

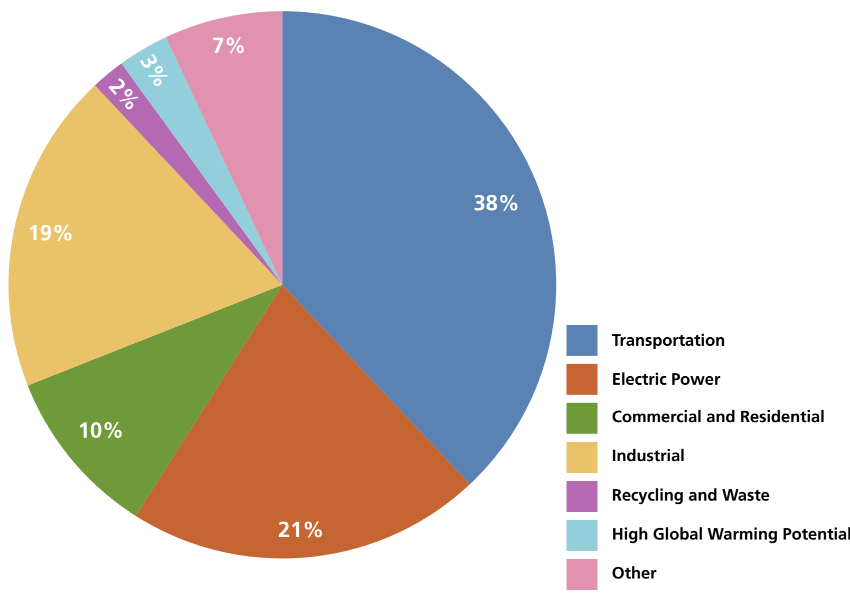
In Woodland, the largest contributors to greenhouse gas emissions are the transportation sector (predominantly motor vehicles) and electricity used in residential and commercial buildings.

in programs to reduce GHG emissions, allowing staff and decision makers to understand the emissions profile of a jurisdiction or facility.

State GHG Inventory

As the second largest emitter of GHGs in the United States and 12th to 16th largest in the world, California contributes a large quantity of GHGs to the atmosphere (CEC 2006b:i). Emissions of CO2 are byproducts of fossil-fuel combustion and are attributable in large part to human activities associated with the transportation industry, electricity generation, natural gas consumption, and agriculture (ARB 2011a). As noted, the transportation sector is the largest emitter of GHGs, followed by electricity generation (ARB 2011a) (Chart 3-1).

Chart 3-1: 2010 California GHG Emissions by Scoping Plan Category



Notes: Commercial and Residential includes natural gas and other fuel use. Industrial includes GHG emissions attributable to refineries, natural gas, oil and gas extraction, cement plants, and other industrial process related emissions.

Source: ARB, 2013.

Local GHG Inventory – City of Woodland

In 2012, a GHG emissions inventory for the baseline year 2005 was developed for the City (UC Davis 2012). Baseline annual emissions were determined to be approximately 544,145 MT CO_2e per year from sources such as residential/commercial energy use, transportation, water and wastewater, municipal energy use and transportation, and wastewater reuse. Of the total GHG emissions, 68 percent of the emissions are generated from transportation, followed by residential and commercial energy use (31 percent). Table

3.8-1 presents the City of Woodland's 2005 GHG emissions by emissions sector. In addition, Chart 3-2 presents the City of Woodland's GHG emission sectors by their relative contribution to the city's total emissions.

The relative contributions of GHG emissions to the City's inventory from various sources can be used to assemble a package of GHG emission reduction measures that are properly focused on major emissions sources over which the City exercises some control. Some sources of emissions reductions will be more efficient than others – the cost per ton reduced may be higher or lower for different emissions sectors. But, an overall knowledge of the primary sources of emissions will be important to development of the City's Climate Action Plan. The baseline emissions inventory is also normally used to derive an emissions reduction target, which is often (though not always) expressed as a percentage reduction compared to the baseline emissions level.

TABLE 3.8-1 CITY OF WOODLAND YEAR 2005 EMISSIONS INVENTORY

EMISSIONS SECTOR	EMISSIONS (MT CO_2E/YR)	PERCENT CONTRIBUTION
Residential Energy Use	68,704	12.6%
Commercial Energy Use	98,155	18.0%
Transportation	367,567	67.5%
Water and Wastewater	2,666	<1%
Municipal Energy Use and Transportation[1]	2,676	<1%
Wastewater Reuse	4,377	<1%
Total GHG Emissions	**544,145**	

Notes:

MT CO_2e/yr = metric tons of carbon dioxide equivalent per year; GHG = greenhouse gases.

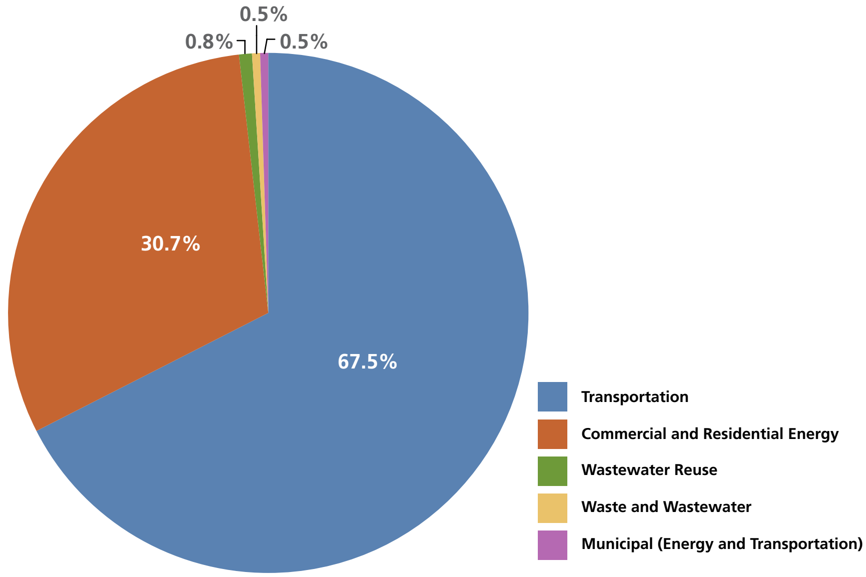
1 Only includes Scope 1 and Scope 2 emissions. Scope 3 emissions have been excluded from this total.

Source: City of Woodland, 2012.

Greenhouse Gas Emissions Opportunities and Challenges

Land use entitlement authority, which largely rests at the local government level in California, has a great influence on development patterns, community design, transportation facilities planning, and other factors that influence the amount of automobile travel, measured as "vehicle miles traveled" (VMT). The number of VMT in Woodland, in turn, directly relates to the amount of transportation-related GHG emissions. However, the City does not have control over vehicle emissions technology or fuel economy standards, which are factors in calculating air pollutant and GHG emissions from the transportation sector. Similarly, City standards can have some influence on the solar orientation of buildings and other components related to building and public realm energy efficiency, but energy generation, renewable energy requirements, and other components of electricity related emissions are largely outside of local government's control.

Chart 3-2: 2010 City of Woodland GHG Emissions by Scoping Plan Category



Notes: Commercial and Residential includes natural gas and other fuel use. Industrial includes GHG emissions attributable to refineries, natural gas, oil and gas extraction, cement plants, and other industrial process related emissions.

Source: ARB, 2010.

There are many local co-benefits of planning to reduce GHG emissions. Land use and transportation policies that reduce VMT and promote alternatives to automobile travel also can reduce household and business transportation costs, reduce harmful air pollution (other than GHGs), enhance mobility, reduce time spent commuting, and provide other benefits. Compact development (which reduces GHGs) can also be more efficient and cost-effective to serve with public infrastructure and services. Measures that promote energy efficiency reduce air pollutant emissions and GHGs, but also save on household and business utility costs. Encouraging reinvestment and revitalization of existing developed areas can reduce VMT, air pollutants, and GHG emissions, but also helps to conserve important open space functions, such as agriculture, habitats, recreation, and watershed protection. Development patterns that promote working, living, and shopping in the same community have fiscal and economic benefits.

Land Use, Community Design, and Transportation

The generation of (and therefore reduction of) GHG emissions is highly dependent on how General Plan policies can create a more effective and efficient transportation system. As discussed above, transportation is the largest GHG emissions sector for the City. Therefore, a reduction in vehicle emissions is necessary to achieve significant GHG reduction, especially since improvements in building energy efficiency can be overwhelmed by increases in VMT. The effectiveness of a local air quality management and GHG reduction program is contingent on promoting development patterns and transportation systems that reduce emissions from the transportation sector.

A variety of land use, transportation, and design approaches, when used together, can substantially reduce vehicular travel (and therefore reduce GHG emissions) (Ewing 2001, Handy 2004). Approaches to managing travel demand that could be incorporated into the 2035 General Plan include:

- **Diversity.** Placing a variety of land use activities in proximity to each other (housing, shopping, employment, services, etc.) provides greater choice of mobility. People can walk, bike, or take transit to meet daily needs. This strategy also makes the trips that must occur in a car shorter.
- **Compactness.** Compact development, by its nature, can increase the efficiency of infrastructure, enable travel by modes other than by car, and reduce trip lengths.
- **Reinvestment.** One way to avoid GHG emissions is to facilitate more efficient and economic use of the lands and existing infrastructure in already-developed portions of a community. Reinvestment in existing neighborhoods and retrofit of existing buildings can result in a net reduction in GHG emissions.
- **Housing and Employment.** Placing jobs and housing closer to one another can reduce work-related trips, which, although they normally represent a minority of trips, can account for a large number of vehicle miles traveled (VMT).
- **Connectivity.** A highly-connected transportation network shortens trip lengths and allows land uses to be placed closer in proximity to one another and along direct routes. Developing more diverse land uses in proximity of one another enables more trips to be made by walking or biking.
- **Facilities.** Safe and convenient bike lanes, pedestrian pathways, transit shelters, and other transportation facilities that are incorporated into a comprehensive transportation network can also encourage more travel by other means, thereby reducing air pollution and GHG emissions.

Energy Efficiency

Another way to address global climate change is to promote energy efficiency and use of renewable (and low emission) sources of energy. Reducing electricity-related GHG emissions can be achieved by a variety of measures and strategies ranging from improving energy efficiency of infrastructure (e.g., buildings [lighting, heating, cooling]), to installing renewable energy sources (e.g., solar panels, wind turbines), to changing the existing electricity production portfolio, and as simple as changing electricity consumption behaviors and practices. However, because energy efficiency is fairly dependent on new technology, it is essential to educate land owners on the payback periods and cost benefits of new energy efficient systems, appliances, building practices, and retrofitting techniques.

Renewable Energy

GHG emissions could be reduced by producing electricity for existing and future land uses from renewable resources such as the sun, wind, or geothermal sources. GHG reductions from renewable energy could be achieved for residential, commercial, or industrial land uses; however, it is also possible for the City to independently invest in, or support the investment in renewable energy sources.

Solid Waste Management

Solid waste management is a tool by which the City can reduce GHG emissions, reduce residents' and businesses' costs, and preserve lands that would otherwise be used for landfills. Decreasing communitywide solid waste generation reduces solid waste decomposition GHG emissions at landfills (i.e., methane) and the transportation-related GHG and air pollutant emissions associated with solid waste hauling. The City can play a role in solid waste reduction through measures such as public education, requirements on products sold in the City, ordinances, adjusting disposal fees, evaluating effectiveness of current solid waste management, and promoting waste diversion.

3.9 Air Quality

This section provides a discussion of the scientific, regulatory, and emissions background of air quality in the region, including natural factors that influence air quality along with air quality pollutants of concern.

Environmental Setting

Climate, Topography, and Meteorology

Woodland is located in Yolo County, which is part of the Sacramento Valley Air Basin (SVAB). The SVAB is comprised of Sacramento, Shasta, Tehama, Butte, Glenn, Colusa, Sutter, Yuba, Yolo, the northeast portion of Solano, and western portion of Placer counties. California's air basins have been created to group together regions that have similar natural factors that affect air quality.[20]

The Mediterranean climate of the Sacramento Valley is characterized by hot dry summers and mild rainy winters. Temperatures throughout the year could range from 20 to 115 degrees Fahrenheit (° F). In the summer, average highs are approximately 94° F. Average lows in the winter are approximately 40° F (WRCC 2013). Average annual rainfall is about 19 inches and snowfall is very rare (WRCC 2013). Prevailing winds are moderate in strength and vary from dry land flows from the north to moist clean breezes from the south.

The mountains surrounding the Sacramento Valley create a barrier to air flow, which can trap air pollutants in the Valley, particularly in the autumn and early winter when large pressure cells lie over the Valley and temperatures are lower. The lack of surface wind during these periods and reduced vertical flow caused by less surface heating, reduces the influx of outside air and allows air pollutants generated within the Valley to become concentrated in a stable volume of air. Ground concentrations are the highest when these conditions are combined with smoke from agricultural burning or temperature inversions that trap cool air, fog, and pollutants near the ground.

The ozone season (May through October) in the Sacramento Valley is characterized by stagnant morning air or light winds, with the Delta sea breeze arriving in the afternoon and evening out of the southwest. Usually, this evening breeze transports the airborne pollutants generated within the Valley to the north out of the Sacramento Valley. During about half of the days from July to September, however, a phenomenon called the "Schultz Eddy" pre-

20 Ambient concentrations of air pollutants are determined by the level of emissions released by pollutant sources (i.e., anthropogenic factors) and the atmosphere's ability to transport and dilute such emissions (i.e., natural factors). Natural factors that affect transport, dilution, and generation of air pollutants include terrain, wind, atmospheric stability, and the presence of sunlight. These natural and environmental factors and pollutants and pollutant sources are discussed separately below.

vents this from occurring. Instead of allowing for the prevailing wind patterns to move north carrying the pollutants out of the Valley, the Schultz Eddy causes the wind pattern to circle back south. Essentially, this phenomenon cause causes air pollutants that would otherwise be transported out of the Valley to be blown southward back into the Valley. This has the effect of exacerbating the pollution levels and increasing the likelihood of violating federal or state standards. This eddy will normally dissipate around noon if the Delta sea breeze arrives.

Criteria Air Pollutants

California Air Resources Board (ARB) and the U.S. Environmental Protection Agency (EPA) focus on the following air pollutants as indicators of ambient air quality: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter with aerodynamic diameter less than 10 microns (PM_{10}), particulate matter with aerodynamic diameter less than 2.5 microns ($PM_{2.5}$), and lead. These pollutants, which are most linked with human health, are commonly called "criteria air pollutants."

Health-based air quality standards have been established for these pollutants by ARB at the state level and by EPA at the national level. These standards, which include a margin of safety, were established to protect the public from adverse health impacts resulting exposure to air pollution. California also has established standards for sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. A brief description of each criteria air pollutant, including its source types and health effects, is provided below, along with the most current monitoring station data and attainment designations for the Woodland area. Table 3.9-1 presents the California ambient air quality standards (CAAQS) and national ambient air quality standards (NAAQS).

TABLE 3.9-1 NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS

POLLUTANT	AVERAGING TIME	CALIFORNIA STANDARDS[A]	NATIONAL STANDARDS[B]	
		Concentration[c]	Primary[c,d]	Secondary[c,e]
Ozone	1 hour	0.09 ppm (180 µg/m³)	–	Same as primary standard
	8 hours	0.070 ppm (137 µg/m³)	0.075 ppm (147 µg/m³)	
Respirable particulate matter (PM_{10})	24 hours	50 µg/m³	150 µg/m³	Same as primary standard
	Annual arithmetic mean	20 µg/m³	–	
Fine particulate matter ($PM_{2.5}$)	24 hours	–	35 µg/m³	Same as primary standard
	Annual arithmetic mean	12 µg/m³	12.0 µg/m³ [f]	
Carbon monoxide	8 hours	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	None
	1 hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	
	8 hours (Lake Tahoe)	6 ppm (7 mg/m³)	–	–
Nitrogen dioxide[g]	Annual arithmetic mean	0.030 ppm (57 µg/m³)	0.053 ppm (100 µg/m³)	Same as primary standard
	1 hour	0.18 ppm (339 µg/m³)	0.100 ppb (188 µg/m³)	None
Sulfur dioxide[h]	Annual Arithmetic Mean	–	0.030 ppm (for certain areas) [h]	–
	24 hours	0.04 ppm (105 µg/m³)	0.14 ppm (for certain areas) [h]	
	3 hours	–	–	0.5 ppm (1,300 µg/m³)
	1 hour	0.25 ppm (655 µg/m³)	0.075 ppm (196 µg/m³)	–
Lead[i,j]	30-day average	1.5 µg/m³	–	–
	Calendar quarter	–	1.5 µg/m³ (for certain areas) [j]	Same as primary standard
		–	0.15 µg/m³	
Visibility-reducing particles[k]	8 hours	See footnote k	No national standards.	
Sulfates	24 hours	25 µg/m³		
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m³)		
Vinyl chloride[k]	24 hours	0.01 ppm (26 µg/m³)		

TABLE 3.9-1 NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS

Notes: mg/m^3 = milligrams per cubic meter; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; ppb = parts per billion; ppm = parts per million; µg/m^3 = micrograms per cubic meter.

a California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility-reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

b National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM10, the 24-hour is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standards. Contact EPA for further clarification and current national policies.

c Concentration expressed first in the units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and reference pressure of 760 torr; parts per million (ppm) in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

d National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

e National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

f On January 15, 2013, EPA announced it would revise the national annual $PM_{2.5}$ standard to 12.0 µg/m^3 to provide increased protection against health risks.

g To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

h On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1 hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of ppb. California standards are in units of ppm. To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical of 0.075 ppm.

i The California Air Resources Board (ARB) has identified lead and vinyl chloride as toxic air contaminants with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

j The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standards are approved.

k In 1989, ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are “extinction of 0.23 per kilometer” and the “extinction of 0.07 per kilometer” for the statewide and Lake Tahoe Air Basin standards, respectively.

Source: ARB, 2012a.

Ozone

Ozone is a photochemical oxidant—that is, a substance whose oxygen combines chemically with another substance in the presence of sunlight—and the primary component of smog. Ozone is not directly emitted into the air, but is formed through complex chemical reactions between precursor emissions of reactive organic gases (ROG) and oxides of nitrogen (NO_X) in the presence of sunlight. ROG emissions result primarily from incomplete fuel combustion and the evaporation of chemical solvents and fuels.[21] Because these reactions occur on a regional scale, ozone is a regional pollutant.[22]

Meteorology and terrain play a major role in ozone formation. Generally, low wind speeds or stagnant air coupled with warm temperatures and clear skies provide the optimum conditions for ozone formation.[23] Because of the reaction time involved, peak ozone concentrations often occur far downwind of the precursor emissions. In general, ozone concentrations over or near urban and rural areas reflect an interplay of emissions of ozone precursors, transport, meteorology, and atmospheric chemistry.

The number of ozone exceedances in the Sacramento Valley region is not steadily trending downwards, but the exceedance concentrations are becoming less severe and non-exceedance concentrations are becoming cleaner (YSAQMD 2013). In addition to regional ozone concentrations, the ARB has identified the "Broader Sacramento Area," including Yolo County, as an area that transports pollutants to the Upper Sacramento Valley, the San Joaquin Valley, the San Francisco Bay Area, and the Mountain Counties and contributes to State ambient ozone standard exceedances (YSAQMD 2013). The Sacramento area has also been identified as being affected by transport from the Bay Area and the San Joaquin Valley.

Although YSAQMD's rules and regulations have been able to control area and stationary source emissions and keep those emissions levels basically constant, mobile source emissions, which are the major source of ozone precursors, continue to grow along with population. From 2009 to 2011, YSAQMD's jurisdiction grew by approximately 3 percent in population, but VMT grew at more than twice this rate (approximately 6.6 percent) (YSAQMD 2013).

21 NO_X refers to a group of gaseous compounds of nitrogen and oxygen that result from the combustion of fuels. A highly reactive molecule, ozone readily combines with many different components of the atmosphere. Consequently, high levels of ozone tend to exist only while high ROG and NO_X levels are present to sustain the ozone formation process. Once the precursors have been depleted, ozone levels decline rapidly.

22 Ozone located in the upper atmosphere (stratosphere) acts in a beneficial manner by shielding the earth from harmful ultraviolet radiation emitted by the sun. However, ozone located in the lower atmosphere (troposphere) is a major health and environmental concern.

23 Although stagnant conditions typically occur in autumn and early winter, the cumulative effects of warm temperatures, sunlight, and clear skies in the summertime are more conducive to ozone generation and thus summertime is generally the peak ozone season.

Statewide vehicle emission standards and incentive programs, along with land use development patterns and transportation planning will be critical for ozone attainment.[24]

Carbon Monoxide

CO is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes about 56 percent of all CO emissions nationwide. Other non-road engines and vehicles (such as construction equipment and boats) contribute about 22 percent of all CO emissions nationwide.[25] Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are sources of CO indoors. The highest levels of CO in the outside air typically occur during the colder months when inversion conditions become more frequent, trapping the air pollution near the ground beneath a layer of warm air.

Because exceedances of CO concentrations have become less of a problem in the project region in recent years, CO is no longer monitored in Yolo County. The nearest monitoring stations that monitor for CO are located in Sacramento and Solano Counties (Del Paso Manor station in Sacramento and Tuolumne Street station in Vallejo, respectively), which are in more populated areas with higher concentrations of vehicles and have not registered any exceedances of CO in the past 10 years (2002-2012) (ARB 2013).[26]

24 Ozone exposure causes adverse health effects primarily in the respiratory system. Ozone affects not only sensitive receptors, such as asthmatics and children, but healthy adults as well. Exposure to ambient levels of ozone ranging from 0.10 to 0.40 part per million (ppm) for 1–2 hours has been found to substantially alter lung function by increasing respiratory rates and pulmonary resistance, decreasing "tidal" volumes (the amount of air inhaled and exhaled), and impairing respiratory mechanics. Ambient levels of ozone exceeding 0.12 ppm are linked to symptomatic responses, such as throat dryness, chest tightness, headache, and nausea.

