City of Vacaville General Plan

Adopted August 11, 2015 – Resolution 2015-074

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City of Vacaville General Plan

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in association with:

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1 INTRODUCTION

The General Plan provides a vision for the future and establishes a framework for how Vacaville should grow and change over the next two decades. While embracing change, this General Plan also establishes goals, policies, and actions that empower the City and the community to maintain the goals and values that make Vacaville the thriving and friendly place it is today.

Vision Statement

The General Plan is intended to guide the City's actions through the year 2035, or the ***horizon year***[1] of the General Plan. Through the year 2035, the City of Vacaville will continue to preserve and enhance the qualities that make it a great community in which to live, work, and play. Drawing on its many strengths, the city will grow in a manner that provides a high quality of life for all current and future residents and employees. In the coming years, Vacaville will:

- Preserve its "small town feel" by continuing to be a family-friendly city.
- Promote a balance of high-quality housing and commercial development within the Urban Growth Boundary.
- Support existing businesses while attracting new businesses, particularly those that reflect community aspirations.
- Foster community-oriented neighborhoods that are diverse, attractive, safe, walkable, and affordable.
- Maintain its unique character by preserving historic and cultural resources.
- Meet the transportation challenges of the future, so that people can travel safely and conveniently on foot or by car, air, bicycle, and transit.
- Emphasize and protect natural and scenic features, such as open spaces, ridgelines, and creeks that define Vacaville's setting and atmosphere.
- Ensure that development adheres to basic principles of high quality design.
- Continue to strengthen Vacaville's Downtown culture and identity, supporting a vibrancy that will draw residents and visitors to the Downtown.
- Protect Vacaville's unique identity through the preservation of agricultural lands and the creation of new park and open space lands.

[1] Throughout this document, key planning terms are ***bolded and italicized*** and followed by the definition, in addition to being defined in the glossary.

- Protect public health, safety, and the environment by taking steps to reduce noise and air pollution, conserve water and energy, and prepare for natural and man-made disasters.
- Continue to provide beautiful parks, exciting cultural and recreational amenities, and civic institutions that inspire community pride.
- Encourage and support high quality schools.
- Enhance the cultural environment in the city by promoting the arts and cultural activities.
- Welcome people from all backgrounds, ages, income levels, and physical abilities and invite them to become integral, long-term members of the community.
- Promote the health of Vacaville's residents by providing a safe environment and increased opportunities for physical activity.
- Look ahead to plan for expected population growth and allow landowners to maintain economic use and value of their property.

The City will achieve this vision through bold civic leadership, citizen participation and assistance, and responsive, accountable government.

Purpose of this General Plan

The City of Vacaville's General Plan is the principal policy and planning document for guiding future conservation, enhancement, and development in the city. It represents the basic policy direction of the Vacaville City Council regarding community values, ideals, and aspirations to govern a shared environment through 2035. The General Plan addresses all aspects of development including land use, transportation, housing, economic development, public facilities and infrastructure, and open spaces, among other topics.

California Government Code Section 65300 requires that the General Plan be comprehensive, internally consistent, and long-term. Although required to address the issues specified in State law, the General Plan may be organized in a way that best suits the City. The plan must be clearly written, available to all those concerned with the community's development, and easy to administer.

The City of Vacaville General Plan meets these requirements. The General Plan articulates a vision for the city's long-term physical form and development. It also provides overall direction to the day-to-day decisions of the City Council, its commissions, and City staff. In particular, the General Plan serves six related purposes:

- **Policy Determination.** The General Plan defines a set of policies that govern the future physical development of the community.
- **Policy Implementation.** The General Plan provides a framework for the comparison and evaluation of specific projects.

- **Communication.** The General Plan provides a communication forum between the City, citizens, and key stakeholders about a shared vision for the future of the city.
- **Guidance.** The General Plan provides a coherent, unified structure for the Planning Commission to advise the City Council on development issues, and to allow the City to provide advice and recommendations to County and State government.
- **Education.** The document, and the process of creating and revising it, provides a forum for the City to educate itself and others on the problems and opportunities of the city.
- **Action Plan.** The General Plan includes specific actions that the City will take in order to meet its planning goals. These actions constitute a work program for the City Council, City commissions, and City staff over the life of the General Plan.

In order to be used in the ways described above, the General Plan contains the following characteristics and information:

- Defines a realistic vision of what the city intends to be in the long term.
- Serves as a comprehensive guide for making decisions about land use, community character, economic development, circulation, open space, the environment, and public health and safety.
- Contains a general level of information to allow for flexibility of future conditions and ideas and is designed to allow amendment in the future.
- Charts the course of coordinated development and conservation that will preserve the character and heritage of Vacaville.
- Serves as the City's "constitution" for land use and community development. The General Plan provides the legal foundation for all zoning, subdivision, and public facilities ordinances, decisions, and projects, all of which must be consistent with the General Plan.)
- Is written in a clear and easy-to-understand format that encourages public discussion and understanding.

The City of Vacaville and its Planning Area

Vacaville is located in Solano County on the edge of the Coastal Range that separates California's Central Valley from the San Francisco Bay Area. The city lies 27 miles southwest of Sacramento and 46 miles northeast of San Francisco. Interstate 80 runs through the middle of the city, connecting Vacaville to the core of the Bay Area to the southwest, and to the Sacramento metropolitan area to the northeast. Interstate 505 branches off Interstate 80 and connects to Interstate 5 to the north. Figure I-1 shows Vacaville's regional location.

The State of California encourages cities to look beyond their borders when preparing a General Plan. For this reason, the General Plan assesses four delineated areas that are larger than the

incorporated city limits. These are the Sphere of Influence, Urban Growth Boundary, Urban Service Area, and Planning Area. Figure I-2 depicts the boundaries for each area.

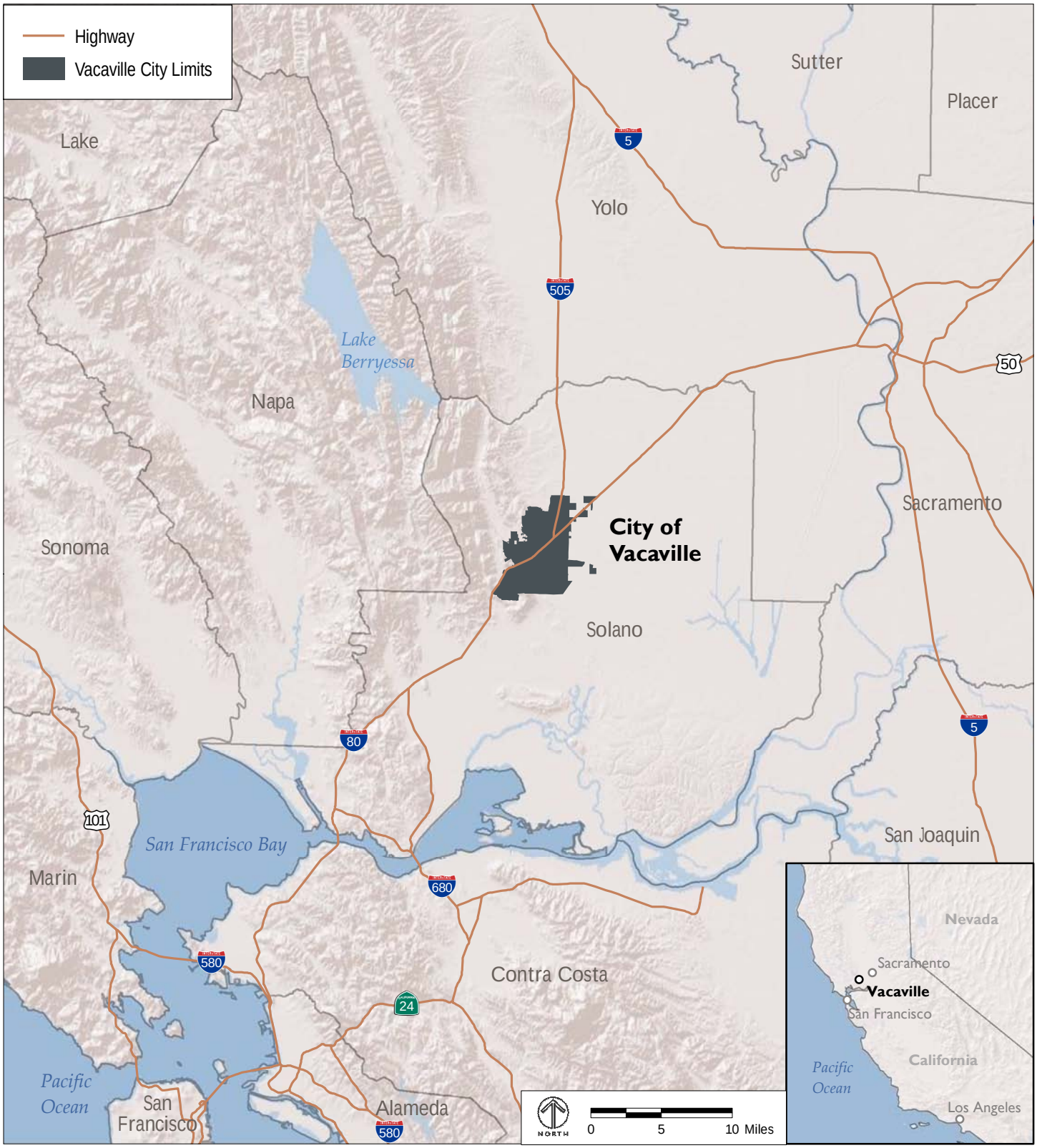
The ***Sphere of Influence (SOI)*** is a boundary that identifies land that the City may annex in the future, and for which urban services, if available, would be provided. Under State law, the SOI is established by the Solano County ***Local Agency Formation Commission (LAFCO)*** with input from the City. LAFCOs are empowered by the State to approve the SOI and other local agency boundaries to ensure orderly growth and efficient governance. The SOI delineates the city's probable future boundary and service area. Factors considered in an SOI review focus on a city's existing and future land use, existing and future service needs and the capacity to meet those needs, and any relevant communities of interest. Vacaville's existing SOI is 35 square miles in size.

As shown in Figure I-2, this General Plan proposes to amend the SOI boundary to include areas that are designated for development beyond the existing SOI, but within the Urban Growth Boundary, as well as to remove areas that are not expected to develop within the General Plan horizon year of 2035. The planned SOI shown in Figure I-2 may not represent the City's final version that will be submitted to LAFCO for approval, but it represents the City's current plans for the future SOI; these proposed changes are subject to LAFCO approval.

In 2008, the City adopted a 20-year ***Urban Growth Boundary (UGB)***, which totals 36 square miles in size. The UGB was adopted by the City Council as a result of a voter signature-gathering process. Subsequently, the City Council voted to incorporate the UGB within the General Plan Land Use Element. The location of the UGB and the City's UGB policies can only be amended by the voters of Vacaville or by the City Council pursuant to the procedures set forth in the Land Use Element, which establish required findings for such an amendment. Land outside the UGB cannot be designated for anything other than agriculture, park, open space, public facility, and utility uses until March 1, 2028, specifically as set forth in this General Plan.

The ***Urban Service Area Boundary*** is a result of the 1995 Master Water Agreement between the City and the Solano Irrigation District (SID). As part of the Master Water Agreement, which remains in effect until 2050, the City and SID committed to accommodate and support urban development within the Urban Service Area Boundary. Conversely, both entities have committed not to support urban development outside of the boundary, which is considered to be the SID's agricultural service area.

The ***Planning Area*** is 98 square miles, and encompasses the city limits, SOI, and UGB. While the Planning Area does not give the City any regulatory power over this land, it signals to the County and to other nearby local and regional authorities that Vacaville recognizes that development within this area may have an impact on the future of the city.



Source: City of Vacaville; The Planning Center | DC&E, 2012; ESRI 2010; FHA 2002.

FIGURE I-1
REGIONAL LOCATION

Vacaville Today

Landscape

Vacaville lies in a geological transition zone between the Sacramento Valley to the east and the Coast Ranges to the west. The Vaca Mountains, part of the Coast Range, provide the dramatic western backdrop for the city. Known locally as the English Hills, several ridges extend into the western and northern areas of the city, and the central area of Vacaville features a number of low, rolling hills. Vacaville also contains portions of the Vaca and Lagoon Valleys, with the eastern portions of the city falling on the edge of California's Central Valley.

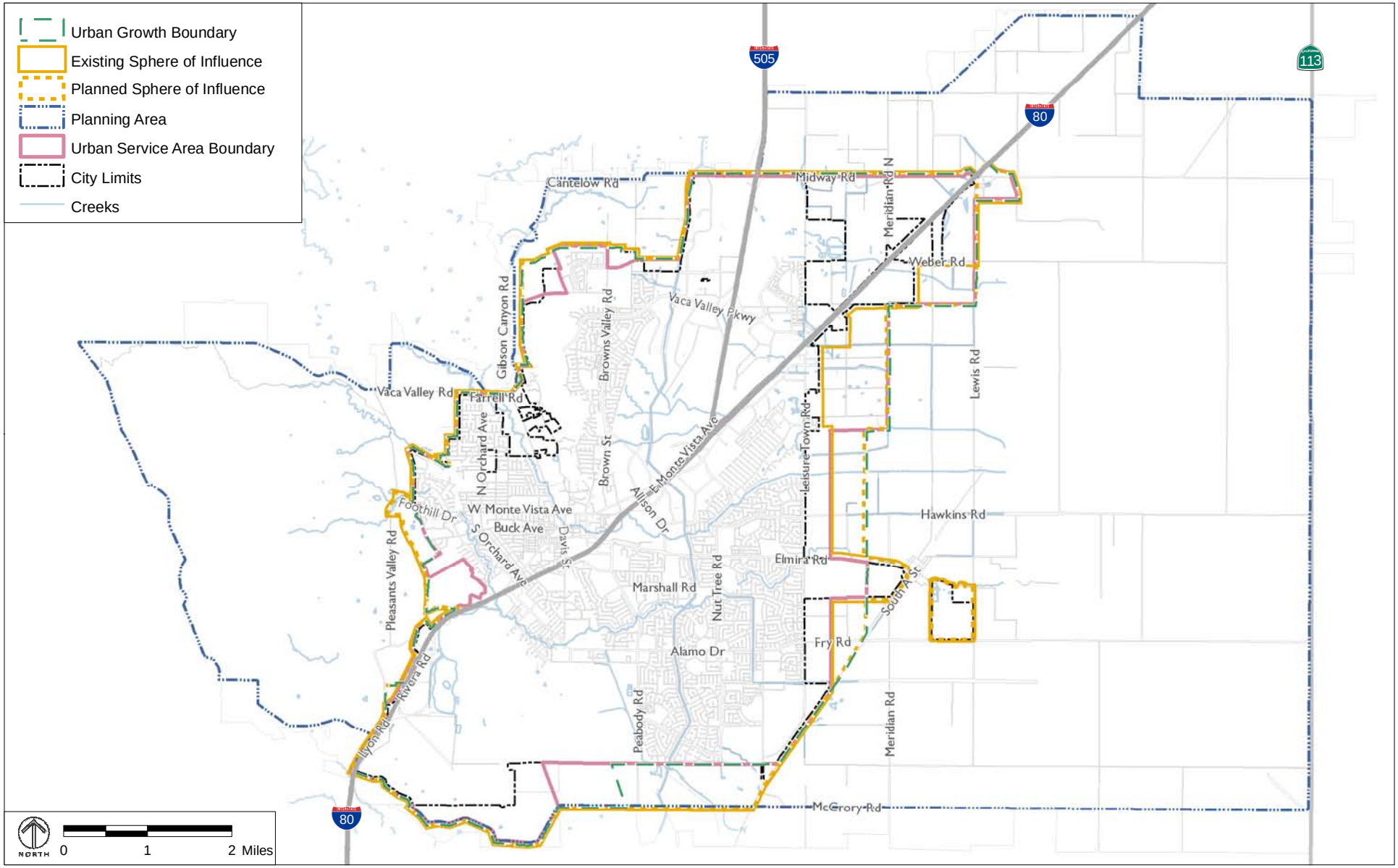
Vacaville is drained by Alamo, Ulatis, Horse, and Gibson Canyon Creeks, as well as their smaller tributaries. The major stream courses that flow through Vacaville are largely in a natural state and alignment, except at the eastern edge of the city where flood control channels have been constructed. Alamo and Ulatis Creeks are flanked by stands of riparian vegetation throughout most of their journey through the city.

Along with most of California, Vacaville enjoys a Mediterranean climate characterized by dry, warm to hot summers, with wet, cool winters. Located on the edge of the Bay Area, Vacaville occasionally experiences the cooling influence of marine air spilling through the Carquinez Strait during the otherwise warm spring, summer, and early fall. Winters are at times foggy and cold, but snow is exceedingly rare.

History and Economy

The town of Vacaville was established in 1851, when livestock and wheat production were the principal economic products in the county. The completion of nearby railroads in the late 1860s provided a way for ranchers to get their crops to market, but the higher cost of rail transport coupled with increased competition led to the decline of the area's wheat industry during the 1880s. Subsequently, Solano County farmers turned to other crops, most of which required irrigation. While rail transport had contributed to the decline of wheat production, the ease of access it provided gave a boost to produce farming. By the 1890s, Vaca Valley and the foothills of the Vaca Mountains were covered with orchards, and in 1892, Vacaville was formally incorporated.

After peaking in the mid-1910s, fruit production in the Vacaville area declined due to drought and soil depletion, competition during the Great Depression, and overproduction for the World War I war effort. In the mid-20th century, new employers arrived in the area, resulting in explosive growth in Vacaville. The now defunct Basic Vegetable Products company located a 1,000-worker onion dehydrating facility in Vacaville, and in 1942, Suisun Air Base (now Travis Air Force Base) was established just to the south of Vacaville.



Source: City of Vacaville.

FIGURE I-2

PLANNING BOUNDARIES

With its industry, ease of access, and close proximity to the core of the Bay Area, Vacaville saw its population double between 1940 and 1950. Ongoing freeway construction and increasing employment in the Bay Area led to Vacaville's continued growth through the end of the 20th century and the beginning of the 21st.

As of the 2010 US Census, approximately 46,600 people were employed in Vacaville. By employment, the largest industries are education and healthcare; retail; arts, entertainment, recreation, and accommodation and food services; manufacturing; and public administration. Together, these industries comprise about 70 percent of Vacaville's employment. The city's ten largest individual employers are the California State Department of Corrections, Vacaville Unified School District, Kaiser Permanente, Genentech, The City of Vacaville, State Compensation Insurance Co., Alza Corporation, NorthBay VacaValley Hospital, Travis Credit Union, and Mariani Packing Company. The presence of Genentech, Alza Corporation, and Novartis in Vacaville contribute to the city's position as a center for the biotech industry. Vacaville hopes to further strengthen this position in biotech and similar cutting edge industries over the lifetime of this General Plan.

Demographics

As of the 2010 U.S. Census, the population of Vacaville was approximately 85,000 people.[2] There were about 30,000 households in Vacaville, and the average household size was 2.71. The median age of Vacaville residents was 37 years, which is slightly older than the overall statewide median average of 35 years.

Approximately 67 percent of Vacaville's population identified as white, 10 percent identified as black, 6 percent as Asian, 1 percent as American Indian, and 0.6 percent as Hawaiian or other Pacific Islander. Approximately 23 percent identified as being of Hispanic origin and 7 percent reported being two or more races. Of Vacaville residents, approximately 10 percent identified as foreign-born and 17 percent reported a primary home language other than English.

General Plan Update Process

The Vacaville General Plan was developed with extensive community input at key milestones, as illustrated in Figure I-3. Widely-publicized community workshops were held to inform community members about the update and to invite feedback on the process. To help guide the work of the consultant team and City staff, a nine-member Steering Committee was formed, composed of members of three different city commissions: the Planning Commission, Community Services Commission, and Housing and Redevelopment Commission. A total of 20 Steering Committee meetings, nine City Council study sessions, and five community workshops were held during the planning process, all of which were open to the public and included

[2] The 2010 Census reported a population of 92,400, which includes the prison populations of the California State Prison, Solano, and the California Medical Facility. In January 2010, the California Department of Corrections and Rehabilitation, Data Analysis Unit, reported a prison population of 7,900 between both prisons.

extensive public comment periods. The City also hosted a number of community outreach meetings with community groups, including civic groups, church groups, neighborhood associations, and parent teacher associations, throughout the General Plan process. This input and direction from the public was then incorporated into the General Plan by City staff and the General Plan consultant team.

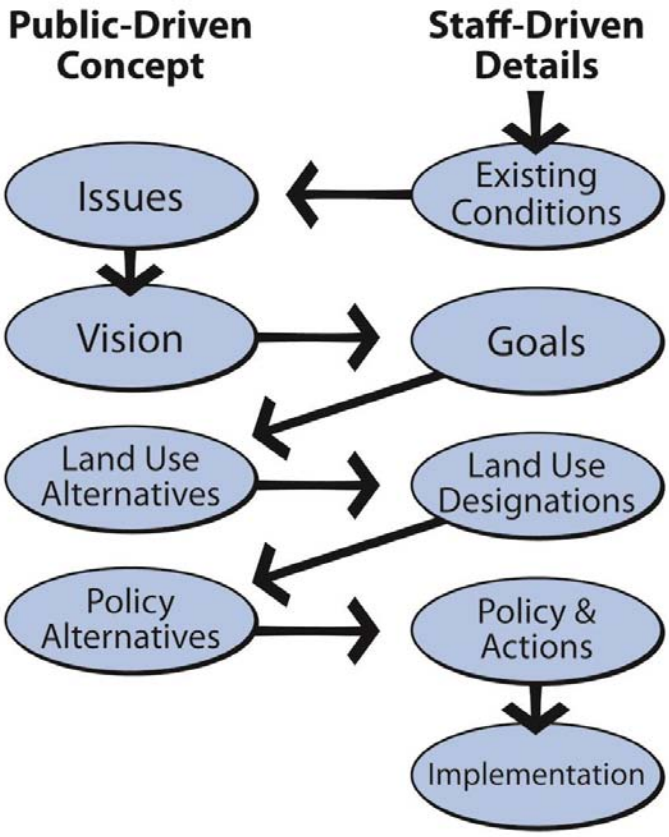


FIGURE 1-3 GENERAL PLAN UPDATE PROCESS

Vacaville created a General Plan website at www.vacavillegeneralplan.org to enhance and inform the public process. The website provides all maps and documents, meeting summaries, meeting announcements and information, and additional records from public workshops, Steering Committee meetings, and City Council meetings. The website also includes an online discussion forum in which members of the public can post and discuss comments about Vacaville and the General Plan. The City also published four newsletters at key points throughout the process to raise awareness of the General Plan Update and inform the public about its progress.

The process to update the General Plan included the phases discussed below.

Existing Conditions

The first phase of the General Plan Update process was devoted to researching and documenting baseline environmental conditions in Vacaville. This effort resulted in a series of technical memoranda covering the following topics: land use, agriculture, demographics, economic development, parks and recreation, public services, utilities and infrastructure, biological resources, cultural resources, transportation, greenhouse gas emissions, air quality, and noise. These memoranda informed the issues identification phase and the development of land use alternatives, and they provided the foundation of baseline conditions for the ***Environmental Impact Report (EIR)***, which is a document required by State law to evaluate and mitigate the potential environmental effects of implementing the General Plan.

Issues Identification

The issues identification phase involved a public process to identify issues and opportunities for the General Plan Update. This task included a community workshop, Steering Committee meeting, and City Council Study Session, which offered the public and decision-makers information on the General Plan Update, a chance to ask questions and make comments on the process and the update itself, and identify the issues they felt were most important.

Alternatives Development and Selection

This highly interactive and participatory phase involved crafting alternative land use scenarios in response to the issues identified in the second phase. Land use alternatives were then evaluated and compared in relation to market and financing feasibility, utilities and transportation infrastructure needs, public service needs, and impacts on environmental resources. This evaluation informed the selection of the Preferred Land Use Alternative, which formed the basis for the General Plan Land Use Map, and guides the nature, pattern, and location of land development and conservation in the city. During this phase, a community workshop was held, and the Steering Committee and City Council held numerous meetings to develop the alternatives and select the Preferred Land Use Alternative.

Policies Development

Following selection of the Preferred Land Use Alternative, the project team developed the goals, policies, and actions for each element of the General Plan. Policies were designed to support the Preferred Land Use Alternative and reflect the issues identified in the second phase and other community input provided throughout the process. Many policies from the prior General Plan were carried forward. In addition, a number of other policies were included in order to respond to specific environmental concerns and avoid common environmental impacts associated with new development under the General Plan. One community workshop and three Steering Committee meetings provided community guidance on the major policy issues for this General Plan.

Draft Documents

The City published a draft version of the General Plan for public review and comment. Also at this time, the City published the draft Energy and Conservation Action Strategy (ECAS), the result of a concurrent planning effort, and the associated Draft EIR for both documents. The Draft General Plan was based upon the Preferred Land Use Alternative and the goals, policies, and actions developed through the prior phases, integrated with feedback collected during community participation processes. Greenhouse gas reduction targets and a series of measures to achieve those targets were formulated for inclusion in the Draft ECAS. The completed EIR evaluates both this General Plan and the ECAS. By preparing the EIR concurrent with the Draft General Plan and ECAS, the City was able to incorporate necessary mitigation measures directly into the Plans themselves, thus ensuring that they are "self-mitigating."

Public Review and Adoption

The final tasks of the General Plan Update process included the review and adoption of final documents and the certification of the EIR. This phase included the 45-day public review period of the EIR, followed by revision of the Draft EIR based on the public comments received, and completion of the Final EIR. In addition, a series of City Council and Planning Commission hearings were held to certify and adopt the Final EIR, General Plan, and ECAS. During these adoption hearings, the Planning Commission and City Council provided direction on final edits to General Plan policies and the land use map.

General Plan Organization and Contents

This General Plan includes the Introduction and seven separate elements that establish goals, policies, and actions for each given topic. The elements cover the topics required by California State Government Code Section 65302 as well as topics of particular interest to Vacaville. In addition, this General Plan includes a glossary. Throughout this document, key planning terms are ***bolded and italicized*** and followed by the definition, in addition to being defined in the glossary.

General Plan Elements

A brief explanation of each General Plan element is provided below.

- **Land Use Element.** The State-required Land Use Element designates all lands within Vacaville's Planning Area for specific uses such as housing, retail, industrial, and agricultural uses. The Land Use Element also provides development regulations for each land use designation and overall land use policies for the City.

- **Transportation Element**. State law requires that a Transportation Element[3] specify the general location and extent of existing and proposed major streets and other transportation facilities. The Element is correlated with the Land Use Element to provide adequate pedestrian, bicycle, motor vehicle, transit, air transportation, and emergency access to serve both new and existing land uses.
- **Conservation and Open Space Element.** This Element combines two elements required under State law: the Open Space Element and the Conservation Element. It addresses four of the six types of open space identified by State law: open space for the conservation of natural resources, open space used for the managed production of resources, open space in support of the mission of military installations, and open space for the protection of Native American sacred sites. The other types of open space, open space for recreation and open space for public health and safety, are covered in the Parks and Recreation Element and the Safety Element. In addition to these open space types, the Conservation and Open Space Element addresses biological resources, agricultural resources, cultural resources, scenic resources, greenhouse gases, energy conservation, air quality, water resources, mineral resources, and military installations.
- **Parks and Recreation Element.** While not required by State law, this element discusses goals and policies for the maintenance and expansion of Vacaville's park system and recreation facilities. This element considers park provision service standards and approaches to supporting the City's recreation goals.
- **Public Facilities and Services Element.** This Element addresses public services and facilities within the city, including fire protection and emergency medical services, law enforcement, schools, public buildings, technology and telecommunications, other community services, solid waste and recycling, water service, and wastewater. It meets the requirements of State law that the General Plan address public utilities and facilities.
- **Safety Element.** The State-required Safety Element provides information about risks in Vacaville due to natural and human-made hazards, and contains goals, policies, and actions designed to protect the community and its property from hazards. It specifically addresses risks associated with geologic and seismic hazards, flooding and storm drainage, wildland fires, hazardous materials and waste, and climate change.
- **Noise Element.** The State-required Noise Element addresses noise problems, quantifies current and projected noise levels from a variety of sources, and establishes noise compatibility guidelines for different land uses.

Goals, Policies, and Actions

Each element of this General Plan contains background information and a series of goals, policies, and actions. Many of the goals, policies, and actions are carried over from the previous

[3] State Law requires that the General Plan include a Circulation Element that addresses "the circulation of people, goods, energy, water, sewage, storm drainage, and communications." This requirement is met through both the Transportation Element and the Public Facilities and Services Element of this General Plan.

General Plan; those goals, policies, and actions include the goal or policy number in parentheses following the text. They will be deleted in the final, adopted version of this General Plan.

Figure I-4 illustrates that policies and actions are at the same level of importance, and are both intended to support goals. In most cases, goals have both policies and actions. However, it is also possible for a goal to be supported exclusively by policies or actions. The following provides a description of goals, policies, and actions and explains the relationship between them:

- A ***goal*** is a description of the general desired result that the City seeks to create through the implementation of its General Plan.
- A ***policy*** is a specific statement that regulates activities in the City, guides decision-making and directs on-going efforts as the City works to achieve a goal. A policy is on-going and requires no further implementation. The General Plan's policies set out the standards that will be used by City staff and the Planning Commission in their review of land development projects and in decision-making about City actions.
- An ***action*** is a measure, procedure, or technique intended to help reach a specified goal. The City must take additional steps to implement each action in the General Plan. An action is not on-going, but rather something that can and will be completed. Taken together, the actions in this General Plan constitute a "to-do list" for the City of Vacaville.

These goals, policies, and actions provide guidance to the City on how to direct change and manage its resources over the next 20 years.

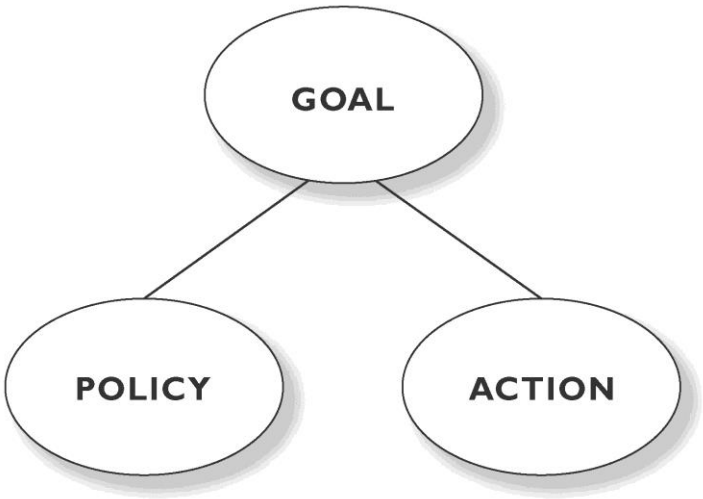


FIGURE 1-4 GENERAL PLAN COMPONENTS

2 LAND USE ELEMENT

The purpose of the Land Use Element is to shape the future physical development of Vacaville and to preserve, protect, and enhance Vacaville's quality of life. The Land Use Element sets forth specific goals, policies, and actions to guide land use for the City of Vacaville through the year 2035. The General Plan Land Use Map, which is also part of this element, graphically represents the City's vision for the future development of the ***city limits*** – the boundary that encompasses the incorporated city and defines the properties that are subject to the City's jurisdiction – and the ***Sphere of Influence (SOI)*** **–** the area that the City expects to grow into in the future. The Land Use Element also includes goals, policies, and actions for the ***Planning Area*** **–** the areas outside of the city's boundaries that bear a relation to the city's planning but are under the jurisdictional control of Solano County. These planning boundaries are shown in Figure I-2 of the Introduction chapter. The City's Land Use and Development Code and subdivision regulations implement the Land Use Element.

The Land Use Element describes land use designations, special planning areas, and existing land uses in Vacaville. The Land Use Element is divided into the following sections:

- **Background Information**: A description of Vacaville's community form and image; existing land use; policy plans, master plans, and specific plans; the Urban Growth Boundary (UGB); the Master Water Agreement; and the Nut Tree Airport Land Use Compatibility Plan.
- **General Plan Land Use Designations**: A description of the characteristics and intensity of the different land use designations in Vacaville, including a map identifying the locations of these land use designations.
- **Goals, Policies, and Actions**: A list of goal, policy, and action statements that provide guidance to Vacaville on land use decisions.

Because it identifies locations for future development, the Land Use Element is closely tied to the other elements in this General Plan. In particular, the Transportation and Public Facilities and Services Elements address the infrastructure needs to serve new development; the Conservation and Open Space Element addresses groundwater recharge, which is important to mitigate flood risks that can affect new development; and the Safety Element addresses flood risks for new development.

Background Information

Community Form and Image

Vacaville's development continues to transform it from its historic roots as a small rural town to a moderate-sized suburban city. Although its history will continue to play an important

role in setting the character of the community, new influences must also be integrated. The strongest visual features of the city are the Vaca Mountains, Alamo Creek Ridge, and the English Hills along the western borders of the city. These natural hillsides and ridgelines can be seen from most areas of the city. Creeks and associated riparian corridors are another valuable visual asset. The older sections of Vacaville, especially the Downtown, project a distinctive identity, formed by the city's past. General Plan policies are intended to enhance the character of the existing community.

If Vacaville wishes to retain its identity as a distinct city, as opposed to the seemingly endless urban sprawl so prevalent in other metropolitan areas of California, it must establish clear edges of urban development. Over the coming years, there must be a deliberate effort to promote design that is not only attractive, but also expresses the community identity. Ideas embodied in the General Plan include: continued revitalization and expansion of the Downtown; individual landscape treatments of arterial streets and the freeways; design elements that mark points of entry; and preservation of open space on slopes, major ridges, and Vacaville's Planning Area. To work towards this vision, the City adopted Residential Design Requirements for New Single-Family Development, a companion document to the City's Land Use and Development Code, as well as the City Gateways Design Master Plan and the Opportunity Hill Master Plan, both described later in this chapter.

Healthy Communities

Community planning can directly enhance the wellness of a community. Land use planning has recently become a recognized tool for increasing individuals' physical activity rates, access to healthy foods, and access to health care. This Element and the Conservation and Open Space and Parks and Recreation Elements contain policies and actions that promote healthy communities.

Existing Land Use

This section provides qualitative and quantitative descriptions of existing land uses in Vacaville. Data on existing land use is based on the City's land use database. Figure LU-1 shows a map of the existing land uses in the city as of 2011 and Table LU-1 lists the acreage in each category. As shown in Figure LU-1, most of Vacaville is comprised of single-family residential neighborhoods, with a retail corridor along Interstate 80 and a mix of uses in Downtown Vacaville. Vacaville has significant amounts of vacant land designated for development as well, most of which is located along Interstate 505 in the northeastern portion of the city.

Specific Plans, Policy Plans, and Master Plans

In addition to the General Plan, Vacaville has other plans that guide development in specific areas of the city, including specific plans, policy plans, and master plans. The City's existing specific plans, policy plans, and master plans are shown on Figure LU-2.