25 Higher CO levels generally occur in areas with heavy traffic congestion. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust.

26 Adverse health effects associated with exposure to CO concentrations include such symptoms as dizziness, headaches, and fatigue. CO exposure is especially harmful to individuals who suffer from cardiovascular and respiratory diseases (EPA 2009). CO enters the bloodstream through the lungs by combining with hemoglobin, which normally supplies oxygen to the cells. However, CO combines with hemoglobin much more readily than oxygen does, drastically reducing the amount of oxygen available to the cells.

Particulate Matter

PM_{10} consists of particulate matter emitted directly into the air, such as fugitive dust, soot, and smoke from mobile and stationary sources, construction operations, fires, and natural windblown dust.[27] It also includes particulate matter formed in the atmosphere by condensation and/or transformation of SO_2 and ROG (EPA 2009). $PM_{2.5}$ is a subgroup of PM_{10}, consisting of smaller particles that have an aerodynamic diameter of 2.5 micrometers or less (ARB 2009).

As presented in Table 3.9-4, areawide sources are the largest source of PM_{10} and $PM_{2.5}$ emissions in the region (approximately 88%). Given the agricultural and rural nature of the Planning Area, farming operations, construction and demolition, and road/fugitive dust are the main contributors to particulate matter emissions in the region. Exceedances of the PM_{10} and $PM_{2.5}$ standards are still registered near the Planning Area (see Table 3.9-2) and Yolo-Solano Air Quality Management District (YSAQMD) continues to develop rules and regulations that control and minimize PM_{10} and $PM_{2.5}$ from the construction industry and agricultural burning (YSAQMD 2013).

Nitrogen Dioxide

NO_2 is a brownish, highly reactive gas that is present in all urban environments. The major human-made sources of NO_2 are combustion devices, such as boilers, gas turbines, and mobile and stationary internal combustion engines. Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form NO_2 (EPA 2009). The combined emissions of NO and NO_2 are referred to as NO_X and reported as equivalent NO_2.[28,29]

27 The adverse health effects associated with PM_{10} depend on the specific composition of the particulate matter. For example, health effects may result from adsorption of metals, polycyclic aromatic hydrocarbons, and other toxic substances onto fine particulate matter (referred to as the "piggybacking effect"), or from the presence of fine dust particles of silica or asbestos. Generally, both short-term and long-term exposure to elevated concentrations of PM_{10} may result in adverse effects. These effects may include breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, alterations to the immune system, carcinogenesis, and premature death (EPA 2009). $PM_{2.5}$ poses an increased health risk because the particles can deposit deep in the lungs and may contain substances that are particularly harmful to human health.

28 Because NO_2 is formed and depleted by reactions associated with ozone, the NO_2 concentration in a particular geographic area may not be representative of the local NO_X emission sources.

29 Inhalation is the most common route of exposure to NO_2. The severity of the adverse health effects depends primarily on the concentration inhaled, rather than the length of exposure. An individual may experience a variety of acute symptoms such as coughing, difficulty in breathing, vomiting, headache, and eye irritation during or shortly after exposure. Severe, symptomatic NO_2 intoxication after acute exposure has been linked on occasion with prolonged respiratory impairment, with such symptoms as chronic bronchitis and decreased lung function (EPA 2009).

Sulfur Dioxide

SO_2 is produced by such stationary sources as coal and oil combustion, steel mills, refineries, and pulp and paper mills. SO_2 comprises approximately 97 percent of sulfur oxide (SO_X) emissions in California.[30]

Statewide emissions of SO_X have decreased by approximately 45 percent since 1990, primarily due to increased emissions controls in industrial stationary sources and switching from fuel oil to natural gas for electric generation and industrial boilers (ARB 2011). In addition, in 2006, ARB required the use of ultra-low-sulfur diesel fuel (15 ppm sulfur) for on-road vehicles, which further reduced SO_X emissions throughout the state. By 2014, it is anticipated that all highway, off-road, locomotive, and marine fuel will be ultra-low-sulfur diesel (ARB 2011). As shown in Table 3.9-4, SO_2 emissions are fairly low in the region and primarily occur from stationary sources. As a result of SO_X emissions becoming less of a problem, SO_X is no longer monitored in Yolo County and has not been exceeded in the last 10 years at nearby monitoring stations (ARB 2013).

Lead

Lead is a metal found naturally in the environment and in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in the air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.[31]

Toxic Air Contaminants

Concentrations of toxic air contaminants (TACs), or in federal terminology, hazardous air pollutants (HAPs), are also used as indicators of ambient air quality conditions. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health.[32]

30 SO_2 exposure causes adverse health effects primarily in the upper respiratory tract. SO_2 is a respiratory irritant; the bronchioles constrict with inhalation of SO_2 at five parts per million (ppm) or more. On contact with the moist mucous membranes, SO_2 produces sulfurous acid, which is a direct irritant. The concentration, rather than the duration of exposure, is an important determinant of respiratory effects.

31 Until about 20 years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, EPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. EPA banned the use of leaded gasoline in highway vehicles in December of 1995 (EPA 2009). EPA's regulatory efforts to remove lead from gasoline caused emissions of lead from the transportation sector to decline dramatically (95 percent between 1980 and 1999), and levels of lead in the air decreased by 94 percent between 1980 and 1999. Transportation sources, primarily airplanes, now contribute only 13 percent of lead emissions. A National Health and Nutrition Examination Survey reported a 78 percent decrease in the levels of lead in people's blood between 1976 and 1991. This dramatic decline can be attributed to the move from leaded to unleaded gasoline (EPA 2009).

32 TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

According to the *California Almanac of Emissions and Air Quality*,[33] the majority of the estimated health risk from TACs is attributed to relatively few compounds, the most dominant being PM exhaust from diesel-fueled engines (diesel PM). Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present.

Unlike the other TACs, no ambient monitoring data (i.e., monitored concentrations) are available for diesel PM because a standardized method for measuring diesel PM has not been established. However, ARB has made preliminary concentration estimates based on a PM exposure method. This method uses ARB's emissions inventory PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies to estimate concentrations of diesel PM. In addition to diesel PM, the TACs for which data are available that pose the greatest existing ambient risk in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene.[34] However, diesel PM poses the greatest health risk among these 10 TACs.

ARB estimated that approximately 237 tons of diesel PM are generated in Yolo County per year, which is approximately 9 percent of the total diesel PM emissions generated within the SVAB.[35] Based on receptor modeling techniques, ARB estimated the diesel PM health risk in the SVAB in 2000 to be 360 excess cancer cases per million people. This represents a decreased in diesel PM health risks by 52 percent from 1990 to 2000. Overall, ambient levels of most TACs (including diesel PM), except for para-dichlorobenzene, have decreased since 1990.[36]

Diesel PM concentrations would be anticipated to be relatively higher along major transportation routes with high proportions of heavy-duty diesel truck traffic, including I-5 and SR 113, and diesel PM concentrations drop off substantially with distance from the roadways. For example, ARB reported a 70 percent drop in PM concentrations at a distance of 500 feet from the roadway compared to concentrations in areas adjacent to the roadway. Sacramento Metropolitan Air Quality Management District (SMAQMD) has provided guidance for assessing health risk along major area roadways based, in part, on distance from the roadway, traffic levels, heavy truck mix, and location of the subject sensitive receptor relative to the roadway. Health risk along major transportation routes is anticipated to improve over time—ARB has a regulation that requires diesel trucks and buses to be retrofitted with PM filters.

33 California Air Resources Board (ARB), 2009, ARB Almanac 2009 — Chapter 4: Air Basin Trends and Forecasts – Criteria Air Pollutants, p. 1-34.

34 Ibid, p. 1-34.

35 Ibid, Appendix C: p. C-10

36 Ibid, pp. 5-83 to 5-85.

ARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) provides guidance on land-use compatibility with TAC sources. Although not a law or adopted policy, the handbook offers recommendations for the siting of sensitive receptors (such as proposed residential units) near uses associated with TACs, such as freeways and high-traffic roads, commercial distribution centers, rail yards, ports, refineries, dry cleaners, gasoline stations, and industrial facilities, to help limit the exposure of children and other sensitive populations to TACs. The handbook is used to assess how much exposure would occur as a result of project implementation. Table 1-2 of the handbook includes generalized recommendations, including:

- **Freeways and High-Traffic Roads.** In traffic-related studies, the 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.
- **Distribution Centers.** Because ARB regulations will restrict truck idling at distribution centers, transport refrigeration unit (TRU) operations are the largest onsite diesel PM emission source followed by truck travel in and out of distribution centers. Based on ARB and South Coast District emissions and modeling analyses, we estimate an 80 percent drop-off in pollutant concentrations at approximately 1,000 feet from a distribution center.
- **Dry Cleaners Using Perchloroethylene (perc).** Local air district studies indicate that individual cancer risk can be reduced by as much as 75 percent by establishing a 300 foot separation between a sensitive land use and a one-machine perc dry cleaning operation. For larger operations (2 machines or more), a separation of 500 feet can reduce risk by over 85 percent.
- **Gasoline Dispensing Facilities.** Based on the CAPCOA Gasoline Service Station Industry-wide Risk Assessment Guidelines, most typical GDFs (less than 3.6 million gallons per year) have a risk of less than 10 at 50 feet under urban air dispersion conditions. Over the last few years, there has been a growing number of extremely large GDFs with sales over 3.6 and as high as 19 million gallons per year. Under rural air dispersion conditions, these large GDFs can pose a larger risk at a greater distance.

Odors

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population. In addition, people may have different reactions to the same odor – an odor that is offensive to one person may be perfectly acceptable to another. An unfamiliar odor is more easily detected and is more likely to result in complaints than a familiar one.[37]

Quality and intensity are two properties present in any odor.[38] Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult.[39]

Existing Air Quality

Air Quality Monitoring Data

Criteria air pollutants are monitored at multiple monitoring stations throughout the SVAB. The 41929 Gibson Road monitoring station in Woodland, which is located at the southeastern portion of the city's incorporated limits, measures ozone $PM_{2.5}$, and PM_{10}. Table 3.9-2 summarizes the air quality data from the three most recent years for which data are available (2009–2011) and lists the registered concentrations and exceedances of the CAAQS and NAAQS that occurred at this monitoring station from 2009 through 2011.

The region's major air quality problem is ozone generation, followed by PM_{10} and $PM_{2.5}$ concentrations. Between 2009 and 2011, the Woodland monitoring station registered multiple days above the state and federal eight-hour ozone standards, but no exceedances of the state one-hour standard. The state CO, NO_2, and SO_2 standards were not exceeded in any of the last three years. The state 24-hour PM_{10} standard was exceeded at least once in all of the past three years, but the national 24-hour standard was not exceeded once during the same period. Measured concentrations of $PM_{2.5}$ were determined to exceed the national standard once in the past three years.

37 This is due to a phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

38 The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as "flowery" or "sweet," then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor.

39 At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

TABLE 3.9-2 WOODLAND AMBIENT AIR QUALITY DATA (2009–2011)[1]

	2009	2010	2011
Ozone			
Maximum concentration (1-hour/8-hour, ppm)	0.093/0.082	0.087/0.069	0.088/0.073
Number of days state standard exceeded (1-hour/8-hour)	0/11	0/0	0/2
Number of days national standard exceeded (1-hour/8-hour)2	0/3	0/0	0/0
Carbon Monoxide (CO)[3]			
Maximum concentration (1-hour/8-hour, ppm)	2.4/1.94	1.6/1.23	1.9/1.60
Number of days state standard exceeded (1-hour/8-hour)	0/0	0/0	0/0
Number of days national standard exceeded (1-hour/8-hour)	0/0	0/0	0/0
Nitrogen Dioxide (NO_2)[4]			
Maximum concentration (1-hour, ppm)	0.040	0.037	0.043
Number of days state standard exceeded	0	0	0
Annual average (ppm)	0.007	0.006	0.007
Sulfur Dioxide (SO_2)[5]			
Maximum concentration (24-hour, ppm)	0.002	0.001	0.001
Number of days standard exceeded (national/California)	0	0	0
Annual Average (ppm)	0.000	0.000	0.000
Fine Particulate Matter ($PM_{2.5}$)			
Maximum concentration (μg/m^3) (national/California)[6]	27.6/27.6	26.7/26.7	39.4/39.4
Number of days national standard exceeded (measured/estimated)[7]	0/0.0	0/0.0	1/–
State annual average (μg/m^3) (national/California)	7.5/–	5.6/5.7	–/–
Respirable Particulate Matter (PM_{10})			
Maximum concentration (μg/m^3) (national/California)[6]	64.6/64.0	87.4/87.4	53.2/56.6
Number of days national standard exceeded (measured/estimated)[7]	2/12.2	1/6.5	1/6.1
Number of days national standard exceeded (measured/estimated)[7]	0/0.0	0/0.0	0/0.0
Annual average (μg/m^3) (national/California)	20.5/21.1	18.6/18.8	18.4/19.1

Notes: μg/m^3 = micrograms per cubic meter; ppm = parts per million; – = data not available or insufficient data to determine value

1 Measurements were recorded at the Gibson Road monitoring station unless noted otherwise.

2 The 8-hour national ozone standard was revised to 0.075 ppm in March 2008. Statistics shown are based on the previous 0.08 ppm standard. The 1-hour national ozone standard was revoked on June 15, 2005. Statistics for the 1-hour national ozone standard are shown for informational purposes.

3 Measurements were recorded at the Goldenland Court monitoring station located at 68 Goldenland Court in Sacramento, which is approximately 15 miles southeast of the Planning Area.

4 Measurements were recorded at the Davis-UCD Campus monitoring station located on Campbell Road in Davis, which is approximately 10 miles south of the Planning Area.

5 Measurements were recorded at the Del Paso Manor monitoring station located at 2701 Avalon Drive in Sacramento, which is approximately 22 miles southeast of the Planning Area.

6 State and national statistics may differ for the following reasons: State statistics are based on California-approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers. State statistics are based on local conditions while national statistics are based on standard conditions. State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

7 Measured days are those days that an actual measurement was greater than the level of the state daily standard or the national daily standard. Measurements are typically collected every 6 days. Estimated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year.

Source: ARB, 2009; EPA, 2013.

Attainment Status

To determine whether a region's air quality is healthful or unhealthful, contaminant levels in ambient air samples are compared to the CAAQS and NAAQS. Both ARB and EPA use the type of monitoring data presented in Table 3.9-2 to designate an area's attainment status relative to the CAAQS and NAAQS, respectively, for criteria air pollutants. The purpose of these designations is to identify areas with air quality problems and thereby initiate planning efforts for improvement. The three basic designation categories are "nonattainment," "attainment," and "unclassified." The "unclassified" designation is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards.

With respect to the CAAQS, the YSAQMD is currently designated as a nonattainment area for ozone and PM_{10}, and as an attainment or unclassified area for all other pollutants. With respect to the NAAQS, the YSAQMD is designated as a nonattainment area for ozone and $PM_{2.5}$ and as an attainment or unclassified area for all other pollutants. Table 3.9-3 shows the YSAQMD's most recent attainment designations.

TABLE 3.9-3 CALIFORNIA AND NATIONAL ATTAINMENT STATUSES FOR THE YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT

	DESIGNATION/CLASSIFICATION	
POLLUTANT	**California**	**National**
Ozone (1-hour)	Nonattainment	–
Ozone (8-hour)	Nonattainment	Nonattainment
Carbon monoxide (CO)	Attainment	Unclassified/ Attainment
Nitrogen dioxide (NO_2)	Attainment	Attainment
Sulfur dioxide (SO_2)	Attainment	Attainment
Respirable particulate matter (PM_{10})	Nonattainment	Unclassified
Fine particulate matter ($PM_{2.5}$)	Unclassified	Nonattainment
Lead	Attainment	Attainment
Sulfates	Attainment	No national standards
Hydrogen sulfide	Attainment	
Vinyl chloride	Attainment	
Visibility-reducing particles	Attainment	

Source: ARB, 2009.

Existing Emissions – Yolo-Solano Air Quality Management District

Criteria Air Pollutants

Table 3.9-4 summarizes the emissions inventory for criteria air pollutants in YSAQMD. Mobile sources are the largest contributor to the estimated annual average air pollutant levels of ROG, CO, and NO_X, accounting for approximately 55 percent, 86 percent, and 88 percent, respectively, of the total inventory. As discussed above, ROG and NOX are ozone precursors and therefore, mobile sources are a key target for reducing ozone concentrations in the region. Stationary sources in YSAQMD are responsible for the majority (approximately 68 percent) of the SO_X emissions. Areawide sources (e.g., solvent evaporation, on-site fuel combustion for space and water heating, landscape maintenance equipment) account for approximately 88 percent and 63 percent of YSAQMD's PM_{10} and $PM_{2.5}$ emissions, respectively.

TABLE 3.9-4 SUMMARY OF 2008 ESTIMATED EMISSIONS INVENTORY FOR CRITERIA AIR POLLUTANTS AND PRECURSORS (YSAQMD)

SOURCE TYPE/ CATEGORY	ESTIMATED ANNUAL AVERAGE EMISSIONS (TONS PER DAY)					
	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Stationary Sources						
Fuel Combustion	0.39	3.98	4.09	0.33	0.58	0.58
Waste Disposal	0.16	0.07	0.02	0.09	0.00	0.00
Cleaning and Surface Coating	1.44	0.02	0.03	0.00	0.06	0.06
Petroleum Production and Marketing	1.89	0.20	0.04	-	-	-
Industrial Processes	1.04	0.57	0.19	0.08	1.80	0.96
Subtotal (Stationary Sources)	*4.92*	*4.84*	*4.36*	*0.50*	*2.45*	*1.59*
Area-wide Sources						
Solvent Evaporation	4.11	–	–	–	–	–
Miscellaneous Processes	1.47	11.57	0.88	0.06	32.84	5.64
Subtotal (Areawide Sources)	*12.71*	*104.74*	*38.48*	*0.18*	*2.16*	*1.79*

TABLE 3.9-4 SUMMARY OF 2008 ESTIMATED EMISSIONS INVENTORY FOR CRITERIA AIR POLLUTANTS AND PRECURSORS (YSAQMD)

SOURCE TYPE/ CATEGORY	ESTIMATED ANNUAL AVERAGE EMISSIONS (TONS PER DAY)					
	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Mobile Sources						
On-Road Motor Vehicles	7.21	76.26	25.78	0.07	1.34	1.07
Other Mobile Sources	5.50	28.48	12.70	0.11	0.82	0.72
Subtotal (Mobile Sources)	*12.71*	*104.74*	*38.48*	*0.18*	*2.16*	*1.79*
Total for YSAQMD	**23.22**	**121.14**	**43.72**	**0.73**	**37.45**	**9.02**

Notes:

CO = carbon monoxide; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; ROG = reactive organic gases; SO_X = oxides of sulfur

Totals in table may not add exactly due to rounding.

Source: ARB, 2009.

Toxic Air Contaminants

Existing TAC sources in the Woodland area include mobile sources, stationary sources, and areawide sources, which all cumulatively contribute to the existing TAC concentrations and the associated health risk.

Mobile sources are dispersed on roadways throughout the Woodland area. SR 113 and I-5 both handle heavy-duty diesel trucks with emissions that can expose residents and other adjacent sensitive receptors to TAC emissions. YSAQMD works closely with the Sacramento Metropolitan Air Quality Management District (SMAQMD) due to their proximity and similar air quality issues. SMAQMD has developed screening tables based on peak hourly volumes to evaluate the cancer risk associated with major roadways.[40] The SR 113 and I-5 year 2011 peak hourly vehicle volumes and maximum truck volume percentages that occur in proximity of the City's sensitive receptors are presented below:[41,42]

- SR 113: 1,950 vehicles per hour (12.5 percent trucks)
- I-5: 4,000 vehicles per hour (23.25 percent trucks)

40 SMAQMD. 2009 (January). Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways, Technical Appendix. Available: <http://airquality.org/ceqa/SLUMajorRoadway/SLURecommendedProtocolAppendix2.1-Jan2009.pdf>. Accessed April 19, 2013.

41 California Department of Transportation (Caltrans). 2012. 2011 Traffic Volumes on the California State Highway System. Available: < http://traffic-counts.dot.ca.gov/2011TrafficVolumesAug2012.pdf>. Accessed April 19, 2013.

42 California Department of Transportation (Caltrans). 2011. 2011 Annual Average Daily Truck Traffic on the California State Highway System. Available: < http://traffic-counts.dot.ca.gov/>. Accessed April 19, 2013.

Considering the vehicle volumes above and using the SMAQMD's Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways guidance and screening tables, existing receptors may be exposed to a cancer risk of 149 cases in a million in within 50 feet of the east-west stretch of I-5 and 165 in a million within 50 feet of the north-south stretch of SR 113.[43] This level of health risk includes diesel PM health risk only from the mentioned roadways and not other background TAC emissions. As discussed above, the current overall background cancer risk from diesel PM in the SVAB is 360 cancer risks in million. The statewide average is 540 cancer risks in a million. Development anticipated under the General Plan, along with regional growth, would increase vehicular traffic on I-5 and SR 113. Advances in emissions technology, turnover in vehicles, and increasingly stringent emission standards would reduce average emission rates of vehicles, but health risk is still an important factor for the city's land use planning along these major transportation routes.

In addition, stationary sources that would generate TACs are permitted by YSAQMD. These include gasoline-dispensing facilities, natural gas heaters, paint and adhesives facilities, concrete production, lumber cutting facilities, woodworking, emergency backup diesel engines, and grain milling, which are located throughout the city.

Areawide TAC emissions are not monitored and tracked as closely as stationary or major roadway sources because of the dispersed nature of areawide TAC sources. Typically, areawide TAC sources are dependent on consumer behavior, which makes data difficult to gather. However, ARB has developed TAC emissions inventories that provide a baseline level of TAC emissions and how those emissions compare with the region. Table 3.9-5 presents the TAC emissions occurring within Yolo County compared with the overall TAC emissions occurring within the SVAB.

43 Assumes that sensitive receptors could be located 50 feet north or south of an east-west roadway, and 50 feet east or west of a north-south roadway.

TABLE 3.9-5 TAC EMISSIONS IN YOLO COUNTY AND SVAB

TOXIC AIR CONTAMINANT	YOLO COUNTY EMISSIONS (TONS/YEAR)	SVAB EMISSIONS (TONS/YEAR)	PERCENT OF YOLO COUNTY CONTRIBUTION
Acetaldehyde	63	986	6.4%
Benzene	57	957	6.0%
1,3-Butadiene	20	437	4.6%
Carbon Tetrachloride	0	0	0.0%
Chromium (Hexavalent)	<0.01	<1	0.0%
para-DiChlorobenzene	8	107	7.4%
Formaldehyde	132	2,045	6.5%
Methylene Chloride	25	352	7.0%
Perchloroethylene	26	355	7.3%
Diesel PM	237	2,590	9.2%

Notes: TAC = toxic air contaminants; SVAB = Sacramento Valley Air Basin; PM = particulate matter.

Source: ARB, 2009.

Odors

Woodland has several facilities and land uses that would be considered potential odor sources.

The Yolo County Central Landfill is located approximately seven miles southeast of Downtown.

In addition, the City operates a wastewater treatment plant, known as the "Water Pollution Control Facility" (WPCF), which processes wastewater from the City's residential, commercial, and industrial land uses. The WPCF is located approximately 3.5 miles east of Downtown. The North Ponds of the WPCF wastewater treatment ponds have been abandoned for their original purpose that had resulted their drying-out and occasional wetting. During these wetting episodes, decomposition would cause unpleasant odors. The abandoned wastewater treatment ponds were converted into storm water treatment ponds, which has addressed the odor issue.

The WPCF headwork facility and pond system are also both odor sources within the city. The headworks area includes an influent pump station, screens, and grit removal, all of which are open to atmosphere and not currently equipped with any odor controls. The pond system can receive raw sewage influent and effluent during times of maintenance or peak flows at the WPCF, which, during warmer weather, can generate odor emissions. The City has found that proper management, including the maintenance of a water cap and adequate water circulation through the pond system, addresses this issue. The City is currently studying the effect of using mechanical aerators in the ponds to reduce odors. The City is monitoring odor emissions with odor detectors.

In addition, to these municipal facilities, the city also includes industrial uses (e.g., manufacturing facilities, biomass storage for biomass power generation, food processing) that could constitute potential odor sources.

Lastly, the city is surrounded by agricultural uses in each direction that can generate odors from a variety of processes, such as agricultural burning, livestock pens, fertilization, and composting, among others. The City of Woodland and YSAQMD work in cooperation with industrial facilities and agricultural producers to limit the odor emissions associated with manufacturing processes and agricultural burning.

Currently, the Pacific Coast Producers, which processes and cans tomatoes, spreads water that has been previously used in the manufacturing facility and to wash the tomatoes across agricultural fields in the east side of the city. As the organic matter in the residual water is decomposed, odor emissions are generated that have impacted local residents. Pacific Coast Producers have invested more than $3 million dollars in the past years to reduce potential odor sources from their operations, including measures such as adding calcium nitrate and Bioxide to their wastewater to reduce organic loading rates (i.e., odor-generating source). Pacific Coast Producer is planning to employ a new sprinkler irrigation system that is anticipated to help reduce its odor emissions from spreading of the residual manufacturing plant and washing water. The new irrigation system is designed to minimize standing water, which creates the ideal conditions (i.e., anaerobic) for generating odor emissions. Pacific Coast Producers and the City have joined together to purchase and utilize a sophisticated computerized odor plume tracking system to identify odor sources and assist both entities with mitigation efforts.

Because the city is surrounded by agricultural lands in all directions, the ongoing process to control these emissions is essential to reducing not only odor emissions, but also PM_{10} and $PM_{2.5}$ emissions. Certain agricultural processes that generate dust and odors, such as residual crop and managed burning, livestock operations, and travel on unpaved roads, among others also contribute to the city and region's total PM_{10} and $PM_{2.5}$ emissions.

Other smaller and dispersed odor sources include residential and commercial dumpsters, which can be located in proximity of sensitive receptors. However, with proper disposal containers and regular trash collection services, odors from residential and commercial dumpsters would be minimized.

The Yolo County Animal Services Shelter (2640 Gibson Road) and the County Fairgrounds (particularly livestock shows) have also been identified as odor sources at different times of the year.

Air Quality Opportunities and Challenges

Land use entitlement authority, which largely rests at the local government level in California, has a great influence on development patterns, community design, transportation facilities planning, and other factors that influence the amount of automobile travel, which is measured as "vehicle miles traveled" (VMT). The number of VMT in Woodland, in turn, directly relates to the amount of transportation-related air pollutant and GHG emissions. However, the City does not have control over vehicle emissions technology or fuel economy standards, which are factors in calculating air pollutant and GHG emissions from the transportation sector. Similarly, City standards can have some influence on the solar orientation of buildings and other components related to building and public realm energy efficiency, but energy generation, renewable energy requirements, and other components of electricity related emissions are largely outside of local government's control.

There are many local co-benefits of planning to reduce air pollutant (including GHG) emissions. Land use and transportation policies that reduce VMT and promote alternatives to automobile travel also can reduce household and business transportation costs, reduce harmful air pollution (other than GHGs), enhance mobility, reduce time spent commuting, and provide other benefits. Compact development (which reduces GHGs) can also be more efficient and cost-effective to serve with public infrastructure and services. Measures that promote energy efficiency reduce air pollutant emissions and GHGs, but also save on household and business utility costs. Encouraging reinvestment and revitalization of existing developed areas can reduce VMT, air pollutants, and GHG emissions, but also helps to conserve important open space functions, such as agriculture, habitats, recreation, and watershed protection.

Land Use, Community Design, and Transportation

Similar to air quality, the generation of (and therefore reduction of) GHG emissions is highly dependent on how General Plan policies can create a more effective and efficient transportation system. As discussed above, transportation is the largest GHG emissions sector for the city and mobile sources are the largest source of ozone precursors in the YSAQMD area. Therefore, a reduction in vehicle emissions is necessary to achieve significant air pollutant and GHG reduction, especially since improvements in building energy efficiency can be overwhelmed by increases in VMT. **The effectiveness of a local air quality management and GHG reduction program is contingent on promoting development patterns and transportation systems that reduce emissions from the transportation sector.**

A variety of land use, transportation, and design approaches, when used together, can substantially reduce vehicular travel (and therefore reduce GHG emissions) (Ewing 2001, Handy 2004). Approaches to managing travel demand that could be incorporated into the 2035 General Plan include:

- **Diversity.** Placing a variety of land use activities in proximity to each other (housing, shopping, employment, services, etc.) provides greater choice of mobility. People can walk, bike, or take transit to meet daily needs. This strategy also makes the trips that must occur in a car shorter.
- **Compactness.** Compact development, by its nature, can increase the efficiency of infrastructure, enable travel by modes other than by car, and reduce trip lengths.
- **Reinvestment.** One way to avoid GHG emissions is to facilitate more efficient and economic use of the lands and existing infrastructure in already-developed portions of a community. Reinvestment in existing neighborhoods and retrofit of existing buildings can result in a net reduction in GHG emissions.
- **Housing and Employment.** Placing jobs and housing closer to one another can reduce work-related trips, which, although they normally represent a minority of trips, can account for a large number of vehicle miles traveled (VMT).
- **Connectivity.** A highly-connected transportation network shortens trip lengths and allows land uses to be placed closer in proximity to one another and along direct routes. Developing more diverse land uses in proximity of one another enables more trips to be made by walking or biking.
- **Facilities.** Safe and convenient bike lanes, pedestrian pathways, transit shelters, and other transportation facilities that are incorporated into a comprehensive transportation network can also encourage more travel by other means, thereby reducing air pollution and GHG emissions.

Energy Efficiency

Another way to address global climate change and other air pollution is to promote energy efficiency and use of renewable (and low emission) sources of energy. Reducing electricity-related GHG emissions can be achieved by a variety of measures and strategies ranging from improving energy efficiency of infrastructure (e.g., buildings [lighting, heating, cooling]), to installing renewable energy sources (e.g., solar panels, wind turbines), to changing the existing electricity production portfolio, and as simple as changing electricity consumption behaviors and practices. However, because energy efficiency is fairly dependent on new technology, it is essential to educate land owners on the payback periods and cost benefits of new energy efficient systems, appliances, building practices, and retrofitting techniques.

Renewable Energy

GHG emissions could be reduced by producing electricity for existing and future land uses from renewable resources such as the sun, wind, or geothermal sources. GHG reductions from renewable energy could be achieved for residential, commercial, or industrial land uses; however, it is also possible for the City to independently invest in, or support the investment in renewable energy sources.

Solid Waste Management

Solid waste management is a tool by which the City can reduce air pollutant and GHG emissions, reduce residents' and businesses' costs, and preserve lands that would otherwise be used for landfills. Decreasing communitywide solid waste generation reduces solid waste decomposition GHG emissions at landfills (i.e., methane) and the transportation-related GHG and air pollutant emissions associated with solid waste hauling. The City can play a role in solid waste reduction through measures such as public education, requirements on products sold in the City, ordinances, adjusting disposal fees, evaluating effectiveness of current solid waste management, and promoting waste diversion.

Toxic Air Contaminants

Achieving air quality goals requires supportive land use patterns, community design, transportation systems, and the location of highways, railroads, industries, and other sources of air emissions in relation to houses, schools, and other sensitive land uses. Woodland has a higher amount of truck traffic than other communities due to the presence of I-5 and SR 113, as well as large-scale commercial developments and warehouse uses that attract large amounts of truck traffic and associated diesel particulate emissions. Most of these uses today are located close to the highways and therefore most of the truck traffic associated with these uses is not moving on local roadways near homes and other sensitive uses. Existing and future regulations are anticipated to reduce diesel particulate emissions associated with trucking and rail activity. The City has some stationary sources that generate toxic air contaminants, as well. These sources are generally permitted by the Yolo-Solano Air Quality Management District and include gas stations, natural gas heaters, paint and adhesives facilities, concrete production, lumber cutting facilities, woodworking, emergency backup generators, and grain milling. Permit conditions normally require application of technologies and management practices to reduce the public and environmental health effects of these facilities. The public health impacts associated with newly proposed uses is dependent upon the type of industry, the location, the scale, operations, meteorological conditions, relative location of sensitive uses, and other project and site-specific characteristics.

Buffer distances may not be necessary with the application of control technologies to proposed stationary sources. There are manufacturing/assembly uses that can co-exist in residential areas without adversely affecting quality of life and the public health. What guidance should the General Plan provide – both for mobile and stationary sources – that is protective of the public health, promotes economic development, recognizes the site-specific nature of this issue, and recognizes improvements over time in emissions control technology and regulations?

2 LAND USE AND DEVELOPMENT POTENTIAL

This chapter evaluates land uses in the Planning Area to take stock of the community's assets and determine availability of sites to accommodate projected growth.

2.1 Land Use Pattern

Existing land uses were identified from City and County data, windshield reconnaissance, and aerial photography. The City and County data use parcel-level information from the jurisdictions' Geographic Information Systems (GIS) databases, including Assessor's data, updated in 2012. Aerial photography is current as of 2011. Figure 2-1 shows existing land uses in the Planning Area.

Magnitude and Distribution of Existing Uses

There are approximately 9,619 acres in the current city limits, and an additional 3,161 acres of land contained within the Planning Area outside of the city limits. Within the entire Planning Area, vacant and agricultural land are the largest existing land uses, each occupying about 18 percent (18%) of the total land area, and thus together account for more than one-third of the Planning Area acreage. Nearly 86 percent (86%) of vacant land is located inside city limits, whereas nearly 86 percent (86%) of agricultural land is located outside city limits, concentrated in the eastern and southern sections of the Planning Area. A large concentration of agricultural land is also located in the northwest corner of the Planning Area. Vacant land within the city limits is concentrated in the northeast quadrant (generally north of Main Street and east of East Street) and southern part (Spring Lake Specific Plan area) of the city. Within the Spring Lake Specific Plan area, approximately 268 acres of land currently in agricultural use (farmland) and 175 acres of land on which there is no active use (vacant land) are designated for new residential and commercial development.

Vacant land in Woodland occupies large and small parcels, representing a range of development opportunities.

Around 21 percent (21%) of the total land area is residential (16.4% low density, 3.5% medium density, and 1.4% high density). Industrial uses occupy about 12 percent (12%) of the Planning Area, including warehouse uses, which account for more than a third of all industrial land. Public and institutional uses such as schools, city buildings, and hospitals account for 10 percent (10%) of the Planning Area. Additionally, about 13 percent (13%) of the land in the Planning Area is allocated to right-of-way uses such as roads, highways, interchanges, sidewalks, and railroads. The majority of commercial and office uses are located within the city of Woodland and account for a little more than 5 percent (5%) of land within the city limits. These include a mix of downtown, community, and highway commercial uses. Table 2.1-1 shows the breakdown of existing land uses in the Planning Area and within the city limits.

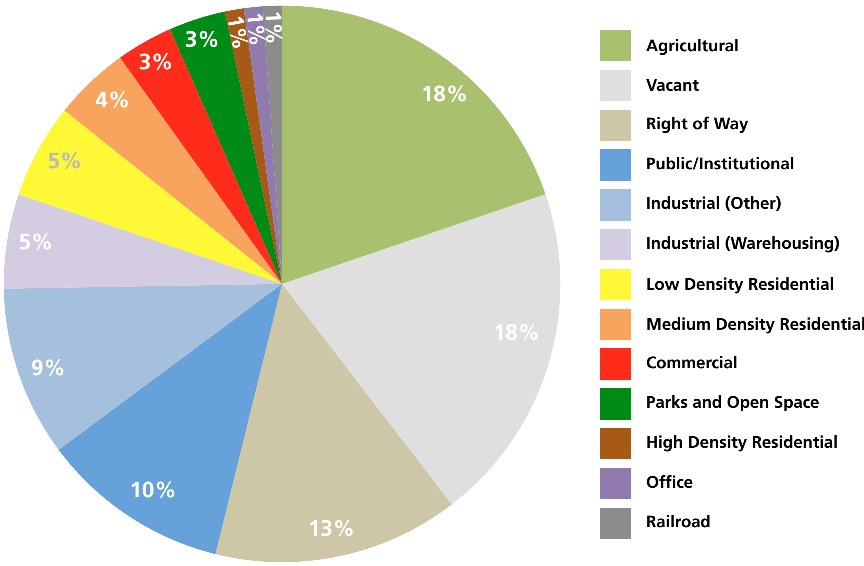
TABLE 2.1-1 EXISTING LAND USES IN THE PLANNING AREA

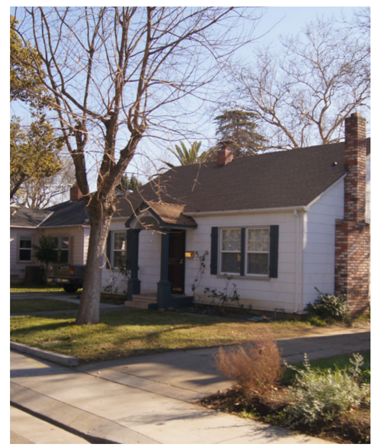
	INSIDE CITY LIMITS		OUTSIDE CITY LIMITS		TOTAL PLANNING AREA	
LAND USE	Acres	Percent	Acres	Percent	Acres	Percent
Low Density Residential (1-8 du/ac)	1,997	20.8%	102	3.2%	2,099	16.4%
Medium Density Residential (9-16 du/ac)	443	4.6%	0	0.0%	443	3.5%
High Density Residentia (>16 du/ac)	180	1.9%	0	0.0%	180	1.4%
Commercial	405	4.2%	6	0.2%	411	3.2%
Office	111	1.2%	3	0.1%	114	0.9%
Industrial (Warehousing)	596	6.2%	0	0.0%	596	4.7%
Industrial (Other)	773	8.0%	190	6.0%	963	7.5%
Park and Open Space	358	3.7%	41	1.3%	400	3.1%
Public/ Institutional	960	10.0%	338	10.7%	1,298	10.2%
Agricultural	315	3.3%	1,924	60.9%	2,238	17.5%
Vacant	1,923	20.0%	323	10.2%	2,246	17.6%
Right of Way[1]	1,500	15.6%	215	6.8%	1,715	13.4%
Railroad	58	0.6%	19	0.6%	77	0.6%
Total	9,619	100.0%	3,161	100.0%	12,781	100.0%

1 "Right of Way" acreage is estimated by subtracting the sum of the existing land use acreages for parcels from the total Planning Area acreage.

Source: Dyett & Bhatia, 2013.

Chart 2-1: Existing Land Use Distribution in the Planning Area





Woodland's housing stock consists of a range of types, densities, and architectural styles.

Current Land Use Pattern

Vacant

Eighteen percent (18%) of the land within the total Planning Area is currently vacant—that is, it has no active use. Vacant land totals 2,246 acres and consists of a wide range of parcel sizes, from small infill sites less than an acre in size near Downtown, to larger sites of up to 460 acres. Vacant land is generally scattered throughout the Planning Area, however a large amount of the vacant land is located in the northeastern quadrant (generally north of Main Street and east of East Street) in Woodland's industrial area and southeastern quadrant (Spring Lake Specific Plan area and east of County Road 102).

Agriculture

Land in active agricultural use also comprises about 18 percent (18%) of the land (2,238 acres) within the Planning Area. The vast majority of farmland—86 percent (86%)—is located outside the city limits along the northwestern, northeastern, and southern (primarily in Master Plan Remainder area) boundaries of the city. Agricultural land located inside the city limits is primarily located in the western portion of the Spring Lake Specific Plan area.

Residential

After agricultural, residential land uses are the most prevalent within the Planning Area, at 21 percent (21%) or 2,722 acres. More than 96 percent (96%) of residential development is located within the city limits. Only a small amount of residential land—102 acres—is located outside of the city, primarily in the northwest corner of the Planning Area.

The Yolo County fairgrounds is a unique public facility in Woodland.

Residential land makes up about 27 percent (27%) of land inside the city limits. The majority of residential uses—76 percent (76%)—is low density residential (defined as one to eight dwelling units per acre). Medium density (defined as nine to sixteen units per acre) comprises 17 percent (17%), and the remaining 7 percent (7%) is high density residential (defined as more than 16 units per acre). Residential development is located primarily in the western (west of East Street) and central (south of East Street and west of County Road 102) parts of the city, with a smaller, but growing residential concentration in the Spring Lake Specific Plan area along the southern city boundary.

Industrial

Woodland's industrial land is concentrated primarily in the northeast quadrant (north of Main Street and east of East Street) of the Planning Area and consists of a mix of automotive, industrial and warehouse uses. Total industrial land within the Planning Area is 1,559 acres, of which approximately 88 percent (88%) is located within the city limits. Warehouse uses (44%) make up the majority of existing industrial land, followed by light and heavy industrial (38%), automotive (7%), and other miscellaneous industrial (11%) uses. Smaller concentrations of industrial land are located in the northwest quadrant of the Planning Area (primarily outside city limits) and along the southern segment of East Street (south of Main Street).

Public, Semi-Public, and Community Facility

There are 1,298 acres of public, semi-public and institutional uses in the Planning Area, making up more than 10 percent (10%) of the total. Within city limits, public, semi-public, and institutional uses account for about the same (10%) of the total existing land uses. These uses include schools and Woodland Community College, City and County government facilities, utilities, and medical facilities. Many of these uses occupy very large parcels (e.g. Woodland Community College, Pioneer High School, Woodland High School, and Yolo County Fair Grounds (located outside city boundaries)) and are activity centers in the community. Another large public facility in the Planning Area is the Yolo County Jail.

Commercial

Commercial (including office uses) comprise 4 percent (4%) of land (525 acres) in the Planning Area. The majority of this acreage—more than 98 percent (98%)—is located within the city limits. Commercial land uses are generally concentrated in the downtown along Main Street, with a large amount of neighborhood and service related commercial along west Main, a large amount of office, with a high concentration of highway commercial and retail uses located east of Main Street adjacent to the Interstate 5 (I-5) corridor. Commercial uses also generally front East Street to the north and south as well as Kentucky Avenue in the northwest quadrant. Pockets of smaller, neighborhood-serving commercial establishments are scattered throughout otherwise residential areas.