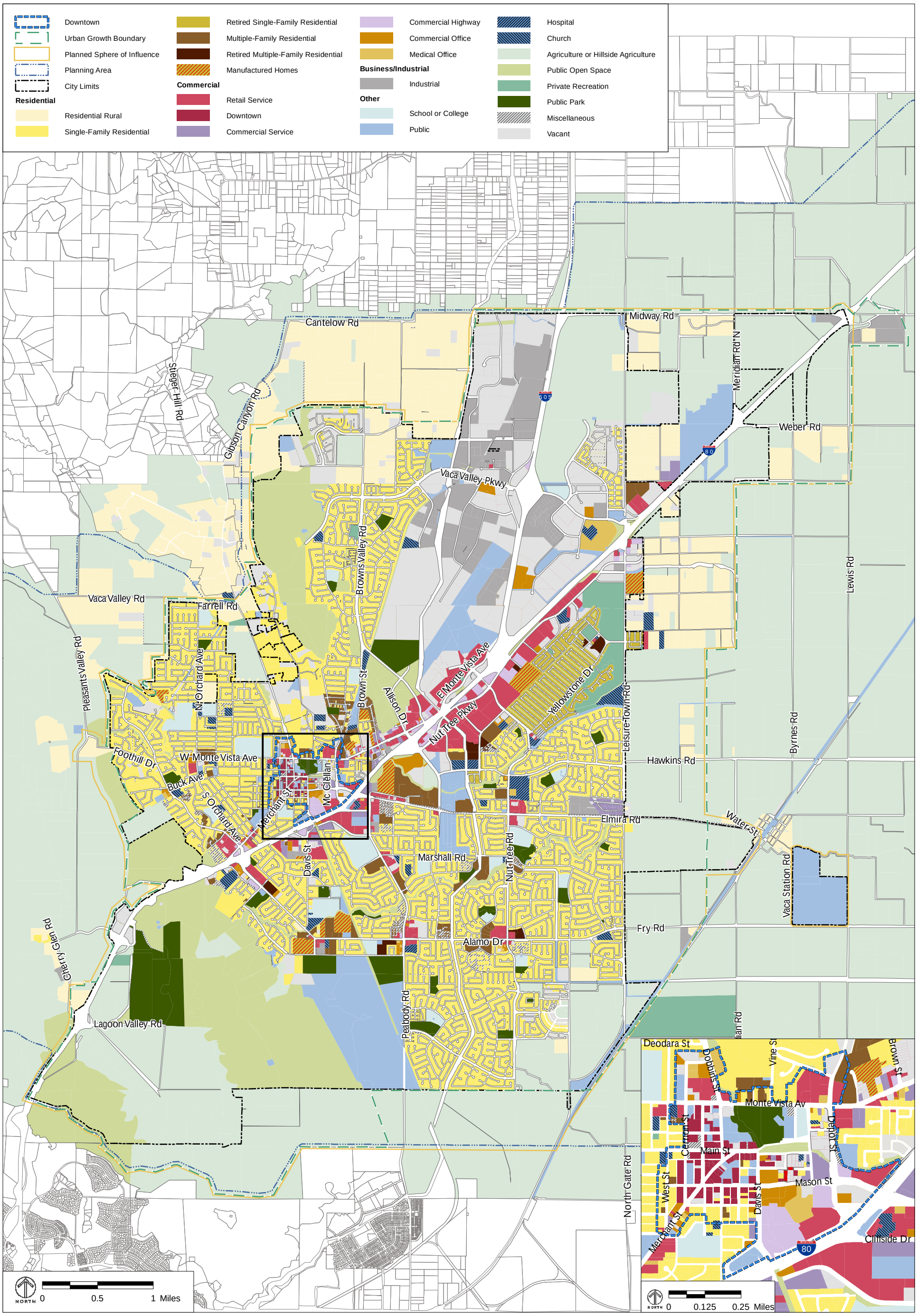
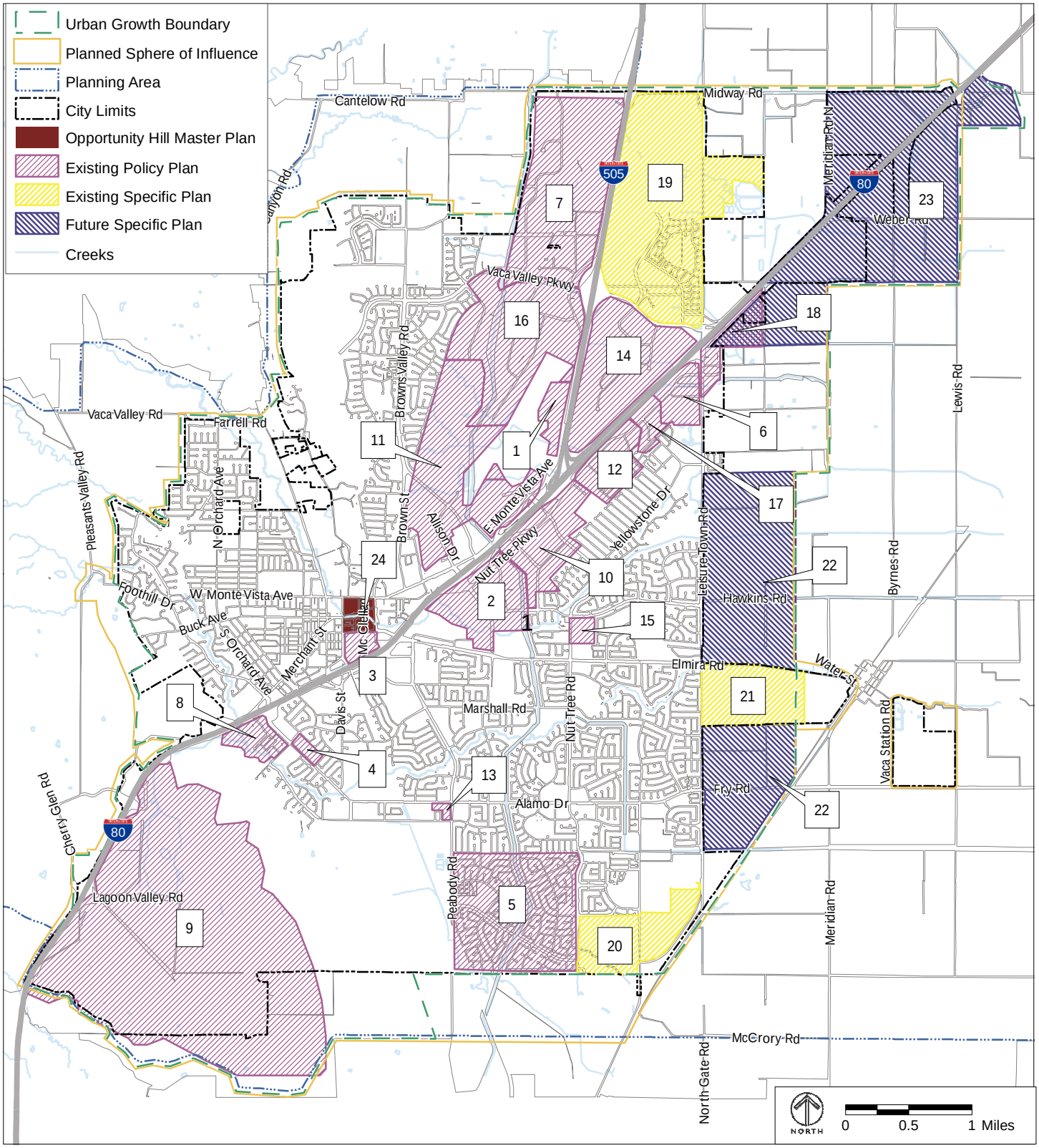


FIGURE LU-1
EXISTING LAND USE

TABLE LU-1 **EXISTING LAND USE**

Existing Land Use	Acres	Units
Residential Rural	1,280	270
Single-Family Residential	4,090	22,010
Retired Single-Family Residential	220	1,680
Multiple-Family Residential	360	7,130
Retired Multiple-Family Residential	50	1,030
Manufactured Homes	130	1,140
Total Residential	**6,120**	**33,260**
Retail Service	490	
Downtown	20	
Commercial Service	70	
Commercial Highway	80	
Commercial Office	80	
Medical Office	70	
Industrial	630	
Elementary School	190	
High School	90	
College	10	
Public	1,330	
Hospital	40	
Church	100	
Agriculture/Hillside Agriculture	2,510	
Public Open Space	2,490	
Private Recreation	200	
Public Park	530	
Miscellaneous	90	
Vacant	1,890	
Total Non-Residential Acres	**10,890**	

Note: This table provides land use information for the area contained by the Vacaville city limits, SOI, and Urban Growth Boundary. Numbers do not always add up due to rounding.
Source: City of Vacaville, January 2011.



Source: City of Vacaville.

1 Airport Business Area Policy Plan
2 Allison Business Area Policy Plan
3 Basic American Foods Site Policy Plan
4 East Side of Alamo Drive Policy Plan
5 Gonsalves-Lockie (Foxboro) Policy Plan
6 Green Tree Park Policy Plan
7 Interchange Business Park Policy Plan
8 Interstate 80/Alamo Drive Policy Plan
9 Lower Lagoon Valley Policy Plan
10 Nut Tree Business Park Policy Plan
11 Nut Tree Ranch Policy Plan
12 Orange Tree Business Park Policy Plan
13 Peabody-Alamo Office Center Policy Plan
14 Vaca Valley Business Park Policy Plan
15 Vaca Valley Medical Campus Policy Plan
16 Vacaville-Golden Hills Business Park Policy Plan
17 Vacaville Auto Center Policy Plan
18 Willow-Kilkenny Policy Plan
19 North Village Specific Plan
20 Vanden Meadows Specific Plan
21 Brighton Landing Specific Plan
22 East of Leisure Town Road Future Specific Plan
23 Northeast Area Future Specific Plan
24 Opportunity Hill Area

The City Gateways Design Master Plan is not shown on this figure

FIGURE LU-2

POLICY, SPECIFIC, AND MASTER PLANS

Specific Plans

A ***specific plan*** is tool for systematically implementing the General Plan within a portion of the Planning Area. A specific plan is a hybrid document that combines General Plan policy statements with development regulations. It is often used to address the development requirements for a single project, such as urban infill or a new growth area. As a result, its emphasis is on concrete standards and development criteria. Its text and diagrams will address the planning of necessary infrastructure and facilities, as well as land uses and open space. In addition, it will specify those programs and regulations necessary to finance infrastructure and public works projects.

A specific plan may be adopted either by resolution, like a general plan, or by ordinance, like zoning. The City currently has three specific plans: North Village Specific Plan, Vanden Meadows Specific Plan, and Brighton Landing Specific Plan. The City requires that specific plans be applied to large areas of raw land on the city's fringe where major utility and circulation extensions are likely to be required. Specific plans are also required for areas within the city where major projects are being considered or a significant change in land use will occur. Specific plans may be implemented by themselves or in conjunction with development agreements, and are executed consistent with State law.

Future specific plans must include a diagram showing the distribution of land uses; define permitted and conditionally permitted land uses; identify major public facilities, including roads, water, sewer and drainage facilities, schools, and parks; describe phasing; identify infrastructure financing mechanisms; and describe any other elements that may be needed to ensure an orderly development process with minimal adverse impacts.

Policy Plans

Similar to a specific plan, a ***policy plan*** is another tool used to implement the General Plan. Policy plans provide development guidelines for master planning development within a geographic area of the city. The principal difference between the contents of a policy plan and a specific plan is that the specific plan contains more detailed information on public infrastructure and facilities and how they will be funded. The City has 18 policy plans that support commercial, office, and industrial development. Many of these documents are over 20 years old and address areas that have been built out. However, the City's largest policy plan areas, located in the northern portion of the city, have a significant inventory of vacant land capable of accommodating additional development within the existing industrial and business parks. This area is addressed by the following policy plans: Airport Business Area Policy Plan, Nut Tree Ranch Policy Plan, Interchange Business Park Policy Plan, Golden Hills Business Park Policy Plan, and Vaca Valley Business Park Policy Plan.

Master Plans

The City of Vacaville has adopted two Master Plans: the City Gateways Design Master Plan and the Opportunity Hill Master Plan. ***Master plans*** provide development and design

guidelines for specific geographic areas within the city or for specialized areas and/or amenities within the city (e.g. freeway landscaping, riparian areas, and freeway signage).

The City Gateways Design Master Plan, adopted on October 26, 1999, establishes standards for entry points into the city and for the city's image as seen from the freeways that traverse the city, including landscape design and a coherent signage design. Focusing on the Interstate 80 and Interstate 505 corridors, the City Gateways Design Master Plan identifies ways to improve the perception of Vacaville from the freeways.

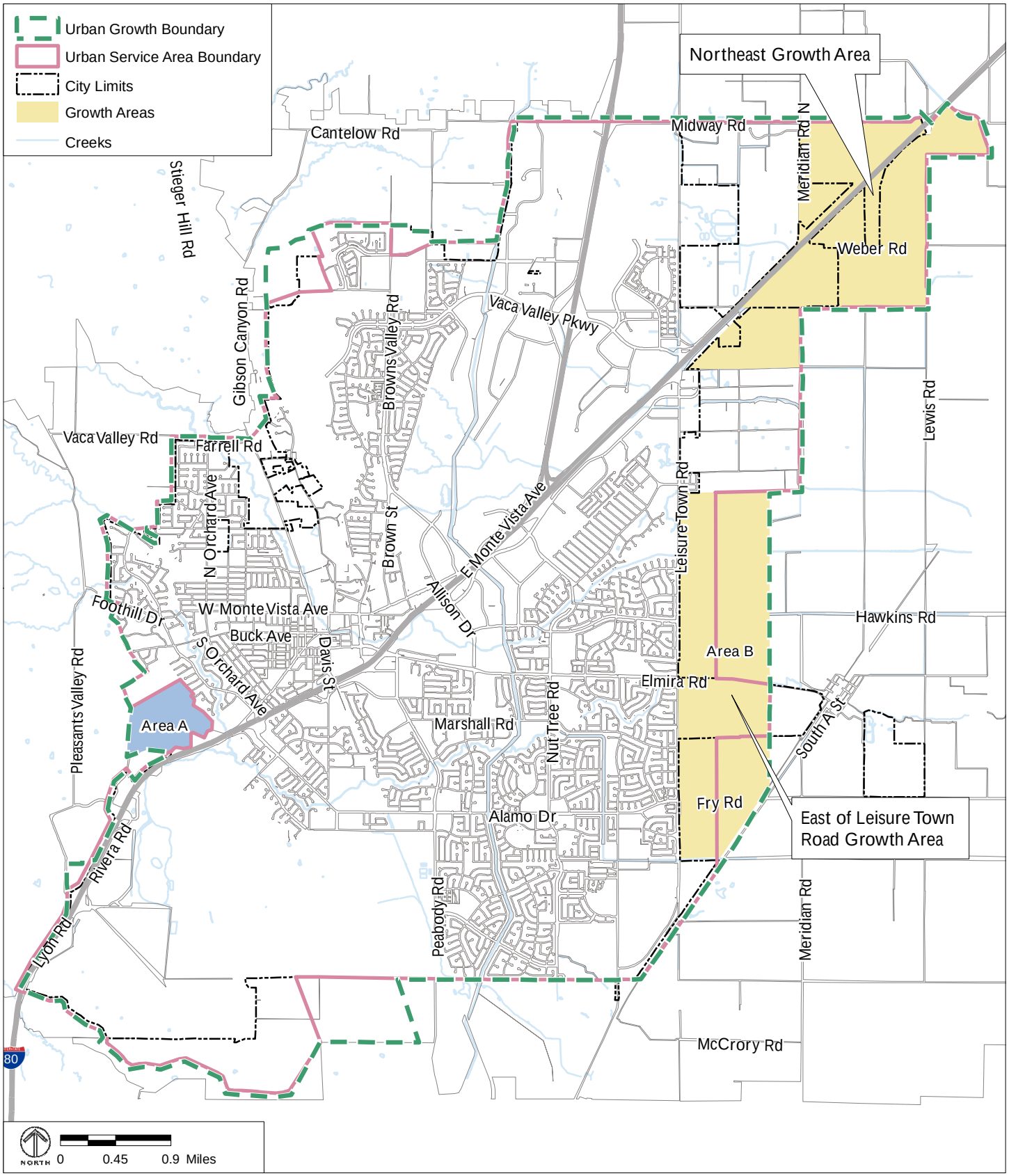
Adopted in April 2008, the Opportunity Hill Master Plan establishes goals and policies to enhance two areas in Downtown Vacaville, as shown in Figure LU-2: the Opportunity Hill sites, located at the northeast corner of Wilson Street and East Main Street, and the Depot Street site, located on McClellan Street between Bush Street and East Main Street. The strategic framework identifies the primary land uses and supporting strategies for these sites. Primary land uses include housing, restaurant/entertainment, recreation, retail, office, and heritage tourism. The Opportunity Hill Master Plan includes two development scenarios for these sites that feature a mix of housing and commercial uses. To support the Master Plan's goals, several policies and actions are included in this Element related to design guidelines and standards, parking, development incentives, General Plan and Zoning amendments, connectivity, infrastructure, wayfinding, and affordable housing. In addition, this Element directs the City to amend the Residential Urban High Density Overlay on the Opportunity Hill and Depot Street sites to allow up to 65 dwelling units per acre.

Urban Growth Boundary

In 2008, the City adopted a 20-year ***Urban Growth Boundary (UGB)***, which totals 36 square miles in size and is shown in Figure LU-3. The UGB indicates the maximum allowable extent of urbanization; beyond this boundary, only agricultural or open space uses are typically permitted. The UGB was adopted by the City Council as a result of a voter signature gathering process. Subsequently, the City Council voted to incorporate the UGB within the General Plan Land Use Element. The location of the UGB and the City's UGB policies can only be amended by the voters of Vacaville or by the City Council pursuant to the procedures set forth in the policies related to the UGB in this Element, which establish required findings for such an amendment. Land outside the UGB cannot be annexed into the City or designated for anything other than agriculture, park, open space, public facility, or utility uses until March 1, 2028. For areas outside of the UGB but within the Planning Area, the General Plan land use map (see Figure LU-6) shows land use designations consistent with the Solano County General Plan. The only exception to this approach is an area designated Public/Institutional south of the city limits and UGB between Peabody Road and Vanden Road.

Urban Service Area Boundary and Master Water Agreement

The Urban Service Area Boundary, shown on Figure LU-3, is a result of the 1995 Master Water Agreement between the City and the Solano Irrigation District (SID). As part of the



Note: Areas A and B refer to specific areas that are addressed in the Urban Growth Boundary policies.
Source: City of Vacaville.

FIGURE LU-3

URBAN GROWTH BOUNDARY, URBAN SERVICE AREA, AND GROWTH AREAS

Master Water Agreement, which remains in effect until 2050, the City and SID committed to accommodate and support urban development within the Urban Service Area Boundary. Conversely, both entities have committed not to support urban development outside of the boundary, which is considered to be SID's agricultural service area. The agreement specifies that the City and SID could mutually amend the agreement to consider an easterly expansion of the Urban Service Area Boundary. Such an amendment would be required to allow City water service in the East of Leisure Town Road Growth Area, an area that is designated for urban development under this General Plan.

The City requires a 300- to 500-foot agricultural buffer between residential and agricultural uses. The agricultural buffer is intended to protect viable agricultural operations (particularly crops that require irrigation, tilling, and spraying) from the intrusion of urban uses. The Master Water Agreement stipulates that any proposal for the expansion of the Urban Service Area Boundary must consider the potential expansion of the City's existing agricultural buffer requirement. The agricultural buffer is addressed in the Conservation and Open Space Element.

Growth Areas

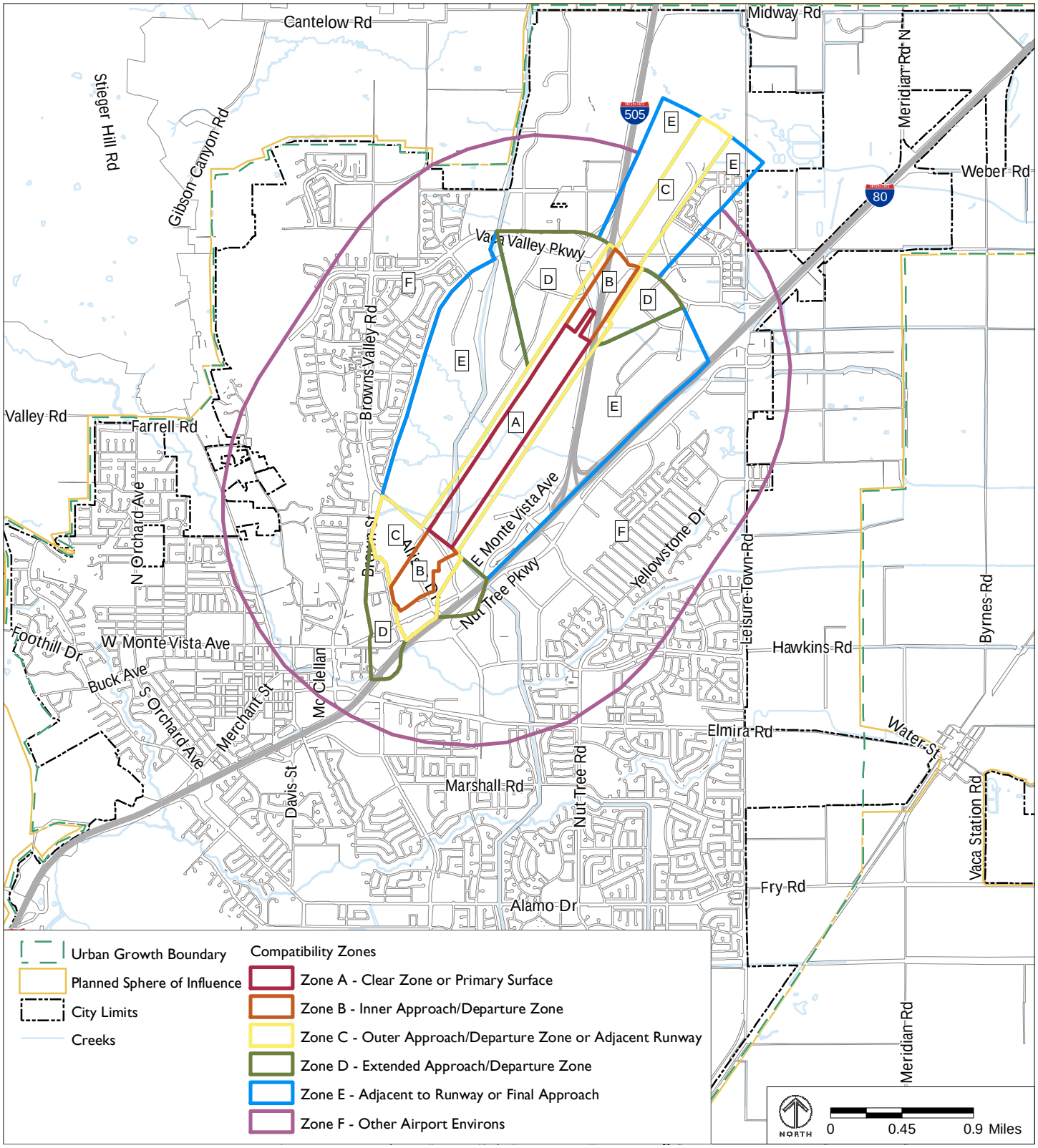
Adoption of the UGB created two new significant areas of undeveloped land within the UGB: the East of Leisure Town Road Growth Area and the Northeast Growth Area, which are shown in Figure LU-3. Each of these growth areas is partially located outside of the existing city limits and SOI, but within the UGB. The East of Leisure Town Road Growth Area is approximately 1,300 acres in size, and the Northeast Growth Area is approximately 1,400 acres in size. The two growth areas are separated by the unincorporated Locke Paddon community. This General Plan establishes land use designations for new urban development within these two areas.

Airport Land Use Compatibility Plans

The Solano County ***Airport Land Use Commission (ALUC)*** is charged with promoting land use compatibility around the county's airports as a means to minimize public exposure to excessive noise and safety hazards. This is accomplished through the preparation and periodic update of Airport Land Use Compatibility Plans (ALUCPs).

Two airports influence land use decisions in Vacaville: the Nut Tree Airport, operated by Solano County and located on East Monte Vista Avenue just north of Interstate 80, and Travis Air Force Base, operated by the United States Air Force and located in Fairfield, south of Vacaville.

The Nut Tree ALUCP's land use compatibility zones are shown in Figure LU-4. Table LU-2 displays the maximum residential densities, permitted number of structures, maximum people per acre, and open space requirements for each airport compatibility zone.



Source: City of Vacaville, 2012.

FIGURE LU-4
NUT TREE AIRPORT LAND USE COMPATIBILITY ZONES

TABLE LU-2 **NUT TREE AIRPORT LAND USE COMPATIBILITY CRITERIA**

	Zone A	Zone B	Zone C	Zone D	Zone E	Zone F
Maximum Densities						
Residential (units/acre)	0	0.3	1	4	6**	-
Other Uses (people/structure)	10	20	50	100	-	-***
People/Acre*	15	40	75	150	-	-
Required Open Land	65%	50%	15%	10%	-	-

* The use should generally not attract more than the indicated number of persons per net acre. These densities are intended as general planning guidelines to aid in determining the acceptability of proposed land uses.
** Zone allows clustered development of up to three times the allowed density, which equates to 18 units per acre.
*** Under flight tracks, captive groups should not exceed 100 persons/structure; large assemblages should not exceed 300 persons, where grouped in close proximity, i.e., theaters, auditoriums, conference facilities, etc.
Source: The Barnard Dunkelberg Company Team, May 20, 2010, *Nut Tree Airport Master Plan Working Paper One*, page 37.

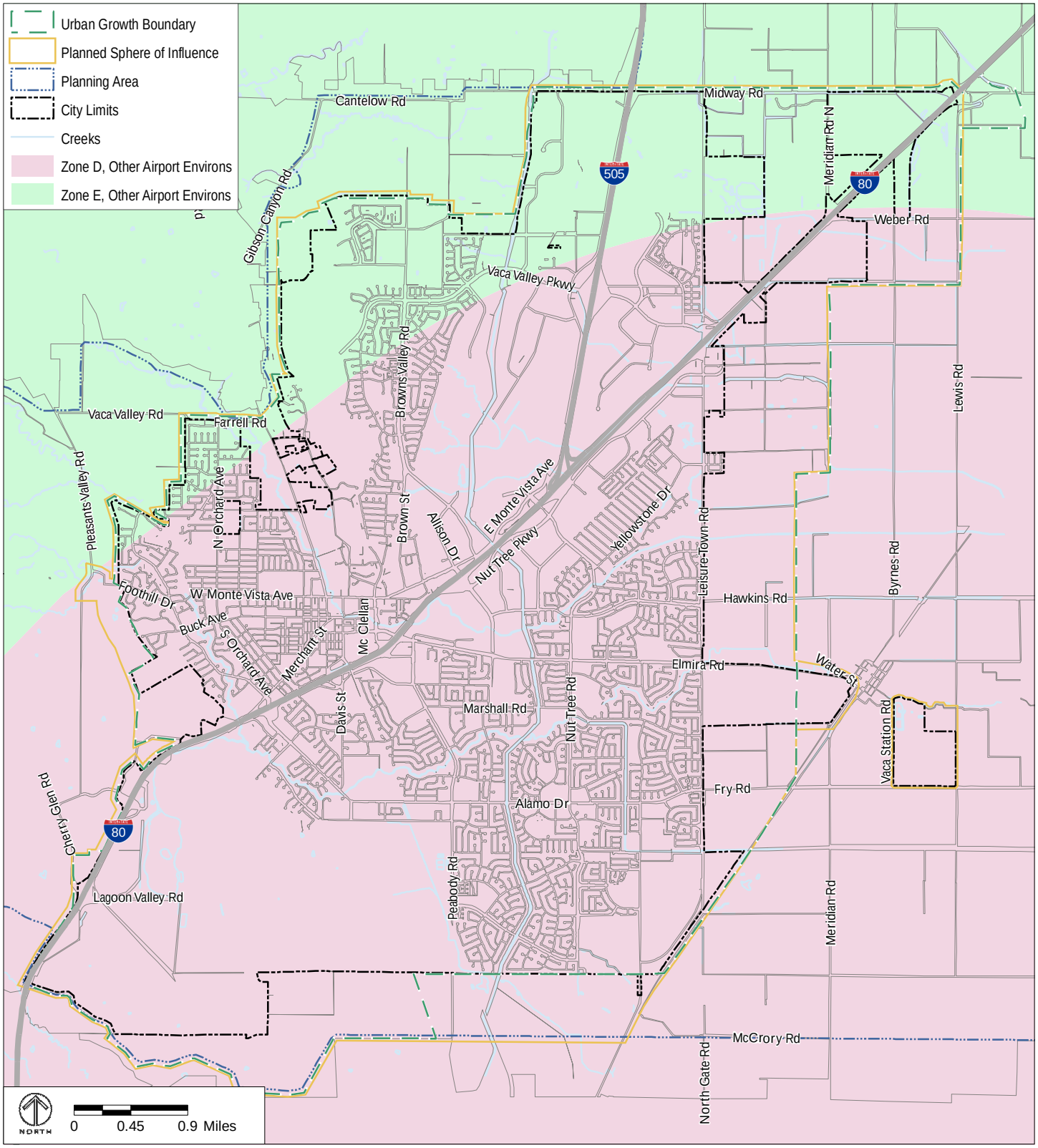
As shown in Figure LU-5, with the exception of the extreme northern and northwestern portions of Vacaville, the majority of the city is located within Compatibility Zone D of Travis Air Force Base Land Use Compatibility Plan. Compatibility Zone D does not place any restrictions on the types of land uses allowed, with the exception of land uses that could cause hazard to flight, such as physical, visual, and electric forms of interference and land uses that attract birds. Any object over 200 feet tall requires airspace review. The only development condition for Compatibility Zone E, within which the rest of the Planning Area is located, is the requirement for airspace review for objects over 200 feet tall.

General Plan Land Use Designations

This section describes the General Plan land use designations for Vacaville. The land use designations are intended to help implement the future vision of Vacaville, as reflected in the goals, policies, and actions of this General Plan, while also providing flexibility for landowners.

Figure LU-6 maps the locations of the land uses designations, and Table LU-3 summarizes the acreage for each land use designation. The land use designations described in this Element establish the types and intensity or density of uses allowed on each parcel.

In this General Plan, standards of building intensity for residential uses are stated as the allowable range of dwelling units per gross acre (site area less area occupied by non-residential uses, area of slope at or over 25 percent, creekways, flood channels, hazardous lands, and areas above the water service elevation). The number of units permitted will be further modified by the zoning district, policy plan, and/or any applicable overlay district.



Source: City of Vacaville, 2012.

FIGURE LU-5
TRAVIS AIR FORCE BASE LAND USE COMPATIBILITY ZONES

TABLE LU-3 **ACREAGE OF LAND USE DESIGNATIONS**

Land Use Designation	Acres
Rural Residential	870
Residential Estate	1,030
Residential Low Density	4,490
Residential Low Medium Density	670
Residential Medium Density	300
Residential Medium High Density	0
Residential High Density	500
Residential Golf Course	450
Residential Manufactured Home Park	120
Total Residential	***8,430***
Mixed Use	60
General Commercial	830
Neighborhood Commercial	60
Commercial Service	70
Highway Commercial	540
Commercial Office	220
Business Park	1,120
Industrial Park	980
Technology Park	300
Public/Institutional	1,620
Schools	370
Public Parks	900
Private Recreation	170
Public Open Space	2,560
Agriculture	730
Agriculture Buffer	140
Hillside Agriculture	1,400
Urban Reserve	690
Total Non-Residential Acres	***12,760***
Total Acres	**21,190**

Note: This table provides land use information for the area contained by the Vacaville city limits, SOI, and Urban Growth Boundary.
Source: PlaceWorks, February 2015.

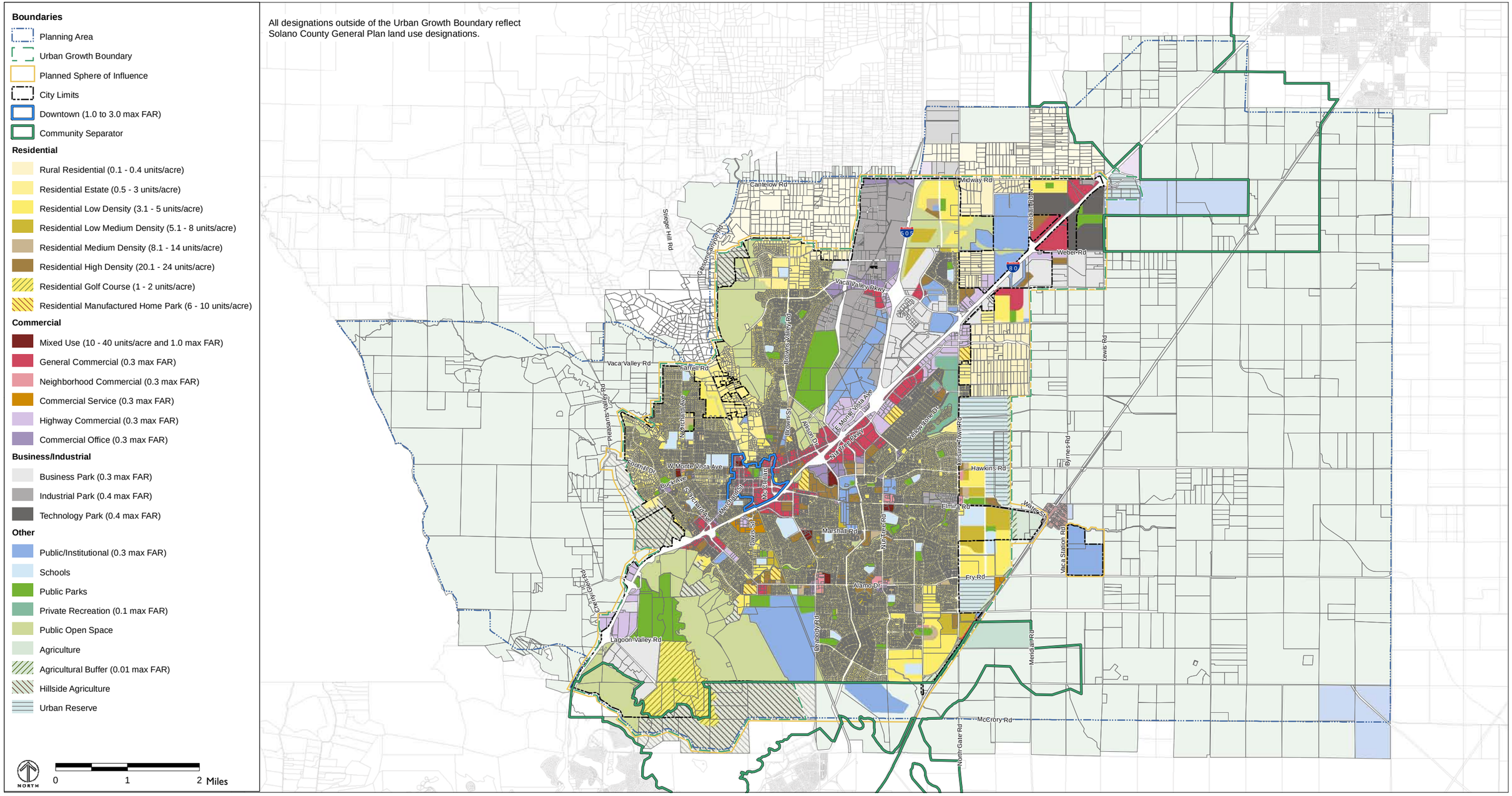
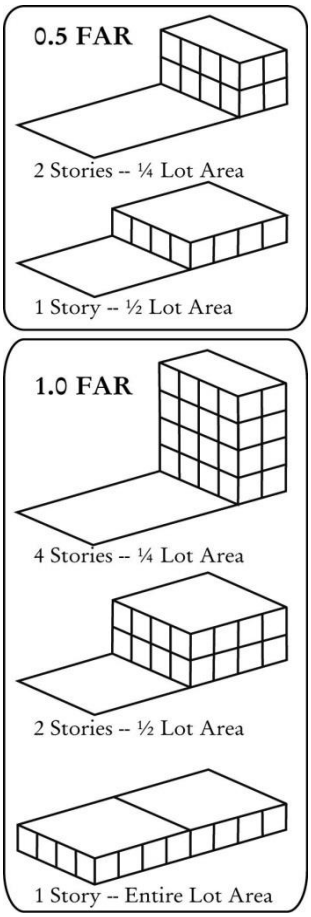


FIGURE LU-6

GENERAL PLAN LAND USE DESIGNATIONS

Standards of building intensity for non-residential uses are stated as maximum ***floor-area ratios (FAR)*** based on gross acreage. FAR is a ratio of the gross building square footage permitted on a lot to the gross square footage of the lot. For example, on a site with 10,000 square feet of land area, a FAR of 1.0 will allow 10,000 gross square feet of building floor area to be built. On the same site, a FAR of 2.0 would allow 20,000 square feet of floor area. This could take the form of a two-story building with 100 percent lot coverage, or a four-story building with 50 percent lot coverage. A FAR of 0.4 would allow 4,000 square feet of floor area.



Examples of floor-area ratio (FAR) and building coverage.

The goals, policies, and actions contained in this Element provide additional direction on how the various land use designations should be developed to contribute to the overall character of and vision for Vacaville. These designations are also implemented through the zoning districts applied in the Land Use and Development Code. More than one zoning district may be consistent with a single General Plan land use designation. Land use classifications in policy plans may be more detailed than those in the General Plan; however, all development must be consistent with the policies of the General Plan.

Residential

Nine residential categories establish different densities. The residential densities described below are given as a range of units per ***gross acre*** – the entire amount of land area, prior to any dedications for public use, health, and/or safety purposes. The number of units permitted may be further modified by the zoning district, any applicable overlay district or specific plan, or density transfers or bonuses.

Existing neighborhoods include some residences built at densities outside the ranges specified in this General Plan. This does not imply that such development should be replaced or treated as nonconforming uses by the City's Land Use and Development Code.

The residential land use designations are as follows:

- **Rural Residential**. This designation provides opportunities for rural living on lots ranging in size from 2½ to 10 acres. This designation also permits animal husbandry and limited horticulture, subject to appropriate standards. The base density is 0.1 units per gross acre, and the maximum potential density is 0.4 units per gross acre.
- **Residential Estate**. This designation provides opportunities for very low density residential land uses. The minimum lot size is 10,000 square feet; larger lots may be

required in specific areas by policy plans and/or zoning regulations because of topography or limited public service capacities. The base density is 0.5 units per gross acre, and the maximum potential density is 3 units per gross acre.

- **Residential Low Density**. This designation provides opportunities for single-family residential uses in neighborhoods on lot sizes ranging from 5,000 to 10,000 square feet, subject to appropriate standards. The base density is 3.1 units per gross acre, and the maximum potential density is 5 units per gross acre.
- **Residential Low Medium Density**. This designation provides opportunities for single-family, duplex, and clustered housing in neighborhoods on lot sizes ranging from 3,600 square feet to 4,500 square feet, subject to appropriate standards. The designation also permits clustered development on sites measuring at least 10 acres in size, subject to appropriate standards. The base density is 5.1 units per gross acre, and the maximum potential density is 8 units per gross acre.
- **Residential Medium Density**. This designation provides opportunities for multiple residential uses, including duplexes, duets, attached or detached townhouses, and multi-dwelling structures with landscaped open space for residents, subject to appropriate standards. Homes designed as stacked units without garages are prohibited in this land use designation. Multi-dwelling structures must be within a subdivision in which each unit may be under individual ownership. Single-family detached housing may be allowed when in compliance with Residential Design Requirements for New Single Family Development. The base density is 8.1 units per gross acre, and the maximum potential density is 14.0 units per gross acre.
- **Residential Medium High Density.** This designation provides opportunities for higher density multi-family residential uses, including attached or detached townhomes, condominiums, and apartments, subject to appropriate standards. The base density is 14.1 units per gross acre, and the maximum potential density is 20 units per gross acre.
- **Residential High Density**. This designation provides opportunities for high density multiple residential uses, including attached townhouses, condominiums, and apartments, subject to appropriate standards. The base density is 20.1 units per gross acre, and the maximum potential density is 24 units per gross acre.
- **Residential Golf Course**. This designation provides opportunities for residential use in conjunction with a golf course development, subject to appropriate standards. A golf course, or comparable large recreation center, is a required component in any development project under this classification. The average base density is 1 unit per gross acre, and the maximum potential density is 2 units per gross acre; units may be clustered. Specific or policy plan approval is required.
- **Residential Manufactured Home Park**. This designation provides opportunities for affordable housing using manufactured or modular components on sites developed as a planned unit development, subject to appropriate standards. This classification is intended for both parks with rental spaces for manufactured housing (i.e. mobile

homes) and parks where the spaces are individually owned. The base density is 6 units per gross acre, and the maximum potential density is 10 units per gross acre.

Commercial

Six commercial land use designations allow a range of commercial, retail, service, and office uses. The maximum intensity of development allowed in all of the commercial designations is generally limited to a FAR of 0.3, although, as noted in the descriptions below, the Mixed Use designation allows a higher FAR. Exceptions to the FAR limits may be granted for areas with low employee densities, such as wholesaling and distribution uses, or low peak-hour traffic generation, such as a hospital. Further, the FAR may be adjusted in policy plan areas based on the intensity of the use and the availability of public facilities and infrastructure and projected traffic levels of service. FAR limits may be increased only if adequate public services are available or new development is responsible to resolve any deficiencies.

- **Mixed Use.** This designation allows and encourages different but compatible uses to be located in close proximity to each other. A common example is a single building or a group of buildings that combine residential uses with commercial, public, entertainment, and/or office uses. In multi-story mixed-use developments, the ground floor uses are predominantly retail or office with the purpose of supporting pedestrian activity. Mixed-use buildings with two or more uses in the same structure are encouraged in this designation, but single use residential, retail, or office buildings are also allowed. Since this designation allows for both residential and commercial uses, it allows a wider residential density range and a higher FAR than other designations. This designation allows 10 to 40 dwelling units per acre and a maximum FAR of 1.0.
- **General Commercial**. This designation provides for a full range of commercial uses, including retail stores, food and drug stores, auto sales, and businesses selling home furnishings, apparel, durable goods, and specialty items. Support facilities, such as entertainment and eating-and-drinking establishments, are also permitted.
- **Neighborhood Commercial**. This designation provides for small sites for neighborhood commercial centers, generally anchored by a grocery store with convenience uses serving the immediate area. New Neighborhood Commercial sites must be between 4 and 10 acres in size.
- **Commercial Service**. This designation provides areas for heavy commercial uses, such as lumber yards and auto-related services. Limited retail is permitted, but the primary function of this designation is to provide for commercial uses not permitted in other areas because they attract heavy vehicles or otherwise have adverse impacts on other uses. Office uses are prohibited unless they are accessory to a commercial service use.
- **Highway Commercial**. This designation adjoins Interstate highways and includes specialty retailing, restaurants, hotels/motels, and commercial recreation and

entertainment, designed to attract primarily visitor business and shopping. Development in this designation should be high-quality in order to enhance views of Vacaville from the highway.

- **Commercial Office**. This designation provides sites for office development. Supporting retail and business services are permitted. This designation is intended for transition areas between commercial and residential areas. The Land Use and Development Code identifies a Professional Office overlay zoning district that can be applied to this land use designation that limits the types of permitted uses to professional and administrative offices, including medical and dental offices, which primarily provide services to local residents. No retail type of uses are allowed within this overlay district.

Business and Industrial

There are three categories of business and industrial land uses that provide opportunities for a wide range of uses, including office centers, research and development, technology facilities, and manufacturing. All three of these designations are either located within existing policy plans, or will require the preparation of a specific plan prior to development. In all areas with one of these three designations, the FAR may be adjusted in specific plan areas based on the intensity of the use and the availability of public facilities and infrastructure and projected traffic levels of service. FAR limits may be increased only if adequate public services are available or new development is responsible for resolving the existing deficiencies.

- **Business Park**. This designation applies to sites in a landscaped setting for office centers, research-and-development facilities, and, under appropriate conditions, medical and institutional uses. Secondary uses may include limited industrial activities, small-scale warehousing and distribution operations, and limited retail sales accessory to these areas. Commercial uses and services for employees and businesses (e.g. delicatessens, child care, dry cleaners, and branch banks) are required as a means of reducing trips and vehicle miles traveled. These uses must be centrally located and have adequate pedestrian access. The commercial uses and services must also be ancillary, rather than primary uses, and there must be adequate public infrastructure to support the proposed use. Policy plans and specific plans may additionally allow for commercial development.

  This designation is intended for parcels that would be developed as a unit. In addition, this designation is intended for lower-intensity uses than the uses permitted in the Industrial Park and Technology Park designations, thereby reducing potential adverse impacts to adjacent development. The FAR is generally limited to 0.3.

- **Industrial Park**. This designation provides sites for industrial uses that require access to major transportation lines and large areas for structures, truck loading and parking, and storage of products, equipment, and materials. This designation also accommodates light manufacturing and heavy industrial uses, subject to appropriate standards to ensure that adjacent uses are not adversely impacted. The commercial uses and services must also be ancillary, rather than primary, uses, and there must be

adequate public infrastructure to support the proposed use. Policy plans and specific plans may additionally allow for limited office and commercial uses. This designation is intended to protect Vacaville's established industrial areas, which constitute a major resource, from encroachment by non-industrial retail and commercial uses. The FAR is generally limited to 0.4.

- **Technology Park.** This designation applies to sites of at least 100 acres in size. Development in this designation must provide a landscaped setting, and may include office centers, research-and-development facilities, technology facilities, and medical and institutional uses. Secondary uses may include limited industrial activities, small-scale warehousing and distribution operations, and limited retail sales accessory to these areas. Commercial uses and services for employees and businesses (e.g. delicatessens, child care, dry cleaners, and branch banks) are encouraged as a means of reducing trips and vehicle miles traveled. Such uses must be centrally located and have adequate pedestrian access. The commercial uses and services must be ancillary, rather than primary, uses, and there must be adequate public infrastructure to support the proposed use. The FAR is generally limited to 0.4.

Other Classifications

Other land uses shown on Figure LU-6 include various public, institutional, open space, and recreation uses. These uses comprise a substantial portion of the City's Planning Area and have a direct effect upon its character and the quality of life for Vacaville residents.

- **Public/Institutional**. This designation includes the Civic Center, Cultural Center, California Medical Facility, California State Prison, Vaca Valley Hospital and related medical facilities, and other public facilities, large institutions, and utilities. The FAR is generally limited to 0.3. The FAR may be adjusted in specific cases based upon the intensity of the use and the availability of services and infrastructure and projected traffic levels of service. FAR limits may be increased only if adequate public services are available to service the project or new development resolves the existing deficiencies. Public facilities are also addressed in the Public Facilities and Services Element.
- **Schools**. Existing and proposed private and public elementary, junior high, and high schools are included in this category. Public school sites are subject to review by the school districts, and ultimate locations may not be the same as proposed on the General Plan Land Use map (Figure LU-6). Schools are also addressed in the Public Facilities and Services Element.
- **Public Parks**. This designation includes existing and proposed public park sites. Parks are also addressed in the Parks and Recreation Element.
- **Private Recreation**. This designation includes country clubs, free-standing golf courses, recreational vehicle (RV) parks, riding stables, campgrounds, and theme parks. The FAR is generally limited to 0.1, but may be adjusted in specific cases if included in a specific plan, and based on the availability of public services and

infrastructure and expected traffic levels of service. FAR limits may be increased only if adequate public services are available to serve the project, or if new development resolves the existing deficiencies.

- **Public Open Space**. This designation consists of lands that are owned or controlled by the City, a public entity, or a non-profit entity. This designation is also used to identify lands that are designated for future acquisition by the City, and lands that are to be preserved as permanent open space. This category includes creekways, hillsides, ridgelines, transmission line corridors, and the hillside areas of the California Medical Facility. Public open space lands may be used for recreational purposes, such as hiking; to preserve a permanent inventory of open space lands; or for agricultural grazing. However, the Public Open Space designation does not guarantee public access to these lands. The physical characteristics of the land, or the extent to which improvements are required, may restrict the accessibility of the site. Public open space lands are addressed in more detail in the Parks and Recreation Element.
- **Agriculture.** This designation includes lands currently used for agricultural purposes or lands planned for agricultural use. This designation primarily consists of irrigated croplands and pasture outside of the city limits but within the City's Planning Area. Agricultural lands are also discussed in the Conservation and Open Space Element.
- **Agricultural Buffer.** This designation identifies lands bordering urban development on one side and intensive and/or irrigated agriculture on the other. Uses within this designation are intended to serve as a buffer between urban development and agricultural uses and are subject to an agreement between the City and the Solano Irrigation District (SID). Proposed uses include passive open space uses that are not accessed by a large number of employees or the general public. These uses include public infrastructure improvements, passive recreational uses such as pedestrian and bicycle trails, and alternative energy facilities.

  Where urban land uses abut grazing land, buffers are evaluated on a case-by-case basis. The FAR is generally limited to 0.01, and may only be increased in specific instances where the City Council finds that a higher ratio will not substantially reduce the open space utility of the buffer zone. Only structures that are non-occupied and that meet one of the following criteria are allowed:
  - Structures that are necessary to the maintenance of agricultural operations (e.g. pump stations); or
  - Structures that form a portion of a landscaped separator (e.g. a sound wall); or
  - Structures that serve a passive public recreation use; or
  - Structures that are adjunct to a public health and safety use of the buffer zone (e.g. floodwater detention facilities).
- **Hillside Agriculture.** This designation includes lands that are generally privately owned hillside properties. This designation is intended for low-intensity agricultural uses. Hillside agriculture lands generally consist of hillsides and ridgelines where development is limited due to the topography. Lands within this designation

generally contain steep slopes, are located above the public water system service elevations, have a high fire risk, have highly visible ridgelines, are likely to have value as plant or wildlife habitat, and may be subject to geologic instability. This designation allows for the development of 1 residential unit per 20 acres, subject to compliance with established development standards.

This designation also provides for the potential for ***density transfers***, in which the allowed density from one part of a site is transferred to another part of the site, so that sensitive areas are preserved as open space and density is increased in less constrained areas, while the average density across the whole site does not exceed the allowed maximum. This tool is a means of preserving sensitive areas and accommodating public facilities. Section 14.09.098.060, Density Transfer, of the Land Use and Development Code explains how density transfers are implemented in Hillside Agriculture areas.

- **Urban Reserve.** This designation is applied to relatively large, contiguous, and undeveloped geographic areas where comprehensive planning must occur prior to urbanization. The purpose of assigning the Urban Reserve designation, rather than specific land use designations in the East of Leisure Town Road Growth Area, is to demonstrate that the City eventually expects urban development in these areas, while also allowing flexibility in planning for these uses in the future. This designation has also been applied to a small area within the Northeast Growth Area where existing uses have developed in the unincorporated county.

Boundaries and Overlays

The General Plan land use map (Figure LU-6) also designates the following two General Plan boundaries and overlays:

- **Downtown**. The Downtown boundary encompasses the area generally bounded by Stevenson Street, Cernon Street, Monte Vista Avenue, and the former Southern Pacific Railroad track. The Downtown area includes a mix of residential, commercial, civic, and recreational uses appropriate for the Downtown. New development within this boundary is subject to a maximum FAR of 3.0 for the core area in the parking district and a range of 1.0 to 2.0 elsewhere in the Downtown. The Land Use and Development Code identifies a Residential Urban High Density (RUHD) overlay applied to properties zoned Downtown Commercial, General Commercial, and Office Commercial within the Downtown boundary. The RUHD overlay district provides for a development of high-density residential and mixed-use development. Residential uses with densities of 8.1 to 36 units per acre are encouraged as part of mixed-use projects, and, as directed in the actions for the Downtown in the Areas of Special Consideration section of this Element, the Opportunity Hill and Depot Street sites will allow up to 65 units per acre. Separate, non-mixed-use residential projects are subject to conditional use permit approval. Construction of new, detached single-family housing in the Downtown area is not permitted.

- **Community Separator**. The Community Separator boundary includes lands to be restricted to agricultural or other defined open space uses through zoning, joint powers agreements between Vacaville and adjacent cities, and/or through acquisition of development rights by a public or nonprofit agency. The City is a party to two Greenbelt Agreements: the Vacaville-Fairfield-Solano Greenbelt Agreement, and the Vacaville-Dixon Greenbelt Agreement.

  The Vacaville-Fairfield-Solano Greenbelt Agreement identifies approximately 4,100 acres between Vacaville and Fairfield that must be preserved to serve as a permanent separation between the urban areas of Fairfield and Vacaville. This area must be maintained in agriculture and open space uses consistent with the provisions of the agreement. The Vacaville-Dixon Greenbelt Agreement identifies approximately 1,000 acres of land located between Vacaville and Dixon that have been purchased by the Vacaville-Dixon Greenbelt Authority (VDGA) to be maintained in productive agriculture or as other open space uses mutually agreed upon by VDGA.

Goals, Policies, and Actions

Community Character and Design

Goal LU-1	**Preserve, promote, and protect the existing character and quality of life within Vacaville.**

Policies

Policy LU-P1.1	Maintain Vacaville as a free-standing community surrounded by foothills, farmland, and other open space.
Policy LU-P1.2	Protect Vacaville's natural environment. Integrate creeks, hills, utility corridors, and other significant natural features into major development plans.
Policy LU-P1.3	Preserve the predominant single-family residential character of Vacaville while providing other housing opportunities.
Policy LU-P1.4	Protect established neighborhoods from incompatible uses.
Policy LU-P1.5	With the exception of Priority Development Areas, require that infill projects be designed to complement the neighborhood and surrounding zoning with respect to the existing scale and character of surrounding structures, and blend, rather than compete, with the established character of the area.
Policy LU-P1.6	Provide assistance where needed to eliminate substandard buildings and improve the appearance of neighborhoods and commercial areas.

Policy LU-P1.7 Use the natural topography of the lands north of Mason Street and adjoining the Downtown to help define the location and setting of the Downtown. Encourage buildings to be designed to complement the topography and to maximize the views from these areas.

Policy LU-P1.8 Design aesthetically pleasing roadways using trees or other appropriate landscaping.

Policy LU-P1.9 Do not use streets alone to define the outer limits of urbanization. The boundary of the city shall be defined by elements such as the natural topography of the land, enhanced landscaping, and other existing visual barriers

Policy LU-P1.10 Promote and acknowledge outstanding community design.

Actions

Action LU-A1.1 Maintain and replace, as necessary, lighting and landscaping on the City's streets.

Responsible and Well-Planned Growth

Goal LU-2	**Carefully plan for new development in undeveloped portions Vacaville.**

Policies

Policy LU-P2.1 Require lands outside, but adjacent to, the current city limits to annex to the City of Vacaville as a prerequisite to development. Do not provide City utility services, water, and sanitary sewer to new development outside of the city limit (with the exception of sanitary sewer for infill in the Elmira area) unless the City Council, with the approval of the Local Agency Formation Commission (LAFCO), approves exceptions in situations where the following three conditions are met:

- The area in question cannot annex to the City immediately, because it is not currently contiguous to the city limit.
- The property owner signs a recorded, irrevocable agreement to annex the property to the City when such annexation is requested by the City.
- The development is consistent with this General Plan and is found to meet all appropriate City development standards.

Policy LU-P2.2 Require that specific plans be prepared for new areas brought into the city for development. Such specific plans must provide a coordinated plan for land use, public facilities, and public services. Prohibit individual, piecemeal developments within these outlying areas.

Policy LU-P2.3 Encourage housing, shopping, and employment opportunities on both sides of Interstate 80 to minimize the need for excessive travel across Interstate 80.

Policy LU-P2.4 Require that development on any prime farmland, farmland of statewide importance, or unique farmland (as classified by the California Department of Conservation) purchase conservation easements to permanently protect agricultural land of equal or greater value at a ratio of 1 acre of conserved agricultural land per 1 acre of developed agricultural land.

Policy LU-P2.5 Do not convert lands designated Public Open Space to developed urban uses unless an overriding public purpose requires such a change.

Policy LU-P2.6 Lands designated Public Open Space that are converted to developed urban use shall be compensated for by providing equal or better lands for a similar use in another location. All proceeds that the City receives from any sale of Public Open Space lands shall be used to acquire additional open space lands elsewhere.

Policy LU-P2.7 Require that open space that is designated as a condition of development approval be permanently restricted to open space use by recorded map or deed.

Policy LU-P2.8 Continue discussions with the Solano Irrigation District (SID) to consider the future expansion of the Urban Service Area as far east as the PG&E transmission line right-of-way subject to the expansion of the agricultural buffer.

Actions

Action LU-A2.1 Update the zoning map in the Land Use and Development Code to reflect the General Plan land use designations, and insert a table into the Land Use and Development Code specifying which zoning districts implement each General Plan land use designation.

Goal LU-3	**Coordinate land development with the provision of services and infrastructure.**

Policies

Policy LU-P3.1 The General Plan Update Environmental Impact Report (EIR) assumes the following maximum development projections for the year 2035 for the lands located within the Urban Growth Boundary, excluding the East of Leisure Town Road and Northeast Growth Areas, shown in Figure LU-3:

- Residential: 7,340 units
- Commercial: 880,000 square feet (67 acres)
- Office: 1.06 million square feet (81 acres)
- Industrial: 1.49 million square feet (86 acres)

When approved development within the city reaches the maximum number of residential units or any of the non-residential square footages projected in the General Plan EIR, the Community Development Director shall require that environmental review conducted for any subsequent development project address growth impacts that would occur due to development exceeding the General Plan EIR's projections. This does not preclude the City, as lead agency, from determining that an EIR would be required for any development in the Urban Growth Boundary to the extent required under the relevant provisions of CEQA (e.g. Section 21166 and related guidelines). The City will conduct the appropriate scoping at the time of initial study for any specific plan, all in accordance with these requirements. *This policy does not apply to development within the East of Leisure Town Road and Northeast Growth Areas. See Policies LU-P17.8 and LU-P18.8, respectively, for these areas.*

Policy LU-P3.2 Manage growth so that the quantity and quality of public services and utilities provided to existing businesses and residents will not drop below required levels of service because of new development, except when required findings related to levels of service are made. While existing development bears some responsibility to fund improvements that will resolve such deficits, ensure that new development also funds its fair share of the costs of maintenance and depreciation of facilities.

Policy LU-P3.3 Provide urban services in accordance with the May 1995 City of Vacaville/Solano Irrigation District Master Water Agreement, as it may be amended from time to time.

Policy LU-P3.4 Do not approve new development unless there is infrastructure in place or planned to support the growth.

Policy LU-P3.5 Encourage new development to consider transit, pedestrian, and bicycle circulation during the design phase.

Policy LU-P3.6 Require that new development or new Specific Plan areas be located immediately adjacent to existing development or infrastructure.

Actions

Action LU-A3.1 Regularly update and maintain the City's Municipal Services Review and Comprehensive Annexation Plan to ensure that urbanization does not outpace the provision of public facilities within the Urban Growth Boundary.

Action LU-A3.2 Monitor the rate of growth to ensure that it does not overburden the City's infrastructure and services and does not exceed the amounts analyzed in the General Plan EIR.

Action LU-A3.3 Continue to monitor new development where infrastructure limits are being reached or exceeded so that linkages with necessary improvements can be established and funded.

Action LU-A3.4 Continue to revise existing policy plans, which are shown in Figure LU-2, to conform to General Plan policies and requirements for infrastructure financing mechanisms and open space.

Action LU-A3.5 Review and revise the City's capital improvement program annually to ensure that public improvements will be consistent with General Plan policies for residential areas and that progress is made toward implementing these policies.

Action LU-A3.6 Develop a focused infrastructure investment plan to service employment sites.

Goal LU-4 Balance residential development with jobs.

Policies

Policy LU-P4.1 Strive to maintain a reasonable balance between potential job generation and the local job market with a goal of one job for each employed resident.

Policy LU-P4.2 Strive to maintain a reasonable balance between employment income levels and housing costs within the city, recognizing the importance of housing choice and affordability to economic development in the city.

Policy LU-P4.3 Continue to implement the City's Economic Development Strategy, as permitted by available funding, including specific incentives and promotional activities designed to attract desirable new businesses to the city.

Actions

Action LU-A4.1 Update and maintain the Economic Vitality Strategy to address the community's targeted goals for attracting targeted employment uses to the city, including incentives to attract those uses to the city.

Goal LU-5 Maintain the City's Urban Growth Boundary.

Policies

Policy LU-P5.1 Urban Growth Boundary: To enhance and protect the city's quality of life, establish and maintain an Urban Growth Boundary so that urban development will be focused within the Urban Growth Boundary and the land outside the Urban Growth Boundary will not be redesignated other than for agriculture, park, open space, public facility, and utility uses until March 1, 2028, specifically as set forth in Policies LU-P5.4 through LU-P5.7.

Policy LU-P5.2 Lands East of Leisure Town Road: In conjunction with approval of any new urban development on lands shown as "Area B" on Figure LU-3, which consists of lands that are inside the Urban Growth Boundary but east of Leisure Town Road and between the Locke Paddon Community areas on the north and New Alamo Creek on the south, the City shall require such development to mitigate its impact on agricultural and open space lands by preserving, to the extent consistent with applicable law, for each acre of land developed, at least 1 acre of land outside the Urban Growth Boundary but within Pleasants Valley, Upper Lagoon Valley, or Vaca Valley, or any other location that is within 1 mile of the Urban Growth Boundary. Alternatively, to the extent consistent with applicable law, such development may pay an equivalent in-lieu fee as determined by the City in consultation with the Solano Land Trust. Lands acquired directly or with fees collected pursuant to this requirement shall first be offered to the Solano Land Trust. Any such fees transferred to the Solano Land Trust may only be used to acquire or protect lands outside of the Urban Growth Boundary but within 1 mile of the Urban Growth

Boundary, or within Pleasants Valley, Upper Lagoon Valley, or Vaca Valley. Acquisitions pursuant to this requirement shall be coordinated with the Solano Land Trust.

If for any reason adequate land to meet the conservation goals described in the Vacaville General Plan, and in particular this section, cannot be identified or acquired, the City and the Solano Land Trust, or if the Solano Land Trust declines to participate, the City and another land conservation entity shall meet and confer to identify other areas where conservation acquisitions can occur at a reasonable cost and to satisfy the conservation goals described in this section.

Policy LU-P5.3 Coordination with Future Solano County LAFCO Open Space or Agricultural Land Mitigation Program: If the Solano County Local Agency Formation Commission (LAFCO) adopts an open space or agricultural land mitigation program applicable to the area defined in Policy LU-P5.2, lands defined therein shall be subject only to the requirements of the LAFCO mitigation program, provided that if the requirement described in Policy LU-P5.2 provides greater mitigation than the LAFCO requirement, the incremental difference between the two programs shall be imposed in addition to the LAFCO requirement to the maximum extent permitted by State law. To the extent the LAFCO requirement and this requirement overlap, development shall be subject to only the LAFCO requirement.

Policy LU-P5.4 Establish and Maintain an Urban Growth Boundary: Establish and maintain an Urban Growth Boundary so that urban development within the City's land use jurisdiction will be focused within the Urban Growth Boundary and the land outside the Urban Growth Boundary within the City's land use jurisdiction will be maintained primarily for agriculture, park, open space, public facility, and utility uses until March 1, 2028, as generally described in Policies LU-P5.1 through LU-P5.3, and as more specifically set forth in Policies LU-P5.5 through LU-P5.7. Until March 1, 2028, Section 2.10 of the Vacaville General Plan Land Use Element may be amended only by the voters of the City or as provided in Policy LU-P5.7. The Urban Growth Boundary is established at the location shown on Figure LU-3.

Policy LU-P5.5 Description of the Urban Growth Boundary: The Urban Growth Boundary is a line beyond which the General Plan land use designation cannot be amended to apply any designation other than Public Parks, Open Space, Agriculture, or Hillside Agriculture (as those designations are defined in the General Plan as amended through the Submittal Date), except by the voters or as provided in Policy LU-P5.7. Additionally, any

lands outside the Urban Growth Boundary that are not currently subject to the General Plan, but which may become so in the future, shall be subject to these same restrictions on land use designations.

Policy LU-P5.6 Land Use Restrictions Outside the Urban Growth Boundary: In those areas located outside the Urban Growth Boundary and within the City's land use jurisdiction, only the following shall be permitted: (1) all uses permitted in the Vacaville General Plan or the Land Use and Development Code on the Submittal Date, or existing on that date, shall continue to be permitted, and in the event any such use is damaged or destroyed by natural disaster, fire, or Act of God, it may be rebuilt and continued; (2) new uses consistent with the General Plan as amended by the Urban Growth Boundary Initiative; and (3) any infrastructure improvements necessary or appropriate to serve or protect existing uses and new permitted uses within the Urban Growth Boundary, including, but not limited to, construction and/or expansion of public facilities and utilities outside the Urban Growth Boundary that support such development elsewhere, such as stormwater detention basins, water tanks (reservoirs), sewer and water lines, and wastewater treatment plants to accommodate buildout of the Vacaville General Plan. In addition, the area identified on Figure LU-3 as "Area A" shall remain designated Hillside Agriculture, as defined in the Vacaville General Plan on the Submittal Date, until March 1, 2028.

Policy LU-P5.7 No Amendment before March 1, 2028, except by Voters, or City Council Under Specific Enumerated Circumstances: Until March 1, 2028, the location of the Urban Growth Boundary depicted on Figure LU-3 and the policies adopted or amended by the Urban Growth Boundary Initiative may be amended, or exceptions thereto may be granted, only by the voters of Vacaville, or by the City Council pursuant to the procedures set forth in subsections (a) through (d) below.

(a) Upon request of an affected landowner with a pending development application, the City Council may amend the location of the Urban Growth Boundary depicted on the General Plan Diagram, or amend policies adopted or amended by the Urban Growth Boundary Initiative, if it makes both the following findings based on substantial evidence in the record:

(i) That the application of any aspect of the Urban Growth Boundary depicted on the General Plan Diagram or the implementation of any Vacaville General Plan Policy amended by the Urban Growth Boundary Initiative would constitute an unconstitutional taking of a landowner's property for which compensation would be required, and

(ii) That the amendment will allow additional land uses only to the minimum extent necessary to avoid such a taking of the landowner's property.

(b) The City Council may amend the location of the Urban Growth Boundary, or amend policies adopted or amended by the Urban Growth Boundary Initiative, where the City Council determines, after at least one public hearing, that doing so is necessary to comply with State law regarding the provision of housing, if it first makes each of the following findings based on substantial evidence in the record:

(i) a specific provision of State law requires the City to accommodate the proposed housing; and

(ii) the amount of land to be included within the Urban Growth Boundary is no greater than necessary to accommodate the proposed housing; and

(iii) no alternative site within the Urban Growth Boundary could be used to satisfy the applicable State housing law; and

(iv) the proposed housing will be located adjacent to already developed land and roads, unless locating the development in such areas would result in greater environmental impacts than would locating the housing elsewhere, would conflict with State or federal laws, or would not be possible.

(c) The City shall not approve any general plan amendment, zoning amendment, specific plan or policy plan, specific plan or policy plan amendment, rezoning, subdivision map, conditional use permit, or public works project not otherwise provided for in Policy LU-P5.6, or take any other similar action that is inconsistent with the Vacaville General Plan amendments adopted by Section 3 of the Urban Growth Boundary Initiative.

(d) The policies under Goal LU-5 of the General Plan Land Use Element shall not apply to any development project or ongoing activity that has obtained, as of the effective date of the Urban Growth Boundary Initiative, a vested right pursuant to State or local law.

Infrastructure and Services for New Development

Goal LU-6	**All development shall pay its own way and not result in a financial burden to existing development or services.**

Policies

Policy LU-P6.1 Require that all development mitigate its own impacts on the existing community and pay its fair share of the cost of capital improvements needed to serve that development.

Policy LU-P6.2 Require that infrastructure and service improvements for future annexation or growth areas do not create an undue burden on existing City infrastructure and services.

Policy LU-P6.3 Ensure that future annexations are consistent with the overall goals and policies of the General Plan and do not adversely impact the City's fiscal viability, environmental resources, infrastructure and services, and quality of life.

Policy LU-P6.4 Require that all specific plans include a fiscal impact study.

Actions

Action LU-A6.1 Adopt a General Plan Update cost recovery fee that establishes an impact fee for new development to proportionately pay for the cost of the General Plan Update.

Action LU-A6.2 Establish an impact fee for new development in the East of Leisure Town Road and Northeast Growth Areas, which are shown in Figure LU-3 that accounts for the significant infrastructure improvements required to develop these areas.

Action LU-A6.3 Evaluate competitive cost comparisons to target efforts that assist specific businesses in a way that maximizes benefits for the City. Study impact fees and fiscal impacts as an integral part of economic development planning.

Public Involvement in Planning

Goal LU-7 Promote public participation in the City's planning processes.

Policies

Policy LU-P7.1 Provide opportunities for individuals, organizations, and neighborhood associations to participate in the planning process.

Policy LU-P7.2 Use traditional communication tools and new media and technology to provide clear and current information on City processes and decisions and to encourage public participation in City government.

Policy LU-P7.3 Require that sponsors of new development projects have early and frequent communication with affected citizens and stakeholders.

Actions

Action LU-A7.1 Develop online information pages for specific neighborhood areas to provide ongoing information to residents regarding the status of development in their neighborhoods.

Coordination with Other Agencies and Jurisdictions

Goal LU-8	**Coordinate with surrounding jurisdictions and other local and regional agencies that may affect Vacaville's future development patterns and character.**

Policies

Policy LU-P8.1 Coordinate with Solano County to ensure land uses outside the Sphere of Influence and Urban Growth Boundary, but within the Planning Area, remain in agricultural or open space use, with the following exceptions, as reflected in Figure LU-6:

- The Cypress Lakes Golf Course.
- The areas north of the Midway in northeast Vacaville identified for development by the Solano County General Plan (2008).
- The Hay Road Landfill, located in southeast corner of the Planning Area.

Policy LU-P8.2 Work with Solano County to ensure that projects developed in the Vacaville Planning Area or Sphere of Influence meet City policies and standards, do not induce further development, and do not unduly burden the City.

Policy LU-P8.3 Provide written comments to Solano County on all proposed significant development projects in the Planning Area in accordance with the City's land use designations, policies, and standards.

Policy LU-P8.4 Testify in opposition to development proposals in the Planning Area that are not consistent with the City's policies at Solano County public hearings.

Policy LU-P8.5 Work with Solano County and the Nut Tree Airport to ensure Vacaville's future development patterns and character do not adversely impact the Nut Tree Airport.

Policy LU-P8.6 Coordinate Vacaville's open space planning efforts with those of other agencies whenever possible.

Policy LU-P8.7 Work with Solano County to coordinate and support the County's efforts to promote agri-tourism and related uses.

Actions

Action LU-A8.1 Maintain and implement agreements with the Solano Irrigation District, nearby cities, and Solano County, and negotiate agreements with other local government entities to help direct the provision of urban services to urban areas while maintaining as much viable agriculture on prime agricultural soils as is practical.

Action LU-A8.2 Work with Solano County and the Local Agency Formation Commission (LAFCO) to update the Vacaville Sphere of Influence (SOI) to include areas where the city intends to grow, including the area beyond the current SOI but within the Urban Growth Boundary, and to remove areas not identified for annexation. As of the adoption of this General Plan, the City's desired SOI is shown on Figure LU-6.

Action LU-A8.3 In coordination with neighboring jurisdictions and regional and State agencies, develop regional open space programs that will benefit Vacaville.

Healthy Communities

Goal LU-9 Ensure convenient access to healthy foods for all residents.

Policies

Policy LU-P9.1 Encourage sources of fresh food, including grocery stores, farmers markets, and community gardens, and prioritize underserved areas for new sources of healthy food.

Policy LU-P9.2 Consider the provision of programs, incentives, and/or grants to encourage small grocery or convenience stores to sell fresh foods in underserved areas. These programs could include grants or loans to purchase updated equipment (e.g. refrigeration), publicity or directories of healthy food outlets, or connecting stores to wholesale sources of healthy, local, or organic food.