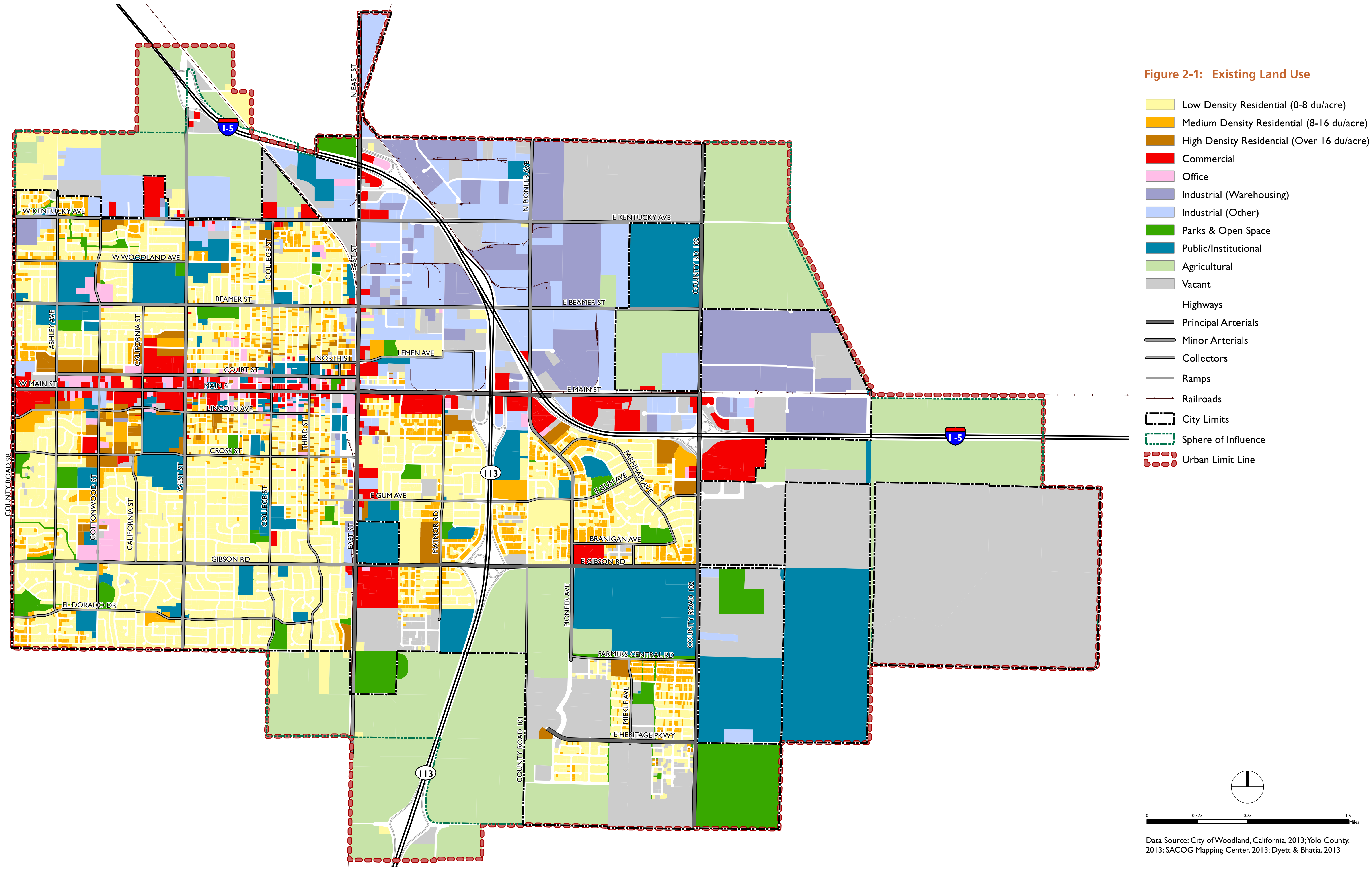


Figure 2-1: Existing Land Use
Low Density Residential (0-8 du/acre)
Medium Density Residential (8-16 du/acre)
High Density Residential (Over 16 du/acre)
Commercial
Office
Industrial (Warehousing)
Industrial (Other)
Parks & Open Space
Public/Institutional
Agricultural
Vacant
Highways
Principal Arterials
Minor Arterials
Collectors
Ramps
Railroads
City Limits
Sphere of Influence
Urban Limit Line
0 0.375 0.75 1.5 Miles
Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013

2.2 Development Trends and Major Development Projects

This section describes development projects that are currently in the pipeline as of June 2013. The tables include projects at all stages of the development process, from initial review to under construction. Projects that are under review, or approved but not yet under construction, represent what residents may see developed in Woodland over the next few years. As of June 2013, nine residential projects, four retail and commercial, one hotel, and one public project were approved but not constructed. A second public project is under construction, as are several commercial tenant improvements. Additionally, two residential projects and one industrial/retail project were proposed (projects with completed applications as of the General Plan notice of preparation date) for development. Tables 2.2-2 and 2.2-3 list the current residential and non-residential development projects, respectively, and Figure 2-2 maps their location and land use.

Residential

Since the late 1990s, the majority of residential growth has occurred in the east and southeast parts of Woodland. Sycamore Ranch in the east was developed first, followed by the adoption and initial development of the Spring Lake Specific Plan area. Currently, most of Woodland's approved single-family residential development potential exists in the Spring Lake Specific Plan area (see Table 2.2-1 below).

About 254 acres are in the residential development "pipeline" for a total of 1,416 units, the majority of which are located in the Spring Lake Specific Plan area (937 units). These are comprised of approved tentative maps, final maps, and proposed tentative maps for which there is a complete application but no final action has been taken on the project.

Of the units and lots in current development projects, 1,311 are single-family and 105 are multi-family units (93% and 13% respectively). For the pipeline projects listed in Table 2.2-2, gross densities of single-family developments average 6 units per acre and multi-family development average 20 units per acre; average density on a net basis—excluding land needed for public purposes such as streets—will be higher. Most of the projects are on sites large enough to require new public streets and infrastructure. Table 2.2-2 summarizes the current residential development projects.

In 2005, City Council established a 5,000-unit cap on new residential development between 2001 and 2020 in Woodland, replacing a prior policy that set a population limit. The residential unit cap applies only to development of new single-family units in planned neighborhoods and does not apply to new infill or multi-family development. According to City staff, about 3,000 single-family units remain before reaching the 5,000-unit cap. This policy indicates the continued support for the provision of multi-family product as a necessary means by which to effectively provide multiple housing options with in the community. In this market, multi-family that is not subsidized is difficult to build. However, as land demand becomes greater in the future, multi-family product will be more viable.

Spring Lake Specific Plan

The Spring Lake Specific Plan (SLSP), adopted in 2001, comprises 1,097 acres of a 1,748 master plan area identified by the 1996 General Plan for future residential growth. The Spring Lake Specific Plan provided for about 4,000 new single-family and multi-family units in southeast Woodland. Since 2001 a little more than 1,000 units have been constructed in Spring Lake leaving about 3,000 units of remaining development potential. The Master Plan Remainder Area (MPRA) is a 651-acre future specific plan area that will share infrastructure with the SLSP. The MPRA was assumed in prior infrastructure planning to have about 2,400 units of possible additional residential development potential, however, City Council has not yet approved this area for new residential development nor annexed the land. Infrastructure capacity in the Spring Lake Master Plan area was oversized in order to accommodate the future projected growth in the remainder area. Homes in Spring Lake have four annual assessments on their property tax bill: (1) Mello Roos assessment, (2) Lighting and Landscape District assessment, (3) Sports Park Maintenance Community Facilities District, and (4) Fire Suppression District. A Mello Roos District, or CFD, is created to finance public improvements and services when no other money is available, and the source of funding is typically a sale of municipal bonds. CFDs are normally formed in undeveloped areas and used to fund roads and install water, sewer and drainage systems so that new homes or commercial space can be built. The cash received from the bonds is used to build the infrastructure, and the assessment you pay is used to make principal and interest payments on the bonds. The bonds were issued in 2004 and are 30 year bonds (2034 financing period). Additional bonds may be issued within the District to help facilitate development. If new bonds are issued, they would likely have a 30 year term.

Remaining development potential in the Spring Lake Specific Plan and Master Plan Remainder areas is summarized in Table 2.2-1 below.

TABLE 2.2-1 REMAINING DEVELOPMENT CAPACITY IN SPRING LAKE SPECIFIC PLAN AREA (AS OF JUNE 2013)

	SPRING LAKE	MASTER PLAN REMAINDER	TOTAL
Specific Plan Development Potential	4,067	2,438	6,505
Units Constructed 2001-2013	1,017	0	1,017
Total Units Remaining	**3,050**	**2,438**	**5,488**

Source: BAE, Dyett & Bhatia, 2013.

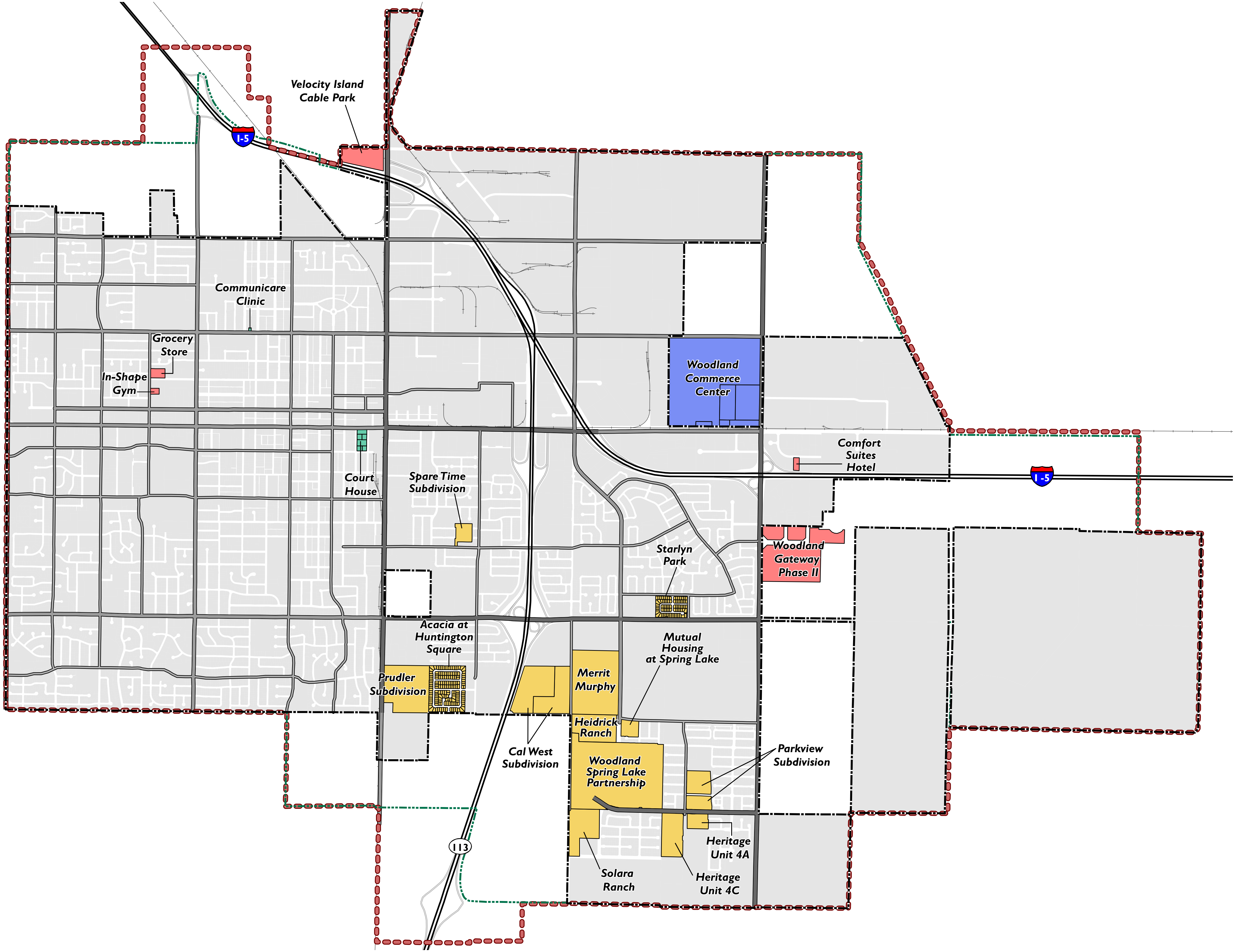


Figure 2-2: Current Development Projects

Major Developments: Proposed, Approved or Under Construction

Residential
Commercial
Industrial
Public
Highways
Principal Arterials
Minor Arterials
Collectors
Local Roads
Ramps
Railroads
City Limits
Sphere of Influence
Urban Limit Line

0 0.375 0.75 1.5 Miles

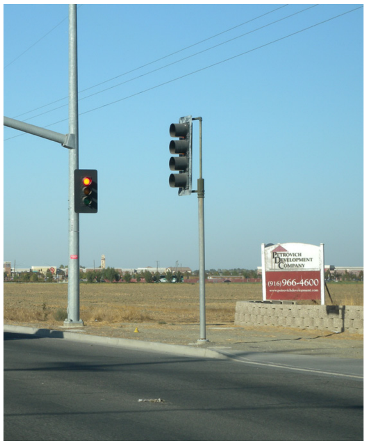
Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013

TABLE 2.2-2 CURRENT RESIDENTIAL DEVELOPMENT PROJECTS (AS OF JUNE 2013)

NAME / DESCRIPTION	ADDRESS/LOCATION	SPRING LAKE SP AREA	ZONING DISTRICT	SITE AREA (ACRES)	TOTAL LOTS OR UNITS	SINGLE FAMILY	MULTI FAMILY	DENSITY (DU/ GROSS ACRE)	STATUS[1]
Merrit Murphy Units 1 & 2	NW corner of Pioneer Ave and Farmers Central Road	Yes	R-5	55.41	241	241		5.0	Approved
Cal West Subdivision	NW corner of Harry Lorenzo Ave and Farmers Central Road; east of Hwy 113	Yes	R-8	27.76	173	173		6.1	Proposed
Prudler Subdivision (general plan amendment and rezone)	North of Sports Park Dr., east of East St., and south of County Fair Mall	No	R-5, R-8	37.27	204	204		5.0	Proposed
Heritage Units 4A and C	Unit 4A: SE corner of Heritage Parkway and Meikle Ave; Unit 4C: SW corner of Heritage Parkway and Meikle Ave	Yes	R-4	21.59	116	116		4.0	Approved
Parkview Subdivision (general plan and spring lake specific plan amendment)	NE corner of Meikle Ave & Heritage Parkway	Yes	R-8	6.25	108	108		6.7	Approved
Heidrick Ranch Phase 2 & 3	SW corner of Farmer's Central Road and Pioneer Ave	Yes	R-5	21.26	104	104		5.0	Approved
Mutual Housing at Spring Lake	Pioneer Ave, Farmers Central Road, Brubaker St, and Armus Place	Yes	R-25	5.14	101		101	19.6	Approved
Acacia at Huntington Square (Standard Pacific Homes)	End of Matomor Drive	No	R-5	40.00	162	162		5.0	Approved
Starlyn Park (Centex Homes)	East Gibson and Branigan Avenue	No	LDR-7	14.47	75	75		1.0	Approved
Solara Ranch	SW corner of Parland Ave and Heritage Parkway	Yes	R-5	19.22	94	94		5.0	Approved
Spare Time Subdivision	1341 East Gum St	No	R-1	5.65	38	34	4	6.7	Approved
Total				**254.02**	**1,416**	**1,311**	**105**	**5.6**	
Total Spring Lake Specific Plan Area				**156.63**	**937**	**836**	**101**	**6.0**	

1 Proposed projects are those with submitted applications as of the notice of preparation date for this General Plan update.

Source: City of Woodland, 2013.



The Gateway Commercial Center is one of the largest new retail developments in Woodland. A second phase is planned to the south.

Non-Residential

Retail

As of result of new residential development in Sycamore Ranch and the Spring Lake Specific Plan area, Woodland has experienced a significant amount of new retail development on the city's eastern edge. This includes big box retail development along East Main Street, east of County Road 102 (CR 102) including Walmart, Home Depot, Office Max, and smaller ancillary retail tenants; the Bel-Air supermarket at the northeast corner of Gibson Road and Pioneer Avenue; and more recently, the development of the Gateway Phase I commercial center at the southeast corner of CR 102 and I-5. Phase I of the Gateway Commercial Center includes Costco, Target (relocated from the County Fair Mall), Best Buy, Michael's, and a range of smaller retailers. This center has capacity for approximately 100,000 square feet of additional space.[1]

On December 6, 2011, City Council approved a development agreement and prezoning application associated with the annexation of approximately 154 acres located east of CR 102 and north of County Road 24 (CR 24)/ East Gibson Road for the Gateway Phase II project. Of the 154 acres, City Council approved prezoning of 61 acres for commercial development, with the other 93 acres remaining in agricultural use. The project includes 340,000 square feet of future retail development plus sites for three auto dealerships (typically 25,000 square feet) on the 61-acre site.[2]

Industrial

Most of Woodland's industrial space is concentrated in the northeastern part of the city, north of Main Street, and east of East Street. Woodland's industrial inventory has a mixture of building ages and sizes, although there are relatively few modern buildings. According to the Economic and Fiscal Background Report prepared by BAE as part of the General Plan Update process, Woodland has about a 10-plus year supply of vacant industrial space. Low demand and the high costs associated with flood proofing new construction have limited new industrial development in northeastern part of the city. While rents are the lowest in the region, the added expense of required flood insurance for new tenants and flood proofing of new construction for most industrial buildings has resulted in challenges in leasing vacant space and selling vacant industrial land for new development. Please refer to Chapter 3 for more detail on constraints related to flooding and how it impacts development opportunity.

More than 38 percent (38%) of industrial land located in the Planning Area is currently used for warehouse and distribution facilities. Low-cost land in conjunction with close proximity to I-5 and Interstate 80 (I-80), as well as Sierra Northern Railway and California Northern Railroad has attracted a number

1 Economic and Fiscal Background Report, City of Woodland. BAE (2013).

2 Staff Report to City Council, Woodland Gateway Phase II Project. City of Woodland (September 20, 2011)

of large-scale, cost sensitive warehousing operations. Major warehouse and distribution facilities located within the Planning Area include Target, Walgreens and Rite Aid. Together these facilities employ nearly 2,000 people.[3]

A developer recently proposed annexation of 146 acres (located in the 100-year floodplain) in the northeast portion of the Planning Area, adjacent to Woodland's boundaries northwest of the East Main Street and CR 102 intersection. The proposed project—Woodland Commerce Center—proposes to subdivide the 146-acre site into approximately 15 parcels for future industrial and retail development and create more than 3.1 million square feet of new industrial uses including up to 20,000 square feet of new retail uses.

Relocation of the Yolo County courthouse, currently under construction, is anticipated to catalyze further office development downtown.

Office

There are no applications for private office space being processed nor are there any approved unbuilt private office projects at this time, despite relatively low vacancy rates (around 10% to 11%). Overall, Woodland does not have a large presence in the regional office market; with the exception of the courthouse-related office uses, most office space in Woodland serves as local market. Woodland's office tenants have historically been local residents who own small businesses and seek inexpensive class B and C space.[4]

The city does not currently have any business park projects. Business parks provide larger concentrations of office space that could command regional visibility. A 48-acre site was designated in the Master Plan Remainder area for a future business park use. The site is located in the northwest quadrant of the SR 133 and CR 25A intersection in the southern part of the city. However, the site has not been entitled, and the area remains outside the city limits. A specific plan process would be required to prepare the site for development.

While demand for office space in Woodland is low, there exists some potential for new office development associated with construction of the new County courthouse building (see below). When completed, law offices are expected to gradually relocate to buildings closer to the new courthouse building, and out-of-town attorneys are expected to generate additional demand for office space.[5]

Public

Yolo County is constructing a new 163,000 square foot facility that will consolidate and replace seven court facility sites spread throughout Downtown Woodland. The new facility is located on the south side of Main Street, between 5th and 6th streets. The courthouse relocation presents an opportunity for the City regarding reuse of the old courthouse space—possibilities include more office space, education-related uses (e.g. a satellite campus of some higher learning institution), or similar.

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3 Comprehensive Annual Financial Report, FY 2010/11. City of Woodland (2011).

4 Economic and Fiscal Background Report, City of Woodland. BAE (2013).

5 ibid

TABLE 2.2-3 CURRENT NON-RESIDENTIAL DEVELOPMENT PROJECTS (AS OF JUNE 2013)

NAME / DESCRIPTION	ADDRESS / LOCATION	ZONING DISTRICT	SITE AREA (ACRES)	TOTAL SF	RETAIL/ COMMERCIAL (SF)	INDUSTRIAL (SF)	PUBLIC (SF)	HOTEL (ROOMS)	FAR	STATUS[2]
Commercial										
Comfort Suites Hotel	2080 Freeway Drive	EOZ/ CH/ PD	1.30	56,628				66	1.0	Approved
Woodland Gateway Phase II[1]	East of County Road 102 and north of CR 24/East Gibson Road	C-2	61.30	415,000	415,000				0.2	Approved
Velocity Island Wakeboard Park	755 North East Street	OS	15.00	1,824	1,824				N/A	Approved
In-Shape Gym (Tenant Improvements)	285 California Street	C-2	N/A	24,500	24,500				N/A	Under Construction
Grocery Store (Tenant Improvements)	215 California Avenue	R-M	2.41	40,000	40,000				0.4	Under Construction
Industrial										
Woodland Commerce Center (30 Lots)	NW Corner of East Main Street and CR 102	I	146.00	3,196,932	20,000	3,176,932			0.5	Proposed
Public										
CommuniCare Clinic	215 Beamer Street	R-1	0.16	21,000			21,000		3.0	Under Construction
Court House (14 Courtrooms)	1000-1022 Main Street	DSP	1.81	163,000			163,000		2.1	Approved
Total			227.98	3,918,884	501,324	3,176,932	184,000	66	0.4	

1 Project includes 340,000 square feet of potential retail/commercial development and three sites of approximately 25,000 square feet for auto dealerships.
2 Proposed projects are those with submitted applications as of the notice of preparation date for this General Plan update.

Source: City of Woodland, 2013.

2.3 Densities & Intensities

The General Plan establishes density/intensity standards for each type of land use. These standards regulate how much development is permitted on a site. For residential uses, the density/intensity standards are expressed as the number of housing units per gross acre.[6] For non-residential uses, development intensity is controlled by a measure known as Floor Area Ratio (FAR), which refers to the ratio between a building's total floor area and the total area of the site. For instance, a one-story building occupying a quarter of a parcel has an FAR of 0.25; a two-story building occupying the same quarter of a parcel has an FAR of 0.5. When FAR is specified for a residential and non-residential mixed use classification, the FAR refers to the amount of non-residential use only (per the current General Plan, Table B-1, page 1-9). Density and FAR are standard measures of site intensity that are used to evaluate development and during the site planning review process.

The current General Plan land use classifications are described below and mapped in Figure 2-3. Land use classifications may be modified as appropriate during the General Plan Update.

Residential

Housing is the primary use intended for residential land use designations. However, in each classification, some non-residential uses may also be permitted, such as medical and professional office uses, and public and quasi-public uses. Residential densities are expressed as gross dwelling units per acre. The following is a summary of the existing land use designations in the current General Plan.

Rural Residential

This designation provides for single family detached homes, secondary residential units, hobby farming and keeping of animals, public and quasi-public uses, and similar and compatible uses. Residential densities shall not exceed 2.0 units per gross acre. The FAR for non-residential uses shall not exceed 0.40.

Very Low Density Residential

This designation provides for single family detached homes, secondary residential units, public and quasi-public uses, and similar and compatible uses. Residential densities shall be in the range of 1.0 to 4.0 units per gross acre. The FAR for non-residential uses shall not exceed 0.30.