Policy LU-P9.3 Allow community gardens in residential and other land use designations.

Policy LU-P9.4 Encourage the purchase of local and organic food for City functions, and encourage school districts to do the same.

Policy LU-P9.5 Encourage all new public facilities, schools, parks and recreational facilities, and commercial, office, and medical buildings to provide drinking fountains.

Actions

Action LU-A9.1 Identify and prioritize neighborhoods underserved by healthy food sources for development of healthy food sources.

Action LU-A9.2 Develop a program to provide fast-track permitting for grocery stores in underserved areas and areas identified for increased residential development and mixed use.

Action LU-A9.3 Identify and inventory potential community garden and urban farm sites on existing parks, public easements, rights-of-way, and schoolyards, and develop a program to establish community gardens in appropriate locations.

Action LU-A9.4 Establish a process through which a neighborhood can propose and adopt a site as a community garden.

Action LU-A9.5 Work with the local Farmers Market Association and agricultural producers to identify appropriate locations for farmers markets or local produce stands outside of Downtown Vacaville during weekdays.

Goal LU-10 Promote healthy communities through access to health care and consideration of health care needs in the planning process.

Policies

Policy LU-P10.1 Encourage new neighborhoods to provide for the basic needs of daily life and for the health, safety, and mental well-being of residents.

Policy LU-P10.2 Consider available State-generated community health information, such as incidence of diabetes or heart disease, when making decisions about the built environment that could affect community health.

Policy LU-P10.3 Improve access of Vacaville residents to health care, medical, and mental health facilities, in part by ensuring that such facilities are served by public transit.

Policy LU-P10.4 Provide technical assistance to local groups that offer health and social services.

Actions

Action LU-A10.1 Provide staff-level reports to the Planning Commission and City Council with recommendations on ways that the City may address newly emerging public health concerns.

Action LU-A10.2 Hold staff-level meetings with Solano County Public Health to review emerging health issues.

Residential Neighborhoods

Goal LU-11	**Preserve and enhance the existing character and sense of place in residential neighborhoods.**

Policies

Policy LU-P11.1 Encourage creative residential site design and architectural quality and variety in the City's design approval process.

Policy LU-P11.2 Ensure that the design of new residential development in established neighborhoods minimizes disruption to the neighborhood and is compatible with the design of existing residences.

Policy LU-P11.3 Require a Planned Development permit for all residential development meeting one or more of the following criteria, consistent with the adopted Planned Development regulations *(the Planned Development permit process is intended to increase flexibility for these types of development by allowing deviations from typical development standards, such as setbacks, building height, landscaping, parking, and design)*:

- Multi-family projects of 10 units or more.
- Mixed use.
- A location potentially subject to natural or man-made geologic hazards, including hillside areas.
- Any project exceeding the maximum density allowed by the land use designation or with 50 units or more.

Policy LU-P11.4 Maintain buffers between residential areas and business parks, industrial parks, and technology parks. The minimum separation shall be 200 feet.

Policy LU-P11.5 Prohibit residential neighborhood design that places access to single family lots on arterial streets.

Policy LU-P11.6 Design residential neighborhoods to avoid placing access to single family lots on collector streets, and limit the number of intersections along collector streets.

Actions

Action LU-A11.1 Re-evaluate, implement, and maintain the City's Residential Design Requirements for New Single-Family Development, which encourage residential subdivisions that are sensitive to topography, limit use of mass grading, provide for functional and aesthetically pleasing neighborhoods, and provide a variety of housing sizes.

Action LU-A11.2 Update the Land Use and Development Code to include a diagram illustrating the requirements of the buffers between residential areas and business parks, industrial parks, and technology parks.

Action LU-A11.3 Update the Traffic Mitigation Ordinance (Chapter 14.13.180 of the Land Use and Development Code) to address roadway design in residential neighborhoods, including, but not limited to, traffic calming measures.

Goal LU-12 Provide high-quality housing in a range of residential densities and types.

Policies

Policy LU-P12.1 Encourage development that broadens the choice of type, size, and affordability of housing in Vacaville.

Policy LU-P12.2 Provide for transitions between higher-density and lower-density housing.

Policy LU-P12.3 Strive to maintain a citywide housing mix of approximately 75 percent single-family and 25 percent multi-family attached housing.

Commercial and Office Uses

Goal LU-13 Promote the development of attractive commercial areas and uses that provide goods and services.

Policies

Policy LU-P13.1 Ensure that new commercial development is compatible with the character and scale of existing and planned adjoining land uses.

Policy LU-P13.2 Provide neighborhood and community shopping centers of various sizes and locations to ensure easy access from nearby residential areas to daily commercial and service needs.

Policy LU-P13.3 Locate shopping centers and neighborhood commercial facilities at the intersection of major thoroughfares and, where appropriate, adjacent to multi-family housing and transit.

Policy LU-P13.4 Prohibit the location of competing new neighborhood shopping centers at one major intersection.

Policy LU-P13.5 Encourage similar and compatible types of commercial businesses to cluster together in appropriate locations to provide comparison shopping.

Policy LU-P13.6 Provide sufficient space to meet the need for commercial services and commercial recreation that can be supported by Vacaville's residents, businesses, and private workers.

Policy LU-P13.7 Apply the highest development standards to highway commercial uses to ensure that the characteristics of major entrances to the community are not diminished by incompatible uses or inharmonious site development concepts.

Policy LU-P13.8 Provide new commercial sites in new residential areas only in proportion to additional demand so that existing sites are not abandoned.

Policy LU-P13.9 Minimize conflicts between commercial areas and residences by requiring adequate buffers and screening.

Policy LU-P13.10 Require increased setbacks adjoining freeways and ensure that new commercial developments do not appear to back up to freeways.

Policy LU-P13.11 Ensure the design of new commercial areas considers public safety through physical design such as lighting, visibility into the stores from the street, and avoiding the creation of isolated public spaces.

Actions

Action LU-A13.1 Establish commercial design guidelines to govern new construction and major exterior alterations and additions in neighborhood and community

shopping centers and in highway commercial areas. In neighborhood and community shopping centers, the guidelines should set a coherent design concept but avoid imposing a rigid, stylistic requirement for individual buildings. A range of architectural expression should be allowed. Free-standing uses, such as service stations, banks, and restaurants, should be compatible in design and materials with the main building complex. In highway commercial areas, the guidelines should ensure that the characteristics of major entrances into the community and views from the freeway are not diminished by incompatible uses or inharmonious site development concepts.

Action LU-A13.2 Revise the Land Use and Development Code to set specific limits on the size of neighborhood shopping centers to preserve opportunities for local-serving businesses and to exclude region-serving stores likely to generate high traffic volumes. Require increased setbacks from residential neighborhoods.

Action LU-A13.3 Revise the Land Use and Development Code to define competing neighborhood commercial uses, and to outline the development review process applicable to addressing development proposals including competing land uses and appropriate siting standards.

Goal LU-14	**Promote the development of attractive office areas and uses that provide jobs to Vacaville residents.**

Policies

Policy LU-P14.1 Encourage new regional and local-serving office development at appropriate locations.

Policy LU-P14.2 Require increased setbacks adjoining freeways and ensure that new office developments do not back up to freeways.

Actions

Action LU-A14.1 Establish office design guidelines to govern new construction and alterations and additions, including criteria for building massing, exterior materials, landscaping, and location of parking.

Industrial and Research and Development Uses

Goal LU-15	**Promote the development of attractive industrial areas and uses that provide jobs to Vacaville residents.**

Policies

Policy LU-P15.1 In cooperation with Solano Economic Development Corporation, other cities, and Solano County, actively promote the development of new, clean, employment-intensive industrial uses in Vacaville and the region.

Policy LU-P15.2 Strive to retain existing industry and allow existing industrial uses to expand, consistent with other General Plan policies.

Policy LU-P15.3 Encourage clustering of industrial development.

Policy LU-P15.4 Protect existing and new residential areas from adverse effects of new industry and, wherever feasible, of existing industry.

Policy LU-P15.5 Require that new industrial development be designed to avoid adverse impacts to adjacent non-industrial uses, particularly residential neighborhoods, with respect to, but not limited to, noise, dust and vibration, water quality, air quality, agricultural resources, and biological resources. Include specific standards in Policy Plans for adequate physical and aesthetic separation of industrial business parks and residential land.

Policy LU-P15.6 Require increased setbacks adjoining freeways and ensure that new developments do not appear to back up to freeways.

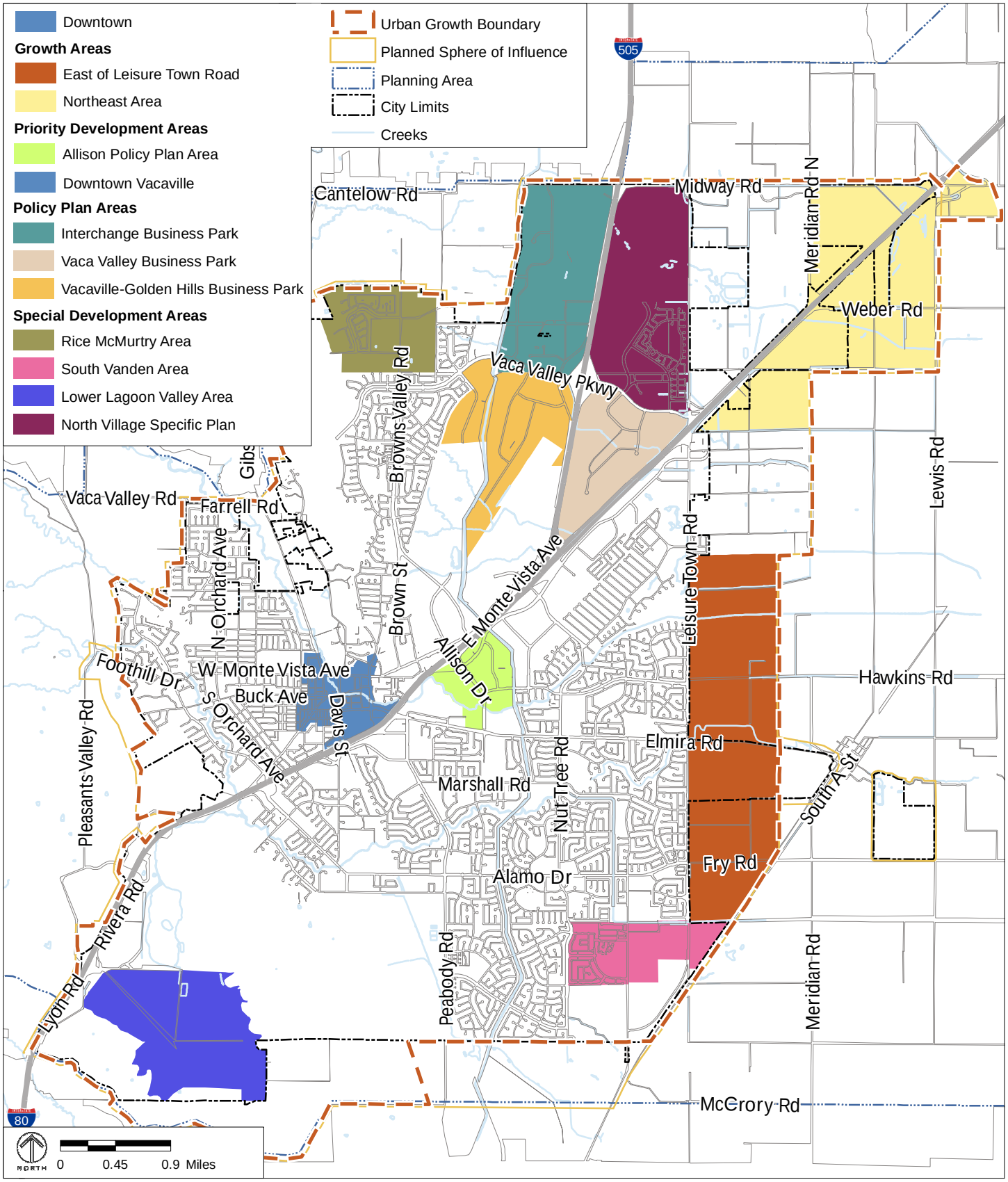
Actions

Action LU-A15.1 Continue marketing efforts and assistance to promote the stimulation of job-generating industrial uses in Vacaville.

Action LU-A15.2 Compile information and/or maps to assist new development in identifying infrastructure availability and assist in economic development efforts for City capital improvement planning.

Areas of Special Consideration

In addition to land use designations and goals, policies, and actions, the General Plan identifies numerous Areas of Special Consideration. These are specific areas of the city where more detailed design and development guidance shall be applied. With the exception of airport areas, these Areas of Special Consideration are shown in Figure LU-7 and are discussed below. The Nut Tree Airport Land Use Compatibility Zones are shown in Figure LU-4 and the Travis Air Force Base Airport Land Use Compatibility Zones are shown in Figure LU-5.



Note: This map shows only three of the 18 existing policy plans in Vacaville. These three policy plans are shown on this map because there are policies to address the infrastructure constraints that are specific to these policy plan areas. The remaining policy plan areas are shown in Figure LU-2.

Source: City of Vacaville.

FIGURE LU-7

AREAS OF SPECIAL CONSIDERATION

The Areas of Special Consideration include:

- Downtown
- Growth Areas:
  - East of Leisure Town Road Growth Area
  - Northeast Growth Area
- Priority Development Areas
  - Allison Policy Plan Area Priority Development Area
  - Downtown Vacaville Priority Development Area
- Policy Plan Areas:
  - Interchange Business Park
  - Vacaville-Golden Hills Business Park
  - Vaca Valley Business Park
- Special Development Areas:
  - Rice McMurtry Area
  - South Vanden Area
  - Lower Lagoon Valley Area
  - North Village Specific Plan
  - Other Areas
- Airport Areas

Downtown

The Downtown area, especially the Historic District, is a unique area within the city. No other commercial area has both the central location and historic atmosphere of the Downtown. The Downtown area is located generally between Stevenson Street, Cernon Street, Monte Vista Avenue, and the former Southern Pacific Railroad line. The following provisions are intended to enhance the existing historic character of the Downtown and add to its economic vitality by providing for a wide range of commercial and residential uses.

Goal LU-16	**Promote a physically, socially, and economically vibrant Downtown.**

Policies

Policy LU-P16.1 Encourage continued improvement and redevelopment of the Downtown area with new specialty shops, restaurants, major stores, offices, and supporting commercial uses, but retain the small-town scale and character conveyed by development along Main Street with an appropriate transition between commercial and adjoining existing residential areas.

Policy LU-P16.2 Encourage mixed-use development projects in the Downtown.

Policy LU-P16.3 Encourage local-serving offices to locate in the Downtown.

Policy LU-P16.4 Encourage local-serving commercial uses to locate in the Downtown.

Policy LU-P16.5 To the extent possible, continue to provide off-street parking facilities close to Downtown retail areas.

Policy LU-P16.6 Continue to integrate Andrews Park and the Ulatis Creek Creekwalk into Downtown planning efforts.

Policy LU-P16.7 Support the implementation the Opportunity Hill Master Plan.

Policy LU-P16.8 Encourage transit-oriented development, including mixed use, high density housing, and commercial and office uses, in the Downtown.

Policy LU-P16.9 Allow retention and rehabilitation of the traditional single-family homes on the east side of Vine Street, south of Vineyard Valley Way. Due to the topography of these lots, these lots may be redeveloped with single-family homes within the legally established setbacks of the original homes without the need of an approved planned development permit.

Actions

Action LU-A16.1 Review and revise the adopted *Design Requirements for the Main Street Vacaville Historic District* to include the entire Downtown area. The guidelines should encourage the renovation and preservation of historic structures in the Downtown Historic District; preserve the architectural, historical, and cultural significance of those buildings; and govern new commercial development and major exterior alterations and additions. As part of these guidelines, define and clarify "gateway" areas to the Downtown. Include criteria and guidelines so that new buildings in the gateway and surrounding areas are compatible with buildings in the Historic District, including building design, building materials, massing, and colors. The guidelines should set a coherent design concept but avoid imposing a rigid, stylistic requirement for individual buildings. Instead, a range of architectural expression should be allowed.

Action LU-A16.2 Continue to implement public improvements that will support revitalization of the Downtown area.

Action LU-A16.3 Provide information regarding rehabilitating buildings in the Downtown Historic District to businesses and property owners. The information should include federal, State, and local requirements, and City procedures for design review, conditional use permits, environmental review, and building permits.

Action LU-A16.4 Amend the Land Use and Development Code to increase the allowed density in the Residential Urban High Density Overlay on the Opportunity Hill and Depot Street sites, which are shown in Figure LU-8, up to 65 dwelling units per acre.

Action LU-A16.5 Amend the zoning designations within the Downtown to conform to revised land use designations.

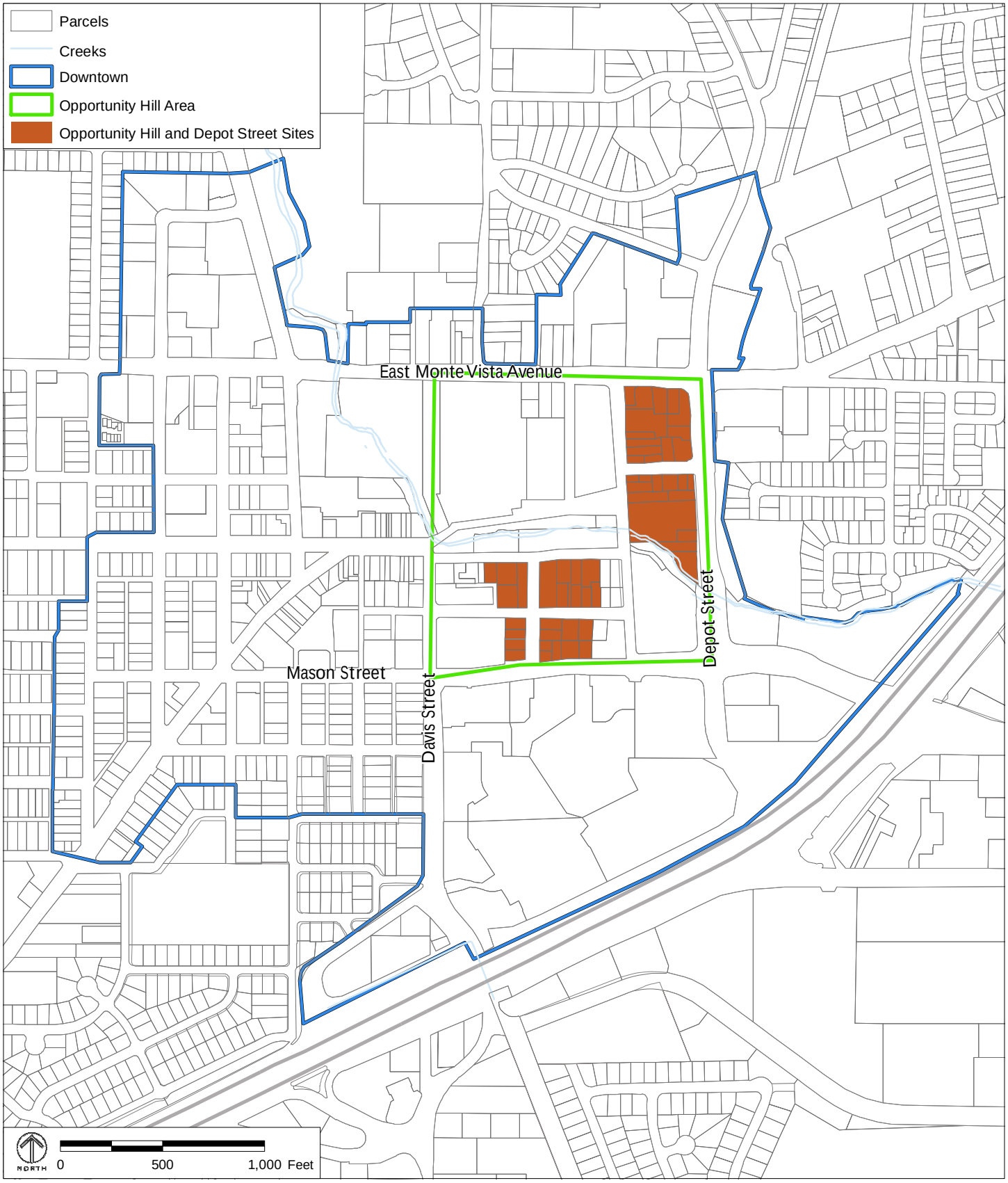
Action LU-A16.6 Prepare a Downtown Specific Plan to provide development standards that will promote the development of the City's central commercial core and implement policies for the commercial, mixed-use, and employment uses promoted under Goal LU-16.

Growth Areas

With adoption of the Urban Growth Boundary in 2008, two new growth areas were established in areas predominantly used for agriculture: the East of Leisure Town Road Growth Area and the Northeast Growth Area. The East of Leisure Town Road Growth Area is approximately 1,300 acres in size and primarily designated for future residential growth. The Northeast Growth Area is approximately 1,400 acres in size and primarily designated as an economic development area. These growth areas are not anticipated to fully develop within the 2035 horizon year of this General Plan. As such, an Urban Reserve land use designation has been applied to relatively large, contiguous geographic areas within the East of Leisure Town Road Growth Area, and to a small area within the Northeast Growth Area.

Lands designated as Urban Reserve are recognized by the City as areas that may be annexed to the City and developed in the future. Areas within the East of Leisure Town Road Growth Area with an Urban Reserve land use designation will require comprehensive planning and the preparation of a Specific Plan prior to development. In conjunction with a Specific Plan, a General Plan amendment will be necessary to establish specific General Plan land use designations for each parcel of land.

This section provides policies and actions to ensure balanced growth in these areas with adequate public facilities and services. In addition to the goals, policies, and actions below that specifically address the growth areas, the growth areas are also subject to all of the other goals, policies, and actions in the General Plan. For reference, Figure LU-9 shows the land use designations from Figure LU-6 for just the growth areas.



Source: City of Vacaville.

FIGURE LU-8

OPPORTUNITY HILL AREA (EAST DOWNTOWN AREA)

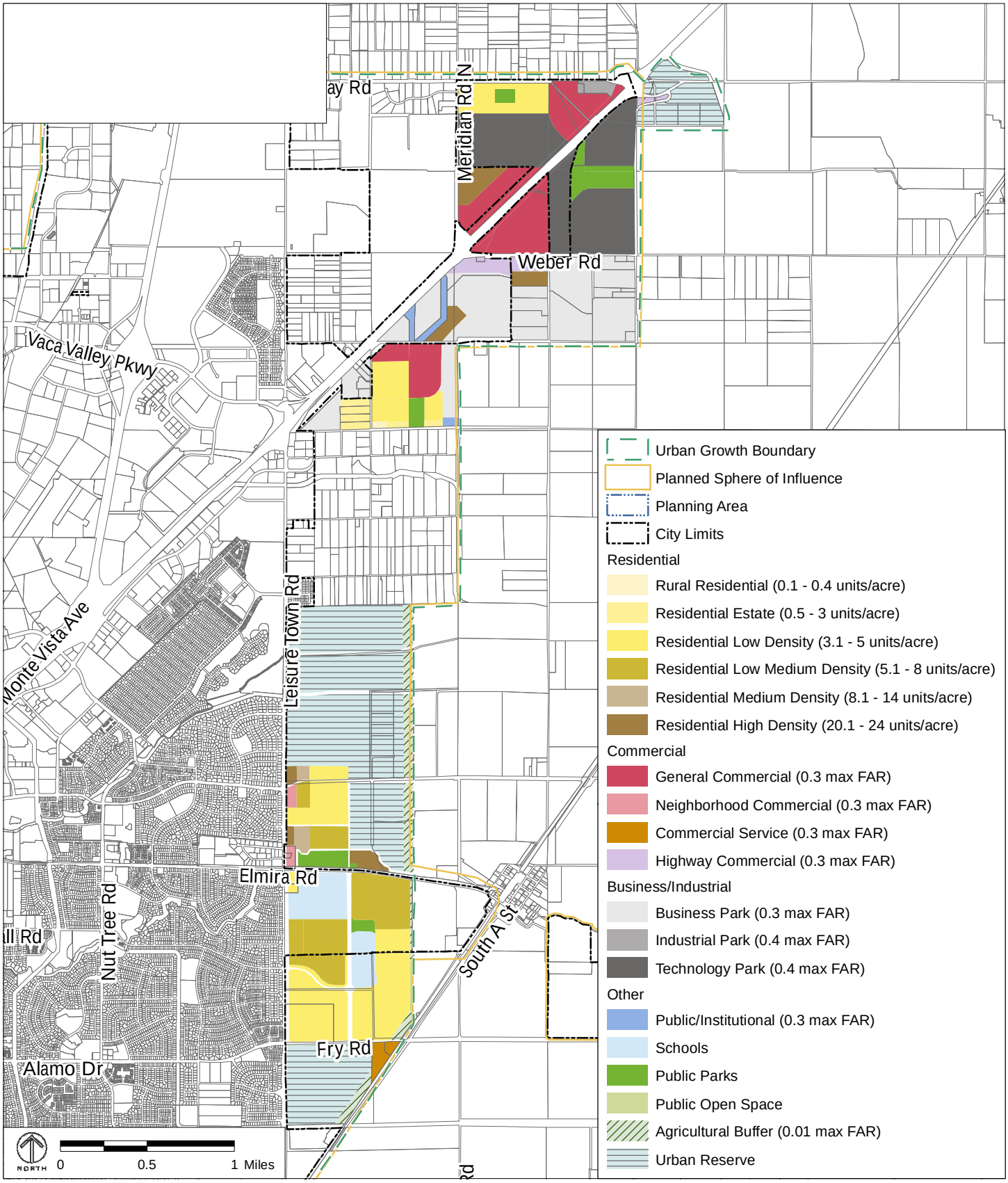


FIGURE LU-9
GROWTH AREAS

Goal LU-17	**Provide for orderly, well-planned, and balanced growth in the East of Leisure Town Road Growth Area.**

Policies

Policy LU-P17.1 Limit residential development within the East of Leisure Town Road Growth Area to 2,175 dwelling units with the following general assumptions:

- Brighton Landing Specific Plan Area: 780 dwelling units
- Properties South of Brighton Landing and North of Fry Road: 785 dwelling units
- Properties North of Elmira Road: 610 dwelling units

Require a General Plan Amendment for residential development in excess of this amount.

Policy LU-P17.2 The East of Leisure Town Road Growth Area shall include a mixture of housing densities, and attached and detached housing types consistent with the adopted land use diagram.

Policy LU-P17.3 When considering specific plan proposals for development on lands designated Residential High Density in the East of Leisure Town Road Growth Area, ensure that overall development in the East of Leisure Town Road Growth Area is on track to provide at least 13 percent of the total residential units as attached, multi-family units.

Policy LU-P17.4 Approximately 80 percent of the 610 units permitted for the properties located within the East of Leisure Town Road Growth Area, north of Elmira Road, shall be distributed between Elmira Road and Hawkins Road, west of the future north-south collector street; the remaining 20 percent shall be located north of Hawkins Road, west of the future north-south collector street.

Policy LU-P17.5 Require that specific plans be prepared for development in the East of Leisure Town Road Growth Area to ensure that coordinated plans for land uses, public facilities, and public services are created for such area, and require that these specific plans are consistent with the City's updated infrastructure master plans that account for development in the East of Leisure Town Road Growth Area.

Policy LU-P17.6 Require that specific plans for the East of Leisure Town Road Growth Area include a diagram showing the distribution of land uses and define permitted and conditionally permitted land uses, major public facilities

(including schools, parks, roads, water, sewer, and drainage facilities), phasing, infrastructure financing mechanisms, interim fire protection measures, and any other elements that may be needed to ensure an orderly development process with minimal adverse impacts to the existing community. The specific plans shall be consistent with the City's master infrastructure plans prepared for the East of Leisure Town Road Growth Area.

Policy LU-P17.7 Prohibit the location of competing new neighborhood shopping centers at the Hawkins Road and Leisure Town Road intersection.

Policy LU-P17.8 The General Plan Update Environmental Impact Report (EIR) assumes the following maximum development projections for the year 2035 for the lands located within the East of Leisure Town Road Growth Area, shown in Figure LU-7:

- Residential: 2,340 units
- Commercial: 160,000 square feet (12 acres)

When approved development in the East of Leisure Town Road Growth Area reaches the maximum number of residential units or commercial square feet projected in the General Plan EIR, the Community Development Director shall require that environmental review conducted for any subsequent development project address growth impacts that would occur due to development exceeding the General Plan EIR's projections. This does not preclude the City, as lead agency, from determining that an EIR would be required for any development in the East of Leisure Town Road Growth Area to the extent required under the relevant provisions of CEQA (e.g. Section 21166 and related guidelines). The City will conduct the appropriate scoping at the time of initial study for any specific plan, all in accordance with these requirements.

Note: The General Plan Update EIR assumed more residential units in the East of Leisure Town Road Growth Area would develop by 2035 than the number of units permitted by Policy LU-P17.1.

Policy LU-P17.9 Require residential specific plans within the East of Leisure Town Road Growth Area to contain a component of housing designed to attract business executives and professionals.

Policy LU-P17.10 Require Specific Plans within the East of Leisure Town Growth Area to provide a wide variety of lot sizes and housing types. Lots located adjacent to the Agricultural Buffer, north of Elmira Road, shall be 10,000 square feet in size.

Policy LU-P17.11 Require specific plans within the East of Leisure Town Road Growth Area to incorporate detention basins, agricultural buffer areas, and public open spaces into the physical amenities designed into the neighborhoods. These amenities could include trails, passive open spaces, recreational spaces, or other features designed to create innovative, attractive neighborhood design.

Policy LU-P17.12 Development projects within the East of Leisure Town Road Growth Area shall coordinate their respective roads, bike paths, landscape corridors, and design standards to create a unified sense of place and identity.

Actions

Action LU-A17.1 Reduce the width of the agricultural buffer located north of Elmira Road from 500 feet to 300 feet. A 300-foot-wide agricultural buffer is consistent with the Solano County General Plan policy that identifies the requirement for 300-foot-wide agricultural buffers. Further discussions with the Solano Irrigation District are required as part of this action, and will be addressed in an amendment to the Master Water Agreement. In the event that the City and the Solano County Irrigation District do not agree to such amendment, the buffer shall remain 500 feet in width.

Action LU-A17.2 Work with the Solano Irrigation District to expand the Urban Service Area and amend the Master Water Agreement to accommodate urban development in the East of Leisure Town Road Growth Area. As part of the amendment to the Master Water Agreement, consider the width, location, and allowed uses in the agricultural buffer.

Goal LU-18 Provide for orderly, well-planned, and balanced growth in the Northeast Growth Area.

Policies

Policy LU-P18.1 The Northeast Growth Area shall primarily be developed with job generating uses such as high quality offices, industrial uses, and technology campuses. Encourage the development of employment generating uses prior to residential uses in the Northeast Growth Area.

Policy LU-P18.2 Properties within the Northeast Growth Area designated as Technology Park and measuring over 100 acres in size are intended for large technology and business campuses. These properties shall not be

subdivided into smaller parcels for the purpose of developing several unrelated uses.

Policy LU-P18.3 Require that specific plans be prepared for development in the Northeast Growth Area to ensure that coordinated plans for land uses, public facilities, and public services are created for each area, and require that these specific plans are consistent with the City's updated infrastructure master plans that account for development in the Northeast Growth Area.

Policy LU-P18.4 Require that specific plans for the Northeast Growth Area include a diagram showing the distribution of land uses and define permitted and conditionally permitted land uses, major public facilities (including schools, parks, roads, water, sewer, and drainage facilities), phasing, infrastructure financing mechanisms, interim fire protection measures, and any other elements that may be needed to ensure an orderly development process with minimal adverse impacts to the existing community.

Policy LU-P18.5 One comprehensive infrastructure master plan shall be prepared for the Northeast Growth Area prior to development in this area to ensure coordinated planning for infrastructure, public facilities, and public services.

Policy LU-P18.6 Require that the Specific Plan for the Northeast Growth Area comply with the City Gateways Design Master Plan.

Policy LU-P18.7 Setback distance and/or landscaping in the Northeast Growth Area shall ensure that development is protected from the adverse impacts of the freeway and does not appear to back up to the freeway.

Policy LU-P18.8 The General Plan Update Environmental Impact Report (EIR) assumes the following maximum development projections for the year 2035 for the lands located within the Northeast Growth Area, shown in Figure LU-7:

- Industrial: 560,000 square feet (32 acres)

When approved development in the Northeast Growth Area reaches the maximum industrial square feet projected in the General Plan EIR, the Community Development Director shall require that environmental review conducted for any subsequent development project address growth impacts that would occur due to development exceeding the General Plan EIR's projections. This does not preclude the City, as lead agency, from determining that an EIR would be required for any development in the Northeast Growth Area to the extent required under

the relevant provisions of CEQA (e.g. Section 21166 and related guidelines). The City will conduct the appropriate scoping at the time of initial study for any specific plan, all in accordance with these requirements.

Actions

Action LU-A18.1 Amend the City Gateways Design Master Plan and the Land Use and Development Code to include freeway frontage in the Northeast Growth Area and to address billboard development in this area.

Goal LU-19 Comprehensively plan for future development in the East of Leisure Town Road and Northeast Growth Areas.

Policies

Policy LU-P19.1 Require a General Plan amendment to convert lands designated as Urban Reserve to other land use designations. Require all conversions to make the findings identified in an Urban Reserve Ordinance described in Action LU-A19.1, below.

Policy LU-P19.2 Prioritize development of residential land use in the East of Leisure Town Road Growth Area over future new residential uses in the Northeast Growth Area in the City's infrastructure planning and land use approval process.

Policy LU-P19.3 The City Municipal Service Review and Comprehensive Annexation Plan (MSR/CAP) shall serve as the City's growth management plan. The growth management plan shall include an urban growth strategy, infill strategy and agricultural preservation strategy. The MSR/CAP shall be updated every five years as mandated by State law.

Policy LU-P19.4 Identify all properties designated as Urban Reserve as long-term annexation areas in the City's Municipal Service Review and Comprehensive Annexation Area Plan. Long-term annexation areas are areas that will not be annexed to the City within the 5- to 10-year planning period of the most current Municipal Service Review and Comprehensive Annexation Plan.

Policy LU-P19.5 Evaluate General Plan amendment requests to convert lands designated as Urban Reserve to other land use designations no more often than every 5 years. Applications to amend the General Plan to convert Urban Reserve lands must be consistent with the City's Municipal Service Review and Comprehensive Annexation Plan.

Policy LU-P19.6 Prior to the approval of any subdivision applications in the East of Leisure Town Road or Northeast Growth Area, the developers shall assure that all required domestic water supply and distribution systems, wastewater collection and treatment facilities, stormwater management facilities, and roadway segment and intersection improvements will be incorporated into the final project plans.

Actions

Action LU-A19.1 Amend the Land Use and Development Code to establish an Urban Reserve ordinance. The ordinance shall include criteria necessary to support a General Plan amendment permitting the conversion of the land designated as Urban Reserve to another land use designation. The criteria shall allow consideration of amendments needed to retain a 20-year supply of developable land within the Urban Growth Boundary or to replenish the supply of developable land reduced since General Plan adoption. These findings shall support the General Plan Vision Statement.

Action LU-A19.2 Update the City's master infrastructure plans to identify the infrastructure requirements for the development of the East of Leisure Town Road and Northeast Growth Areas through the 2035 horizon year. The specific plans for these growth areas shall be consistent with the City's infrastructure master plans.

Action LU-A19.3 As part of its regular Municipal Service Review and Comprehensive Annexation Plan updates, the City shall review and analyze the growth and population projections for the East of Leisure Town Road and Northeast Growth Areas in relation to the rest of the city to ensure an adequate, long-term supply of developable residential and non-residential land, and to ensure the City can provide adequate infrastructure and facilities to serve the needs of these growth areas.

Priority Development Areas

In 2008, the Association of Bay Area Governments (ABAG) approved the Allison Policy Plan Area and Downtown Vacaville as Priority Development Areas (PDAs) for inclusion in FOCUS, the San Francisco Bay Area's Regional Blueprint Plan. FOCUS is a regional development and conservation strategy that promotes a compact land use pattern for the Bay Area. The PDAs discussed in this section meet the FOCUS designation criteria by allowing mixed-use development, including office, commercial, retail, and residential uses, in close proximity to jobs, public transit, parks, libraries, shopping, and dining. PDA designations provide the City with the opportunity to apply for grants to assist with the costs of planning,

infrastructure improvements, and/or construction related to the development of these project areas.

Allison Policy Plan Area

The Allison Policy Plan Area PDA is categorized as a "Suburban Center." Suburban Center PDAs generally have a mix of low-rise, mid-rise, and some high-rise residential buildings, consisting of 30 to 100 dwelling units per acre. The Allison Policy Plan Area PDA encompasses approximately 290 acres, and is bordered by Interstate 80 in the vicinity of Allison Drive. It is served by the Vacaville Intermodal Transit Center, which serves regional and local transit needs by providing bus service with connections to Sacramento, Bay Area Rapid Transit (BART), and the Vallejo ferry. The Transit Center includes a multi-bus terminal, a park-and-ride area with surface parking for over 200 cars, bicycle lockers, and a van pool. Future expansion plans include a 400-car parking garage.

There are prominent job, entertainment, and leisure opportunities within this PDA, including approximately 3,500 jobs, and the potential for approximately 800 additional jobs. The PDA also includes the Vacaville Performing Arts Theater, the Ulatis Community Center, a branch of the Solano County Library, and a private school serving kindergarten through eighth grade. Approximately 600 apartments are located within this PDA, with the potential for approximately 230 additional apartments. This PDA is located adjacent to single family homes, senior housing, and an assisted living facility.

Downtown Vacaville

The Downtown Vacaville PDA is designated as a "Transit Town Center" PDA, which is generally characterized as having a mix of small-lot single family homes, townhomes, and low- and mid-rise residential buildings, with 20 to 75 dwelling units per acre. The Downtown PDA encompasses approximately 300 acres, and is located in downtown Vacaville, bound generally by Monte Vista Avenue to the north, Interstate 80 to the southeast, West Street to the west, and Depot Street to the east.

The area is envisioned for mixed-use residential and retail projects. The area includes the City Coach Transit Center that serves six local bus routes and connects to the Intermodal Transit Center. This area is pedestrian orientated with an abundance of shopping and dining options, a branch of the Solano County Library, a movie theater, an indoor sports facility, and a large community park that routinely hosts live entertainment.

Goal LU-20	**Support development within the Allison Policy Plan Area and Downtown Vacaville Priority Development Areas.**

Policies

Policy LU-P20.1 Provide a variety of housing options within close proximity to transit, jobs, shopping, and services within Priority Development Areas.

Policy LU-P20.2 Continue to actively pursue planning grants and capital infrastructure funding to support planning and development in Priority Development Areas.

Policy LU-P20.3 Ensure that development at the edge of Priority Development Areas is sensitive to adjoining uses and neighborhood context.

Actions

Action LU-A20.1 Identify steps to further support development within Priority Development Areas.

Action LU-A20.2 Amend the zoning map to identify the Allison Policy Plan Area and Downtown Vacaville Priority Development Areas.

Action LU-A20.3 Amend the Land Use and Development Code to provide development and design standards for the Allison Policy Plan Area and Downtown Vacaville Priority Development Areas.

Policy Plan Areas

As described earlier in this Element, policy plans are one of the primary tools used by the City to strategically plan for new growth within the industrial and business parks. In order to allow development flexibility, the policy plans typically allow a wide range of land uses. However, development of much of the remaining vacant land within the Interchange Business Park, Vacaville-Golden Hills Business Park, and Vaca Valley Business Park Policy Plans is limited by the available water, wastewater, and transportation infrastructure; there is not adequate infrastructure to allow every parcel to be developed with uses that have high water demand or traffic impacts. This section includes policies to address these infrastructure issues. See the section on specific plans, policy plans, and master plans in the Background Information section of this Element for additional information about policy plan areas.

Goal LU-21	**Provide for development that is consistent with the limits imposed by water and wastewater infrastructure in the Interchange Business Park, Vacaville-Golden Hills Business Park, and Vaca Valley Business Park Policy Plans.**

Policies

Policy LU-P21.1 Do not permit new development in the Interchange Business Park, Vacaville-Golden Hills Business Park, and Vaca Valley Business Park Policy Plans unless the applicant demonstrates to the satisfaction of the Public Works and Utilities Director that the project will not exceed available infrastructure capacity, and conforms to the latest adopted

Water and Sewer Master Plans, Northeast Sector Sewer Master Plan, and current Wastewater Collection and Treatment Master Plans.

Policy LU-P21.2 Encourage businesses that do not require intensive wastewater collection capacity (e.g. offices), to locate in the Interchange Business Park, Vacaville-Golden Hills Business Park, and Vaca Valley Business Park Policy Plans.

Special Development Areas

The following special development areas require specific policies and standards related to the unique characteristics of these areas:

- Rice McMurtry Area
- South Vanden Area
- Lower Lagoon Valley Area
- North Village Specific Plan
- Other Areas

Rice McMurtry Area

The Rice McMurtry area is surrounded by the English Hills to the west, a residential subdivision to the south, and rural and agricultural uses to the north and east. The northern boundary of the Cheyenne Subdivision serves as the jurisdictional boundary between the city and county. As such, it has been the intention of the City and the project applicants to create a high quality development area that serves as a transition area between the city and county. This goal is being accomplished by allowing flexibility and creativity in building design and site planning.

Development within the Rice McMurtry Area is required to promote a rural atmosphere. As outlined below, all new residential development within the Rice McMurtry area must be of superior quality and design.

Goal LU-22	**Provide large residential lots within a rural atmosphere to achieve the identity of the Rice McMurtry Area.**

Policies

Policy LU-P22.1 All new residential development within the Rice McMurtry project area shall adhere to the following standards and guidelines:

- The area shall be developed with a rural feel and look with semi-custom and custom homes on lots with a minimum size of 10,000 square feet and an overall maximum density of 2.0 units per acre.
- Lot patterns shall be diverse, avoiding repetitive size and shaped lots.

- Lots around the perimeter, particularly along the west side of Browns Valley Road and Shelton Lane, shall be larger lots of at least 1 acre in size.
- All new lots fronting on the north, east, and south sides of Browns Valley Road and the east side of Shelton Lane shall be at least 1 acre in size unless the Planning Commission approves an exception to this standard. Exceptions may only be granted in those cases where it can be shown that the dimensions or configuration of an existing lot or the corner lots with two frontages precludes the attainment of the allowed density. In those cases, all new lots fronting on Browns Valley Road or Shelton Lane shall provide a minimum width of 150 feet and a minimum area of 20,000 square feet. For all other lots not fronting on Browns Valley Road and Shelton Lane, the minimum lot size shall be 10,000 square feet.
- All new homes fronting on all sides of Browns Valley Road and Shelton Lane are to be unique custom homes individually-designed by an architect.
- Housing along Browns Valley Road and Shelton Lane shall be limited to one story.
- Low-level lighting using non-standard light standards and heads is encouraged.
- Private streets with rolled curbs, narrow sections, and sidewalks on at least one side are encouraged.
- There is no requirement to install curbs, gutters, and sidewalks along the east side of Shelton Lane and the north, south, and east sides of Browns Valley Road unless dictated by new development on these properties.
- Unless otherwise identified in this policy, all public streets must conform with adopted City Standards.
- Perimeter fencing along Browns Valley Road and Shelton and McMurtry Lanes shall be open in nature, such as three-rail or split-rail wood.
- A public pedestrian, bicycle, and/or equestrian trail system shall connect the developments.
- The landscaped pedestrian and equestrian trail along the Shelton Lane frontage shown on the Concept Plan, approved with the Cheyenne Subdivision (a.k.a. Reynold's Ranch), shall be incorporated into the Reynolds Ranch subdivision plans and a similar amenity shall be included in all new development along the west side of Browns Valley Road.

- Browns Valley Road shall be designed and constructed to provide an interim minimum pavement width of 32 feet. The minimum ultimate pavement width shall be no less than 40 feet with separated sidewalks and landscaping on both sides. Additional right-of-way and pavement width may be required as the properties fronting Browns Valley Road develop. The City Engineer may approve an interim roadway width and configuration prior to the development of the properties fronting on Browns Valley Road.
- Infrastructure master plans for sewer, water, storm drain, and traffic improvements shall be prepared prior to or in conjunction with the processing of subdivision maps for all development within the Rice McMurtry area.
- Prior to the approval of any subdivision applications, the developers shall assure that all required domestic water supply and distribution systems, wastewater collection and treatment facilities, storm water management facilities, and roadway segment and intersection improvements will be incorporated into the final project plans.
- A landscaped buffer shall be provided around the perimeter of each residential area adjacent to provide open space for aesthetics as well as fire protection.
- All requirements of the Fire Department for protecting the homes from wildland fires shall be integrated into the final project plans.
- There shall be deed restrictions precluding the new residents from protesting the keeping of farm animals and associated nuisances on the surrounding properties.

Actions

Action LU-A22.1 Amend the Land Use and Development Code to include the development standards and guidelines provided in Policy LU-P22.1 above.

South Vanden Area

The Southtown and Southtown Commons (a.k.a Moody Property) projects are separate but contiguous developments that make up the South Vanden area. The approximately 280-acre Southtown project area is bounded by Nut Tree Road on the west and Leisure Town Road on the east, and is immediately to the south of the Villages East and Heritage Place neighborhoods and the New Alamo Creek channel. The 39-acre triangular-shaped Southtown Commons project area is located on the east side of Leisure Town Road, south of the New Alamo Creek channel, and west of the railroad tracks.

Individual neighborhoods within this area should be designed to achieve a separate identity while being visually integrated with the larger Southtown community

Goal LU-23	**Establish a consistent architectural character in residential, commercial, and public facility development areas to achieve the identity of the South Vanden area.**

Policies

Policy LU-P23.1 Require that the South Vanden Area, including the Southtown and Southtown Commons Project Areas, facilitate the development of a range of housing densities and opportunities, pedestrian and bicycle friendly design, neighborhood commercial sites, and recreational and neighborhood facilities, by including the following requirements:

- A network of landscaped pedestrian/bike corridors shall connect key elements of the area, such as the community park and arterial streets.
- New development adjacent to existing homes within the city limits shall match or exceed the size, character, and quality of adjacent homes and lots.
- All new residential development shall conform to the Residential Design Requirements for New Single Family Development.
- The Southtown project area will include a range of housing types and densities and attached, detached, and cluster housing.
- Land shall be reserved for community uses such as private schools, membership organizations, day care centers, and senior centers.
- A financing mechanism for all public facility improvements shall be established before development occurs.
- Nut Tree Road and Vanden Road shall be widened to the City standard width through the project sites for all projects that front on these streets.
- Leisure Town Road shall be widened and improved to the standards for the Jepson Parkway along the frontage of all projects that abut Leisure Town Road.
- Foxboro Parkway shall be extended between Nut Tree Road and Vanden Road. The extension will be completed prior to the reconstruction and reconfiguration of Vanden Road.
- A 1-acre site for a future fire station site shall be reserved within the Southtown project area.
- A site within the Vanden Road loop shall be reserved for a park.

- A multi-family project on Leisure Town Road shall begin construction in the first phase of development within the Southtown project area.
- Public areas adjacent to Alamo Creek shall be landscaped to enhance the view of the creek channel, within the requirements of Solano County Water Agency.
- Different development projects within the Southtown project area shall coordinate their respective roads, bike paths, landscape corridors, and design standards to create a unified sense of place and identity.
- Commercial buildings shall be no more than an average of 30 feet in height, and be designed to front on the sidewalk, with parking at the rear of the property, when feasible, so as to enhance neighborhood aesthetics and to encourage pedestrian–friendly design.
- Infrastructure master plans for sewer, water, storm drain, and traffic improvements shall be prepared prior to or in conjunction with the processing of subdivision maps for all development within the South Vanden areas, including the Southtown and Moody project areas.
- Prior to the approval of any subdivision applications, the developers shall assure that all required domestic water supply and distribution systems, wastewater collection and treatment facilities, stormwater management facilities, and roadway segment and intersection improvements will be incorporated into the final project plans.
- The lands to the south of the Southtown and Southtown Commons project areas will be subject to subsequent General Plan Amendments, Prezonings, and other prerequisites to annexation.

Actions

Action LU-A23.1 Amend the Land Use and Development Code to include the development standards and guidelines provided in Policy LU-P23.1 above.

Lower Lagoon Valley Area

The Lower Lagoon Valley area is located in the southwest corner of the city and functions as a major community separator and gateway between Vacaville and Fairfield. Separated by Interstate 80 from the northern portion of Lagoon Valley, Lower Lagoon Valley is surrounded on three sides by hillsides, the majority of which are in public open space. The approximately 360-acre Lagoon Valley Park occupies the northern portion of the valley. The City envisions that development in Lower Lagoon Valley will be through a policy or specific plan that would facilitate development of a community with superior design quality for

residential, office, and commercial buildings while recognizing the recreational and visual amenities inherent in the valley.

Development within the Lower Lagoon Valley area is required to promote a gateway community with superior design quality.

Goal LU-24	**Develop the Lower Lagoon Valley area as a major community separator and gateway with superior design quality while recognizing the visual and recreational amenities in the valley.**

Policies

Policy LU-P24.1 Require that the policy plan for the Lower Lagoon Valley area facilitate development of a business park of regional significance and "upper-end" housing by adhering to the following requirements:

- High standards of community design shall be established, addressing building design and landscaping, streetscape character, and public amenities.
- Ridges and slopes of 25 percent and greater shall remain undeveloped in order to maintain agricultural grazing areas, protect the public health and safety, and provide for community separation and open space, except that a limited area of golf course development with minimized grading may be permitted.
- Business Park and General Commercial development shall be of high quality, conforming to design criteria intended to protect view corridors and the open space feel of the valley. Design standards shall be established for building size, materials, and design; site coverage and placement; street design and landscaping; and public amenities.
- In the southwest corner of the valley, a berm that parallels Interstate 80, and which appears as a natural extension of the ridgeline of the hills, shall be created to help screen views of the development on the valley floor. The berm shall allow views into the golf course and the lake, and shall not completely obstruct views of the hills on the eastern side of the valley.
- A permanent view corridor from eastbound Interstate 80 will be established to allow limited views of Lagoon Valley Lake and the hills that provide a backdrop for the lake.
- On the valley floor, the sense of open space shall be preserved. Development shall be set back from Interstate 80 beyond a 112-foot

landscaped buffer adjoining the Business Village and beyond 1,500 feet for any residential units. Development shall not completely obstruct views of the surrounding hills.

- Business Village and Commercial development shall be designed to accommodate employee-service commercial uses.
- Development shall enhance the recreational potential of the area.
- Residential development shall be limited to 1,325 units and shall be integrated with a golf course. There shall also be a clubhouse, swim, tennis, and fitness recreation complex.
- Detention of floodwater shall provide for all lost floodwater storage and incremental increases in runoff, and total retention shall reduce downstream flows during peak-storm conditions to not more than 90 percent of existing conditions.
- A financing mechanism for all public facility improvements shall be established before development occurs.

Actions

Action LU-A24.1 Amend the Land Use and Development Code to include the development standards and guidelines provided in Policy LU-P24.1 above.

North Village Specific Plan

The North Village Specific Plan is located in the northeast sector of the city, north of Vaca Valley Parkway, east of Interstate 505, and west of Leisure Town Road. The 882-acre project site is governed by an approved Specific Plan, which permits 2,499 residential units. Due to the environmentally sensitive vernal pool areas and wetlands within the project site, development is also subject to US Army Corps of Engineers wetlands permitting processes, which resulted in a reduction in the number of allowed units to approximately 2,220 units. The goal, policies, and action apply to any future amendments of the approved specific plan.

Goal LU-25	**Provide for orderly and well-planned growth in the North Village Specific Plan.**

Policies

Policy LU-P25.1 Require that the residential area east of Interstate 505, south of Midway Road, and north of the Vaca Valley Parkway achieve an innovative mixed residential – commercial community. The Plan should integrate mixed density residential and non-residential uses so that residents are encouraged to walk to shopping services, employment, and leisure activities as an alternative to standard subdivision configurations.

Residential development shall be a maximum of 2,499 dwelling units. The site should also include an earthen sound berm immediately east of Interstate 505 to provide an adequate noise and safety buffer for adjacent residential uses.

Policy LU-P25.2 An elementary school site shall be provided within the northern portion (Area Plan 2) of the North Village Specific Plan.

Other Areas

Goal LU-26	**Provide for orderly and well-planned growth in the specific development areas of the city.**

Policies

Policy LU-P26.1 In the portion of the Vanden Specific Plan area, south of Foxboro Parkway and west of Vanden Road, the minimum lot size shall be 10,000 square feet.

Policy LU-P26.2 The separator between residential and industrial uses may be reduced to less than 200 feet for those areas bordering the Maris Industrial Park, located north of Elmira Road and west of Leisure Town Road.

Policy LU-P26.3 The former Solano Irrigation District Headquarters and Corporation Yard Site, located at 508 Elmira Road, shall comply with the following requirements:

- Comply with the Mitigated Negative Declaration (10-107) mitigation measures for a Maintenance Plan including requiring the owner of the site to continuously maintain the vacant site for the duration of ownership to prevent the site from becoming a hazard or blighted prior to development.
- The City's Infill Standards for Residential Development shall be met for any future development for the site, regardless of lot size. Site-specific standards also include:
  - No attached housing shall be approved for the site.
  - Additional landscaping allowed by Infill Standards shall address protection of privacy for adjacent existing homes per Policy LU-P11.2.
- Site development applications for this property shall be submitted concurrently with a Zone Change request, per Land Use and Development Code Section 14.09.071.050.

Actions

Action LU-A26.1 Amend the Land Use and Development Code to include the development standards and guidelines provided in Policy LU-P26.2 above.

Action LU-A26.2 Amend the Land Use and Development Code to include the development standards and guidelines provided in Policy LU-P26.3 above.

Airport Areas

The Nut Tree Airport is operated by Solano County and located west of Interstate 505 near its junction with Interstate 80. The Nut Tree ALUCP establishes land use compatibility zones, which are shown in Figure LU-4.

As shown in Figure LU-5, Vacaville is located within Compatibility Zones D and E of the Travis Air Force Base Land Use Compatibility Plan. Compatibility Zones D and E do not place any restrictions on the types of land uses allowed, except land uses that could cause hazard to flight.

Goal LU-27	**Ensure that development near the Nut Tree Airport and Travis Air Force Base is compatible with airport uses and conforms to safety requirements.**

Policies

Policy LU-P27.1 Support the Nut Tree Airport's contributions to business efficiency and recreational opportunities in Vacaville.

Policy LU-P27.2 Limit residential development in areas impacted by noise and potential hazards from the Nut Tree Airport to uses identified in the Solano County Airport Land Use Commission's Airport Land Use Compatibility Plan.

Policy LU-P27.3 Ensure that land uses in the vicinity of Nut Tree Airport, or potentially affected by Travis Air Force Base, are compatible with airport operations and are consistent with the Airport Land Use Compatibility Plans for both airports.

Policy LU-P27.4 Encourage uses that are compatible with the noise, air quality, and traffic impacts associated with airports, such as aviation-oriented commercial and industrial uses, to be located near the Nut Tree Airport whenever possible.

Policy LU-P27.5 Continue to refer development proposals within the Nut Tree Airport and Travis Air Force Base Compatibility Districts to the Solano County Airport Land Use Commission.

Policy LU-P27.6 Continue to require avigation easements to be granted to Solano County for all development within the Nut Tree Airport Compatibility District. Require that residential renters and purchasers be notified that they are in the vicinity of an airport.

Policy LU-P27.7 Notwithstanding other provisions of the General Plan, land use changes and development approvals within the Vacaville Planning Area shall be consistent with the Nut Tree Airport and Travis Air Force Base Airport Land Use Compatibility Plans (ALUCP).

Actions

Action LU-A27.1 Continue to implement the Airport Land Use Compatibility Plans for the Nut Tree Airport and Travis Air Force Base through the Land Use and Development Code.

Action LU-A27.2 Continue marketing efforts and assistance to promote the stimulation of job-generating land uses that are compatible with the Nut Tree Airport.

3 TRANSPORTATION ELEMENT

The purpose of the Transportation Element is to define the long-term vision for citywide mobility by setting goals and policies that respond to existing conditions and future changes. This element defines the means to meet this vision by establishing standards that need to be met for transportation operations through the year 2035, and preserves right-of-way for transportation improvements that have the capacity to serve the ultimate buildout of the General Plan. This element balances the need to provide efficient and reliable ways to move people and goods by multiple transportation modes and routes with the overall vision of Vacaville as a safe, attractive community with walkable neighborhoods, vibrant retail districts, and economically strong employment areas. Looking forward, the transportation system should accommodate the planned growth of Vacaville, minimize environmental degradation, and complement regional transportation and land use plans.

Transportation is, and will remain, a major issue for the citizens and businesses of Vacaville and will need to be balanced with the anticipated transportation impacts of new development. Regional freeway traffic will continue to affect Vacaville no matter what types of development occur within the city. The volume of traffic in Vacaville is expected to increase over the coming decades. Roadway and interchange improvements will be required to increase capacity capable of serving this increased traffic.

Land use patterns and transportation systems are directly related. Land use decisions drive the need for a transportation system, while the capacity of the transportation network may support or constrain land use options. Therefore, State law requires that the Transportation Element include "the general location and extent of existing and proposed major thoroughfares, transportation routes, (and) terminals… all correlated with the Land Use Element of the Plan" (Govt. Code, Sec. 65302[b]). The circulation network included in this Transportation Element is based on the land use map and designations contained in the Land Use Element.

The California Complete Streets Act (AB 1358), passed in 2008, requires all General Plan updates after January 1, 2011 to "plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways for safe and convenient travel" and defines "users of streets, roads, and highways" to include bicyclists, children, persons with disabilities, motorists, pedestrians, users of public transportation, and seniors. The policies and actions in this Transportation Element are intended to meet the requirements of Complete Streets legislation.

This element is divided into the following sections:

- **Existing Transportation System.** Describes the existing transportation system, including vehicular, transit, bicycle, pedestrian, freight movement, and aviation serving the mobility needs of residents and businesses in Vacaville.
- **Roadway Classifications and Standards.** Defines classifications and standards for the hierarchy of arterials, collectors, and local streets within the City's roadway network.
- **Standards for Traffic Service and Street Transportation Improvements.** Describes the performance standards for the transportation system.
- **Changes to the Transportation Network.** Describes the programmed, planned, and proposed improvements to the roadways, transit system, bicycle network, and pedestrian facilities.
- **Goals, Policies, and Actions.** Provides goals, policies, and actions to address the transportation and circulation needs of the city, including level of service standards.

The Transportation Element establishes the goals, policies, and actions related to transportation in Vacaville. Specific traffic implementation measures are established in the City's Municipal Code and as part of project-specific environmental assessment documents.

Existing Transportation System

This section describes the existing transportation and circulation systems and programs in the Vacaville area.

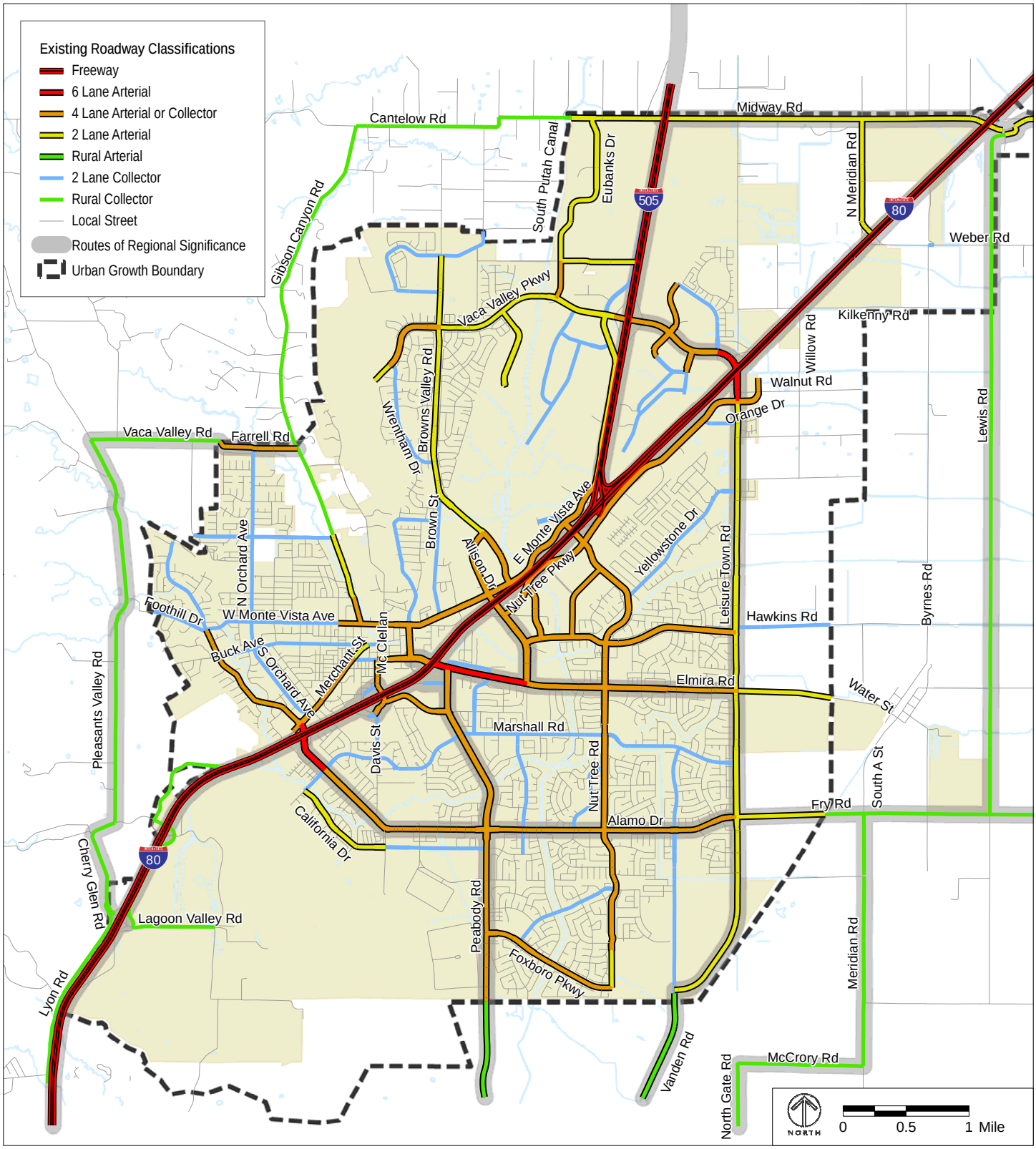
Roadway System

The city contains a hierarchy of roadways that serve different functions, ranging from the highway system to arterial, collector, and local streets. A subset of these roads are designated as regionally significant routes and are subject to regional policy considerations, as described in the sections below that summarize the Solano County Comprehensive Transportation Plan and Congestion Management Program. Vacaville's existing roadway system is shown in Figure TR-1.

Highways

Vacaville is served by two freeways, Interstate 80 and Interstate 505, which are part of the interstate highway network.

Interstate 80 primarily has four travel lanes in each direction in the Vacaville area. It extends southwest through Fairfield and Vallejo, crosses the Carquinez and Oakland Bay Bridges, terminating at Highway 101 in San Francisco. It also extends northeast through Dixon and Davis, over the Sacramento River to Sacramento and beyond.



Source: City of Vacaville Existing Roadways as of 01/01/2012 and Solano Transportation Authority (STA) Comprehensive Transportation Plan 2011

FIGURE TR-1

EXISTING ROADWAY SYSTEM

Interstate 505 links Interstate 80 with Interstate 5, a major north-south freeway serving the west coast of the United States. Interstate 505 has two travel lanes in each direction.

These freeways and their associated interchanges define the regional context, which affects the local access and circulation within Vacaville.

Local Street and Roadway System

The local street and roadway system is composed of a hierarchy of streets with varying functions. The classifications within this hierarchy are explained in detail in the Roadway Classifications and Standards section below. Arterial roads range from six-lane arterials, such as portions of Elmira Road, to four lane arterials, such as Peabody Road and Nut Tree Road. Two-lane roads can also be designated as arterial roads. Collectors, which have two travel lanes, include Orchard Avenue, Marshall Road, and Vanden Road. Local streets are primarily found in residential neighborhoods, carry little through traffic, and generally have the lowest traffic volumes. As shown in Figure TR-1, collector routes funnel traffic from local roadways to the arterial roadway network. In most cases, collector and local streets also serve as residential streets.

Routes of Regional Significance

The Solano County Comprehensive Transportation Plan (CTP) envisions, directs, and prioritizes the transportation needs of Solano County. The CTP identifies ***Routes of Regional Significance,*** which are roadways that carry significant through traffic, connect two or more jurisdictions, serve major transportation hubs, or cross county lines. Since these routes are significant to the transportation network of the region, and serve more than local transportation needs, they are eligible for federal funding. Figure TR-1 identifies the Routes of Regional Significance in the Vacaville area.

The 2009 Draft Comprehensive Transportation Plan Update (2009 CTP Update) is the current CTP for Solano County as of fall 2013 and identifies transportation needs through the year 2035. In addition to Interstate 80 and Interstate 505, the 2009 CTP Update identifies the following local roadway segments within the Vacaville city limits as Routes of Regional Significance:

- Alamo Drive between Interstate 80 and Leisure Town Road.
- Fry Road between Leisure Town Road and eastern city limits.
- Allison Drive between Elmira Road and Interstate 80.
- Bella Vista Road between Interstate 80 and Davis Street (*segment no longer exists*).
- Cliffside Drive between Interstate 80 and Peabody Road.
- Davis Street between Hickory Lane and Bella Vista Road.
- Elmira Road between Leisure Town Road and Interstate 80.

- Hickory Lane between Davis Street and Interstate 80.
- Leisure Town Road (Jepson Parkway) between Interstate 80 and Vanden Road.
- Midway Road between Interstate 505 and eastern city limits (portions in county).
- Peabody Road between Elmira Road and southern city limits.
- Vaca Valley Parkway between Interstate 505 and Interstate 80.

The 2009 CTP Update also identifies the following roadway segments that are located within the county, adjacent to city limits, as Routes of Regional Significance:

- Cherry Glen and Pleasants Valley Road from Interstate 80 to Vaca Valley Road.
- Farrell Road between North Orchard Avenue and Gibson Canyon Road.
- Fry Road from existing city limits east into Solano County.
- Lewis Road from Midway Road south to Fry Road.
- Midway Road from Interstate 505 east across Interstate 80 into Solano County (portion within city limits).
- Vaca Valley Road from Pleasants Valley Road to Gibson Canyon Road.
- Vanden Road (Jepson Parkway) from Leisure Town Road south into Fairfield.

Congestion Management Program

The Solano County Congestion Management Program (CMP) identifies a CMP System for monitoring purposes, which consists of a subset of roadways identified as Routes of Regional Significance by the CTP. The CMP is a mobility monitoring and planning tool for counties that contain an urbanized area with a population of 200,000 or more. The major goals of the CMP are to maintain mobility on Solano County's streets and highways, and to ensure the County's transportation system operates effectively as part of the larger Bay Area and Northern California transportation systems. The 2009 CMP is the current version as of fall 2013.

State law requires that level-of-service (LOS) standards[1] be established as part of the CMP process. The purpose of setting LOS standards for the CMP system is to provide a quantitative tool to analyze the effects of land use changes to the system's performance (i.e. congestion). If the actual system performance falls below the standard (i.e. congestion worsens to LOS F), actions must be taken to improve LOS. The roadway segments listed below are subject to biannual monitoring to ensure compliance with the levels of service identified by the 2009 CMP.

[1] LOS is described in more detail in the Standards for Traffic Service and Transportation Improvements section below.

- Vaca Valley Parkway between Interstate 505 and Interstate 80.
- Elmira Road from Vacaville city limits to A Street in Elmira.
- Peabody Road from Alamo Drive south into Fairfield.
- Vanden Road from Leisure Town Road south to Peabody Road.

Bicycle System

The relatively flat areas of the city, where most residents live and employees work, are attractive for both bicycle commuters and recreational riders. Figure TR-2 shows the existing and planned bicycle network in Vacaville. These bicycle routes are more expansive than the bikeways designated in the Solano Countywide Bicycle Plan, which was adopted by the Solano Transportation Authority (STA) in 2004.

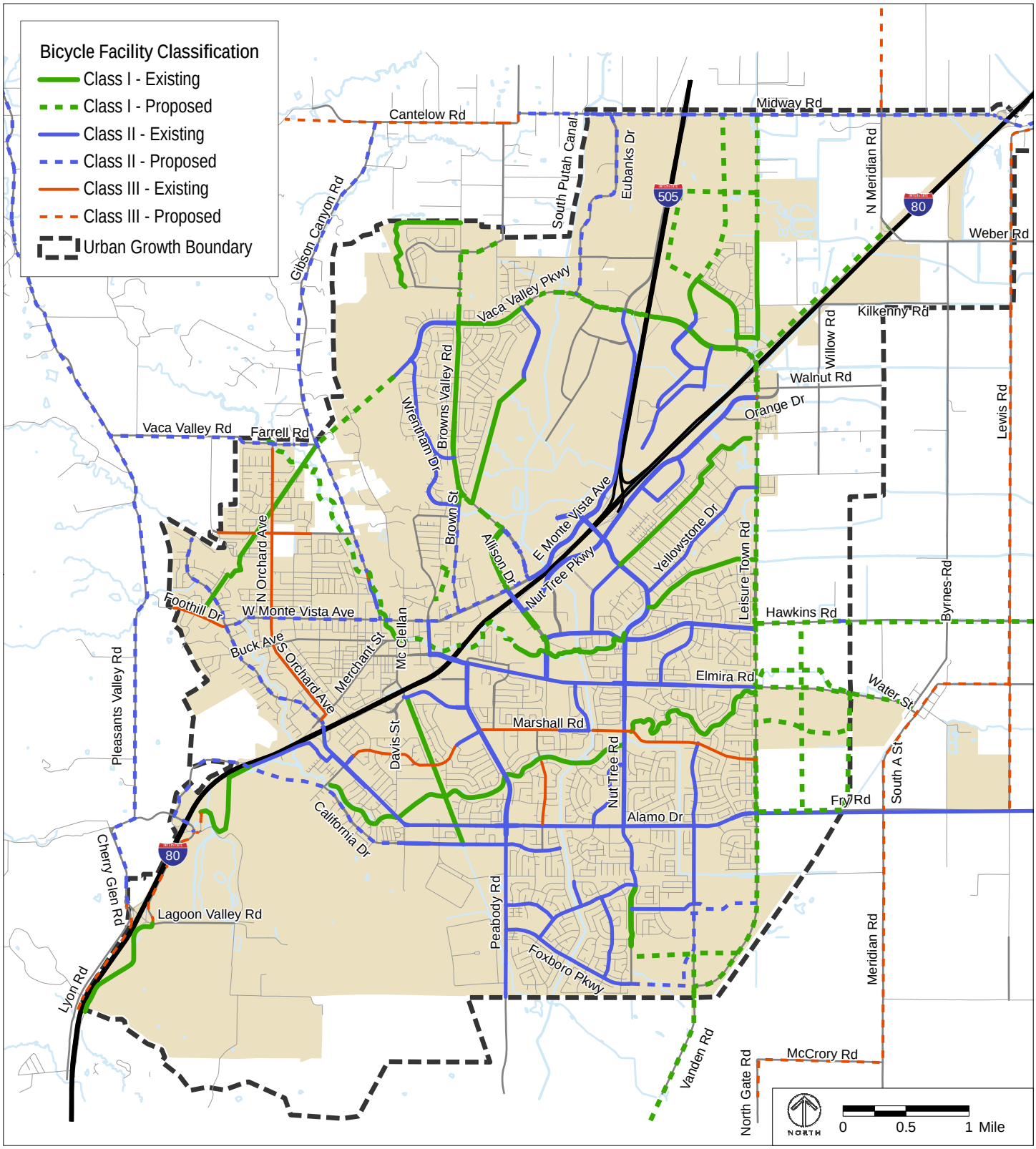
The City classifies bikeways into categories that are consistent with the California Streets and Highways Code (Section 890.4), the California Manual on Uniform Traffic Control Devices for Streets and Highways, and the Caltrans Highway Design Manual. These classifications are described below.