6 Woodland General Plan Policy Document, Part II, p. 1-2. City of Woodland (2002).

Low Density Residential

This designation provides for single family detached and attached homes, secondary residential units, public and quasi-public uses, and similar and compatible uses. Residential densities shall be in the range of 3.0 to 8.0 units per gross acre. The FAR for non-residential uses shall not exceed 0.40.

Neighborhood Preservation

This designation provides for single family detached and attached homes, duplexes, existing triplexes and fourplexes, existing multi- family units, existing nurseries, nursing, and convalescent homes and hospitals, limited commercial uses, public and quasi-public uses, and similar and compatible uses. This designation has the same density range and use provisions as low density residential, but allows the following uses in existence as of December 6, 1979: multiple-family residential uses, nurseries, nursing, and convalescent homes, and hospitals to continue to operate as legal uses. The primary focus of this designation is residential. Residential densities shall be in the range of 3.0 to 8.0 units per gross acre. The FAR for non-residential uses shall not exceed 0.50. This designation is applied to older residential neighborhoods where a mix of housing types has developed due to previous land use designations and where continued conversions may negatively affect the overall low density residential character of the area, the capacity of services, and the circulation system.

Medium-Low Density Residential

This designation provides for single family detached and attached homes, secondary residential units, public and quasi-public uses, and similar and compatible uses. Residential densities shall be in the range of 5.0 to 12.0 units per gross acre. The FAR for non-residential uses shall not exceed 0.50.

Medium Density Residential

This designation provides for single family homes, duplexes, triplexes, fourplexes, multi-family residential units, group quarters, mobilehome parks,

The Neighborhood Preservation designation is applied to older residential areas near Downtown Woodland and is intended to maintain the area's unique character.

medical and professional offices, public and quasi-public uses, and similar and compatible uses. Medical and professional offices may be allowed with discretionary approval, when found to be compatible with the surrounding neighborhood. Residential densities shall be in the range of 8.0 to 16.0 units per gross acre. The FAR for non-residential uses shall not exceed 0.50.

High Density Residential

This designation provides for triplexes, fourplexes, multi-family residential units, group quarters, medical and professional offices, public and quasi-public uses, and similar and compatible uses. Medical and professional offices may be allowed with discretionary approval when found to be compatible with the surrounding neighborhood. Residential densities shall be in the range of 16.0 to 25.0 units per gross acre. Densities greater than 25.0 units per acre may be allowed subject to a conditional use permit. The FAR for non-residential uses shall not exceed 0.50.

Planned Neighborhood

This designation provides for single-family detached and attached homes, secondary residential units, multi-family residential units, neighborhood commercial uses, parks, open space, public and quasi-public uses, and similar and compatible uses. All urban development under this designation shall be approved pursuant to an adopted specific plan. As these specific plans are approved, the Planned Neighborhood designation shall be replaced through corresponding general plan amendments with more specific land use designations. Policies 1.C.3 through 1.C.5 in Part II, Chapter 1, of this Policy Document [in the 2002 General Plan] include guidelines for the preparation of specific plans for Planned Neighborhood areas. The overall average residential density for residential lands (i.e., excluding lands designated for Neighborhood Commercial, Open Space, or Public Service) shall not exceed 7.0 units per gross acre. Prior to adoption of a specific plan, allowable uses shall include only those specified under the Agriculture (A) and Open Space (OS) designations.

Townhouses and flats can be built in areas designated for medium- and high-density residential uses.

Commercial designations provide for a variety of retail, service, and office uses that serve local residents and visitors.

Mixed Use

The mixed use designation allows for the combination of residential and non-residential uses within the same project. Mixed use developments are currently only permitted within the Downtown Specific Plan area, East Street Corridor Specific Plan area,[7] in the C-2 zoning district, and in the C-3 zoning district with a conditional use permit.

Commercial/Residential Mixed Use

This designation provides for medium to high density residential uses, retail and service uses, restaurants, banks, professional and administrative offices, and similar and compatible uses. This designation is seen as a transition zone utilized to buffer residential and more intensive commercial uses. The FAR for non-residential uses shall be in the range of 0.6 to1.5. The allowable density for residential projects shall be in the range of 0.0 to 25.0 units per gross acre. Residential uses shall be subject to discretionary review and approval.

Commercial

Non-residential use—such as office and retail—is the primary use intended for commercial land use designations.

Neighborhood Commercial

This designation provides for neighborhood and locally-oriented retail and service uses, public and quasi-public uses, and similar and compatible uses. This designation is applied to areas of 15 acres or less within residential neighborhoods for the purpose of providing services to the immediate neighborhood. The FAR shall not exceed 0.50.

Central Commercial

This designation provides for retail and service uses, restaurants, banks, entertainment uses, professional and administrative offices, residential units above the ground floor, public and quasi-public uses, and similar and compatible uses. The FAR for non-residential uses shall not exceed 4.0. The FAR for non-residential uses in the East Street Corridor Specific Plan area shall be between 0.80 and 1.50. Residential densities shall be in the range of 5.0 to 12.0 units per gross acre. Residential densities in the East Street Corridor Specific Plan area shall be in the range of 0.0 to 25.0 units per gross acre. Residential uses shall be subject to discretionary review and approval.

7 It should be noted that the East Street Corridor Specific Plan is somewhat inconsistent in how it addresses mixed use. In 2004 an amendment was made to restrict SF/duplex/split lot uses such that they have to be part of a mixed use project and are subject to a zoning administrator permit. However, this is in conflict with the requirement that multi-use developments require a conditional use permit.

General Commercial

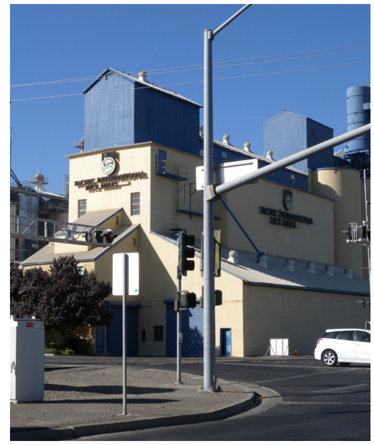
This designation provides for retail, services, restaurants, professional and administrative offices, hotels and motels, public and quasi-public uses, and similar and compatible uses. The FAR shall not exceed 0.80. The FAR in the East Street Corridor Specific Plan Area shall be between 0.60 and 1.50.

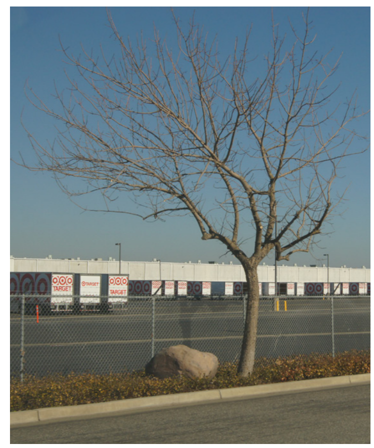
Service Commercial

This designation provides for heavy commercial uses such as repair shops when activities are conducted indoors, contractors shops, auto and other vehicle sales lots; large retail building supply businesses, storage warehouses, and nurseries; eating establishments; entertainment and recreation facilities; and small and large grocery stores, public and quasi-public uses, and similar and compatible uses. The FAR shall not exceed 0.80.

Highway Commercial

This designation provides for restaurants, service stations, truck stops, hotels and motels, and retail and amusement uses that are oriented principally to highway and through traffic, regional retail uses, regional offices, public and quasi-public uses, and similar and compatible uses. The FAR shall not exceed 0.50.





Uses permitted under the Industrial land use designation include food processing, warehousing, and distribution.

Industrial

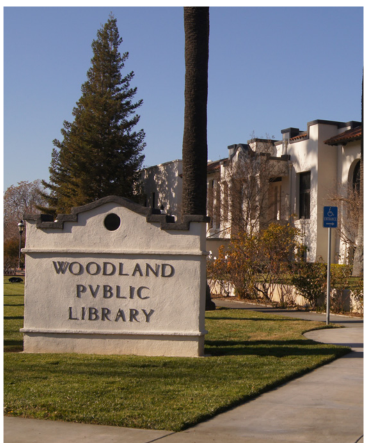
Industrial is the primarily use intended for industrial land use designations. However, the Business Park land use designation allows for some commercial uses such as office and research and development (R&D). Housing is not a permitted use for any industrial designation.

Business Park

This designation provides for office parks, research and development, warehouses and light manufacturing related to research and development, general commercial uses that cater to industrial uses in this designation, professional offices, public and quasi-public uses, and similar and compatible uses. The FAR shall not exceed 0.50.

Industrial

This designation provides for industrial parks, warehouses, manufacturing, research and development, commercial uses compatible with the industrial uses, public and quasi-public uses, and similar and compatible uses. The FAR shall not exceed 0.60.



Schools and libraries are among the uses permitted in the Public Services land use designation. Public and quasi-public uses, such as churches and schools, are also permitted under residential designations.

Public and Open Space

Public Services

This designation provides for public facilities such as colleges, schools, hospitals, sanitariums, penal institutions, libraries, museums, government offices and courts, churches, meeting halls, cemeteries and mausoleums, and similar and compatible uses. The FAR shall not exceed 0.50.

Open Space

This designation provides for agricultural uses, outdoor recreational and equestrian uses, habitat protection, irrigation canals, reservoirs, watershed management, public and quasi-public uses, and areas typically limited for human occupation due to public health and safety hazards such as earthquake faults, flood- ways, unstable soils, or areas containing wildlife habitat and other environmentally-sensitive features. Such land areas are primarily publicly owned, but may include private property. The FAR for non-residential uses shall not exceed 0.10.

Agriculture

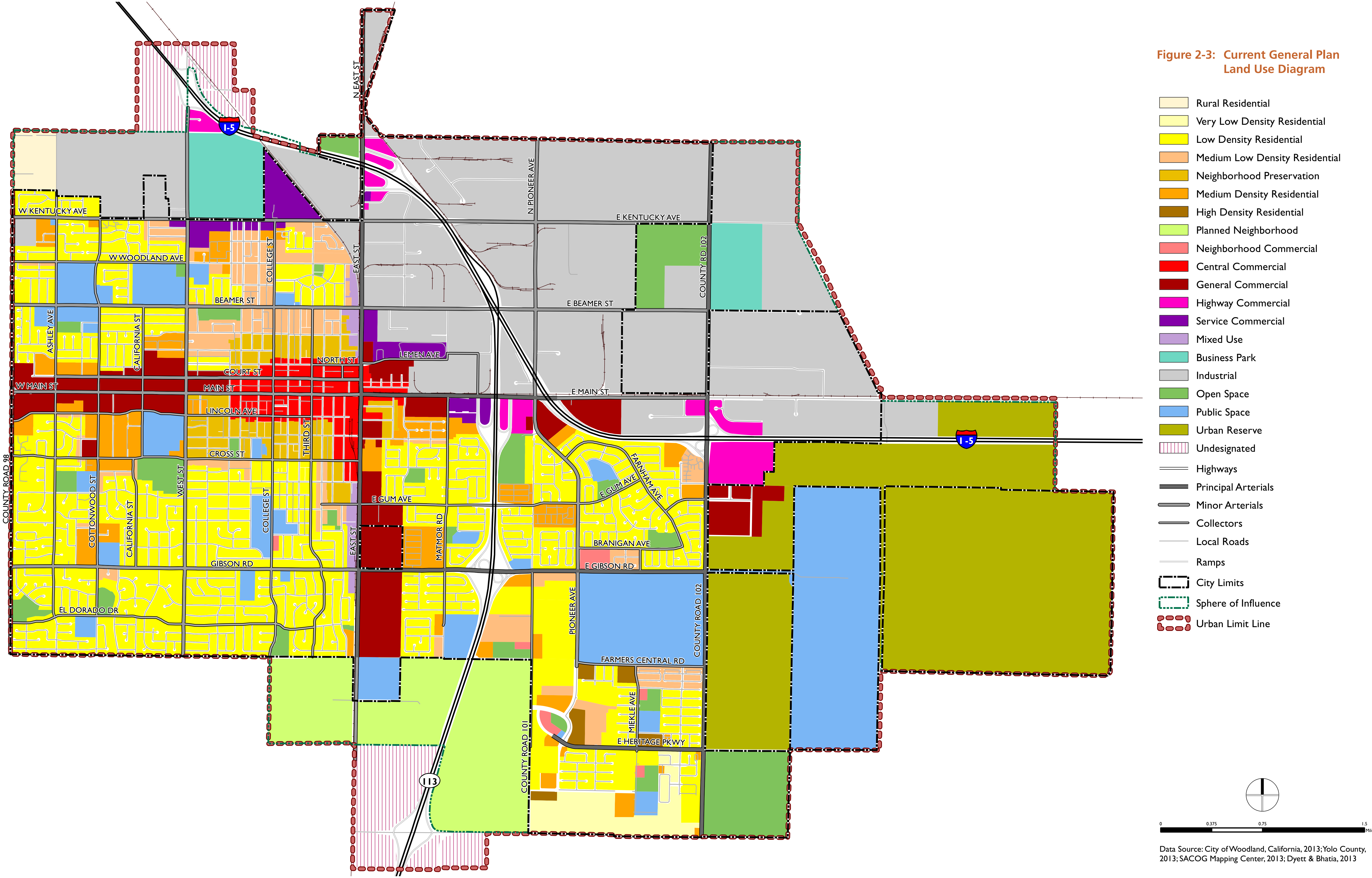
This designation provides for agricultural uses, limited agricultural support service uses (e.g., barns, animal feed facilities, silos, stables, fruit stands, and feed stores), industrial uses related directly to agriculture, public and quasi public uses, and similar and compatible uses. The minimum parcel size shall be 20 acres. Allowable residential development in areas designated Agriculture includes single family homes, secondary residential units, caretaker/employee housing, and farmworker housing. The FAR for non-residential uses shall not exceed 0.40. This designation is applied to lands outside the Planning Area, but does not prohibit lands within the Planning Area from being used for agricultural purposes.

Urban Reserve

This designation is applied to land outside the Urban Limit Line within the Planning Area, which may be considered for development with urban uses. No urban development may occur on lands designated Urban Reserve before the General Plan is amended to specify a primary land use designation for the property. Allowable uses include wastewater treatment facilities and other uses specified under the Agriculture (A) and Open Space (OS) designations.

It should be noted that the definition of Urban Reserve included here reflects the wording in the 2002 General Plan, which differs from the meaning implied by the Urban Limit Line voter initiative. The initiative that established, by vote, a permanent ULL spoke to the ideas of infill, residential development, and preservation of agricultural land; the Urban Reserve definition in the current General Plan is focused more on minimizing use conflicts with the wastewater treatment facility.

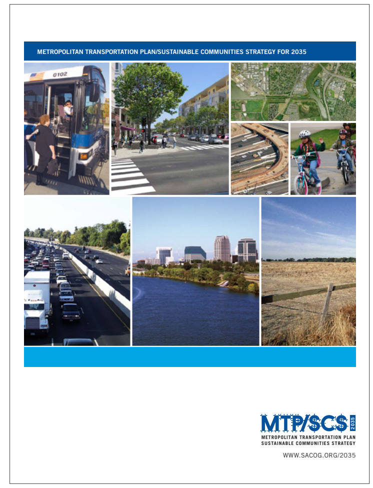
Figure 2-3: Current General Plan Land Use Diagram



Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013

2.4 Existing Plans

This section summarizes the key points and objectives of a range of regional and local plans, regulations, and programs that establish the existing local context and form a basis for the Woodland General Plan Update. The various specific plans discussed in this section are mapped on Figure 2-4.



SACOG adopted its first Sustainable Communities Strategy, required under SB 375, in 2012.

SACOG Sustainable Communities Strategy (2012)

Under Senate Bill 375 (SB 375) (Statutes of 2008), as the regionally identified Metropolitan Planning Organization, the Sacramento Area Council of Governments (SACOG) is required to develop a Sustainable Communities Strategy (SCS) as part of its Metropolitan Transportation Plan (MTP). The MTP identifies policies and strategies to reduce per capita GHG emissions from passenger vehicles. The SCS is intended to encourage an integrated approach to land use and transportation planning that not only reduces vehicle travel, but accommodates an adequate supply of housing, reduces impacts on valuable habitat and productive farmland, increases resource use efficiency, and promotes a prosperous regional economy.

SACOG adopted its MTP/SCS in 2012 and categorized the urbanized land within its jurisdiction into four Community Types according to land use and density/intensity. According to the MTP/SCS, three Community Types are represented in Woodland, as follows:

- **Center and Corridor Communities.** Land uses are typically higher density and more mixed than surrounding land uses. These areas are identified in local plans as historic downtowns, main streets, commercial corridors, rail station areas, central business districts, town centers, or other high density destinations. They typically have more compact development patterns, a greater mix of uses, and a wider variety of transportation infrastructure compared to the rest of the region. In Woodland, this Community Type designation is applied to the Downtown and East Street Corridors.
- **Developing Communities.** These areas are typically, though not always, situated on vacant land at the edge of existing urban or suburban development; they are the next increment of urban expansion. Areas are identified in local plans as special plan areas, specific plans, or master plans and may be residential-only, employment-only, or a mix of residential and employment uses. Transportation options in Developing Communities often depend, to a great extent, on the timing of development. In Woodland, this Community Type designation is applied to the Spring Lake Specific Plan area.

- **Established Communities.** Typically these areas are adjacent to, or surrounding, Center and Corridor Communities. Local land use plans aim to maintain the existing character and land use pattern. Land uses are typically made up of existing low- to medium-density residential neighborhoods, office and industrial parks, or commercial strip centers. This Community Type represents all areas of Woodland outside those noted in the Community Types above.

The fourth Community Type, which is not represented in Woodland, is Rural Residential. Rural Residential communities are typically located outside of urbanized areas and are predominately very low-density residential, with some small-scale hobby or commercial farming. While some unincorporated areas within Woodland's ULL may currently exhibit characteristics similar to Rural Residential communities (specifically in unincorporated farmland areas), SACOG recognizes that most of these areas have the potential to transition to higher intensity uses during the planning period due to their location within the ULL.

Notably, SACOG categorizes much of Woodland's land area in the "Established Communities" Community Type, which is considered the least likely for future change or growth. While this characterization is largely true for many areas of Woodland, particularly in low- and medium-density residential neighborhoods, it does not recognize other areas that have been identified locally as districts for community growth and revitalization. These areas include the Northeast Industrial Area, commercial nodes along 1-5, the West Main Street Corridor, and Kentucky Avenue. Given that SACOG projects Woodland's population will grow 20 percent (20%) by 2035, adding nearly 11,500 people, and total employment to grow by 20 percent (20%), with an additional 5,000 jobs, it will likely be necessary to consider these as potential growth areas in addition to Downtown, East Street, and Spring Lake. SACOG has not identified any Transit Priority Areas within Woodland. These are defined as areas within one-half mile of a rail station stop or a high-quality (minimum headways, or time between trains/buses, of 15 minutes during peak hours) transit corridor. Woodland has no rail transit, and bus headways all exceed 15 minutes.

SB 375 does not require the City's land use policies or regulations, including its General Plan, to conform to the SCS. However, SB 375 places indirect pressure on local governments to be consistent with the SCS in their planning by creating financial incentives, as SACOG may only award funding to projects that are consistent with the SCS. In additional to qualifying for federal funding, general plan consistency with the SCS also provides local jurisdictions with CEQA streamlining benefits. Specifically, (1) all housing and mixed-use projects consistent the SCS are exempt from requirements to analyze the impact of the project on passenger vehicle greenhouse gas emissions, the regional transportation system, and growth inducement; (2) Transit

Priority Projects have an easier legal burden of proof to meet and may prepare a short-form Sustainable Communities Environmental Assessment instead of a full EIR; and (3) a very limited number of infill projects qualify for a complete waiver from any CEQA review.[8]

City of Woodland General Plan (1996, Technical Update 2002)

The City of Woodland's most recent General Plan was last comprehensively updated in 1996, with technical updates adopted by the City Council in 2002. In addition to the seven state-required elements (land use, housing, circulation, open space, conservation, safety, and noise), the General Plan also addresses community design, public facilities and services, educational and community services, historic preservation, environmental resources, health, economic development, and administration and implementation. The General Plan establishes long-range policies to guide the use of private and public lands within the community's planning boundaries through the horizon year of 2020. Though a technical update was completed in 2002, the plan has not been fully reconsidered since 1996, with the exception of the Housing Element. As required under State law, the Housing Element has been update more recently: the most recent adoption was 2009, and the most recent revision was in August 2013 as part of the parallel General Plan update process. The new Housing Element is scheduled for approval by October 31, 2013 pursuant to requirements of State law.

Downtown Specific Plan (1993, Revised 2003)

The Downtown Specific Plan was originally adopted in 1993 with the intention of revitalizing Woodland's core Historic Downtown and reestablishing it as the specialty retail, business, entertainment, cultural, and government center for the community. This plan was revised in 2003, following a very extensive public process. The Specific Plan revision was developed concurrently with the 2002 General Plan Update, and as such, is consistent with the existing General Plan goals and policies. The Downtown Specific Plan identifies numerous "Plan Concepts" that serve as guiding principles for implementation and cover topics ranging from economic viability and physical environment to circulation and historic preservation. The Downtown Specific Plan area is shown in Figure 2-4.

The plan establishes design guidelines for new construction and building renovations in Downtown. The guidelines encourage pedestrian-oriented development with active, visible ground floor uses along Main Street. Parking, service areas, and vehicle entries would be located away from the pedestrian realm and on secondary streets. Emphasis is placed on building design and character, including massing, scale, and articulation, as well as materials, roof lines, and design details.

8 http://www.sacog.org/2035/the-plan/sustainable-communities-strategy/about-senate-bill-375/. Accessed on 8/30/13.