- ***Bike Path (Class I Bikeway).*** Off-street bike paths are designated for the exclusive use of bicyclists and pedestrians, with minimal crossflows by motorists.
- ***Bike Lane (Class II Bikeway).*** On-street, striped and signed bike lanes are designated for the exclusive or semi-exclusive use of bicycles alongside through travel by motor vehicles. Vehicle parking and crossflows by pedestrians and motorists are permitted adjacent to Class II bikeways.
- ***Bike Route (Class III Bikeway).*** On-street, signed bike routes are designated for shared use by bicyclists with motorists. Bicycles are permitted on most roadways, but for safety purposes, signed bicycle routes are often found on streets with lower speeds and traffic volumes.

Pedestrian System

Vacaville has a well-established pedestrian network. Sidewalks with a raised curb and gutter are typically provided along arterial and collector streets, and in newer residential neighborhoods. Some older residential neighborhoods, constructed prior to sidewalks being a standard condition of approval, contain sidewalks with rolled curbs that are intermittently interrupted by landscaping and other obstructions. This is a prominent condition in the older neighborhoods located west of Downtown.

Most major intersections in the city have marked crosswalks and pedestrian crossing signals that can be activated by pedestrians. Pedestrian curb ramps are located at most intersections. High-contrast ***truncated domes*** – textured ground surface indicators to assist vision-impaired pedestrians – are provided at newer installations.



Source: City of Vacaville, Public Works Engineering Department, August 2010 (Existing) Solano Countywide Bicycle Plan, October 2004 (Proposed) STA Countywide Bicycle Transportation Plan, December 2011

FIGURE TR-2

EXISTING AND PLANNED BICYCLE FACILITIES

Detectable warnings that comply with Americans with Disabilities Act (ADA) requirements have not yet been installed in Downtown, one of the areas of highest pedestrian activity. The City has an established ADA Committee to address priorities in providing ADA improvements.

Public Transit

Public transportation service in Vacaville includes local and regional bus service and taxi operations. Public transportation plays an important role in reducing traffic congestion within Vacaville, adjoining jurisdictions of Solano County, and along the Interstate 80 corridor. As residential growth continues, the City's public transit service will be a critical component in transporting individuals in a local capacity and in a broader commuter-based transportation system throughout Solano County and beyond.

The City's public transportation program does not receive funding through the City's General Fund. Instead, funding is derived from passenger fares, the State Transportation Development Act, the Federal Transit Administration, and various grants. These funding sources are finite, limited, and subject to established requirements. For example, State transit funding, provided by the State Transportation Development Act, requires a 20 percent ***farebox recovery***, meaning that for every dollar spent on operating expenses, 20 cents must be recouped from collected passenger fares. Anticipated ridership data derived from various sources, such as public transit interest surveys and short range transit plan documents, must demonstrate an adequate level of ridership to meet the 20 percent farebox recovery mandate before a bus route can be added or extended.

Bus Service

Bus service in Vacaville is provided by Vacaville City Coach, Fairfield and Suisun Transit (FAST), and YOLOBUS, as described further below.

- Vacaville City Coach, operated by the City of Vacaville, offers local service. Most of its routes either begin or end at one of the two City transportation centers: the Vacaville Transit Plaza, located at the corner of Monte Vista Avenue and Cernon Street in the Downtown, and the Vacaville Transportation Center, located at the northeasterly corner of Allison and Ulatis Drives, near access to the Interstate 80 corridor and a key commercial area.
- Fairfield and Suisun Transit (FAST), a public transportation agency, operates intercity service from the Vacaville Regional Transportation Center and the Bella Vista Park & Ride Lot.
- YOLOBUS, which is administered by the Yolo County Transportation District, offers one fixed bus route between Vacaville and Davis.

City Coach provides special services to eligible residents as an ADA paratransit service within Vacaville. Trips beyond the city limits may be specially arranged with City Coach.

Taxi Service

Vacaville is served by a number of privately-operated taxi companies, including Yellow Cab of Vacaville, Veteran's Cab, and Vacaville Checker Cab. In addition, the City of Vacaville administers the Taxi Scrip Program, which provides elderly and disabled Vacaville residents the opportunity to use Vacaville's local Taxi Cab companies at a discount to the regular fare. This program is subject to funding availability as part of the Solano Transportation Authority's mobility resources for seniors and people with disabilities.

Freight Movement

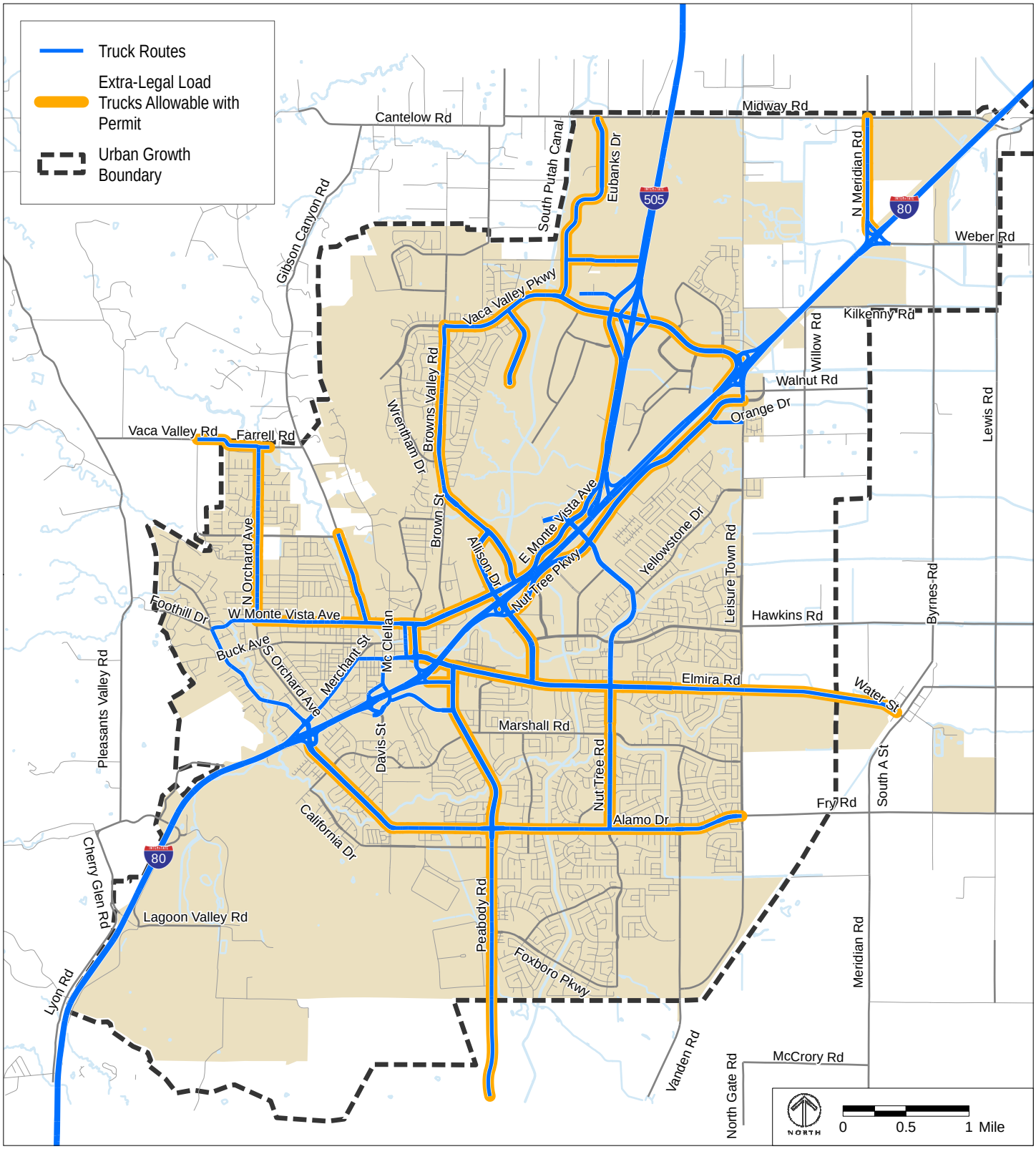
The City has established an extensive truck route network on which vehicles exceeding a gross vehicle weight rating of 5 tons (i.e. the City's definition of "trucks") must travel unless they are destined for, or originated from, points within the city. The shortest and most direct routes must be used to and from the truck routes, and/or between locations within the city. The City has also established an extra-legal permit process, patterned after a State process, for trucks with loads exceeding legal limits. Applications must specify truck dimensions and weights. Appropriate truck routes are approved and conditioned based on established City truck routes, and permits establish limitations for specific extra-legal truck dimensions and weight. Designated truck routes are shown in Figure TR-3.

Aviation System

The Nut Tree Airport is a valuable resource for business and recreational air travel, while Travis Air Force Base is the home of the world's largest military cargo airlift. The Solano County Airport Land Use Commission (ALUC) has adopted plans for airport land use compatibility that will facilitate orderly development and avoid land use conflicts in the airport environs. Policies addressing land use compatibility around the Nut Tree Airport are located in the Land Use Element and in the Land Use and Development Code. Policies addressing Travis Air Force Base are located in the Conservation and Open Space Element.

Transportation Systems & Demand Management

The term Transportation Systems Management (TSM) refers to measures designed to more efficiently serve peak automobile traffic through the efficient use of existing transportation resources. Examples of TSM measures include optimizing signal timing, providing transit preemption, conducting improvements to reduce bottlenecks, and collecting traffic data to monitor and adjust operations. Strategies to reduce traffic demand, specifically that of single-occupancy private vehicles, and/or shift the demand to other modes and to non-peak travel periods are referred to as Transportation Demand Management (TDM). These strategies focus on public transit, flexible working hours, carpooling and vanpooling, and incentives to increase the use of these alternatives.



Source: City of Vacaville Municipal Code Chapter 10.32
Note: Leisure Town Rd is not a designated truck route but is an allowable route for extra-legal loads with a permit.

FIGURE TR-3
TRUCK ROUTES

TDM has become increasingly important in the effort to reduce air quality impacts and greenhouse gas emissions in Solano County and elsewhere in the Bay Area. Consistent with State law, any TSM and TDM program must be achieved on a voluntary, rather than mandatory, basis.

Roadway Classifications and Standards

The road hierarchy in Vacaville is composed of three different functional classifications: arterial, collector, and local. Each road type performs a different function in moving people around the city. The design and construction standards for these roadway classifications are described in the City's Standard Specification for Public Improvements. Figure TR-4 depicts the recommended future roadways by type.

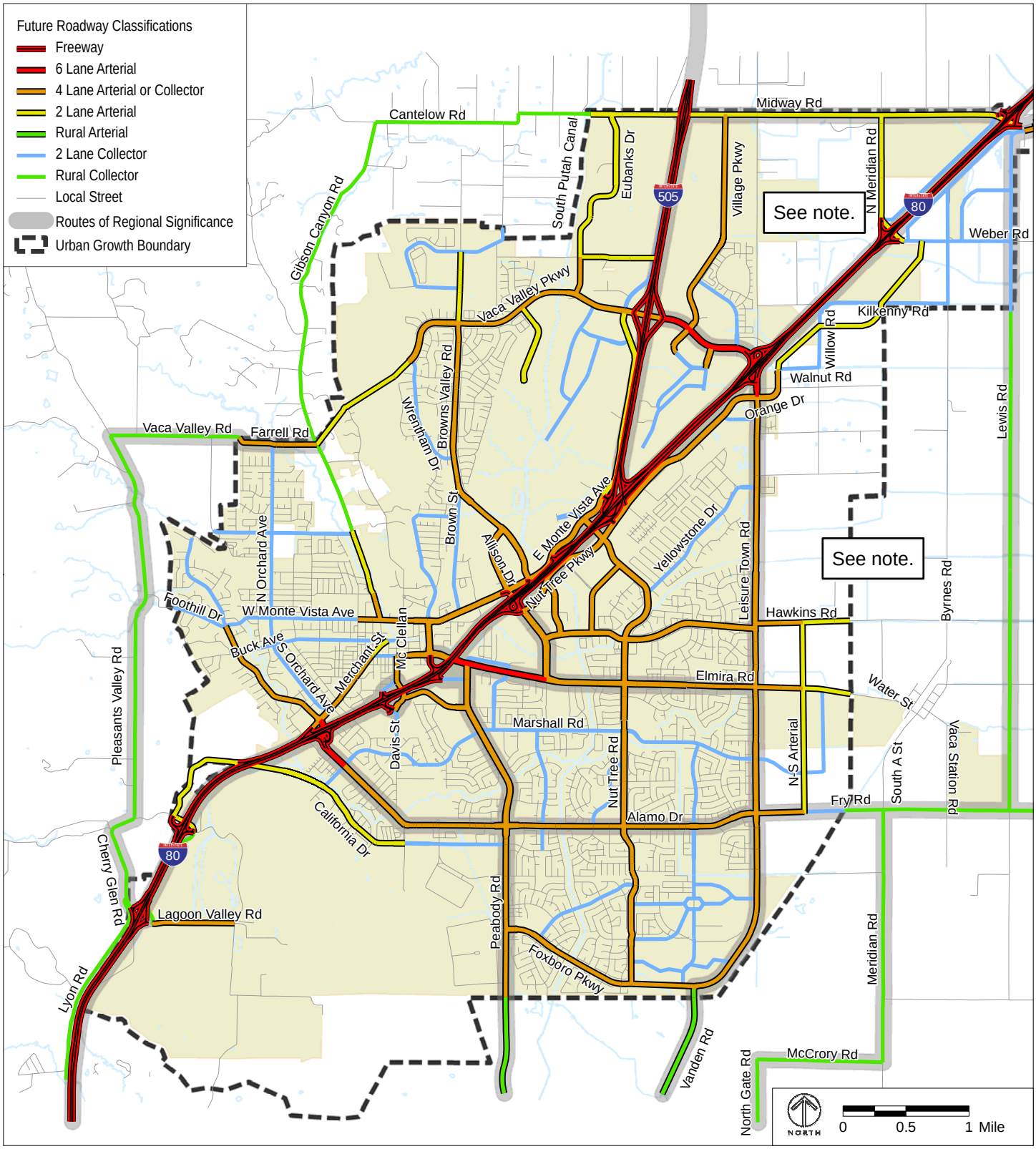
Arterials

Arterials link residential and commercial districts with the freeway network and provide intercity connections. These roadways can be either divided or undivided, and generally carry the heaviest amount of traffic among the three classifications. While the majority of arterials in Vacaville consist of four travel lanes, there are also two-lane arterials, such as Midway Road and Gibson Canyon Road, and six-lane arterials, such as portions of Elmira Road. Access and intersections along arterials are limited to facilitate efficient travel along the arterial.

Rural Arterials serve the same functions as arterials in urban areas, but are outside the boundaries of the urban area. Rural arterials may have different design standards than urban arterials. Design standards are defined in the most recent version of the American Association of State Highway and Transportation Officials (AASHTO) *A Policy on Geometric Design of Highways and Streets* ("Green Book"). Parking lanes, medians, curbs, and sidewalks are typically not constructed on rural arterials. Where curbs and sidewalks are not provided, a minimum 2 feet of shoulder width should be paved. Where bicycles are to be accommodated on the shoulder, a minimum paved width of 4 feet should be used.

Collectors

Collectors are designed to connect residential neighborhoods with arterials. All collector streets in Vacaville have two travel lanes. Some examples of collectors are Orchard Avenue, Marshall Road, portions of California Drive and Youngsdale Drive. Collectors typically provide direct access to adjacent land uses and are wider than most local streets so as to provide improved motor vehicle and bicycle circulation. Access may be limited along collectors to facilitate travel along the roadway, maintain capacity, and limit conflicts between through traffic and local access.



Source: Kittelson & Associates, Inc. and Solano Transportation Authority (STA) Comprehensive Transportation Plan 2011
Note: Final roadway alignments in the Growth Areas will be determined by Specific Plan policies and adjacent development.

FIGURE TR-4

FUTURE (2035) ROADWAY SYSTEM

Rural Collectors serve the same functions as collectors in urban areas, but are outside the boundaries of the urban area. Rural collectors may have different design standards than urban collectors, and are defined in the Green Book mentioned above. Typically, two travel lanes are appropriate for rural collectors. Parking lanes, medians, curbs, and sidewalks are typically not constructed on rural collectors.

Local Streets

Local streets are intended to serve adjacent and nearby residential and commercial neighborhoods or business areas only. They generally carry little through traffic and have low traffic volumes.

Standards for Traffic Service and Transportation Improvements

In Vacaville's developed areas, the primary circulation issue is the flow of traffic on city streets. The standard used for measuring the quality of this flow is called Level of Service. ***Level of Service*** (LOS) describes the operating conditions experienced by roadway users, and applies quantifiable traffic measures such as average speed, intersection delays, and volume-to-capacity ratios to approximate driver satisfaction. Levels of service are designated LOS A through F, from best to worst, and are evaluated differently for different road facility types. This element addresses LOS standards for signalized and unsignalized intersections, and for roadway segments.

Signalized intersection LOS is defined in terms of the average total vehicle delay of all movements through an intersection. Vehicle delay is a method of quantifying several intangible factors, including driver discomfort, frustration, and lost travel time. Specifically, LOS criteria are stated in terms of average control delay per vehicle during a specified time period (for example, the afternoon peak commute hour). Vehicle delay is a complex measure based on many variables, including signal phasing (i.e. progression of movements through the intersection), signal cycle length, and traffic volumes with respect to intersection capacity.

Unsignalized intersection LOS criteria can be further divided into two intersection types: all-way stop-controlled and two-way stop-controlled intersections. All-way stop-controlled intersection LOS is expressed in terms of the average vehicle delay of all of the movements, much like that of a signalized intersection. Two-way stop-controlled intersection LOS is defined in terms of the average vehicle delay of individual movements. This is because the user experience at a two-way stop-controlled intersection is very different for vehicles traveling through the intersection without a stop sign versus those at stop signs. For this reason, LOS for a two-way stop-controlled intersection is defined in terms of its individual movements rather than its average performance overall.

Roadway segment LOS is based on a comparison of hourly traffic volumes to hourly segment capacities by roadway type as established by the City.

The LOS standard provides a means to measure whether the performance of the transportation system meets the goals and vision for the city. The level of service standard is used to identify the needed capital improvements to accommodate growth and to set the significance threshold against which future development is evaluated.

Chapter 14.13 of the Vacaville Land Use and Development Code, Traffic Impact Mitigation Ordinance, describes the specific LOS standards and traffic analysis procedures that implement the policies of the Transportation Element relative to level of service.

Changes to the Transportation Network

Existing regional and local transportation plans and City staff have identified needed improvements to the transportation network in Vacaville to address existing level of service deficiencies and to permit additional development without adversely impacting LOS standards. This section describes these changes to the transportation network. The changes include previously planned roadway, transit and bicycle improvement projects, as well as recommendations for additional improvements to accommodate future growth.

Planned and recommended roadway improvements that would be implemented by the City of Vacaville are shown in Figure TR-5 and listed in Table TR-1.

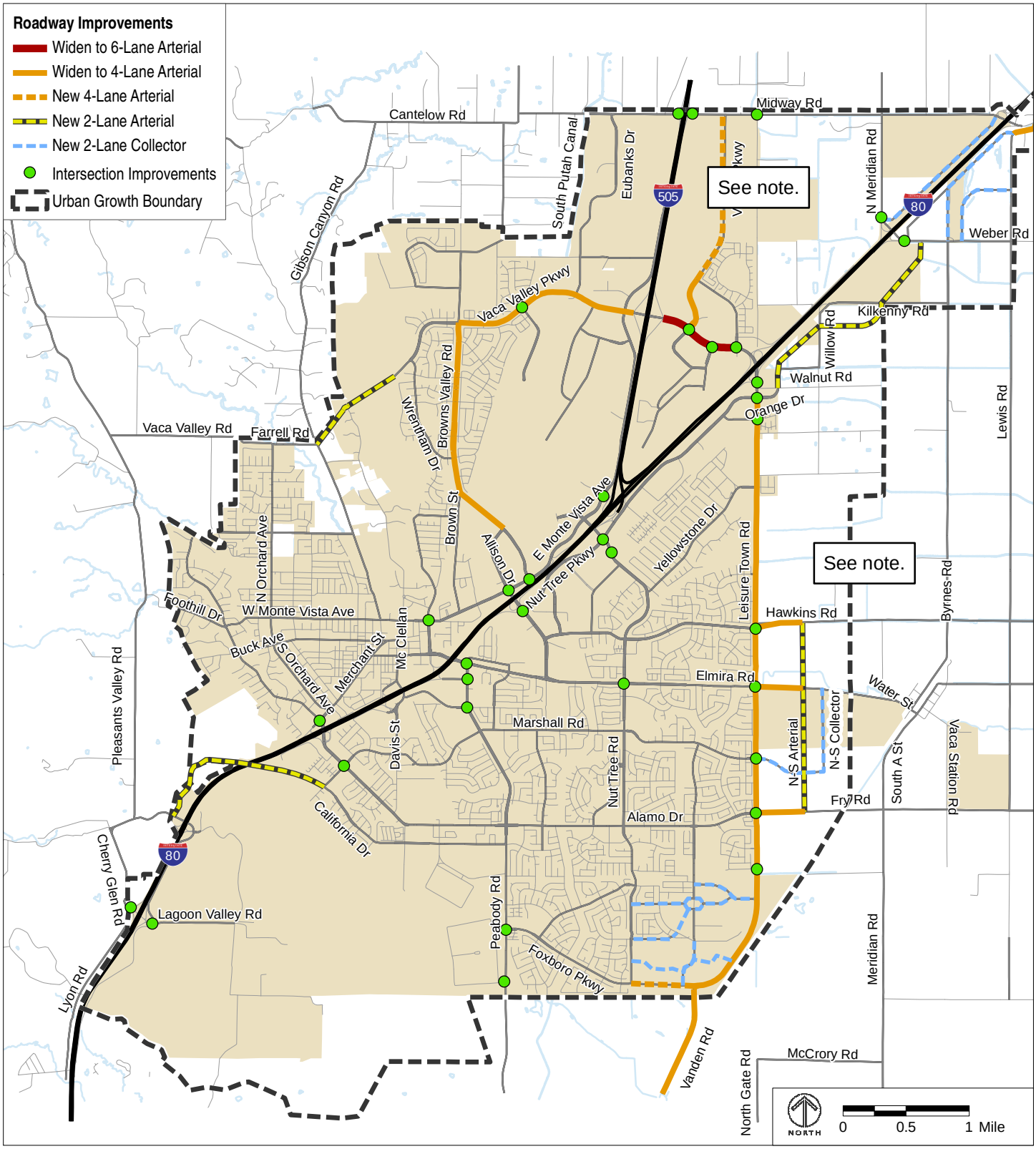
Complete Streets

The California Complete Streets Act (AB 1358), passed in 2008, requires all General Plan updates to "plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways for safe and convenient travel." This law also defines "users of streets, roads, and highways" to include bicyclists, children, persons with disabilities, motorists, pedestrians, users of public transportation, and seniors. Future improvements in Vacaville's transportation network will need to consider these principles.

Planned Transportation Improvements

The improvements discussed in this section were identified in the following plans and programs, and as part of approved development projects:

- Metropolitan Transportation Commission's (MTC) Transportation 2035 Plan
- STA's 2009 Draft Comprehensive Transportation Plan (CTP) 2035 Project List
- Solano CTP Countywide Bicycle Plan (2004)
- I-80/I-680/I-780 Major Investment & Corridor Study Final Report (2004)
- City of Vacaville Capital Improvement Program
- City of Vacaville Development Impact Fee Program
- Jepson Parkway Concept Plan (2000)



Source: Kittelson & Associates, Inc.
Note: Final roadway alignments in the Growth Areas will be determined by Specific Plan policies and adjacent development.

FIGURE TR-5

TRANSPORTATION IMPROVEMENTS IN 2035

TABLE TR-1 **RECOMMENDED ROADWAY IMPROVEMENTS (YEAR 2035)**

Roadway	Location	2035 Improvement
Browns Valley Rd	Between Allison Dr and Wrentham Dr	Widen to 4-lane Arterial
California Dr Extension and Overcrossing	Between Marshall Rd to Pena Adobe Rd and at I-80	2-lane Arterial; 2-lane overcrossing
Foxboro Parkway	Nut Tree Rd to Vanden Rd	2-lane Arterial
Southtown Roadways	(see Planned Development)	2-lane Collector & Jepson Parkway
Vaca Valley Parkway	Between Browns Valley Rd and I-505	Widen to 4-lane Arterial
Vaca Valley Parkway	Between I-505 ramps and Crescent Dr (segment between Crescent Dr and I-80 is 6 lanes)	Widen to 6-lane Arterial
Vaca Valley Parkway	Between Wrentham Dr and Gibson Canyon Rd	2-lane Arterial
Vanden Meadows Roadways	(see Specific Plan)	2-lane Collector / Need to include 2/4 lane Foxboro Extension
Village Parkway	Between Vaca Valley Pkwy and Crescent Dr	Widen to 4-lane Arterial
Village Parkway	Between Crescent Dr and Midway Rd	4-lane Arterial
Weber Rd/Meridian Rd	I-80 Interchange	Revise interchange, potentially incorporating roundabouts
East of Leisure Town Growth Area		
Elmira Rd	Between Leisure Town Rd and New N-S 2-lane Arterial	4-lane Arterial
Fry Rd	Between Leisure Town Rd and New N-S 2-lane Arterial	4-lane Arterial
Hawkins Rd	Between Leisure Town Rd and New N-S 2-lane Arterial	4-lane Arterial
Marshall Rd Extension	Between Leisure Town Rd and New N-S 2-lane Collector	2-lane Collector
New N-S 2-lane Arterial	Between Fry Rd and Hawkins Rd	2-lane Arterial
New N-S 2-lane Collector	Between Marshall Rd Extension and Elmira Rd	2-lane Collector
Northeast Growth Area		
Byrnes Rd Extension	Between Weber Rd and Lewis Rd (East of Interstate 80, Frontage Road)	2-lane Collector
Midway Rd	Between I-80 and Lewis Rd	4-lane Arterial
New Collector (L-shape)	Between Weber Rd and Lewis Rd	2-lane Collector
New Collector	West of I-80, between N. Meridian Rd and Midway Rd (Frontage Road)	2-lane Collector
Orange Dr Extension	Between Orange Dr and Weber Rd	2-lane Arterial

Planned Roadway Improvements

The following planned roadway improvements include those at the regional and local levels for both vehicular and alternative modes of transportation.

Regional Roadway Improvements

The California Department of Transportation (Caltrans) has jurisdiction over all State highway facilities, including the freeway ramps and ramp intersections. The projects identified below include projects on regional routes being planned by Caltrans and the City, and projects being planned in coordination with other jurisdictions. The project status is described as of fall 2013.

Caltrans projects:

- *Interstate 80/Alamo Drive/Merchant Street Westbound On-Ramp.* Widen bridge over Alamo Creek and extend westbound on-ramp to provide an acceleration/merge lane. This project is under construction.
- *Interstate 80/Cliffside Drive Eastbound On-Ramp.* Widen bridge over Mason Street and extend eastbound on-ramp to provide an acceleration/merge lane. This project is in its planning phase.
- *Interstate 80/Davis Street/Hickory Street Westbound On-Ramp.* Extend westbound on-ramp to provide an acceleration/merge lane. This project is in its planning phase.
- *Interstate 80/Davis Street Eastbound On-Ramp.* Widen bridge over Davis Street and extend eastbound on-ramp to provide an acceleration/merge lane. This project is in its planning phase.
- *Interstate 80 High Occupancy Vehicle (HOV) Lanes.* Construct new HOV lanes between the Interstate 80 interchange with Interstate 505 and the Yolo County line. This project is in its planning phase.
- *Interstate 80/Mason Street Westbound On-Ramp.* Extend westbound on-ramp to provide an acceleration/merge lane. This project is in its planning phase.
- *Interstate 80 Ramp Metering.* Provide ramp metering improvements to control access to the freeway. The project has been initiated in Fairfield and a planning phase has been initiated for Vacaville.
- *Interstate 505 Weave Correction.* Construct weave corrections for westbound traffic at the interchange ramp and eliminate lane drop. This project is in its planning phase.[2]

[2] The ***weaving area*** is a segment of the freeway between two interchange ramps, where vehicles merge onto or out of the basic travel lanes. This segment is generally shorter than 2,500 feet in length. ***Lane drop*** means elimination of a lane, for instance transitioning from four travel lanes to three travel lanes. The location of the lane drop is usually a point of conflict as vehicles merge onto the available lanes.

City of Vacaville projects on regional roads:

- *Interstate 505/Vaca Valley Parkway Interchange.* Widen existing overcrossing to provide two lanes in each direction, provide protected turn pockets on off-ramps, accommodate pedestrians and a Class II bike lane, and modify interchange to provide a partial cloverleaf design. The current Vacaville Development Impact Fee Program includes funding for a four-lane overcrossing with slip ramps. The final configuration and schedule for construction will be included in an update to the current Development Impact Fee. This is a City of Vacaville project with Caltrans oversight.
- *Jepson Parkway (County Portion).* Jepson Parkway improvements along the portion of Vanden Road between Fairfield and the Vacaville city limits will be designed and constructed by the City of Vacaville under a funding agreement administered by STA.
- *Lagoon Valley Road Ramp Modifications and Signal.* Widen interchange ramps and bridge to accommodate left-turn storage for both eastbound and westbound on- and off-ramps and provide pedestrian access on the bridge; install traffic signals. The design of this project is on hold pending funding from the Lower Lagoon Valley developer. This is a City of Vacaville project with Caltrans oversight.
- *Vaca Valley Parkway/Interstate 505 Southbound Interim Improvements.* Widen Vaca Valley Parkway to provide a protected westbound left-turn lane and an eastbound right-turn lane and widen southbound off-ramp to provide an eastbound left-turn lane; provide signalization at the southbound ramp intersection. Funding is included in the current Vacaville Development Impact Fee Program. This is a City of Vacaville project with Caltrans oversight.

Projects planned in coordination with other jurisdictions:

- *Jepson Parkway.* Construct a new four-lane expressway between State Route 12 and Interstate 80 along Walters Road, Cement Hill Road, Vanden Road, and Leisure Town Road, and include a Class I bike/pedestrian path. This project is subject to design criteria identified in STA's *2000 Jepson Parkway Concept Plan*. In Vacaville, Jepson Parkway follows the Vanden Road and Leisure Town Road alignments. A concept plan and environmental assessment has been completed. This project is partly funded by the Development Impact Fee Program and partly as conditions of approval for adjacent development. Jepson Parkway is being planned and constructed in partnership with STA, Solano County, and the cities of Fairfield, Suisun City, and Vacaville.
- *Peabody Road between Fairfield and Vacaville City Limits.* Widen the two-lane arterial to a four-lane arterial. This is a City of Fairfield project associated with the Fairfield Train Station Specific Plan.

Local Street and Road Improvements

The following local street and road improvements are planned or proposed by the City. Existing or proposed funding sources have been identified for each of the projects.

- *Orange Drive Extension.* Extend Orange Drive as a four-lane divided arterial to the Weber/Meridian Road interchange. This project will be funded by future area development.[3]
- *Vaca Valley Parkway Widening.* Widen Vaca Valley Parkway to a four-lane divided road with protected turn pockets from Interstate 505 to Browns Valley Parkway, and to a six-lane divided road with protected turn pockets from Interstate 505 to Crescent Drive. The four-lane roadway segment will be funded by area development as conditions of approval. The fifth and sixth lanes will be funded by the Development Impact Fee Program.
- *Vaca Valley Parkway Extension.* Extend Vaca Valley Parkway from Gibson Canyon Road to Wrentham Drive and accommodate a Class I bicycle facility. This project will be funded by the Development Impact Fee Program.
- *California Drive Extension and Interstate 80 Overcrossing.* Extend California Drive as a two-lane arterial from Marshall Road to Pena Adobe Road and construct a new two-lane overcrossing at Interstate 80. Funding for this project is included in the current Development Impact Fee Program, but allocations may be revised during updates to the fee program.
- *Midway Road Widening.* Widen Midway Road to provide two lanes in each direction between Putah South Canal and Interstate 80. This project will be funded by adjacent development as a condition of approval.[4]
- *Browns Valley Road Widening.* Widen Browns Valley Road between Allison Drive and Wrentham Drive. Funding for this project is included in the current Development Impact Fee Program.
- *Interstate 505/Midway Road Interchange Improvements.* Improve the intersections of Midway Road with the Interstate 505 northbound and southbound freeway ramps to accommodate projected demand. This project will be funded by future development impact fees.

Local Streets Within New Development Areas

The following new roadway network is anticipated as part of approved and proposed development areas. These new roadways and roadway improvements will be funded by development as a condition of approval.

- *North Village Parkway*. Complete the connection of North Village Parkway between Vaca Valley Parkway and Midway Road consistent with the approved Specific Plan.

[3] Note that only a two-lane extension is required to accommodate anticipated development in 2035.

[4] Note that this improvement is not required to accommodate anticipated development in 2035.

- *East of Leisure Town Internal Roadway Network.* Improve and construct roadways to serve development east of Leisure Town Road, including but not limited to Hawkins Road, Elmira Road, Fry Road, and the new North-South Arterial.
- *Midway Road Interstate 80 Interchange and Overcrossing Improvements.* Improve the Interstate 80 freeway ramp intersections at Midway Road to accommodate area development, including development in the Northeast Growth Area. These improvements will be funded by adjacent development as a condition of approval, as well as the Development Impact Fee program if included in future updates.
- *Northeast Growth Area Internal Roadway Network.* Improve Midway Road, Weber Road, Kilkenny Road, Walnut Road, Willow Road, Byrnes Road, and Lewis Road to serve area development, provide connections to Orange Drive, and provide new internal roadways as required for local development access. These improvements will be funded by adjacent development as a condition of approval.

Planned Transit Improvements

As development occurs, public transit will play a larger role in the area, particularly for commute trips within Vacaville and to and from adjoining cities. Regional and local transit is necessary to maintain acceptable travel alternatives and achieve a balanced level of service. Based on anticipated growth in the region, projections indicate the potential for serious traffic congestion in the Interstate 80 corridor in the future. To effectively reduce the rate of growth in automobile trips, and thus the need for road widening, the Metropolitan Transportation Commission (MTC) and other agencies encourage efforts to enhance and better coordinate public transit.

The following transit service improvements are planned or proposed:

- *Vacaville/Fairfield Multi-Modal Rail Station.* Construct a new commuter rail station at the southeast corner of Peabody Road and Vanden Road in northeast Fairfield along Amtrak's Capitol Corridor, which provides regional rail service. The station will be the focal point of a transit-oriented development with up to 3,000 dwelling units within a ½-mile radius of the station. The preliminary design of the Fairfield/Vacaville Train Station includes a passenger platform, bus passenger transfer area, parking, an overpass for Peabody Road, and an underpass for pedestrians and bicycle users. It is anticipated that the public transit service will be revised to make connections to the new train station based upon ridership demand and available funding. The City of Fairfield is the lead agency.
- *Vacaville Intermodal Station.* The City of Vacaville completed the construction of a bus transfer facility at the corner of Ulatis Drive and Allison Drive with ten bus bays and a 220-vehicle parking lot in March 2011. Phase 2 of the project includes construction of a 400-vehicle parking garage structure adjacent to the intermodal station. Phase 2 is in its planning phase.

Planned Non-Motorized Transportation Improvements

The following improvements for bicycle and pedestrian transportation in Vacaville are planned or proposed, with project status described as of fall 2013.

- *Ulatis Creek Bike Path.* Construct a Class I bike path along Ulatis Creek between Allison Drive and Interstate 80. The preliminary design and environmental assessment phase has been initiated.
- *Elmira Road Bike Path.* Construct a Class I bike path along the old Southern Pacific Railroad right-of-way on the north side of Elmira Road between Leisure Town Road and Edwin Drive. This project is in its planning and design phase, and is a priority project identified in the STA Countywide Bicycle Plan.
- *Other Bikeways.* Construct the future bikeway improvements shown in Figure TR-2 through conditions of approval for area development, grant funding as available, and/or the Development Impact Fee Program.
- *Video Detection Installation.* Install video detection at all City traffic signals to enhance bicycle and motorcycle detection, including remote viewing and fine-tuning of signal operations. These improvements have begun and will be on-going.
- *Pedestrian Signal Improvements.* Install audible pedestrian push buttons for signals in the vicinity of transit facilities and countdown pedestrian signals at all City-controlled traffic signals. The installation of countdown pedestrian signals has begun.

Additional Recommended Improvements

In addition to the improvements planned or programmed in regional and local plans, additional capacity enhancements will be necessary to maintain established level of service policies on City roadways to accommodate expected future growth under this General Plan. These recommended roadway improvements are based on conditions in 2035 and are listed in Table TR-1 and shown in Figure TR-5.

Specific improvements should be identified and implemented on the basis of detailed traffic studies. Intersection improvements may include intersection approach lane expansions, related channelization[5] improvements, traffic signal installations, and roundabouts. Roundabouts are a relatively new intersection concept in California that relies upon a circular traffic flow pattern and the use of yield control on each approach to the intersection. Other intersections not identified in Table TR-1 and Figure TR-5 may also need future improvements.

[5] Channelization improvements include geometric changes at an intersection, such as raised islands that separate the right-turn lane from the through traffic lane, thereby "channelizing" traffic.

Recommended Right-of-Way Reservation

The Year 2035 transportation improvements discussed above and illustrated on Figure TR-5 are based on the amount of increased levels of traffic expected to occur within the 2035 horizon year of this General Plan. Additional roadway capacity will be necessary to accommodate growth expected to occur after the horizon year, and to maintain the City's established level of service policies. The full potential development of all land uses allowed under the General Plan beyond the 2035 horizon year (i.e. buildout) is anticipated to occur many decades in the future. Therefore, it would be premature to identify and design specific improvements to serve this development.

However, the City must prepare for future roadway improvements (i.e. new roads, roadway widenings, signalized intersections) necessary to support buildout of the General Plan. One way to do this is to preserve right-of-way (ROW). Using projected traffic generated from the development of all land uses allowed under the General Plan, the City can plan to preserve the additional ROW necessary to accommodate future development.

Recommendations for reservation of ROW for transportation improvements needed to support buildout of the General Plan are shown in Figure TR-6 and listed in Table TR-2. These recommendations would provide the roadway capacity and associated ROW that would be needed to maintain consistency with General Plan policies. These improvements would be needed in addition to the improvements listed in Table TR-1 and shown in Figure TR-5.

Goals, Policies, and Actions

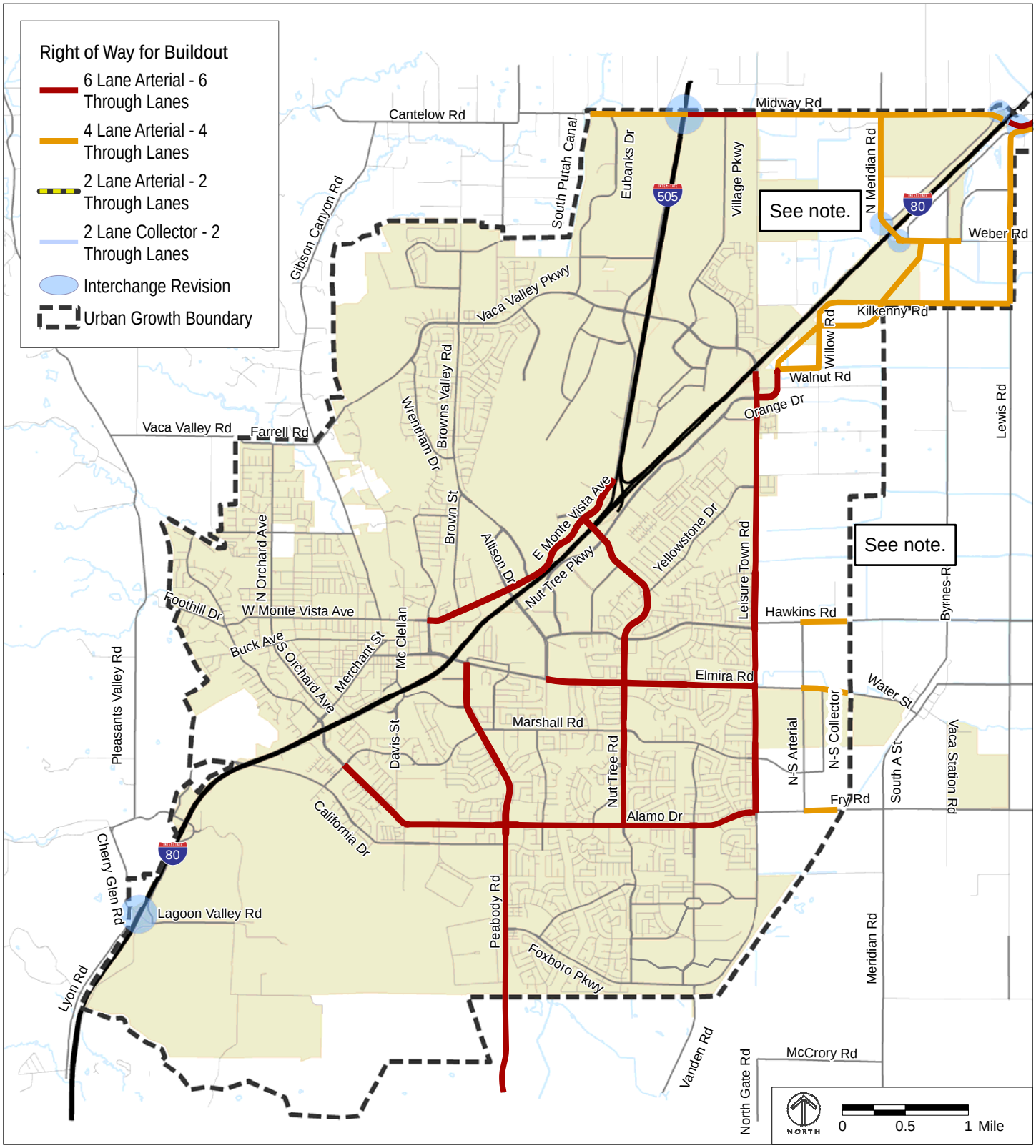
Well-Planned and Integrated Transportation Network

Goal TR-1	**Work with other agencies to plan for an integrated transportation network that responds to regional and local transportation needs while maintaining Vacaville as a safe and pleasant place to live and work.**

Policies

Policy TR-P1.1 Coordinate, to the extent feasible, regional transportation system improvements, specifically those on the Congestion Management Program (CMP) network and Routes of Regional Significance, with neighboring jurisdictions.

Policy TR-P1.2 Provide frontage roads, or parallel roadway facilities adjoining the freeway, wherever possible in order to allow local traffic to avoid congested freeways.



Source: Kittelson & Associates, Inc.
Note: Final roadway alignments in the Growth Areas will be determined by Specific Plan policies and adjacent development.
Note: This map shows the ultimate right-of-way that would be needed to accomodate future improvements that would likely be necessary to serve the complete buildout of all growth allowed under the General Plan, including growth that would be expected to take place beyond the 2035 horizon year. The map only shows requirements beyond the 2035 improvements that were identified in Figures TR-4 and TR-5.

FIGURE TR-6

STREET RIGHT OF WAY FOR BUILDOUT OF GENERAL PLAN

TABLE TR-2 **RECOMMENDED RIGHT-OF-WAY RESERVATION FOR GENERAL PLAN BUILDOUT**

Roadway	Location	ROW Reservation
Alamo Drive	Between Marshall Rd and Leisure Town Rd	6 lanes
Byrnes Road	Between Kilkenny Rd and Weber Rd	4 lanes
Elmira Road	Between Allison Dr and Leisure Town Rd	6 lanes
Elmira Road	Between New N-S Arterial and Urban Growth Boundary	4 lanes
East Monte Vista Avenue	Between Depot St and Nut Tree Airport	6 lanes
Fry Road	Between New N-S Arterial and east Urban Growth Boundary	4 lanes
Hawkins Road	Between New N-S Arterial and Urban Growth Boundary	4 lanes
Kilkenny Road	Between Willow Rd and Lewis Rd	4 lanes
Leisure Town Road (Jepson Parkway)	Between Alamo Dr and I-80	6 lanes
Lewis Road	Between Kilkenny Rd and Midway Rd	4 lanes
Meridian Road	Between I-80 and Midway Rd	4 lanes
Midway Road	Between South Putah Canal and I-505	4 lanes
Midway Road	Between I-505 and Leisure Town Rd	6 lanes
Midway Road	Between Leisure Town Rd and I-80	4 lanes
Midway Road	Between I-80 and Lewis Rd	6 lanes
North-South Arterial	Between Leisure Town Rd and Hawkins Rd	2 lanes
Nut Tree Road	Between Alamo Dr and E. Monte Vista Ave	6 lanes
Orange Drive	Between Leisure Town Rd and Walnut Rd	6 lanes
Orange Drive	Between Walnut Rd and Weber Rd	4 lanes
Peabody Road	Between city limits and Elmira Rd	6 lanes
Vanden Road (Jepson Parkway)	Between Foxboro Pkwy and south city limit	4 lanes
Walnut Road	Between Orange Dr and Willow Rd	4 lanes
Weber Road	Between I-80 and Byrnes Rd	4 lanes
Willow Road	Between Walnut Rd and Kilkenny Rd	4 lanes

Policy TR-P1.3 Continue to coordinate and support regional efforts to construct Jepson Parkway in accordance with the *Jepson Parkway Concept Plan (2000),* or subsequent updates to the Plan for Jepson Parkway.

Actions

Action TR-A1.1 Consider the impacts of regional development on the Vacaville Transportation Network by reviewing public notices for development in the vicinity of Vacaville and require development within Vacaville to establish its impact on the regional (CMP) transportation network. Create a loop street system around the city to avoid over-reliance on Interstate 80 for internal city travel. Construction of the Vaca Valley Parkway Extension, Foxboro Extension, California Drive Extension, and Interstate 80 Overcrossing projects would create the proposed loop street system.

Action TR-A1.2 Continue with the design and construction of Jepson Parkway in south Vacaville and within the county between Fairfield and Vacaville under the funding agreement administered by the Solano Transportation Authority (STA). To the extent possible, facilitate the design and construction of future segments of Jepson Parkway in Vacaville.

Action TR-A1.3 Continue to support STA updates of the Congestion Management Program (CMP) and other regional transportation planning efforts.

Goal TR-2 Work with Caltrans and other agencies to plan for freeway facilities that operate at the highest level possible.

Policies

Policy TR-P2.1 Work with the California Department of Transportation (Caltrans) and Solano Transportation Authority (STA) to achieve timely construction of programmed freeway and interchange improvements.

Policy TR-P2.2 Work with Caltrans to consider how ramp metering is implemented to regulate access to State facilities, while also considering the impacts to local roadways and balancing the desire for a high level of operations on Interstate 80.

Policy TR-P2.3 Encourage Caltrans to widen and upgrade Interstate 80 through Vacaville. In new development areas adjoining Interstate 80 and Interstate 505, require major building setbacks and offers-of-dedication to permit the long-term planning and widening of the freeways.

Level of Service and Traffic Congestion

Goal TR-3	**Provide roadway capacity for typical weekday peak hour (7:00 to 9:00 AM and 4:00 to 6:00 PM) traffic volumes without significant delay.**

Policies

Policy TR-P3.1 Strive to maintain LOS C as the LOS goal at all intersections and interchanges to facilitate the safe and efficient movement of people, goods, and services. Design improvements to provide LOS C conditions based on the City's most recent 20+ year traffic forecast. At unsignalized intersections, maintain an overall LOS C standard with the worst approach to the intersection not exceeding LOS D.

Policy TR-P3.2 At signalized and all-way stop control intersections, LOS mid-D shall be the LOS significance threshold. At two-way stop control intersections, LOS mid-E shall be the LOS significance threshold on the worst approach.

Policy TR-P3.3 To allow for infill development and higher density development at transit centers, the LOS significance threshold shall be LOS D at signalized and all-way stop control intersections in the Downtown Urban High Density Residential Overlay District or other Priority Development Areas (PDA) designated by the City. At two-way stop controlled intersections in these areas, the overall LOS significance threshold shall be LOS mid-E with the worst approach not exceeding LOS E.

Policy TR-P3.4 The City may allow LOS above the established LOS significance thresholds for a particular location as an interim level of service where improvements are programmed by the City that will improve the service to an acceptable level.

Policy TR-P3.5 The City may allow LOS above the established LOS significance thresholds for a particular location on the basis of specific findings described in Chapter 14.13 of the Vacaville Land Use and Development Code, Traffic Impact Mitigation Ordinance.

Policy TR-P3.6 Require all roads to comply with the City's Standard Specification for Public Improvements document for the City's roadway network.

Policy TR-P3.7 Roadway improvements implemented by the City using the Development Impact Fee Program or other funding sources shall be

designed based on the level of service standards prescribed in Policies TR-P3.1 and TR-P3.3.

Policy TR-P3.8 Require roadway improvements implemented by development projects to be designed based on the level of service standards prescribed in Policies TR-P3.2 and TR-P3.3.

Policy TR-P3.9 Implement Transportation Element improvements summarized in Table TR-1 and illustrated in Figure TR-5 prior to deterioration in levels of service below the stated standard, with the exception of situations that are described in Policies TR-P3.4 and TR-P3.5.

Actions

Action TR-A3.1 Develop policies, procedures, and standards for roundabouts and rural roads as part of the update the City's roadway design specifications.

Action TR-A3.2 Continue to track and evaluate available traffic safety data, and establish a means to prioritize and improve circulation facilities as needed to maintain traffic safety (i.e. meet design standards) and levels of service on major arterials. Specific improvements should be identified and implemented on the basis of detailed traffic studies.

Action TR-A3.3 Update the Traffic Impact Fee program to reflect the adopted General Plan and existing land uses to ensure that the level of service standards stated in Policies TR-P3.1 through TR-P3.3 are met to the greatest extent possible.

Action TR-A3.4 Update Chapter 14.13 of the Land Use and Development Code (Traffic Impact Mitigation Ordinance) to be consistent with the level of service policies stated in Policies TR-P3.1 through TR-P3.5.

Goal TR-4 Mitigate traffic impacts from new development.

Policies

Policy TR-P4.1 Evaluate development proposals based on the level of service standards prescribed in Policies TR-3.1 through TR-3.5.

Policy TR-P4.2 As part of development approvals, require reasonable demonstration that traffic improvements necessary to mitigate development in accordance with Policies TR-3.1 through TR-3.3 will be in place in time to accommodate trips generated by the project, or satisfy findings identified in Policies TR-3.4 and TR-3.5.

Policy TR-P4.3 In order to ensure that adequate roadway capacity is provided for the buildout of the General Plan and that new development does not preclude the construction of adequate circulation facilities, require all new development to provide right-of-way dedications consistent with this Transportation Element (Figure TR-6).

Policy TR-P4.4 When reviewing development proposals, consider Year 2035 projections for fair share contributions to transportation improvements (as shown in Figure TR-5) and full buildout projections (beyond Year 2035) for dedication of right of way for future road improvements (as shown in Figure TR-6).

Policy TR-P4.5 For locations where the LOS would exceed thresholds described in Policies TR-P3.2 and TR-P3.3 without the addition of traffic from a proposed development, the City may establish impact and mitigation criteria based on the incremental traffic contribution from the proposed development as described in Chapter 14.13 of the Land Use and Development Code (Traffic Impact Mitigation Ordinance).

Policy TR-P4.6 Where future roadway widening to serve urban development occurs on the Urban Growth Boundary along Kilkenny Road, roadway widening shall occur on the City side of the boundary. Roadways may be realigned to place urban-serving roadways within the adjacent growth areas where appropriate (e.g. Kilkenny Road).

Goal TR-5 Design and maintain arterial roadways that meet circulation and access needs.

Policies

Policy TR-P5.1 Design intersections on arterial roadways to meet level of service standards and to avoid traffic diversion to local roadways or the freeway.

Policy TR-P5.2 Locate high traffic generating uses so that they have direct access or immediate secondary access to arterial roadways, while balancing the need to control the number of driveways that enter arterial roadways.

Policy TR-P5.3 Maintain the City's funding system to enable completion of arterial roadway and interchange capacity improvements in a timely manner (Action TR-A3.3) and give appropriate priority and consideration to budgets supporting maintenance of the roadway network.

Policy TR-P5.4 Maximize the carrying capacity of arterial roadways by controlling the number of intersections and driveways, minimizing access, and prohibiting direct residential access whenever possible, and by requiring sufficient on-site parking to meet the needs of each project. This includes designing parking areas so that traffic turning into the parking areas does not impede through traffic on the arterial roadway, providing acceleration and deceleration lanes, combining driveways to serve several small parcels, limiting appropriate driveways to right-in and right-out movements only, and maintaining adequate distances between driveways and intersections to permit efficient traffic merges.

Policy TR-P5.5 Control access to auto-oriented commercial areas by use of median strips and frontage roads to improve safety, maximize roadway capacity, and minimize traffic conflicts.

Actions

Action TR-A5.1 As funding permits, improve traffic flows on major arterial streets and continue to implement the coordination of traffic signals at major intersections and along arterial streets during daily peak travel periods.

Action TR-A5.2 To improve emergency vehicle response times and minimize transit system delays, continue to implement the emergency vehicle traffic signal preemption (EVP) and Transit Priority System Priority controls (Opticom or an approved equivalent) along major emergency response and transit routes. Require that the system be installed as part of any upgrades or signalizations triggered by new development along these routes.

Action TR-A5.3 Establish policies and procedures for limiting full access along existing and proposed arterials based on the need to maintain roadway capacity, limit conflicts and improve traffic safety.

Action TR-A5.4 Establish policies, procedures, and standards for implementing improvements that maximize carrying capacity of arterials.

Goal TR-6	**Protect residential neighborhoods from through-traffic.**

Policies

Policy TR-P6.1 Discourage unnecessary through-traffic in residential areas through circulation system design and planning.

Policy TR-P6.2 Design new collector roadways and implement traffic-control measures where feasible and warranted to maintain level of service standards at intersections on collector roadways. Direct residential access on collectors shall be evaluated as part of subdivision design.

Policy TR-P6.3 Consider traffic calming measures consistent with the City's traffic calming policies and approved by the City as part of development proposals in an effort to lower vehicle speeds and enhance mobility for bicyclists and pedestrians.

Policy TR-P6.4 Review phased developments for the potential for contributing to, or creating routes for, cut-through traffic, and establish conditions of approval as needed to limit the potential for cut-through traffic on residential roadways.

Policy TR-P6.5 Provide support, through City actions and/or roadway improvements, to Solano County in implementing traffic calming measures that reduce through-traffic in unincorporated neighborhoods near Interstate 80, including the Locke Paddon Colony.

Actions

Action TR-A6.1 Re-evaluate the City's Traffic Calming Ordinance to slow traffic on existing local roads and redirect through traffic. Establish policies, procedures and standards for evaluating traffic calming measures with new development proposals, both on-site and off-site.

Complete Streets

Goal TR-7	**Provide a balanced, multimodal transportation network that meets the needs of all users.**

Policies

Policy TR-P7.1 Continue to implement a local Complete Streets Policy.

Policy TR-P7.2 Require that new and existing on-street bicycle lanes be striped, signed, and maintained to encourage their use.

Policy TR-P7.3 Require that new development applications include transit amenities, such as bus stops, bus bays, transit shelters, benches, and on-site drop-off locations, as appropriate, or explain why these features are infeasible or unnecessary.

Policy TR-P7.4 Require that new development applications design roadway networks to accommodate transit vehicles and facilitate efficient transit routes.

Policy TR-P7.5 Where existing street widths or traffic volumes do not support creation or maintenance of striped bicycle lanes or shoulders, but where cyclists can be safely accommodated and other conditions permit, consider use of mechanisms such as "sharrows" (i.e. markings painted on roadways indicating that auto traffic is expected to share the lane with cyclists), pavement markings, or "share the road" signage to indicate to both drivers and bicyclists that bicycle use is permitted and should be expected.

Policy TR-P7.6 Require that new development applications design roadway networks to accommodate on-street bicycle lanes, and only allow bicycle routes with sharrows when on-street bicycle lanes are impractical or infeasible.

Policy TR-P7.7 Require that new roadway networks be designed as a grid pattern to reduce circuitous travel patterns and improve access and circulation for all modes.

Policy TR-P7.8 Prioritize transportation improvements that support and enhance travel by transit, bicycle, and pedestrian modes to and from designated Priority Development Areas (PDA).

Actions

Action TR-A7.1 Continue to support the Solano Transportation Authority's regional Bicycle, Pedestrian, and Safe Routes to School (SR2S) program as funding and staffing permit.

Action TR-A7.2 Update the Land Use and Development Code to require new roadway networks to be designed to accommodate transit vehicles and facilitate efficient transit routes.

Action TR-A7.3 Develop policies and procedures for evaluating transit demand anticipated from new development, and establish a means for new development to provide for this demand beyond what can be expected from other established funding sources. To the extent possible, develop a means to include anticipated transit demand from development in short- and long-range transit plans.

Action TR-A7.4 Adopt roadway network standards to support a grid network design to establish consistency with Policy TR-P7.7. These standards shall be coordinated with standards for traffic calming measures evaluated as part of Action TR-A6.1.

Action TR-A7.5 Construct off-site transit facilities to enhance citywide transit service and to offset new developments' impact on citywide congestion levels and greenhouse gas emissions.

Action TR-A7.6 Support school districts as appropriate in the provision of school bus service, and consider a process to facilitate the development of Operations and Maintenance districts that would fund school bus service as a Transportation Demand Management (TDM) measure to offset morning peak hour and overall greenhouse gas impacts of new development and existing vehicle traffic to schools.

Action TR-A7.7 Support the local school districts in efforts to reduce motor vehicle trips, reduce overall traffic congestion, improve school area safety, and promote student health as a TDM measure to offset the impact of new development on citywide congestion levels and greenhouse gas emissions.

Action TR-A7.8 Consider including transportation improvements that will support and enhance travel by transit, bicycle, and pedestrian modes in updates to the Development Impact Fee program.

Goal TR-8 Increase bicycling by improving the network of bikeway and support facilities.

Policies

Policy TR-P8.1 Construct the comprehensive network of on- and off-roadway bike routes identified in Figure TR-2 to encourage the use of bikes for commute, recreational, and other trips as part of new development and as funding allows in existing developed areas.

Policy TR-P8.2 Continue to designate bike lanes and cross-city bike paths to facilitate non-motorized trips.

Policy TR-P8.3 Give priority to the development of bike routes that provide access to schools, historic sites, governmental services, major commercial centers, parks, and regional open space.

Policy TR-P8.4 Require that new development applications include bike paths or bike lanes, when appropriate.

Policy TR-P8.5 Enhance and improve bicycle connections between neighborhoods and between neighborhoods and significant destinations, such as parks, schools, transit stops and transit centers, shopping centers, and employment centers.

Policy TR-P8.6 Use available rights-of-way and creek banks for public use as trails, bikeways, or walkways.

Policy TR-P8.7 Encourage major employers to provide support facilities to encourage use of bikes for commute purposes.

Policy TR-P8.8 Incorporate bike storage and other support facilities into transportation system management plans at employment sites and public facilities.

Policy TR-P8.9 Require that new multi-family and non-residential developments provide adequate public and private bicycle parking and storage facilities.

Policy TR-P8.10 Develop signage for bikeway connections between transit stops and significant destinations. Provide this signage as funding allows.

Actions

Action TR-A8.1 Consider preparing and adopting a Citywide Bicycle Transportation Plan in accordance with the California Streets and Highways Code Section 891.2 to be eligible for Caltrans Bicycle Transportation Account funds as staffing and budget allow.

Action TR-A8.2 Establish policies on bike storage and parking requirements

Action TR-A8.3 As budget and staffing allow, establish a signing and marking plan to support the Bicycle Transportation Plan and clearly mark routes to transit stops and significant destinations. The signage plan should also establish priorities for the installation of bicycle route signage.

Action TR-A8.4 Research how providing bicycle storage, parking, and other amenities that encourage bicycle trips affect auto trip generation rates as staffing and budget allow.

Action TR-A8.5 Seek funding to construct bicycle infrastructure to enhance the citywide bike route network and to offset existing and new development's impacts on citywide congestion levels and greenhouse gas emissions.

Goal TR-9	**Ensure safe, pleasant, and convenient pedestrian paths, sidewalks, and trails to accommodate all segments of the population.**

Policies

Policy TR-P9.1 Develop a series of continuous pedestrian walkways within the Downtown and residential neighborhoods.

Policy TR-P9.2 Design separated pedestrian paths and trails to be convenient, visible, and safe.

Policy TR-P9.3 Continue to support programs to improve the mobility of the elderly and disabled, remove existing architectural barriers, and require that new development be accessible to those with physical impairments.

Actions

Action TR-A9.1 Continue to support and facilitate the ADA Advisory Committee as a means to prioritize and address all barriers for people with disabilities on the City roadway network and at public facilities.

Action TR-A9.2 Seek funding to construct pedestrian infrastructure to enhance the citywide pedestrian network (including improved access to transit) and to offset existing and new development's impact on citywide congestion levels and greenhouse gas emissions.

Public Transit and Transportation Demand Management

Goal TR-10	**Reduce traffic impacts through transportation systems management (TSM) and transportation demand management (TDM).**

Policies

Policy TR-P10.1 Cooperate with public agencies and other entities to promote local and regional public transit serving Vacaville.

Policy TR-P10.2 Work cooperatively with the Solano Transportation Authority (STA) to promote transportation demand management programs to reduce peak-period trip generation.

Policy TR-P10.3 Work with the Solano Transportation Authority (STA) to encourage major employers to adopt Transportation Systems Management (TSM) programs that will reduce peak-period trip generation by 20 percent or more from the vehicle trip generation currently observed at similar sites without a TSM program.

Policy TR-P10.4 Encourage Transportation Demand Management (TDM) programs that limit vehicle use, such as ridesharing and public transit, over those that extend the commute hour, such as flex-time and staggered work hours, to provide greater benefits to regional air quality.

Actions

Action TR-A10.1 Amend Chapter 10.60, Transportation System Management, of the Vacaville Municipal Code, to be in compliance with State law.

Goal TR-11 Support a comprehensive, convenient, and efficient transit system.

Policies

Policy TR-P11.1 Design transit routes to serve areas with the greatest need and meet the State-required farebox recovery rates so that State funding is not jeopardized.

Policy TR-P11.2 Encourage the expansion of an inter-city public transit/bus system to link Vacaville with neighboring communities.

Policy TR-P11.3 When financially feasible, support increased frequency and operational hours of public transit service consistent with current short- and long-range transit planning.

Policy TR-P11.4 Continue to work with Caltrans and the Solano Transportation Authority (STA) to identify and evaluate sites for parking to connect with transit and support rideshare parking, and establish standards for the development of parking sites for rideshare and transit users.

Policy TR-P11.5 Support and encourage Caltrans to preserve options for future transit use when designing improvements for Interstate and State highways.

Policy TR-P11.6 Remove physical barriers to improve access to transit facilities for the elderly, disabled, and other transit-dependent groups.

Policy TR-P11.7 Require specific plans in new growth areas to include planning for future public transit service to these areas by considering the addition of future transit stops and route connections as part of the public transportation system.

Freight Movement

Goal TR-12 Maintain roads for goods movement.

Policies

Policy TR-P12.1 Maintain existing truck routes.

Actions

Action TR-A12.1 Continue to implement the Extra-Legal Permit Program to limit truck traffic on local roads.

Action TR-A12.2 Continue to enforce designated truck routes to support truck loads and operations and implement the Extra-Legal Permit Program to appropriately route trucks on the City's roadway network and prioritize roadway design that is needed to support truck loads and operations.

4 CONSERVATION AND OPEN SPACE ELEMENT

State law requires that a General Plan include both a Conservation Element and an Open Space Element. The State-mandated Conservation Element is concerned with the conservation of natural resources, including plants and animal wildlife, water bodies and watersheds, forests, soils, minerals, and energy conservation. Since most natural resources are located in open space land, the City of Vacaville General Plan combines these two elements into one.

The purpose of the Conservation and Open Space Element is to ensure the comprehensive and long-range preservation and management of open space lands in and around the city for the protection of natural resources and as a scenic resource. The recreation amenities of open space lands are addressed in the Parks and Recreation Element. This Conservation and Open Space Element also addresses the protection of cultural resources, including paleontological resources, archaeological resources, historic resources, and Native American cultural resources. Lastly, this Element addresses air quality because clean air is an important natural resource and a vital component of a healthy environment.

This Element is divided into the following sections:

- Biological Resources
- Agricultural Resources
- Cultural Resources
- Scenic Resources
- Greenhouse Gases
- Energy Conservation
- Air Quality
- Water Resources
- Military Installations
- Mineral Resources

Each of these sections is divided into the following two subsections:

- **Background Information:** Provides background information about the various resources within Vacaville.
- **Goals, Policies, and Actions:** A list of goals, policies, and actions that provide guidance to the city related to decisions affecting the open space and resources addressed in this Element.

Requirements for the Conservation Element are established in Government Code Section 65302[d]. General Plans are to address "the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, rivers and other

waters, harbors, fisheries, wildlife, minerals, and other natural resources." Water as a hydraulic force, commercial fisheries, and harbors are not issues in Vacaville's Planning Area, and therefore are not addressed in this Element.

The State-mandated Open Space Element is concerned with the management of open space resources. Open space is defined as any parcel or area of public or private land or water that is essentially unimproved and undeveloped. Government Code Section 65560 describes six categories of open space:

- Open Space for the Preservation of Natural Resources
- Open Space for the Managed Production of Resources
- Open Space for Outdoor Recreation
- Open Space for Public Health and Safety
- Open Space in Support of the Mission of Military Installations
- Open Space for the Protection of Native American Sacred Sites

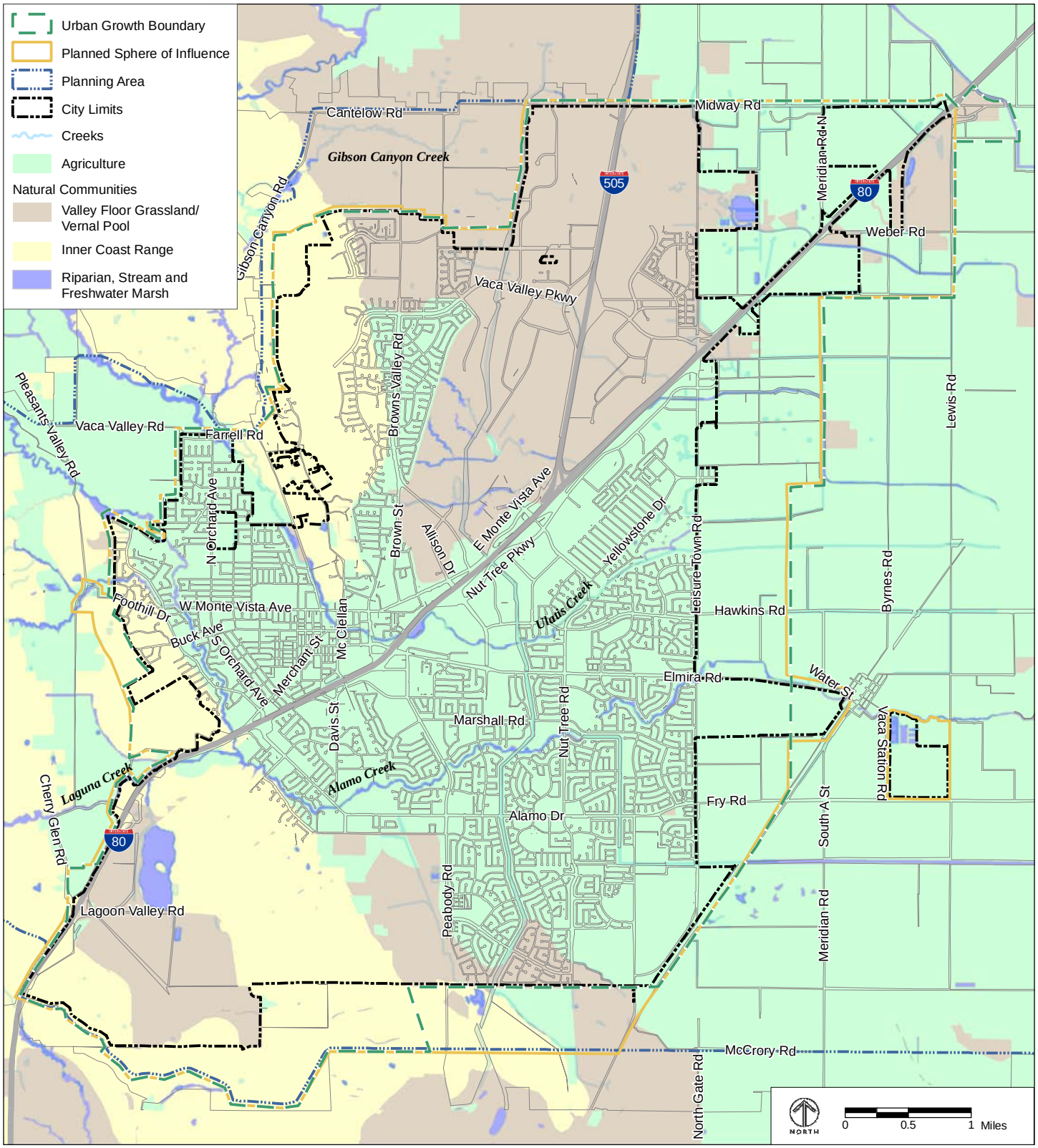
The types of open space in each of these categories and where they are addressed in this General Plan are identified in Table COS-1. Although the Government Code establishes what topics must be included in the Open Space Element, it does not dictate a specific organization for the Element.

Biological and Natural Resources

Background Information

Located at the transition zone between the Sacramento Valley to the east, and the Coast Ranges to the west, Vacaville features a rich diversity of plant and animal species and ***habitats***, which are the physical locations or types of environments in which an organism or biological population lives or occurs. As shown in Figure COS-1, in addition to agricultural areas, the city contains three broad ***natural community*** types – a distinctive group of different organisms that inhabit a common environment, interact with each other, and are relatively independent of other groups – that encompass a wide range of habitats. The distinction between the following natural community types and agriculture is based on soil types, land form, and land use.

- **Valley Floor Grassland and Vernal Pool Natural Community.** This community includes areas that currently support, or have historically supported, vernal pool habitats surrounding grasslands. This community includes known wetlands, including in the areas around Interstate 505 that are subject to various business park policy plans.
- **Inner Coast Range Natural Community.** This community consists of ridges and valleys within the Inner Coast Range that contain a number of plant communities, including grassland, oak woodland, oak savanna, and mixed chaparral/scrub brush.