The Downtown Specific Plan has shown great success in preservation and reuse of historic buildings, as well as development of vacant infill lots in Downtown Woodland. Constructed in 1913 in the Beaux Arts style, deferred maintenance and a high vacancy rate had eroded the Porter Building's once elegant appearance and viability as a retail anchor in the downtown. Recent renovation and improvements to the building allowed Cambridge College to locate there, which has a long-term goal to increase enrollment to 300 students in the three-story building. The presence of the students, staff and faculty have added new vibrancy to Downtown as well as supported business in the downtown. Additionally, the Woodland Corporate Center has proven to be a catalyst for Downtown infill development, and has created an appealing atmosphere at the entrance of Downtown. The success of the project has resulted in the city seeing significant interest for infill development in the downtown area.

Continuing land use decisions over time have had cumulative negative impacts on the Downtown, such as extensive strip commercial development, the County Fair Mall, and more recent freeway oriented retail development. Even the recent economic downturn and shift in shopping habits and internet use have had impacts. This strong retail competition from other parts of Woodland, more recently, the Gateway Shopping Center, and the lack of large improved retail spaces required for retail anchors have severely inhibited Downtown's ability to attract new and viable retail tenants. During the General Plan Update, further consideration should be given to the types of uses that are appropriate for the Downtown.

The Downtown Specific Plan is intended to help revitalize Woodland's historic core. It includes policies and design guidelines related to urban design, streetscape, historic preservation, and mobility.

Southeast Area Specific Plan (1990, Revised 1995)

The Southeast Area Specific Plan, adopted in 1990 and amended most recently in 1995, covers the portion of Woodland directly south of I-5 and east of State Route 113 (SR 113) and was intended to implement a major expansion of the city's eastern urban footprint. In addition to land use and circulation programs, the plan includes design guidelines and standards relevant to residential, commercial and industrial development. Over the last 20 years, this neighborhood has been completely built-out and generally reflects the land use pattern articulated in the plan. Southeast Woodland is a primarily low- and medium-density residential neighborhood with some large format commercial uses along Gibson Road and Pioneer Avenue as well as public uses, including an elementary school, recreational fields, and two public parks. The Southeast Specific Plan area is shown in Figure 2-4.

In general the Southeast Area Specific Plan has been successful in providing new housing at various affordability levels for Woodland residents. While the majority of housing development in the Specific Plan area is single family development, two mobile home parks are also located in the Specific Plan area, which provide housing to lower-income households. Additionally, as part of the buildout of the Southeast Specific Plan area, two parks were constructed and the Bel-Air Shopping center was developed, contributing to the park and retail inventory of the city. Currently there is only one undeveloped residential site within the Specific Plan area that is presently being developed by Centex Homes. Centex plans to construct 75 single-family homes on the site. See Figure 2-2 for the location of the Starlyn Park residential project.

Spring Lake Specific Plan (2001, Revised 2007)

The Spring Lake Specific Plan (SLSP) was adopted in 2001 and has been amended numerous times, most recently in 2007. The Plan covers more than 1,000 acres in southeast Woodland south of Gibson Road and east of SR 113 and, as adopted, would include new parks, schools, and neighborhood commercial areas in addition to more than 4,000 housing units at an average density of approximately 3.7 units per acre. Pockets of higher density housing are interspersed throughout the plan area. The plan, accompanied by a separate set of design standards (adopted in 2003), calls for a "neo-traditional" land use pattern and architectural design in order to foster greater pedestrian connectivity and community interaction. Currently, the plan area is only partially built out. Just over 1,000 residential units, Pioneer High School, and the Community and Senior Center have been constructed. The Spring Lake Specific Plan area is shown in Figure 2-4.

The 651-acre Master Plan Remainder area, also shown in Figure 2-4, has about 2,400 units of possible additional residential development potential. This area includes proposed land use allocations for additional parks, schools, neighborhood commercial, and business park uses.

Approximately 20 percent of the SLSP has been implemented, with many significant land use and policy changes along the way. Neighborhood commercial and neighborhood school concepts were amended out, and significant proposed changes for the central area are currently proposed. Residential densities overall have been lowered. Buildout of Spring Lake has been hindered by market forces, as new residential development region-wide slowed significantly with the economic downturn starting in 2008.

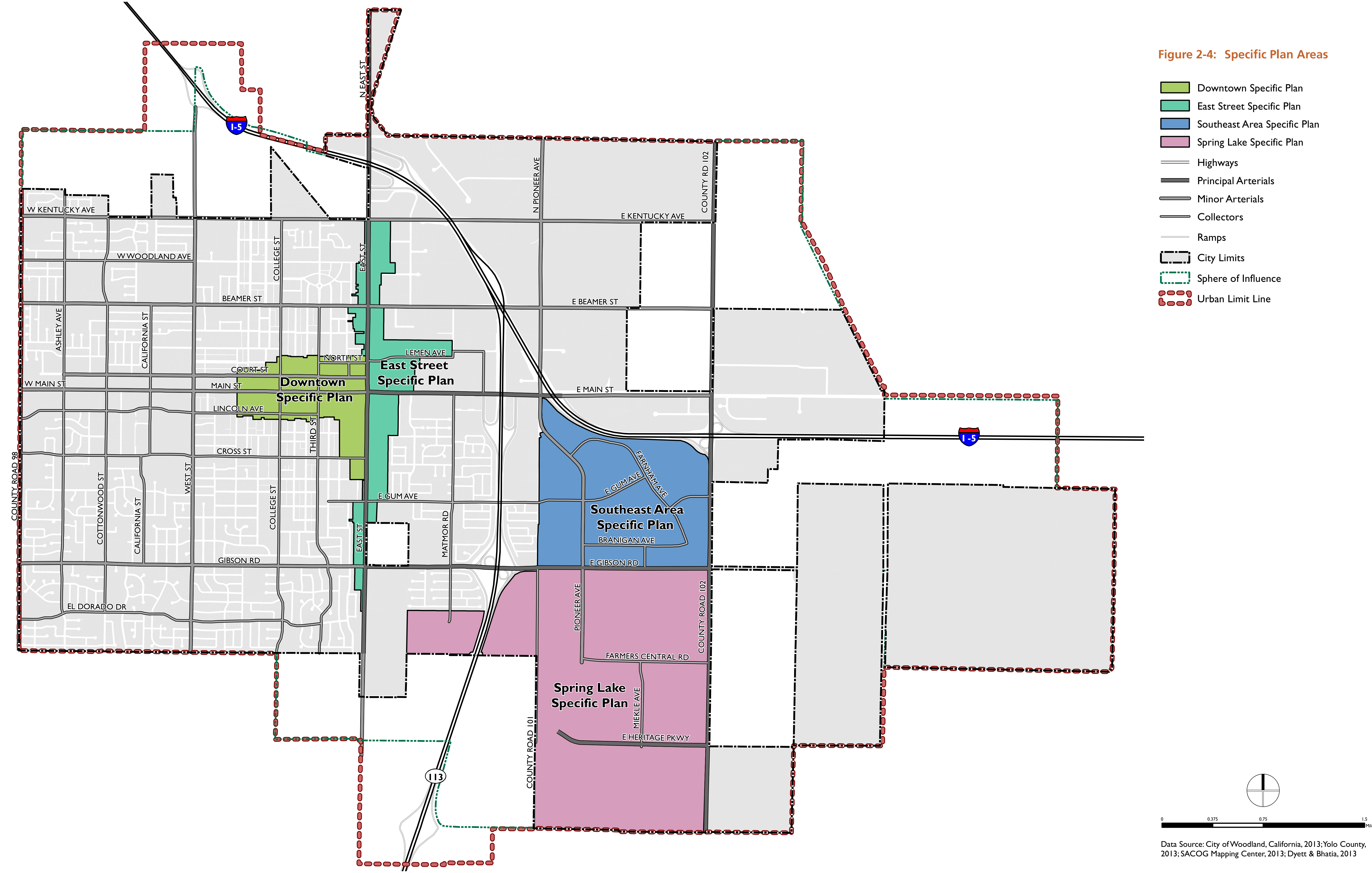
East Street Corridor Specific Plan (1998, Revised 2005)

The East Street Corridor Specific Plan was adopted in 1998, with a minor revision in 2005. The intent of the plan is to enhance the East Street Corridor as a mixed-use residential, shopping, service, and community district. East Street functions as an important north-south connection through Woodland's eastern neighborhoods and provides access to the city's northeast industrial sector. Generally, the plan focuses on encouraging new types of development that create an active community node, enhancing the public realm to make it a more attractive place to gather and conduct business. It contains an extensive urban design element that encourages connectivity and multi-modal transportation options. The East Street Corridor Specific Plan area is shown in Figure 2-4.

The City has seen minimal success in implementing the East Street Corridor Specific Plan. The plan in general is viewed as not being flexible enough in allowing a broad variety of uses that the market is ready to provide. Furthermore, the large number of existing industrial uses are incompatible with the goals of the plan, which focus on creating a mixed use residential corridor. In addition, the plan is somewhat convoluted in how it addresses mixed use: in 2004 there was an amendment to restrict SF/duplex/split lot uses such that they have to be part of a mixed use project and are subject to a zoning administrator permit; however, this conflicts with the requirement that multi-use developments require a conditional use permit.

The East Street Corridor is characterized by service commercial uses, development opportunity sites, and the railroad. The Specific Plan envisions the area as having a broader mix of uses.

Figure 2-4: Specific Plan Areas



Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013

Some "clean up" of the Specific Plan is needed to address these inconsistencies and other problems. This process can begin by using the General Plan Update to clarify the community's intent for the corridor. The General Plan Update should also reconsider the land use designations and regulatory standards in this area, reassess the redevelopment potential of sites within the Specific Plan area, and examine strategies for minimize conflicts between incompatible uses given that not all existing uses are likely to redevelop. The need for flexibility in dealing with a corridor that is in transition is critical.

Woodland Community Design Standards (1998, Revised 2004)

The Woodland Community Design Standards were adopted in 1998 and updated in 2004. The standards are part of a stand-alone document and do not apply to areas governed by the Downtown Specific Plan, East Street Corridor Specific Plan, Southeast Area Specific Plan, or Spring Lake Specific Plan unless the language in a specific plan is ambiguous or silent. They are intended to supplement the basic development standards found in the Zoning Ordinance (Chapter 25 of the Woodland Municipal Code). The standards aim to express the community's shared vision for the quality and attractiveness of development. All development must comply with both the development standards and these design standards.

The Community Design Standards apply to all of those physical elements that constitute the public realm (streets, squares, parks, trails, and the network of natural features that ring and cross the town) and to aspects of private development that shape and give character to the public realm (the interaction of building facades, site plans, and landscapes with streets and other public spaces) and as such are fairly regulatory in nature. The standards address a wide range of design issues from the neighborhood scale to signs and landscaping. They are utilized as an important element in the City's design review procedure and apply to both new development and modifications to existing development. The Entryway Overlay Zone for example addresses architectural design requirements for developments located along I-5 and CR 102. The purpose of the zone is to provide entryway design elements reminiscent of historic Woodland, using more traditional design elements and colors from the 1880s. These design standards help to place an emphasis on the city's historical context.

City Of Woodland Zoning Ordinance

Woodland's zoning ordinance (Chapter 25 of the Municipal Code) is the key regulatory tool meant to implement the General Plan, specifically the Land Use Element. It consists of a zoning map defining the location of districts and a code detailing requirements for each district. While the current General Plan covers a larger area, including some unincorporated areas, the zoning code covers only the incorporated city itself.

The zoning ordinance establishes specific, enforceable standards with which development must comply such as minimum lot size, maximum building height, minimum building setback, and a list of allowable uses. Zoning applies lot-by-lot, whereas the General Plan has a community-wide perspective. Zoning must be consistent with the General Plan. If a property happens to have a zoning designation that is not consistent with the General Plan land use designation, only the General Plan land use designation is enforceable.

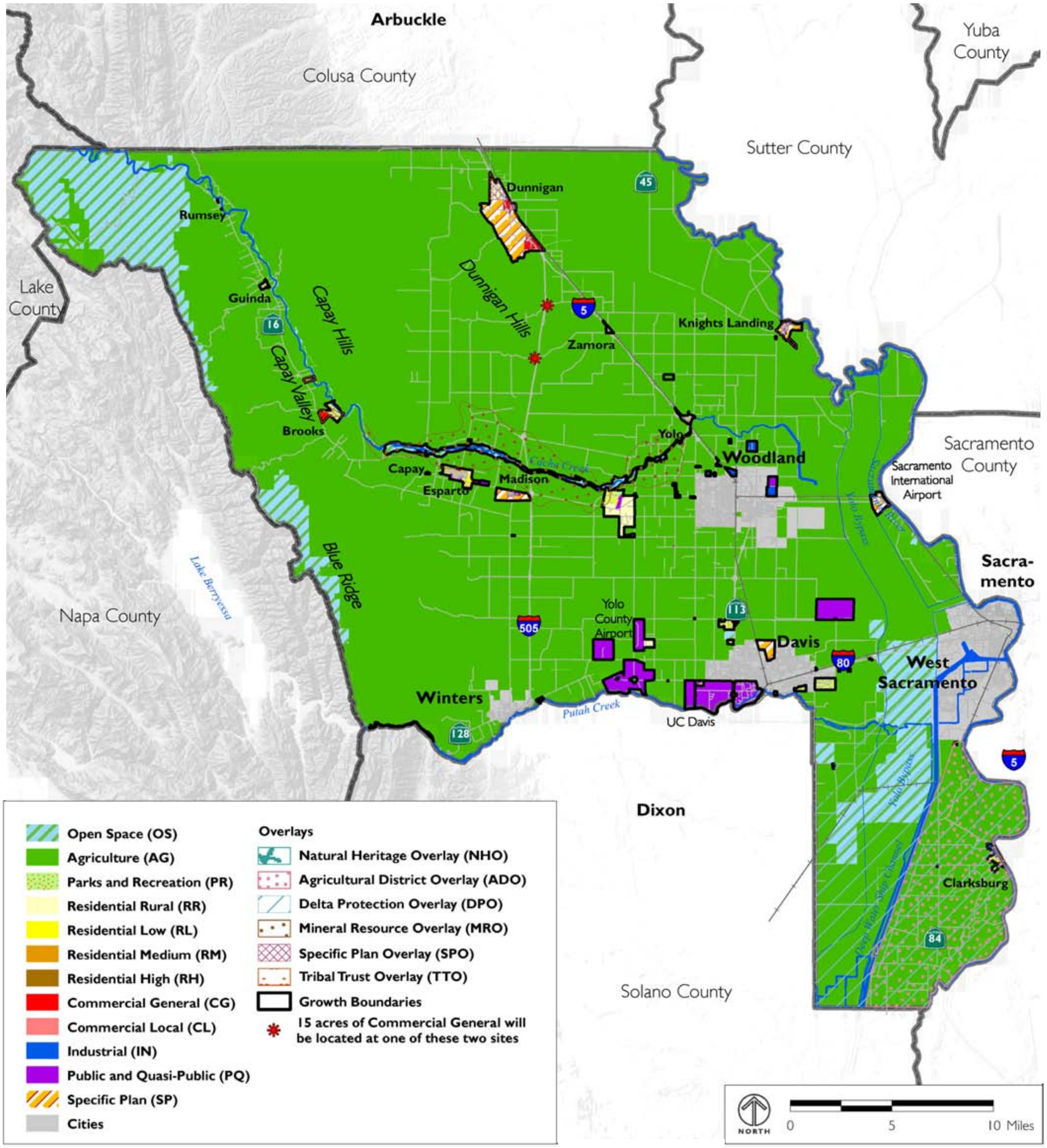
Woodland's zoning ordinance includes various zones for residential, commercial, industrial, open space, and agricultural uses, as well as several overlay zones that apply to specific conditions that may be experienced by a range of uses (e.g. floodplain overlay, transition overlay, entryway overlay, planned development overlay, and similar). Certain multi-use districts apply to specific geographic areas including Spring Lake and the East Street Corridor. Provisions pertaining to landscaping, signs, and parking are also covered in separate sections. The zoning ordinance also includes administrative provisions describing the processes for variances, conditional use permits, amendments, and modifications.

The Zoning Ordinance is expected to be one of the first land use ordinances that will be updated following the adoption of the new General Plan. The City will have an opportunity at that time to evaluate the type of zoning regulation the City wishes to utilize. The City's current Zoning Ordinance is a traditional style of zoning code that regulates based on separating and segregating land uses, controlling development based on specific type of business or dwelling, and limiting design through various numeric measurements like floor area ratio, dwellings per acre, height limits, setbacks, parking ratios, etc.

Many communities have realized that this conventional type of zoning control does not always result in a desired outcome and may be viewed by land owners as inflexible and arduous, particularly in downtowns and mixed use areas. As a result some communities are turning to development controls that are based more on performance measures than on land use. Performance zoning or "form-based" codes focuses on the physical form of development (what you see) rather than occupancy (what goes on in the building) with minimum thresholds to protect the health, safety, and welfare of users. These types of regulations focus on the relationship between public and private space, physical character, and on form, scale, and massing. Form based codes tend to be more flexible regarding the type of uses that could occupy buildings.

The City may wish to change the type of zoning code it utilizes to better achieve the community vision articulated in the new General Plan. This is something that can be further explored later in the process, as a General Plan implementation item.

Figure 2-5: Yolo County General Plan Land Use Diagram



Yolo County General Plan (2009)

Yolo County's General Plan was most recently updated in 2009. Woodland is one of only four incorporated jurisdictions in the county, bordered on all sides by county land and containing one county island within its borders. As Woodland is the Yolo County seat, several other county facilities, such as the courthouse, the jail, and the juvenile detention center, are also located in the city. As seen in Figure 2-5, the city's Urban Limit Line (ULL) extends beyond the existing city boundary primarily toward the east and south, although there are smaller areas in the northeast for which annexation is anticipated in the future. Some unincorporated areas in Woodland's Sphere of Influence (SOI) have been given land use designations in the existing Woodland General Plan in order to express desired municipal future uses, however, SOI areas remain under county jurisdiction and land use control until they are annexed by the city. Almost all of the county land beyond Woodland's borders is designated as agricultural in the Yolo General Plan, with smaller areas of industrial and public uses in the north and northeast.

While the County General Plan acknowledges that urbanized areas are the most appropriate places for future growth and development, the County still has an interest in development that generates tax revenue to support services that it provides. One area in which this may impact Woodland is in unincorporated areas within the ULL, such as around freeway interchanges—both jurisdictions have an interest in the tax revenue that can be generated from highway-serving commercial uses developed in these areas. To address this issue, Woodland and Yolo County enter tax-sharing agreements when unincorporated land within Woodland's ULL is developed and annexed to the city, so that the county retains some benefit from the development while the city provides infrastructure, public safety, and other services.

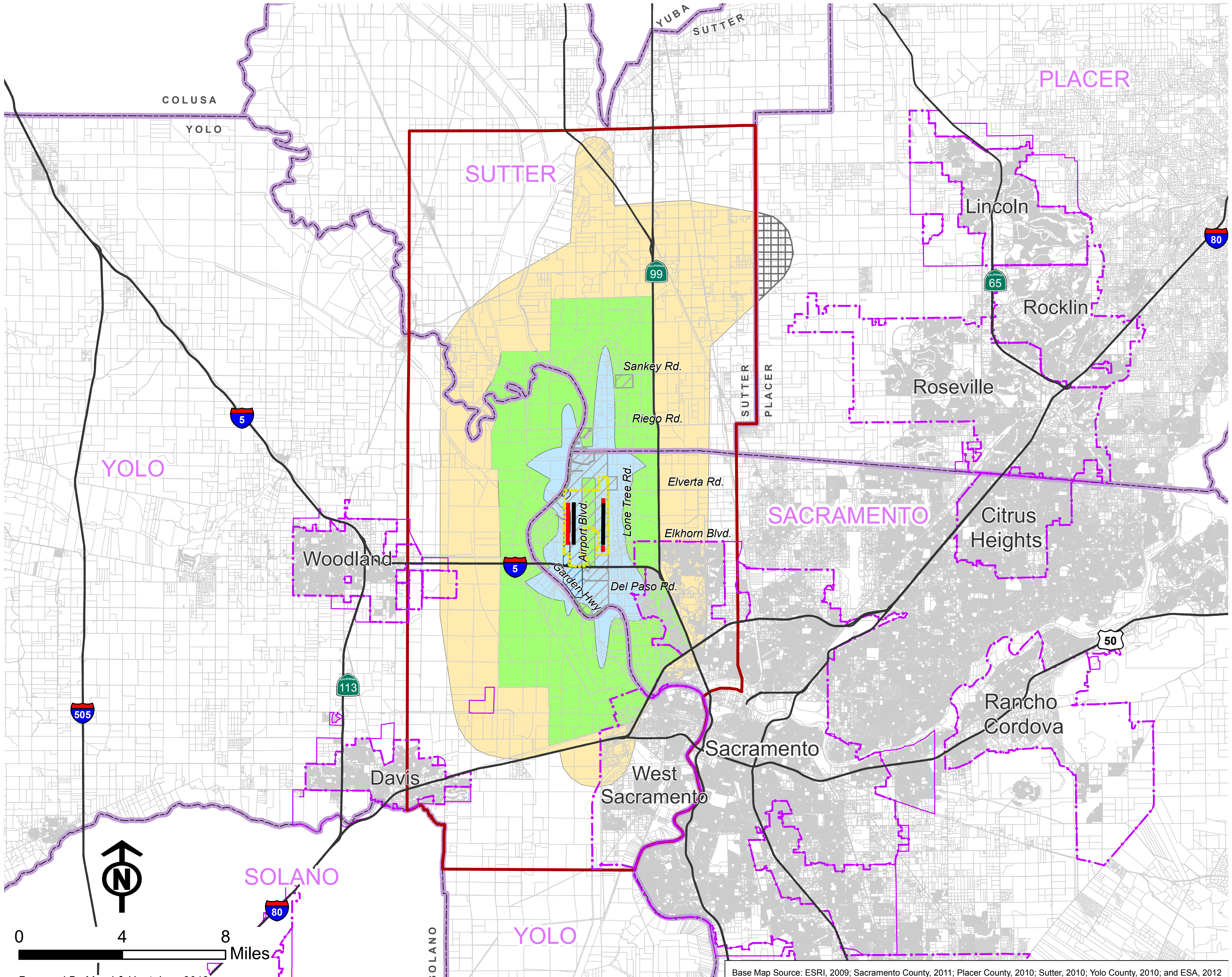
Airport Land Use Planning

Sacramento International Airport (SMF)

Sacramento International Airport (SMF) is located just 10 miles east of Downtown Woodland. Close proximity to major airports is generally a great asset to communities, but this proximity is often associated with constraints as well, specifically related to noise, safety, and other land use compatibility issues. State law requires the preparation of an Airport Land Use Compatibility Plan (ALUCP) for most airports. The responsibility for preparing these plans is given to regional Airport Land Use Commissions (ALUCs). The Sacramento Area Council of Governments (SACOG) serves as the ALUC for the region. Local plans (such as the General Plan) with planning areas that overlap with an Airport Influence Area[9] are required by State law (Government Code Section 65302.3) to ensure that the policies in place for the affected area are

9 Airport Influence Areas are defined as the area in which current or future airport-related noise, overflight, safety, or airspace protection factors may significantly affect land uses or necessitate restrictions on those uses.

Figure 2-6: ALUCP Overflight Compatibility Map



- Sacramento International Airport (SMF)
- Future Property Acquisition
- Existing Runway
- Future Runway
- Airport Operations Area (future)
- County Boundary
- City Boundary
- City Sphere of Influence

ALUC Policy Boundaries

- Airport Influence Area[2]
- Primary Approach Area[3]
- Traffic Pattern Area[4]
- Secondary Approach Area[5]
- Placer County impacts shown for informational purposes only

Notes

1. See Section 3.5 for policies applicable in each zone.

2. Airport Proximity Disclosure applies within entire Airport Influence Area. See Policy 3.5.3

3. Includes locations within CNEL 60dB contour, Safety Zones 1 through 5, and Critical Airspace Zone. Avigation Easement Dedication required. See Policy 4.1.1

4. Includes locations where aircraft regularly fly below 2,000 feet. Avigation Easement Dedication required. See Policy 4.1.1

5. Includes locations where aircraft regularly fly below 3,000 feet. Recorded Overflight Notification required. See Policy 3.5.2

S A C O G

AIRPORT LAND USE COMMISSION FOR SACRAMENTO, SUTTER, YOLO & YUBA COUNTIES

consistent with the ALUCP. Therefore, consultation with the ALUCP is important when developing a land use plan to ensure the safety and comfort of those in the area and the safe operation of the airport itself.

The SMF ALUCP is in the process of being updated. The current adopted plan dates to 1994. As of June 2013, a Public Review Draft is available and an Initial Study/Negative Declaration has been prepared. A portion of the Woodland General Plan planning area falls within the SMF Airport Influence Area. The Airport Influence Area constitutes the area within which certain Land Use Actions are subject to ALUC review to determine consistency with the policies in the ALUCP.[10]

The ALUCP contains policies pertaining to noise, safety, overflight areas, and airspace protection. The areas in which land use compatibility policies apply, in each of these categories, corresponds to certain distances—both horizontal and vertical—from the airport (e.g. noise contours, flight approach areas, etc.). In other words, not all areas within the Influence Area are subject to the same compatibility policies and restrictions.

The western boundary of the SMF Influence Area travels north-south through Woodland, following the western edge of the wastewater treatment plant parcel. While the Influence Area does overlap with part of the Woodland Planning Area, there are no restrictions pertaining to noise, safety, or airspace protection that apply in this particular area. The exception is that a small portion of the eastern side of the Planning Area is within the "Secondary Approach Area" defined in the ALUCP (see Figure 2-6). For this area, draft policy 3.5.2 applies:

> *3.5.2. Recorded Overflight Notification: As a condition for Local Agency discretionary approval of residential land use development within the secondary approach area indicated on Map 6, an overflight notification shall be recorded [against individual property deeds].*

For other areas within the Influence Area, but not subject to specific land use compatibility policies, State law requires that notice disclosing information about the presence of a nearby airport be given to prospective buyers of certain residential real estate. This would apply to any existing or new residential development in the portion of the Woodland Planning Area that falls within this zone; the updated General Plan should include a policy ensuring that this disclosure is provided to such land uses. This policy (draft policy 3.5.3 in the ALUCP) and policy 3.5.2 above are described in more detail on page 2-40 of the April 2013 draft of the ALUCP.

10 Sacramento International Airport Land Use Compatibility Plan (April 2013 Draft), page 2-3.

Approximately two-thirds of the unincorporated farmland within Woodland's Urban Limit Line is protected by Williamson Act contracts.

Other Airports

Two other airports are located near Woodland: the Yolo County Airport, located 8.5 miles to the southwest; and the Watts-Woodland Airport, located 5.5 miles west of the city. ALUCPs for these airports were last adopted in 1999 and 1993, respectively. While these airports may serve Woodland residents, businesses, and visitors, neither airport's Influence Area overlaps with the Planning Area; therefore, there are no land use implications for Woodland associated with these airports or airport operations. More information may be found in Chapter 4, Circulation.

Other Plans in the Region

UC Davis Long Range Development Plan

The 2003 UC Davis Long Range Development Plan (LRDP) is a comprehensive policy and land use plan that guides the growth of the UC Davis campus through the 2015/16 academic year. The LRDP responds to anticipated growth in student enrollment, faculty and state employment by identifying the physical development needed to achieve needs and goals of the campus while demonstrating responsible conservation of limited resources. While the City of Woodland is located outside of the LRDP plan area, future growth at UC Davis has the potential to impact housing and office demand in Woodland.

2.5 Growth Management

There are several policies, programs, and constraints that limit Woodland's growth including state and local preservation policies and city growth policies.

State and Local Preservation Policies

Williamson Act

State and local agricultural preservation goals, policies, and regulations direct most urban development into the four existing incorporated cities in Yolo County. Approximately 85 percent (85%) of land within Yolo County overall is used for agricultural uses such as farming, grazing, and open space. Additionally, 67 percent (67%) of the unincorporated area is protected under the Williamson Act.[11] The Williamson Act enables the County to enter into contracts with private landowners for the purpose of restricting land to agricultural or related open space use in return for lower property tax assessments. In 2009, the State defunded the Williamson Act program, ending its payments to participating counties. In Yolo County, this amounted to a loss of $1.3

11 Agriculture and Economic Development Element, 2030 Countywide General Plan Yolo County (2009), page AG-4.).

million annually. However, subsequent legislation (SB 863, followed by AB 1265) provided a partial solution for the cessation of State funding, wherein counties can voluntarily implement new contracts that are 10 percent (10%) shorter (typically 9 years instead of 10, or 18 years instead of 20) in return for a 10 percent (10%) reduction in the landowner's property tax relief. Yolo County has chosen to implement this new program, thus essentially continuing participation in the Williamson Act program. Generally, Williamson Act lands are approximately half a mile or more from Woodland's city boundaries, however some Williamson Act parcels are adjacent to city limits, where development pressure might be greater.

Open Space Buffer

Additionally, the Yolo County Agricultural and Economic Development Element supports an 11,000-acre agricultural and open space buffer between Woodland and the City of Davis. Both cities have agreed to maintain the buffer, and the Element includes an action to work with the cities to make the agreement more specific and binding.[12]

City Growth Policies

Woodland has always prioritized maintaining a distinctive edge between its urban development and its agricultural surroundings. Various growth management strategies over the past few decades have helped maintain Woodland's discrete urban form and remain important policies in the current General Plan.

TABLE 2.5-1 2002 GENERAL PLAN GROWTH MANAGEMENT POLICIES

GENERAL TOPIC	GENERAL PLAN POLICY #
Urban Limit Line	1.A.2, 1.A.12
Infill Development and Reuse	1.B.6, 1.D.2
Planned Neighborhoods and Specific Plans	1.C.3, 1.C.4
Population/Housing Unit Limit	1.A.7, 1.B.1

Source: 2002 Woodland General Plan.

Table 2.5-1 lists the policies in the 2002 General Plan that pertain to growth management, organized by topic. They are accompanied by implementation programs. As described above, some of these policies have been amended since the plan was adopted, and implementation programs (such as adopting the ULL) have been accomplished.

Several key actions related to growth management in Woodland are summarized below.

12 Agriculture and Economic Development Element, 2030 Countywide General Plan Yolo County (2009), page AG-4.).

Urban Limit Line

The 2002 General Plan contains two policies (1.A.2 and 1.A.12) directing Woodland to contain its growth within a specified boundary and to establish such an Urban Limit Line (ULL) permanently. Program 1.1 accompanies these policies, providing further direction for implementation.

In June 2006, a voter initiative passed that established the permanent ULL and amended the General Plan to reflect the change (policies 1.A.12, 1.B.6, Program 1.1, and Figures 1-3 and 1-4). Specifically, Policy 1.A.12 now specifies that "The City establishes a permanent urban limit line around Woodland to permanently circumscribe development and preserve surrounding agricultural lands as depicted in Figure 1-4. Public facilities and services shall not extend beyond the urban limit line."

Policy 1.B.6 now states, "The City shall continually reevaluate land use densities, housing policies, and zoning to determine the potential for increased residential densities for both infill sites and undeveloped land within the permanent urban limit line. The City shall continually review existing non-residential zoning to determine potential for conversion to higher density residential uses within the permanent urban limit line." To date, the City has not had any proposals to significantly reduce residential uses. One of the purposes of the General Plan Update process will be to evaluate residential land use locations and intensities throughout the Urban Limit Line Process.

Given the amount of undeveloped land (on vacant infill sites and greenfield/agricultural sites) that still exists within the ULL, the boundary remains appropriate for the planning period associated with this General Plan Update. It is not known precisely how much Woodland will grow, but even aggressive estimates indicate that there is more than ample land within the current boundary to accommodate projected residential and non-residential growth through 2035. Therefore, the primary challenge for Woodland with respect to growth management is how development within the ULL should be phased in order to meet the community's various (and sometimes competing) desires: economic benefits, fiscal health, agricultural preservation, efficient use of infrastructure, service provision, and a high quality of life fostered by the built environment.

Population and Development Caps

In 1996 Woodland adopted a growth policy that set a maximum allowable population of 60,000 by 2015. In 2002, as part of the General Plan Update, the City increased this figure to 69,719 by 2020. However, based on a city analysis conducted in 2004, it was thought that buildout of both the Spring Lake Specific Plan and Master Plan Remainder areas would exceed the City's population limit. As a result, in May 2005 City Council voted to amend General Plan Policy 1.A.7, removing the population cap and instead instituting a 5,000 residential unit cap. The residential unit growth cap limits new single-family residential development to 5,000 units between 2001 and 2020, applied solely to new single-family development located in planned neighborhoods. As of April 2013, the city had a remaining balance of about 3,000 single-family units.

Reconsidering the Growth Management Strategy

One of the next key tasks in the General Plan Update is to comprehensively reassess the City's current policy direction towards growth management and consider how these policies might be rethought or revised given current community goals, land availability, fiscal limitations, and other considerations. In the next phase of the General Plan Update process, in which land use and transportation alternatives are considered, different policy approaches to growth management and phasing of new development and infrastructure will also be assessed.

2.6 Land Use Opportunities and Challenges

Land Availability and Growth Management

Woodland's voter-approved permanent Urban Limit Line contains within its boundaries ample land to support projected population and employment growth in Woodland through the time horizon of this General Plan Update (2035) and beyond. **The City should be able to accommodate a range of growth possibilities on a combination of infill and greenfield sites, with the flexibility to achieve economic development goals.**

Land Availability

However, because Woodland is afforded this flexibility through such ample land supply, the challenge will be to be thoughtful and strategic in land allocation, phasing, and growth management. For every land use approach, there will be tradeoffs. Greenfield sites on the periphery are often less expensive, more appealing to developers, and have fewer physical constraints; at the same time, they may require expensive infrastructure extensions, are likely to have greater traffic and environmental impacts, and may require tax-sharing agreements. Redevelopment of infill sites is desirable from a revitalization perspective, and these projects have the potential to catalyze vibrant, pedestrian-friendly areas. Infill development is also more advantageous to the City from a property tax perspective, with the city capturing a higher share of taxes in existing areas as compared to greenfield development. However, this type of development may require land assembly, can be seen as untested in the market, and may even require subsidies from the City in order to be financially feasible. Different land uses, regardless of their location, have different service provision needs and fiscal impacts as well. The General Plan

Update allows the City to comprehensively explore the merits and impacts of different land use strategies—the Development Strategy phase will assess the transportation, fiscal, and policy implications of these choices.

Growth Management

A key policy consideration for the Development Strategy task—and later stages of the General Plan Update—will be the approach to growth management. In addition to the ULL, Woodland's current General Plan has other policies that control the rate and location of new development. These policies, which phase and control development, provide more certainty to landowners and seek to ensure that agricultural land is developed only when needed and only if infrastructure and services can be provided as well. To what extent are these policies as currently defined still appropriate given the city's current growth patterns, fiscal condition, and community desires? How much new development should occur within city limits versus outside, and at what pace? Should the plan establish new thresholds to control what can develop when and where? However these policies are defined, their language and intent must be clear. Issues such as developing a flood solution, economic stability, and job growth are important considerations in future policies regarding growth.

Land Use Designations

The General Plan Update provides the City the opportunity to reexamine how it defines land use designations and also explore the introduction of new land use designations in order to help facilitate desired development activity. The current land use categories that pertain to large parcels on the periphery that have longer-term development potential—e.g. Planned Neighborhood, Urban Reserve—may need to be reconsidered or redefined in order to help define a phasing plan. New designations could include various types of mixed use (Downtown, Corridor, etc.) or industrial. Designations must be described with enough detail to provide clarity, allow flexibility (where appropriate) without being ambiguous, and create a framework through which the City can enable projects it wants to see built.

Conflicts in allowable land uses must also be resolved. This is common in specific plan areas, but occurs elsewhere in the city as well. The updated General Plan should provide guidance on how to reconcile the desire for land use compatibility and revitalization of older areas, such as Downtown and the key corridors, with the risk of harming small businesses by rendering them nonconforming.

Infill and Revitalization

The General Plan Update also allows the City to focus on revitalizing key corridors and opportunity sites, such as Kentucky Avenue, East Street, West Main Street, the County Fair Mall area, and Downtown. Woodland has a significant number of vacant parcels within city limits with strong redevelopment potential. Sites that are not vacant, but may be underutilized or available for other reasons, also have potential. An example of these is the old courthouse properties, which will become available when the courthouse relocation is complete.

Development on these properties can reinvigorate older areas, introduce greater choice in housing types, take advantage of existing infrastructure, and create an easily walkable and bikeable environment. Even just a few successful projects can catalyze further development and turn older areas around. Infill development also offers Woodland the opportunity to accommodate more of its projected growth without converting farmland to urban uses.

It is important that the plan's approach to infill revitalization be considered in conjunction with growth management and land use designations on greenfield sites, as it is easy for development—particularly retail—on larger sites in expansion areas to outcompete infill areas. For instance, an urban decay study conducted for the Gateway II project found that businesses in Woodland's core area were already suffering in the face of competition from newer commercial developments on the urban edge. **The updated General Plan could address this challenge with a citywide retail strategy and appropriate land use designations and phasing that ensures that businesses in different parts of the city complement, rather than compete with, each other.**

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1 INTRODUCTION AND PURPOSE

1.1 Purpose of the General Plan Update

Report Purpose

The City of Woodland has embarked on a comprehensive update of its General Plan. This document—Opportunities and Challenges, Issues and Options Report—describes existing land use conditions, known future conditions, and evaluates opportunities and challenges related to the use of land in and adjacent to Woodland. The overarching opportunities and challenges identified include:

Opportunities

- Ample land supply, sufficient to meet demand across sectors through 2035; few constraints on development
- Unique Downtown with character, historically significant structures, and potential for growth and greater vibrancy
- Excellent access to key regional assets that are important to economic development, such as rail, airport, Sacramento, major freeways, and UC Davis

Challenges

- Lack of flood solution impedes growth and economic development, particularly in industrial area
- Limited fiscal resources affects operation and maintenance of existing public resources (community facilities, roads, infrastructure) and the City's ability to provide and maintain new facilities in the future
- Growth on the periphery/on "greenfield" sites has potential to undermine efforts to revitalize older parts of the city; these potentially competing desires must be managed carefully to ensure that all development is mutually supportive

The General Plan contains policies that guide the City's long-term decisions about growth and development.

The report also discusses planning implications that will need to be addressed as part of the planning process. The information conveyed will also help community members, City staff, and elected officials make informed input and decisions throughout the rest of the General Plan Update. Economic, market, and fiscal issues are analyzed in the Economic and Fiscal Background Report, which was completed in March 2013 by Bay Area Economics (BAE), and is available at: http://www.cityofwoodland.org/gov/depts/cd/woodland_general_plan_2035documents/default.asp.

Woodland General Plan

The General Plan is the policy document that guides growth and development of California cities, and has been described by the courts as the "constitution" of a city. The General Plan is required by state law, and must address the full range of topics related to the city's physical development. Topics mandated by state law to be addressed in the General Plan include the following seven issue areas: land use, transportation, housing, open space, conservation, safety, and noise.

In addition to the State-mandated elements, Woodland's current General Plan also addresses community design, public facilities and services, educational and community services, historic preservation, environmental resources, health, economic development, and administration and implementation. In effect, the plan serves as the City's business plan. Key considerations include planning and maintaining the overall fiscal health of the City and building an economy to support community ideals. Key issues in this regard include economic development, job growth, development of a flood solution and replacing Redevelopment funding.

Woodland's General Plan was last comprehensively updated in 1996, with a technical update in 2002 and an update of the Housing Element adopted in 2009. The most recent update to the Housing Element was completed as part of this General Plan Update effort and has been certified by the California Department of Housing and Community Development; its adoption by the City Council is forthcoming.

Why Update the General Plan?

Woodland's current General Plan is dated, reflecting conditions and trends from nearly 20 years ago. The General Plan Update provides an exciting opportunity for community members to envision the city's future and articulate the city's long-term goals and direction for development. The purpose of this General Plan Update is to:

- Establish a long-range vision that reflects the aspirations of the community, and outline steps to achieve this vision;

- Establish fiscal health and economic sustainability policies and priorities so that the General Plan will function as the City's business plan for guiding decision making for private, community and public functions. The Plan will help build an economy to support the Community's tastes and desires;
- Establish key community priorities including the importance of economic development and job growth, developing a long term flood solution, ensuring long term fiscal sustainability and positioning the city as an industry leader in agricultural food production and technology;
- Establish long-range development policies that will guide City departments, Planning Commission and City Council decision-making;
- Provide a basis for judging whether specific development proposals and public projects are in harmony with the vision and values of the community;
- Plan in a manner that meets future land needs based on the projected population and job growth;
- Allow City departments, other public agencies, and private developers to design projects that will preserve and enhance community character and environmental resources, and minimize hazards;
- Provide the basis for establishing and setting priorities for detailed plans and implementing programs, such as the zoning ordinance, subdivision regulations, specific and master plans, and the Capital Improvement Program; and
- Provide a guide and support for key community objectives and goals including focus on development of a flood solution, providing adequate water supplies, supporting needed job creation actions and overall general support for the long term fiscal health of the City.

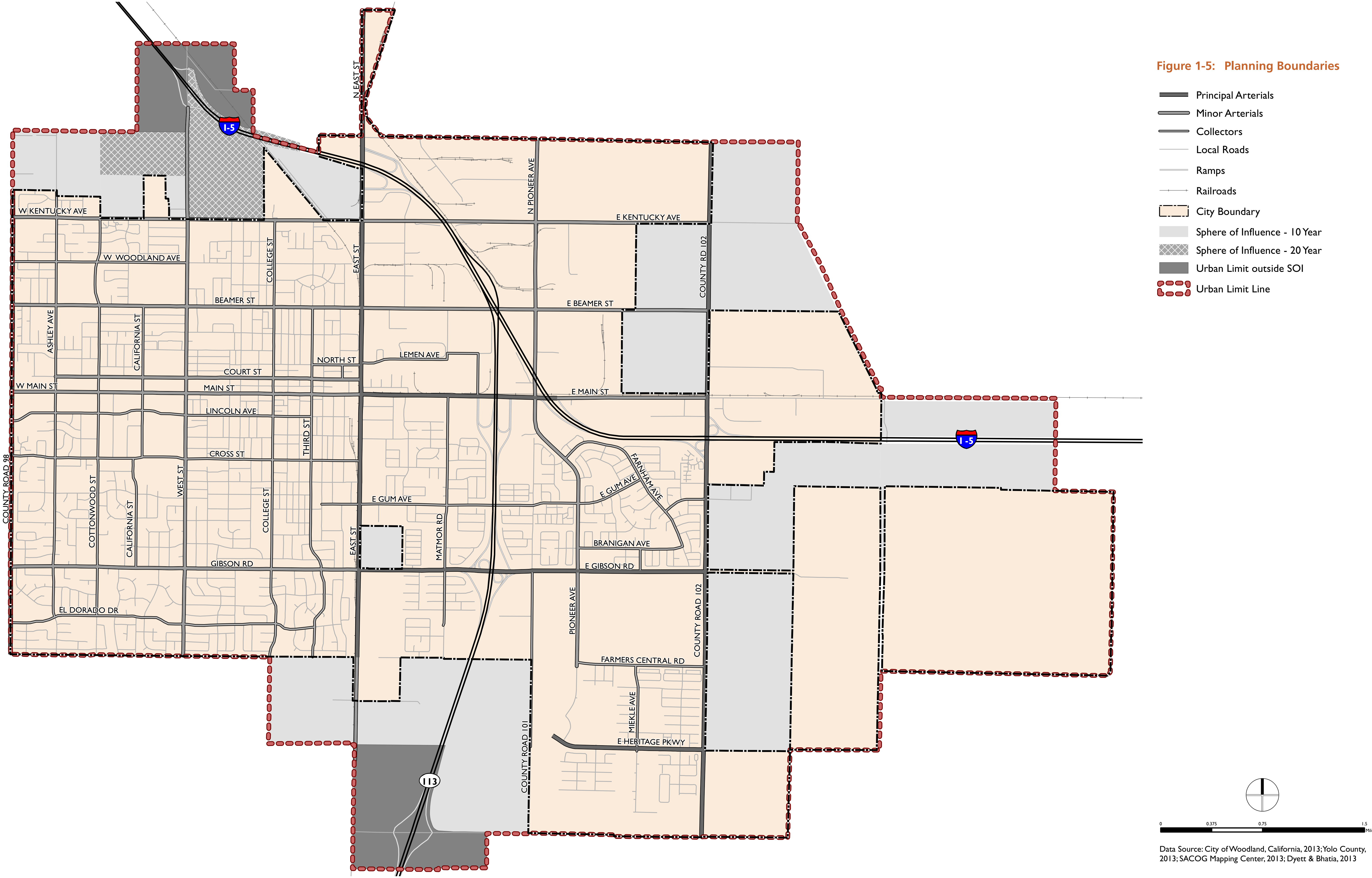
1.2 Regional Location and Planning Boundaries

Regional Location

The City of Woodland is the county seat of Yolo County, located in California's Sacramento Valley. The city is situated approximately 20 miles northwest of Sacramento, eight miles west of the Sacramento International Airport, and 12 miles north of Davis at the intersection of Interstate 5 (I-5) and State Route 113 (SR 113). The Yolo Bypass of the Sacramento River lies approximately three miles east of the city, Willow Slough is located about one mile to the southeast, and Cache Creek is located approximately two miles to the north. Woodland covers an area of approximately 9,624 acres or 15 square miles and is surrounded by agricultural land uses. Figure 1-1 shows Woodland in its regional Northern California context.

Figure 1-4: Regional Location

Figure 1-5: Planning Boundaries



Data Source: City of Woodland, California, 2013; Yolo County, 2013; SACOG Mapping Center, 2013; Dyett & Bhatia, 2013

Planning Area

The Planning Area is the geographic area for which the General Plan establishes policies about urban growth, agricultural protection, and future public facilities and services. According to state law, each city must 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).

In Woodland, the Planning Area is the same as the Urban Limit Line (ULL), established by voters in 2006. Illustrated in Figure 1-2, the Planning Area totals 12,772 acres, which includes 9,624 acres within the city plus an additional 3,148 acres outside the city limits but within the ULL. It is bounded roughly by Churchill Downs Avenue to the north, County Road 98 to the west, and County Road 25A to the south. Various agricultural and industrial parcels form the boundary to the east. Most of the unincorporated area within the ULL is currently vacant or in agricultural use.

Contained within the Planning Area is Woodland's Sphere of Influence (SOI). The SOI is a boundary that encompasses lands that are expected to ultimately be annexed by the City. Yolo County Local Agency Formation Commission (LAFCO), which is an entity empowered to review and approve proposed boundary changes and annexations by incorporated municipalities, determines the SOI. The SOI is divided into a 10-year boundary and a 20-year boundary, based on LAFCO's determination of roughly when the land would need to be annexed to accommodate growth. However, LAFCO does not have land use authority; the SOI is intended to guide urban land uses into an efficient and well-planned development pattern, with consideration given to preserving prime farmland and other open space lands. LAFCO must also consider consistency with the city's General Plan and any specific plans. Portions of the Planning Area beyond the current SOI would likely be included in a future SOI.

Woodland is not bound to restrict its planning to the SOI as currently defined. The city's SOI (which is established by LAFCO) describes its probable physical boundaries and service area and can be used as a benchmark for the minimum extent of the Planning Area—but it need not represent the maximum extent. Following completion of the General Plan Update, Woodland may request an amendment to its SOI to more accurately reflect the intentions of the General Plan.

Figure 1-2 shows the ULL/Planning Area, the city limits, and the SOI.

Residents discussed Woodland's assets, challenges, and aspirations for the future at two community visioning workshops.

1.3 Community Outreach and Key Issues

Community Outreach to Date

As of July 2013, substantial public input regarding visioning and issue assessment has been gathered. Outreach activities to date have included:

- City Council and Planning Commission meetings and workshops;
- General Plan Steering Committee meetings;
- Stakeholder interviews;
- Community workshops;
- A housing forum;
- A citywide mail-in survey;
- Newsletter and e-mails; and
- General Plan 2035 project website.

The community engagement program was designed to provide a range of avenues through which the Woodland community could learn about the General Plan and contribute their ideas—from participating at a workshop to attending a City Council meeting to filling out a survey at their home. Brief summaries and key takeaways from each of the individual outreach efforts are summarized below. Economic development and job creation were top concerns.

Stakeholder Interviews

On February 7 and 8, 2013 the consultant team conducted interviews with a cross-section of stakeholders representing residents, business owners and employers, decision-makers, developers, community groups, and service providers. A total of 34 stakeholders participated in the interview process. The issues discussed most commonly by those interviewed included the following:

- Economic development and job creation
- Growth patterns and small town character
- Agricultural preservation and the agricultural economy
- Downtown
- Flood protection and water resources
- Circulation, transit, and parking
- Housing affordability and diversity
- Historical resources and preservation
- Aesthetics and urban design
- Public education
- Safety

For more in-depth information regarding the themes and priorities, please see the Stakeholder Interviews Report available on the General Plan Update website.

Community Visioning Workshops

The first series of community workshops were held on April 11 and 13, and May 2, 2013. A presentation, activities, and small group discussions gave participants (approximately 64 in attendance) opportunities to learn more about the planning process and share their ideas, priorities, and concerns. Participants completed two main activities: a planning issues "pop quiz," in which they wrote down their top priorities for a range of issues presented; and a visioning exercise, in which they created a "magazine cover" highlighting Woodland's achievements in the year 2035.

Key themes from the "pop quiz included:

- Woodland's identity seen as "historic," "small town," "friendly"
- Aspects to improve include revitalize existing neighborhoods and downtown; improve schools and safety
- Support for infill development and finishing Spring Lake
- Desire for restaurants, entertainment, and nightlife Downtown
- Strong support for better bike infrastructure/lanes, walking trails, greenbelt

Common ideas expressed in the visioning/magazine cover exercise included:

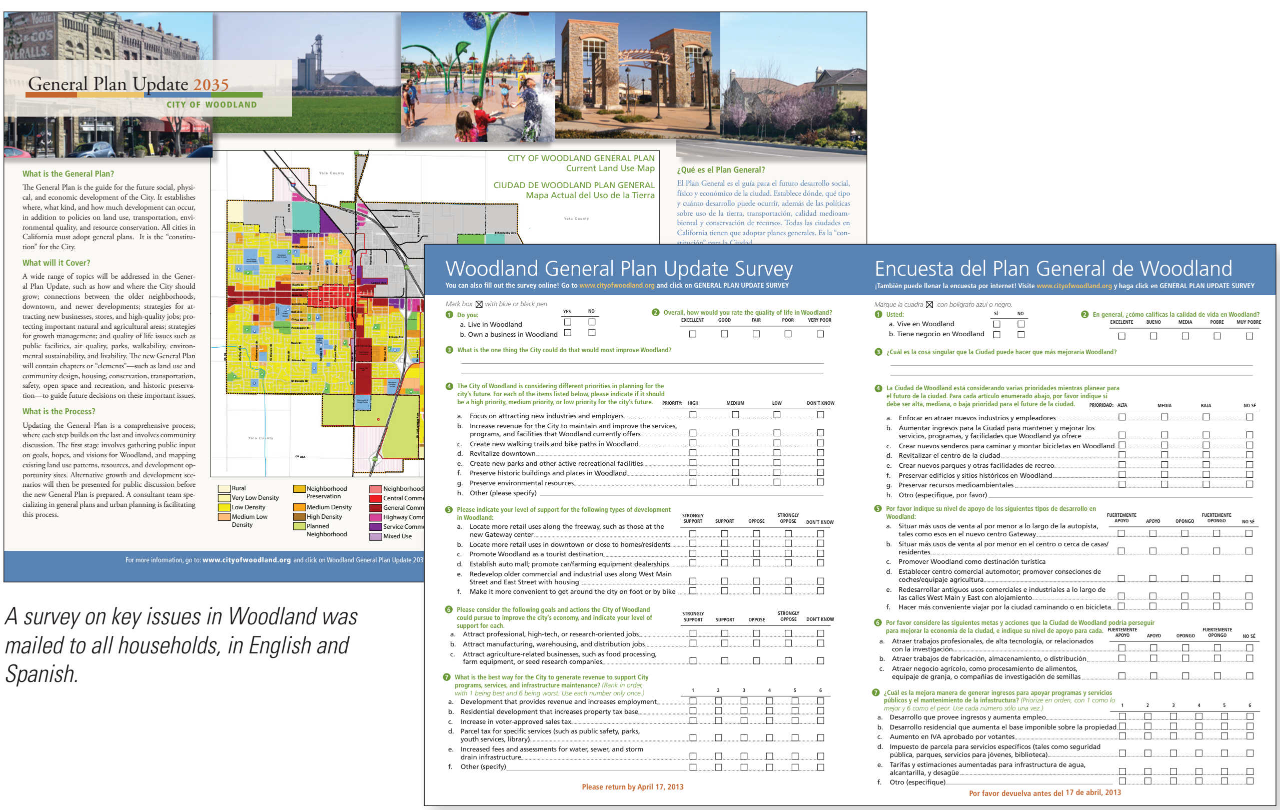
- Prioritize jobs and economic development (especially growing the agriculture technology sector)
- Preserve Woodland's small-town character and improve neighborhood quality
- Revitalize of Downtown, preserve historic resources
- Strengthen schools (making a connection between schools and economic development, labor market)

The full results of the workshops are summarized in a report found on the General Plan Update website.

Mail-in Survey

The first project newsletter was distributed on March 26, 2013. The newsletter was written in both English and Spanish. It introduced the General Plan Update, announced the first workshop, and contained the mail-in survey, as well as provided a link to the City's new General Plan website and an online version of the survey. The bilingual mail-in (and online) survey included a mix of open-ended and marked-choice questions about various community issues. A total of 1,374 people responded to the survey. Two key priorities emerged from analysis of the survey questions overall. These were jobs/economic development and Downtown revitalization. These priorities were shared consistently across the various age, income, and ethnic groups that responded. Other priorities that emerged included support for more retail downtown (versus at the freeways), public safety improvements, and revenue generation through new development (versus increased taxes or fees).

Following the release of the survey results, the City Council requested that there be a comparison of issues raised through the survey as compared to other outreach methods. The top themes and priorities voiced in the survey responses were largely consistent with what was heard through other community engagement activities. Responses to the surveys did, however, provide additional information on topics not typically raised at workshops and other venues (e.g. preferences for raising city revenue).



A survey on key issues in Woodland was mailed to all households, in English and Spanish.

Housing Forum

On March 7, 2013, a forum on housing issues was held at City Hall, as part of the Housing Element Update process. The Housing Element is a required element of the General Plan, but the update is proceeding according to a different schedule in order to comply with State law. This forum was open to the public, and was specifically aimed at organizations that serve lower-income and special needs populations and affordable and market-rate housing providers. Participants gave their input on housing issues and trends in Woodland; opportunities and potential locations for compact housing and high density zoning; constraints to housing development; and fees and funding sources for affordable housing and programs.

The group identified the greatest housing needs in Woodland as:

- Senior housing
- Housing for single farmworkers (i.e., those not with their families), close to place of work
- Extremely low-income housing, especially for those living on low fixed incomes
- Entry-level housing and compact housing types (townhouses, condominiums, in-law units) to help individuals and families enter the housing market
- Supportive housing for individuals with disabilities, coupled with appropriate services
- Housing for large, often multigenerational households (4+ bedrooms)

The group suggested opportunities/locations for compact and more affordable housing. These included Downtown, along West Main Street, repurposed older commercial areas, and in the Spring Lake Specific Plan area. Constraints to housing development that participants identified included high impact fees, the loss of redevelopment funds, and regulatory barriers to developing in Downtown and to creating mixed use or live/work projects.

General Plan Steering Committee Kickoff

The General Plan Steering Committee (GPSC) held its kickoff meeting on February 7, 2013. The GPSC is comprised of 17 members of the Woodland community, representing a range of interests and experience in planning, development, community service, local government, and business. At the kick-off meeting, the GPSC was asked three questions to guide discussion of issue identification and priorities for the General Plan Update:

1. What is your overall vision for Woodland for 2035? What are the city's major opportunities and challenges?
2. What are your thoughts and ideas on economic development priorities? What long-term strategies would you like the General Plan to explore?
3. What are the most important considerations relating to the city's physical development?

The primary elements of the GPSC's vision for Woodland's future were: preserve and enhance Woodland's agricultural heritage; promote Downtown revitalization; and expand multimodal transportation opportunities. Other topics discussed as part of the group's vision included the need to refocus on education, preserve and enhance safety, promote sustainable development, and promote greater housing diversity while preserving neighborhood character. Regarding economic development, the GPSC discussed how economic development occurs when there is good quality of life (e.g. quality education, creating a welcoming and safe community). In addition, the need to better capitalize on Woodland's assets to attract jobs and businesses was discussed. GPSC priorities pertaining to land use and physical development included revitalizing Downtown, preserving historic resources, developing infill sites, and enhancing Woodland's industrial areas.

Full GPSC meeting minutes can be found on the General Plan Update website.

Planning Commission Kickoff

The Planning Commission held a General Plan kickoff meeting on February 21, 2013. The Commission was asked three questions to guide discussion of issue identification and priorities for the General Plan Update, the same as those posed to the GPSC (listed above). The top priorities that emerged as part of the Commission's vision for Woodland's future were a revitalized Downtown, with more housing, thriving businesses, and a greater mix of uses overall; focused development on infill sites and staying within the Urban Limit Line; and creation of a more walkable, sustainable community. Additional comments focused on creating a business-friendly atmosphere and attracting jobs.

City Council Meetings

The Woodland City Council held its General Plan kickoff meeting on February 5, 2013. The Council was given the same three guiding questions as the GPSC and the Planning Commission:

1. What is your overall vision for Woodland for 2035? What are the city's major opportunities and challenges?
2. What are your thoughts and ideas on economic development priorities? What long-term strategies would you like the General Plan to explore?
3. What are the most important considerations relating to the city's physical development?

Many of the Council's top priorities were similar to those expressed by the advisory groups and the general public, such as promoting Downtown/corridor revitalization and infill, and preserving neighborhood character. A few key elements were emphasized more greatly and discussed at length:

- Prioritize fiscal sustainability and strong tax base
- Enhance industrial areas; mitigate flood constraints
- Increase land use flexibility
- Capitalize on key economic assets: location, UC Davis, airport, agriculture, etc.
- Use the Plan and EIR to streamline future CEQA
- Preserve and enhance agricultural heritage, sense of community, history

The Woodland City Council and Planning Commission met again in a joint session concerning the General Plan Update on June 11, 2013. The purpose of this meeting was to hear the results of the community outreach efforts to date and the results of the economic analysis, and to continue brainstorming about key opportunities and challenges that are needed to guide development of the land use alternatives.

Common Themes from Public Outreach

Since the General Plan Update process began in early 2013, these engagement opportunities have yielded a wide range of ideas for the new General Plan and highlighted many shared priorities. These commonly expressed visions and priorities provide guidance to the General Plan Update consultant team, City staff, and decision-makers as the process moves forward. Specifically, recurring themes include:

- Jobs/Economic Development
  - Attract high-tech, research, professional jobs; tie-ins with agriculture (seed research, e.g.) and UC Davis

- Downtown Revitalization
  - Focus on increasing vitality, activity – make it a destination. More restaurants, stores, gathering spaces
- Key Quality of Life Issues
  - Schools
  - Safety
- Mobility, especially walkability
  - Recreation as well as convenience
  - Make it easier to get around town without a car
- Corridors/Key Sites Revitalization
  - East Street; mall site; others
- Community Character
  - Neighborhood character
  - Historic preservation

Taken together, these themes and issue areas will form the basis for the Community Vision and Guiding Principles, which will articulate the community's vision for the city in 2035 and the ways in which the General Plan will help to achieve that vision.

Next Steps in Public Outreach

Throughout the General Plan Update process, public participation will remain a critical input to the creation of the new plan. A comment form has been available on the project website where community members can submit questions, comments, and concerns at any time, and formal public outreach efforts, including additional community workshops at key points, will continue through the General Plan Update process. Key decision-making points will include the evaluation of alternatives, the development of a Preferred Plan, and the drafting of General Plan policies. An Environmental Impact Report (EIR) will be completed in conjunction with the General Plan, which will assess ways to reduce or avoid environmental impacts that may be associated with the plan's adoption and implementation. Community members will also have additional opportunities to provide input during the EIR process.

The proposed public engagement schedule is as follows:

- September 2013 – City Council review and discussion of General Plan Vision and Guiding Principles and Opportunities and Constraints report
- October 2013: City Council discusses draft land use alternatives to be analyzed

- February 2014: Community workshops on land use alternatives and choosing a preferred land use plan
- February/March 2014: City Council and Planning Commission approve a Preferred Plan and key policies
- April/May 2014: GPSC meetings address key issues in draft General Plan
- September/October 2014: Community open house on Public Review Draft General Plan
- September/October 2014: Draft EIR comment period
- January 2015: City Council and Planning Commission hearings on General Plan and EIR

1.4 Report Organization

Chapters in the Opportunities and Challenges, Issues and Options Report are organized by topic, as follows:

1. **Introduction and Purpose.** Overview of the General Plan Update process, Woodland's regional context and planning boundaries, discussion of key objectives and community issues, and next steps.
2. **Land Use and Development Potential.** Identifies current land uses in the Planning Area and their magnitude and distribution, describes development trends and major development projects, discusses current general plan land uses and summarizes existing plans, and describes Woodland's growth management policies.
3. **Environmental Resources and Constraints.** Examines the current state and concerns related to assets and hazards of Woodland's natural environment, including geology, biological resources, air quality, greenhouse gases, hydrology, flooding, and noise.
4. **Transportation Systems and Circulation.** Examines the existing conditions of roadways, transit, and bicycle and pedestrian facilities, and compares these with level of service (LOS) standards and other metrics as a way to evaluate how these systems are performing.
5. **Community Facilities and Services.** Describes the current regulatory context and conditions and future needs of Woodland's parks, recreation, and open spaces; public schools; police and fire departments; water supply; and wastewater and stormwater infrastructure.
6. **Planning Opportunities and Challenges.** Discusses key findings and planning implications for all topics discussed in the preceding chapters.

The research and analysis on each topic is communicated through text, tables, and maps. Key findings and planning implications are summarized in Chapter 6.

1.5 Next Steps

Preferred Development Strategy

Next steps include identifying a Preferred Development Strategy. This process will include formulation of a land use map, growth phasing strategy, triggers for new development, and key policy initiatives. Four potential development scenarios, all of which could result from the preferred land use plan, will be tested to determine the relative impacts on the city's fiscal circumstances, economic development potential, circulation system, and infrastructure systems, and used to inform decision-makers. Community members will have the opportunity to learn about the assessment and performance of the various scenarios, and provide feedback through meetings and other outreach opportunities.

The final Preferred Development Strategy will be the basis for the Draft General Plan document. Detailed goals, policies, and implementation strategies will be drafted that support the land use plan and development strategy.

A APPENDIX: COMMENTS ON DRAFT REPORT

This appendix summarizes questions and comments received from elected officials and other stakeholders on the initial draft of this Opportunities & Challenges, Issues & Options Report. The majority of comments received were incorporated into the final document; those that are listed in this section are generally suggestions for more information or research that will be handled as the General Plan Update process moves forward.

Executive Summary

- There was a request to add a new chapter on Economic Development Opportunities and Challenges, summarizing the key fiscal and ED considerations (job creation, job growth, etc.). There was also a suggestion regarding adding a discussion of service standards from an economic development perspective—that high quality service is essential to attract businesses, and that the City needs to be able to afford its service levels.
  - Note: Economic Development and Fiscal Sustainability are addressed comprehensively in the companion document, Economic and Fiscal Background Report (April 2013). For that reason, an additional chapter of Economic Development has not been included here. A more detailed assessment of economic and fiscal impacts of future land use development will be a critical component of the next phase of the update process, in which the preferred Development Strategy is formulated.
- There was a request to see not only the issues but also possible options discussed related to the limitations of the Beamer trunk line and flooding.
  - These topics too will be explored in much greater detail in the Development Strategy phase.

Chapter 1: Introduction and Purpose

- None

Chapter 2: Land Use and Development Potential

- There was a question concerning internal versus external demand [for retail and services]. How do we compete with other communities in the region including Folsom, Natomas, Roseville, etc.?
  - This topic was also discussed in the Economic and Fiscal Background Report (April 2013).
- There was a desire to see growth projections for multi-family development.
  - Demand and growth projections for all land use types are included in the Economic and Fiscal Background Report (April 2013). The next phase of this update, the Development Strategy, will go into greater detail in residential product types and mix.
- There was a question regarding how the City can give or allow greater flexibility in permitting new development. The goal is to give staff more flexibility to allow efficiency and ability to deal with existing conditions. This would likely apply more in commercial/industrial non-conforming situations.
  - The General Plan may include policies to address non-conforming uses, but in general this is a zoning issue that should be addressed when the zoning ordinance is updated following completion of the General Plan update.

Chapter 3: Environmental Resources and Constraints and Sustainability

- None

Chapter 4: Transportation Systems and Circulation

- None

Chapter 5: Community Facilities and Services

- There is concern about school facility problems and that some schools are located in the wrong places.
  - This question seems to refer to the relationship between schools and residential areas, which will be addressed as a policy issue in the new General Plan.
- There was a comment that this section should give more indication as to whether the police are in fact meeting needs or not and if not what might be needed.
  - Additional information was requested from the Chief of Police, and none was received at the time of publication.

Chapter 6: Planning Opportunities and Challenges

- There was a question relating to the housing costs in Spring Lake and whether they exceed the ability of the average Woodlander to afford.
  - The scope of this report does not include current housing prices; this topic is addressed to some degree in the Economic and Fiscal Background Report (April 2013) and also in the Housing Element, adopted in 2013.

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