SOURCE: Solano Habitat Conservation Plan (June 2012).

FIGURE COS-1

NATURAL COMMUNITY BOUNDARIES

TABLE COS-1 **GOVERNMENT CODE OPEN SPACE CATEGORIES**

Category	Addressed In:
Open Space for the Preservation of Natural Resources	
Plant and animal habitat areas	Conservation and Open Space Element, Biological and Natural Resources Section
Rivers, streams, lakes, and their banks	
Watershed lands	
Areas required for ecologic and other scientific purposes	
Open Space Used for the Managed Production of Resources	
Agricultural lands and rangelands	Conservation and Open Space Element, Agricultural Lands Section
Forest and timber lands	
Mineral resource production areas	Conservation and Open Space Element, Mineral Resources Section
Open Space for Outdoor Recreation	
Areas of outstanding historic or cultural value	Conservation and Open Space Element, Cultural Resources Section
Parks and other areas used for recreation	Parks and Recreation Element
Areas of outstanding scenic value	Conservation and Open Space Element, Scenic Resources Section
Scenic corridors, trails, and links between different open space areas	
Open Space for Public Health and Safety	
Areas requiring special management or regulation because of risks presented by natural hazards such as earthquakes or flooding	Safety Element
Open Space in Support of the Mission of Military Installations	
Areas associated with military bases	Conservation and Open Space Element, Military Installations Section
Open Space for the Protection of Native American Sacred Sites	
Local tribal lands	Conservation and Open Space Element, Cultural Resources Section
Any Native American cultural sites	

- **Riparian, Stream, and Freshwater Marsh Natural Community.** This community occurs within the other natural communities and encompasses all freshwater, aquatic, marsh, and riparian habitats. Alamo Creek and Ulatis Creek, two major riparian and stream habitats in Vacaville, have well-developed riparian plant communities, but the majority of the areas in Vacaville are dominated by non-native species. Although the riparian habitat within the city is narrow and characterized by a mix of native and non-native trees and shrubs, it provides important habitat linking the Vaca Mountains to the valley floor.

These three community types mirror those identified in the countywide Solano ***Habitat Conservation Plan (HCP)***, which is discussed further below. Though not officially classified as a formal community, intensive agriculture is a community that makes up a significant portion of the Vacaville area. It offers critical contributions to the natural environment, including important foraging and nesting habitat for many species, such as the Swainson's hawk and burrowing owl.

As a result of these diverse communities, varied and abundant wildlife occurs within and around the city. Since this diversity of natural communities and fauna includes many endangered, threatened, special-status, or otherwise sensitive species and habitats, Vacaville has implemented policies and actions to protect and conserve key areas and the overall natural environment, and is currently participating in the countywide HCP effort, as described below. In addition, in 1989, Vacaville adopted Resolution 1989-J-5, which approved the City's Creekways Policy. The Creekways Policy document addresses public access, open space, and drainage management along creeks.

Vacaville is a member agency for the Solano HCP. The HCP effectively shifts endangered species regulations compliance from the federal and State level, including the federal and State Endangered Species Acts, to the local level under the authority of a well-regulated, regional plan. The federal ***Endangered Species Act (ESA)*** protects listed animal species from "take," which is broadly defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in such conduct." Plants are legally protected under the ESA if take occurs on federal land or from federal actions, such as issuing a wetland fill permit. The federal ESA is administered by the US Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). The ***California Endangered Species Act (CESA)*** also protects listed species from "take." The State and federal lists of threatened and endangered species are generally similar; however, a species present on one list may be absent from the other. CESA regulations are also somewhat different from the federal ESA in that the State regulations include threatened and endangered plants on non-federal lands within the definition of "take." The California Department of Fish and Wildlife (CDFW) administers CESA.

The HCP addresses 37 threatened and endangered species, many of which occur in and around Vacaville, such as the Swainson's hawk, burrowing owl, vernal pool fairy shrimp, and California tiger salamander. The HCP will implement conservation measures to ensure the protection of these species and their habitat within the HCP area. In addition, the HCP conservation actions provide significant benefit for an additional 35 species identified as "Special Management Species." Special Management Species include species that may be considered by the ***California Environmental Quality Act (CEQA)*** – California legislation that requires environmental review for projects anticipated to result in adverse impacts to the environment – to be threatened or endangered, but insufficient information is available on their status to receive the protections and assurances provided through federal HCP regulations. Table COS-2 includes the threatened and endangered species and Special Management Species addressed in the Solano HCP that are known or could potentially occur

TABLE COS-2 **SPECIAL STATUS SPECIES IN THE VACAVILLE AREA**

Common Name (*Scientific Name*)	Status Federal/ State/RPR	Natural Community Associations
Ferris's milk-vetch *Astragalus tener var. ferrisiae*	–/–/1B	VFG&VP
Alkali milk-vetch *Astragalus tener. var. tener*	–/–/1B	VFG&VP
Heartscale *Atriplex cordulata*	–/–/1B	VFG&VP
Brittlescale *Atriplex depressa*	–/–/1B	VFG&VP
San Joaquin spearscale *Atriplex joaquiniana*	–/–/1B	VFG&VP
Vernal pool smallscale *Atriplex persistens*	–/–/1B	VFG&VP
Big-scale balsamroot *Balsamorhiza macrolepis* var. *macrolepis*	–/–/1B	ICR
Big tarplant *Blepharizonia plumose*	–/–/1B	ICR
Mt. Diablo fairy-lantern *Calochortus pulchellus*	–/–/1B	ICR
Holly-leaved ceanothus *Ceanothus purpureus*	–/–/1B	ICR
Pappose tarplant *Centromadia parryi* ssp. *parryi*	–/–/1B	VFG&VP
Hispid bird's-beak *Cordylanthus mollis* ssp. *mollis*	–/–/1B	VFG&VP
Recurved larkspur *Delphinium recurvatum*	–/–/1B	VFG&VP
Dwarf downingia *Downingia pusilla*	–/–/1B	VFG&VP
Mt. Diablo buckwheat *Eriogonum truncatum*	–/–/1B	ICR
Fragrant fritillary *Fritillaria liliacea*	–/–/1B	ICR and VFG&VP
Adobe-lily *Fritillaria pluriflora*	–/–/1B	ICR
Boggs Lake hedge-hyssop *Gratiola heterosepala*	–/SE/1B	VFG&VP
Brewer's western flax *Hesperolinon breweri*	–/–/1B	ICR
Carquinez goldenbush *Isocoma arguta*	–/–/1B	VFG&VP
Northern California black walnut *Juglans hindsii*	–/–/1B	ICR
Contra Costa goldfields *Lasthenia conjugens*	FE/–/1B	VFG&VP
Legenere *Legenere limosa*	–/–/1B	VFG&VP
Heckard's pepper-grass *Lepidium latipes* var. *heckardii*	–/–/1B	VFG&VP
Baker's navarretia *Navarretia leucocephala* ssp. *bakeri*	–/–/1B	VFG&VP
Colusa grass *Neostapfia colusana*	FT/SE/1B	VFG&VP
San Joaquin Valley orcutt grass *Orcuttia inaequalis*	FT/SE/1B	VFG&VP
Bearded popcorn-flower *Plagiobothrys hystriculus*	–/–/1A	VFG&VP
Rayless ragwort *Senecio aphanactis*	–/–/2	ICR
Slender-leaved pondweed *Stuckenia filiformis*	-/-/2	RSFWM
Showy Indian clover *Trifolium amoenum*	FE/–/1B	ICR
Saline clover *Trifolium depauperatum* var. *hydrophilum*	–/–/1B	VFG&VP

TABLE COS-2 **THREATENED, ENDANGERED, AND SPECIAL MANAGEMENT SPECIES** *(CONTINUED)*

Common Name (*Scientific Name*)	Status Federal/ State/RPR	Natural Community Associations
Crampton's tuctoria or Solano grass *Tuctoria mucronata*	FE/SE/1B	VFG&VP
Animals		
Invertebrates		
Conservancy Fairy Shrimp *(Branchinecta conservation)*	FE / –	VFG&VP
Vernal pool Fairy Shrimp *(Branchinecta lynchi)*	FT / –	VFG&VP
Mid Valley Fairy Shrimp *(Branchinecta mesovalleyensis)*		VFG&VP
Delta Green Ground Beetle *(Elaphrus viridis)*	FE and CH / –	VFG&VP
Valley Elderberry Longhorn Beetle *(Desmocerus californicus dimorphus)*	FT and CH / –	RSFWM
Ricksecker's water scavenger beetle (*Hydrochara ricksecker*i)	– / –	VFG&VP
Vernal pool Tadpole Shrimp *(Lepidurus packardi)*	FT / –	VFG&VP
Wilbur Springs shore bug *Saldula usingeri*	- / -	RSFWM
Fish		
Chinook Salmon - Winter-run *Oncorhynchus tshawtyscha*	FE / SE	RSFWM
Chinook Salmon-Central Valley fall/late fall-run Evolutionary Significant Unit (ESU) *Oncorhynchus tshawtyscha*	Candidate / –	RSFWM
Chinook Salmon – Spring-Run *Oncorhynchus tshawtyscha*	FT / CSC	RSFWM
Steelhead – Central California Coast ESU *Oncorhynchus mykiss*	FT / –	RSFWM
Amphibians/Reptiles		
California tiger salamander (*Ambystoma californiense*)	FT/ ST	VFG&VP and ICR
Western pond turtle (*Actinemys marmorata*)	– /CSC	RSFWM, ICR, and VFG&VP
Foothill yellow-legged frog (*Rana boylii*)	– / CSC	RSFWM and ICR
Birds		
Tricolored blackbird (*Agelaius tricolor)*	– / CSC	RSFWM, VFG&VP, ICR, & Agriculture
Swainson's Hawk (*Buteo swainsoni*)	– / ST	Agriculture, VFG&VP, ICR, & RSFWM
Mountain Plover *Charadrius montanus*	– / CSC	VFG&VP,
Short-eared owl (*Asio flammeus*)	– / CSC	Agriculture, RSFWM, & VFG&VP
Golden eagle (*Aquila chrysaetos*)	– / CSC; CP	ICR & VFG&VP
Burrowing owl (*Athene cunicularia)*	– / CSC	Agriculture, VFG&VP, and ICR
Northern harrier (*Circus cyaneus)*	– / CSC	RSFWM, VFG&VP, ICR, and Agriculture
Yellow warbler (*Dendroica petechia brewsteri*)	–/ CSC	RSFWM
Yellow-breasted Chat *Icteria virens*	–/ CSC	RSFWM
White-tailed kite (*Elanus leucurus*)	– / CP	RSFWM, VFG&VP, ICR, and Agriculture

TABLE COS-2 **THREATENED, ENDANGERED, AND SPECIAL MANAGEMENT SPECIES** *(CONTINUED)*

Common Name (*Scientific Name*)	**Status Federal/ State/RPR**	**Natural Community Associations**
Grasshopper sparrow *Ammodramus savannarum*	–/ CSC	VFG&VP
Song sparrow-Modesto population *Melospiza melodia*	–/ CSC	RSFWM and VFG&VP
American peregrine falcon (*Falco peregrinus anatum*)	Delisted/SE	
Yellow-headed blackbird *Xanthocephalus xanthocephalus*	– / CSC	RSFWM, VFG&VP, ICR, and Agriculture
Loggerhead shrike *Lanius ludovicianus*	– / CSC	VFG&VP, ICR, Agriculture, and RSFWM
Mammals		
Pallid bat *Antrozous pallidus*	– / CSC	RSFWM, VFG&VP, ICR, and Agriculture
Townsend's big-eared bat *Corynorhinus townsendii*	– / CSC	RSFWM, VFG&VP, ICR, and Agriculture
Greater western mastiff-bat *Eumops perotis californicus*	– / CSC	RSFWM, VFG&VP, ICR, and Agriculture
Western red bat *Lasiurus blossevillii*	– / CSC	RSFWM, VFG&VP, ICR, and Agriculture

Status Designations

Federal:
FE = Listed as "endangered" under the federal Endangered Species Act.
FT = Listed as "threatened" under the federal Endangered Species Act.
PE = Proposed for federal listing as "endangered."
PT = Proposed for federal listing as "threatened."
C = A candidate species under review for federal listing Candidates include taxa (i.e. taxonomic categories) for which the USFWS has sufficient biological information to support a proposal to list as endangered or threatened.

State:
SE = Listed as "endangered" under the California Endangered Species Act.
ST = Listed as "threatened" under the California Endangered Species Act.
CP = California fully protected species; individual may not be possessed or taken at any time.
CSC = Considered a "Species of Special Concern" by the CDFW.

California Rare Plant Rank (RPR)
1A = Plants of highest priority; plants presumed extinct in California.
1B = Plants of highest priority; plants rare and endangered in California and elsewhere.
2 = Plants rare, threatened, or endangered in California, but more common elsewhere.
3 = Plants requiring additional information; a review list.
4 = Plants of limited distribution; a watch list.

Natural Community Abbreviations
VFG&VP = Valley floor grassland and vernal pool
ICR = Inner coast range
RSFWM = Riparian, stream, and freshwater marsh

in the Vacaville area. Table COS-2 also identifies other special status species potentially present in the Vacaville area that are not addressed in the Solano HCP.

Goals, Policies, and Actions

Goal COS-1	**Protect and enhance habitat for sensitive species and natural communities.**

Policies

Policy COS-P1.1 Support the Solano County Water Agency and federal and State agencies' efforts to prepare and implement the Solano Habitat Conservation Plan (HCP).

Policy COS-P1.2 Manage natural open space lands, where feasible, in a manner consistent with wildlife protection.

Policy COS-P1.3 Protect the existing wildlife movement corridors within the designated Vacaville-Fairfield Greenbelt area and create new wildlife corridors, including creek corridors and utility easements, where feasible, to enable free movement of animals, to minimize wildlife-urban conflicts, and to establish open space linkages.

Policy COS-P1.4 Continue to protect mature trees and existing native non-agricultural trees.

Policy COS-P1.5 Require new development proposals to provide baseline assessments prepared by qualified biologists. The assessment shall contain sufficient detail to characterize the resources on, and adjacent to, the development site. The assessment shall also identify the presence of important and sensitive resources, such as wetlands, riparian habitats, and rare, threatened, or endangered species affected by the development.

Policy COS-P1.6 Require that new development minimize the disturbance of natural habitats and vegetation. Require revegetation of disturbed natural habitat areas with native or non-invasive naturalized species.

Policy COS-P1.7 Encourage new development to incorporate native vegetation into landscape plans.

Policy COS-P1.8 Prohibit the use of invasive, non-native species, as identified by the State or County Department of Agriculture or other authoritative sources, in landscaping on public property or in common areas in private developments.

Policy COS-P1.9 Require that new development include provisions to protect and preserve wetland habitats that meet one of the following conditions:

- The wetlands contribute to the habitat quality and value of reserve/preserve lands established or expected to be established in perpetuity for conservation purposes.
- The wetlands are contiguous to riparian or stream corridors, or other permanently protected lands.
- The wetlands are located within or contiguous to other high value natural areas.

Policy COS-P1.10 Where avoidance of wetlands is not practicable or does not contribute to long-term conservation of the resources, require new development to provide for off-site mitigation that results in no net loss of wetland acreage and functional value within the watersheds draining to the Delta or Suisun Marsh.

Policy COS-P1.11 Require that, as appropriate, new policy plans or specific plans contain a resource management component and associated funding mechanisms that includes policies to protect preserved natural communities.

Policy COS-P1.12 Until the Solano Habitat Conservation Plan (HCP) is adopted, comply with all of the Avoidance, Minimization, and Mitigation Measures listed in the Draft Solano HCP (see Appendix A for a list of the Avoidance and Minimization Measures that are applicable to Vacaville). In addition, require that development projects provide copies of required permits, or verifiable statements that permits are not required, from the California Department of Fish and Wildlife (2081 Individual Take Permit) and US Fish and Wildlife Service (Section 7 Take Authorization) prior to receiving grading permits or other approvals that would permit land disturbing activities and conversion of habitats or impacts to protected species. In cases where environmental review indicates that such permits may not be required, the Community Development Director may establish time limits of not less than 45 days from the submission of an adequate request for concurrence response from an agency. If the agency has not responded, or requested a time extension of no more than 90 days to complete their assessment, within the established time frame, applicable grading permits or other authorizations may be provided, subject to other City requirements and review. However, the City's issuance of grading permits or other authorizations does not absolve the applicant's obligations to comply with all other State and federal laws and regulations.

Policy COS-P1.13 Require that new development avoid the loss of special-status bat species as feasible.

Policy COS-P1.14 Require that new development that would result in the loss or conversion of woodland resources develop and implement a plan that clusters impacts in order to reduce tree removal and impacts to trees to the maximum extent feasible.

Actions

Action COS-A1.1 Adopt and implement the requirements of the Solano Habitat Conservation Plan (HCP) once it is approved. If the Solano HCP is not adopted, develop standardized policies for conserving natural communities affected by development.

Action COS-A1.2 Develop and implement programs to identify invasive, non-native species and prohibit the use of such species in landscaping in order to prevent them from becoming established or expanding their populations within the city.

Action COS-A1.3 Amend Section 14.09.131, Supplemental Standards, Tree Preservation, of the Land Use and Development Code to include tree protection measures for native trees and woodland habitat.

Action COS-A1.4 Amend the Land Use and Development Code to require all new specific plans, and the Residential Design Requirements for New Single-Family Development to include a resource management component that protects and preserves natural communities, encourages the use of native drought-resistant California vegetation in landscape plans, and establishes street tree planting standards for new development.

Action COS-A1.5 Adopt a citywide open space management plan that identifies ways to protect wildlife, including the protection and enhancement of existing wildlife movement corridors.

Action COS-A1.6 Amend the Land Use and Development Code to establish the following protections for special-status bat species:

- An approved biologist shall conduct pre-construction roost surveys between March 1 and August 31 to identify any roosting bats, and ensure that surveys are conducted within 30 days prior to the anticipated removal of habitat.
- If a maternity roost is encountered during a pre-construction survey, demolition of the roost shall wait until September 15 when the young can live independently of the adults. Prior to demolition,

the bats shall be excluded by an experienced expert. If the roost is not a maternity roost, then the bats shall be excluded from the roost by the certified expert prior to demolition.

- A bat roost shall be recreated within 5 miles of the project site. A conservation easement shall be placed on the mitigation bat roost to ensure that it is not destroyed. The bat roost shall be monitored until it can be demonstrated that bats have used the mitigation roost for three consecutive years. An endowment shall be established in sufficient quantity to provide for the maintenance of the bat roost. The City of Vacaville shall approve the quantity of the endowment.

Action COS-A1.7 Amend the Land Use and Development Code to require that new development mitigate all impacted oak woodland and oak savanna habitats by preserving oak woodland and oak savanna habitat with similar tree canopy densities at a 3:1 ratio (preservation: impact).

Action COS-A1.8 Amend the Land Use and Development Code to require that applicants for development projects that would impact oak woodland and oak savanna prepare and implement a long-term management plan for oak woodland and oak savanna areas that are protected as open space and a mitigation plan to address short-term impacts. Funding for the short-term mitigation and long-term management of these areas shall also be provided. The plans, at a minimum, shall incorporate the following:

- The plans shall be prepared by a qualified person(s) experienced in the development and implementation of grassland and oak woodland restoration, mitigation, and management plans.
- A mitigation plan for an oak woodland area shall include vegetation management, site preparation, exotic species removal, site grading, erosion control, and revegetation of disturbed areas outside of development envelopes. Any revegetation program shall use plant materials indigenous to this region.
- The mitigation plan shall specify a construction and five-year post-construction maintenance and monitoring program by a qualified restoration team to ensure that the project goals and performance standards are met. The monitoring program shall include provisions for remedial action as needed to correct deficiencies. Annual reports and a final report, prepared by the property owner and subject to approval by the local lead agency and the Department of Fish and Game, shall document the success of the revegetation. If the revegetation is not successful, an additional period of correction and monitoring shall be specified.

- The management plan shall clearly identify the plan's goals focusing on vegetation (e.g. stability, succession, reproduction, and non-native species) and wildlife (e.g. habitat quality and species diversity) issues.
- The management plan shall specify maintenance requirements and the responsibility for implementation, long term ownership and/or management responsibility, and a funding mechanism.

Action COS-A1.9 Amend Chapter 14.09.131 of the Land Use and Development Code (Tree Preservation) to require the replacement of protected trees removed as part of a new development project as follows:

- Native Trees:
  - Native trees with a diameter at breast height (dbh) of 6 to 10 inches shall be replaced at a ratio of two replacement trees to one removed tree (2:1).
  - Native trees with a dbh of 10.1 to 18 inches shall be replaced at a ratio of 4:1.
  - Native trees with a dbh of 18.1 to 36 inches shall be replaced at a ratio of 6:1.
  - Native trees with a dbh over 36 inches shall be replaced at a ratio of 8:1.
- Non-Native Trees:
  - Trees with a dbh of 6 to 10 inches shall be replaced at a ratio of 1:1.
  - Trees with a dbh of 10.1 to 18 inches shall be replaced at a ratio of 2:1.
  - Trees with a dbh of 18.1 to 36 inches shall be replaced at a ratio of 3:1.
  - Trees with a dbh over 36 inches shall be replaced at a ratio of 4:1.

City staff shall address mitigation for the removal of eucalyptus trees on a case-by-case basis.

The mitigation trees shall be derived from local stock. A mitigation plan shall be developed by a biologist or professional arborist in order to ensure the long-term survival of the native plantings and City staff shall review mitigation plans on a case-by-case basis. The mitigation plan shall include the location of planting, planting techniques, need for irrigation, monitoring, maintenance, performance standards, and annual reporting. Monitoring shall be done for at least five years after planting to verify that at five years after planting, 80 percent of planted replacement trees shall be established. "Established trees" means trees that are not hazardous, diseased, or a nuisance.

Action COS-A1.10 Amend Chapter 14.09.131 of the Land Use and Development Code (Tree Preservation) to require that a tree protection zone be established on a new development site adjacent to work areas to mitigate potential damage to native trees on the site during construction activities. Usually a tree protection zone encompasses the edge of the canopy. A professional arborist shall be consulted prior to construction regarding the specifications of the tree protection zone and the appropriate care for trees before, during, and after construction. Trees whose roots are damaged by the project shall be monitored for five years after the end of construction. Those trees that die within the five-year monitoring period shall be replaced with three native trees. These new replacement trees shall be covered by the mitigation plan described in Action COS-A1.8.

Goal COS-2 Preserve and restore Vacaville's creeks.

Policies

Policy COS-P2.1 Discourage undergrounding of creeks and encourage daylighting of existing culverted creeks.

Policy COS-P2.2 Protect existing stream channels and riparian vegetation by requiring buffering or landscaped setbacks and storm runoff interception.

Policy COS-P2.3 Require creekway and riparian area protection during construction, such as providing adequate setbacks from the creek bank and riparian areas, and creekway and riparian area restoration after construction.

Policy COS-P2.4 Implement the City's Creekways Policy in all new development approvals to balance recreation and conservation within creekway areas. Integrate creeks with trails and other recreational open space, and encourage public access along creek corridors where compatible with protection of the creek's natural resources and flood control functions.

Policy COS-P2.5 Encourage restoration and expansion of riparian and floodplain habitat within channelized streams and flood channels where feasible, such as old Alamo Creek and old Ulatis Creek channels east of Leisure Town Road.

Policy COS-P2.6 Promote invasive species control programs to reduce potential for infestations to occur and incorporate control programs as part of on-going operational and maintenance activities along creek corridors.

Policy COS-P2.7 Require creek areas in new developments to be visible from the public right-of-way to ensure safety, maintenance, access, and integration into the neighborhood.

Actions

Action COS-A2.1 Develop a creek protection ordinance requiring development setbacks from creeks and protection of the creeks and associated riparian habitats during construction, and restoration after construction. As part of this ordinance, implement programs to limit invasive non-native species from becoming established or expanding within the city, and evaluate public access along creekways to ensure protection of habitat resources and to ensure public safety within creek setback areas. Update the City's Creekways Policy to be consistent with the creek protection ordinance.

Action COS-A2.2 Establish a single maintenance district to ensure uniform maintenance, management, and invasive species control for selected channels and creeks.

Agricultural Lands

Background Information

Like most cities in Solano County, Vacaville was built on agricultural land. Whereas the city's economy once thrived on agriculture, the city has since become urban and diversified. The economic importance of agriculture within Vacaville has diminished, as illustrated by the very few remaining agricultural acres within the city limit. However, given the importance of agriculture in the region, agriculture still contributes to Vacaville's economy and culture.

A significant amount of agricultural land exists immediately outside of the Vacaville city limit and within the Planning Area. The State Department of Conservation (DOC) maps and categorizes farmland within the State. Within the Planning Area, the DOC identifies prime farmland, farmland of statewide importance, unique farmland, and grazing land; these classifications are described as follows:

- ***Prime Farmland*** has the best combination of physical and chemical features able to sustain long-term agricultural production. Prime farmland has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agriculture production at some time during the four years prior to the mapping date.
- ***Farmland of Statewide Importance*** is similar to prime farmland, but with minor shortcomings, such as steeper slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- ***Unique Farmland*** consists of lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated, but may include non-irrigated

orchards or vineyards as found in some climatic zones in California. Land must have been farmed at some time during the four years prior to the mapping date.

- ***Grazing Land*** is the land on which the existing vegetation is suited to the grazing of livestock.

The majority of agricultural land within the Planning Area is classified as prime farmland. Table COS-3 lists the number of acres within the Planning Area in each classification. As shown in Figure COS-2, most of the prime farmland is located on the eastern side of the Planning Area. Throughout the western and southern limits of the Planning Area, the agricultural land is predominantly grazing land, with the exception of prime farmland along Vaca Valley Road, west of the city limit and between Cherry Glen Road and Interstate 80.

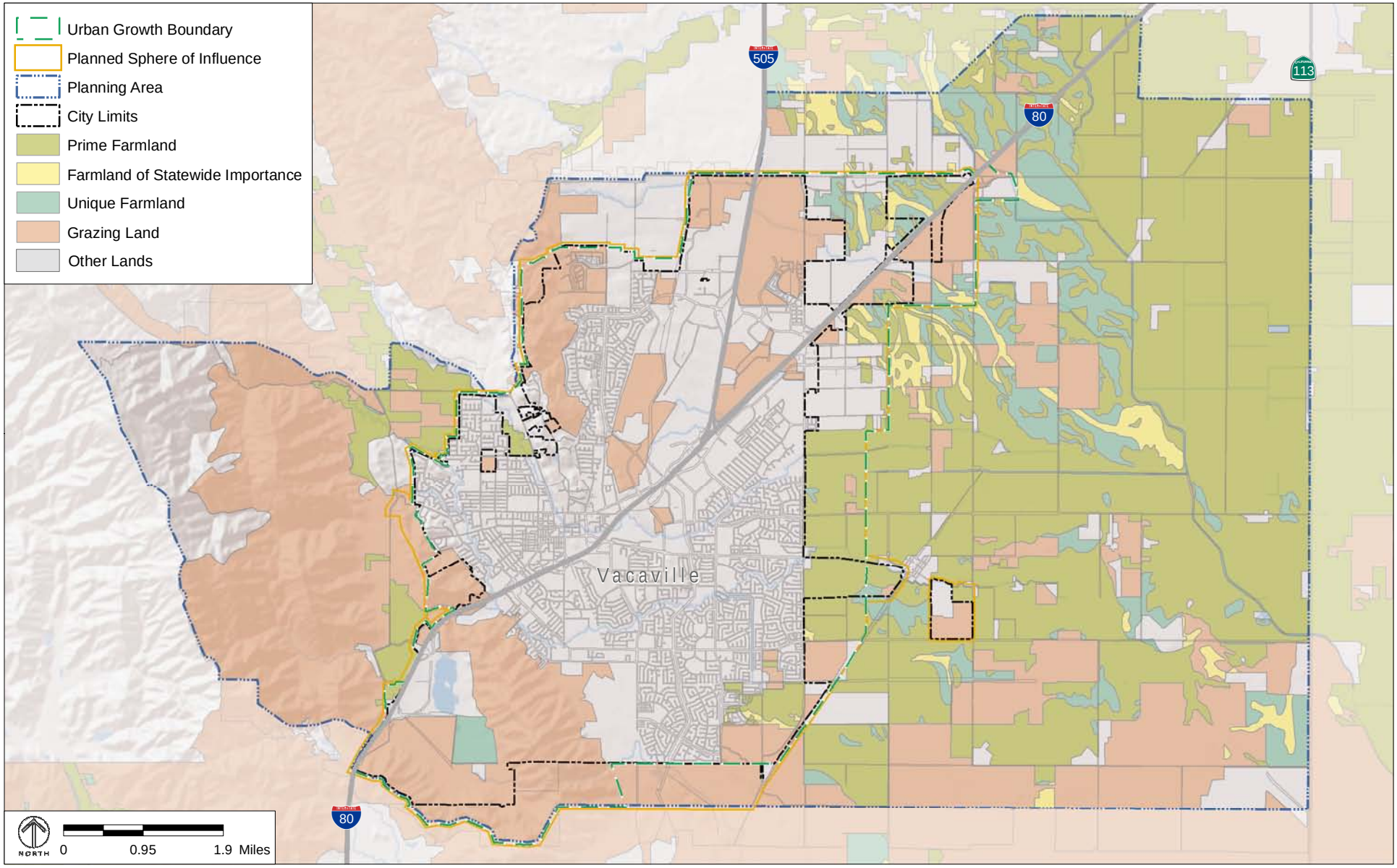
In addition, the Vacaville Planning Area includes lands protected under ***Williamson Act*** contracts, a State incentive to retain prime agricultural land and open space in agricultural use. These contracts preserve land in agricultural use for ten years and are adopted by land owners on a voluntary basis in exchange for tax benefits. According to Solano County, as of December 2009, there are approximately 27,000 acres of agricultural lands under Williamson Act contracts within the Vacaville Planning Area, including 1,200 acres within the Sphere of Influence. These numbers include both lands currently held in active contracts and those that have filed for non-renewal.

Goals, Policies, and Actions

Goal COS-3	**Support Solano County efforts to preserve existing agricultural lands located in the Planning Area.**

Policies

Policy COS-P3.1	Maintain a compact urban form and locate new development to minimize the loss of agricultural and open space resources.
Policy COS-P3.2	Support the preservation of land under Williamson Act contracts within the Vacaville Planning Area.
Policy COS-P3.3	Encourage the continued agricultural use of land within the Planning Area that is currently being used for agricultural purposes.
Policy COS-P3.4	Work cooperatively with non-profit organizations, such as land trusts, to preserve agricultural land in the Planning Area, as shown on Figure LU-6 in the Land Use Element.



Source: City of Vacaville, 2011; California Farmland Mapping and Monitoring Program, 2010

FIGURE COS-2

IMPORTANT FARMLANDS

TABLE COS-3 **AGRICULTURAL LANDS WITHIN THE PLANNING AREA**

Classification	Acres
Prime Farmland	19,809
Farmland of Statewide Importance	1,430
Unique Farmland	3,888
Grazing Land	18,581
Total	**43,708**

Source: Department of Conservation, Farmland Mapping and Monitoring Program GIS data, 2010)

Actions

Action COS-A3.1 Adopt an Agriculture Preservation Policy that addresses the width, location, and allowed uses in the agricultural buffer, and addresses the right-to-farm.

Goal COS-4 Minimize conflicts between agricultural and urban uses.

Policies

Policy COS-P4.1 Within the area east of Leisure Town Road, south of the Locke Paddon Community, and north of the railroad tracks, as shown in Figure LU-6 in the Land Use Element, require new development to maintain a 300- to 500-foot wide agricultural buffer along the eastern boundary of all residential development and existing agricultural lands. Require that uses within the agricultural buffer be limited to passive open space uses that are not accessed by a large number of employees or the general public at one time. Permitted uses within the buffer shall be limited as described below:

- Any portion of the buffer located inside the Urban Growth Boundary, adjacent to the Pacific Gas & Electric Company easement, shall contain substantial landscaping to discourage unlawful access onto the agricultural lands, and to lessen the potential impacts of typical agricultural activities on residential uses. Passive recreational uses such as pedestrian and bicycle trails are permitted.
- Uses located outside of the Urban Growth Boundary, within the 385-foot wide Pacific Gas & Electric Company easement, shall be limited to public infrastructure improvements necessary or appropriate to serve or protect existing and new permitted uses within the Urban

Growth Boundary, including but not limited to, alternative energy facilities, stormwater detention basins, water tanks (reservoirs), and sewer and water lines to accommodate buildout of the Vacaville General Plan.

Policy COS-P4.2 For interim residential development in areas east of Leisure Town Road, as described in Policy COS-P4.1, while adjacent agricultural operations are still on-going, require a disclosure to residents that agricultural operations happen nearby and that they will be exposed to impacts from such operations, such as dust, noise, and odors.

Policy COS-P4.3 Require that the cost of agricultural buffer creation and on-going maintenance be funded by new development in areas east of Leisure Town Road, as described in Policy COS-P4.1.

Policy COS-P4.4 Require property owners within the areas east of Leisure Town Road, as described in Policy COS-P4.1, who own property located outside of the Urban Growth Boundary, adjacent to the Agricultural Buffer, to use this land as mitigation for the loss of agricultural lands resulting from the development of their property east of Leisure Town Road.

Policy COS-P4.5 Consistent with the City's Master Water Agreement with the Solano Irrigation District, which is discussed further in the Land Use Element, prohibit the conversion of agricultural buffer lands to developed urban uses.

Policy COS-P4.6 Require non-residential uses in the Northeast Growth Area to provide on-site agricultural buffers, such as larger landscaped setbacks and plantings, to prevent conflicts between agricultural and non-residential urban uses. Specific Plans for Technology Parks / Business Parks shall incorporate design standards to provide these on-site buffers.

Actions

Action COS-A4.1 Adopt an Agricultural Buffer Policy and zoning district.

Action COS-A4.2 Adopt a right-to-farm ordinance that informs homebuyers near agricultural operations of the possible negative effects of living near active agricultural operations, such as noise, dust, and spraying.

Goal COS-5 Provide local produce to Vacaville residents.

Policies

Policy COS-P5.1 Encourage, maintain, and enhance the Vacaville Farmer's Market and explore ways to expand the market to other locations.

Actions

Action COS-A5.1 Research the formation of an agricultural co-operative for specialty crops to make use of economies of scale and thereby minimize the barriers to providing local crops to Vacaville residents.

Cultural Resources

Background Information

Paleontological Resources

Vacaville lies in a geological transition zone between the Sacramento Valley to the east and the Coast Ranges to the west. The deposits underlying the Vacaville area comprise a variety of rock types dating from various geologic periods, with certain formations containing fossils, some of which may be paleontologically significant. Fossils are the preserved remains of ancient organisms. Mineralized organisms are the most commonly known type of fossils and usually consist of hard material such as bone, shell, and wood. Many common fossils have shapes that can look very bone-like and are usually preserved after being quickly buried in sediment.

Archaeological Resources

Solano County is known for having had a relatively high population density in prehistoric times. The Patwin peoples controlled the area west of the Sacramento River to the crest of the Coast Ranges. The Patwin lived by hunting, fishing, and gathering, and inhabited semi-permanent villages, the remnants of which have been found in the hills around Vacaville. The California Historical Resources Information System identifies dozens of recorded prehistoric archaeological resources in the Vacaville area. These resources consist of the following: habitation sites, containing evidence of resource procurement and social organization; burial sites; bedrock mortars, representing use of technology in food processing; and isolated stone tools, found in contexts other than typical archaeological sites.

Historic Resources

The town of Vacaville was established in 1851, and by the end of that year had a population of 580. During the mid to late 19th century, livestock and wheat production were the principal economic products in the county. The completion of nearby railroads in the late 1860s provided a way for ranchers to get their crops to market, but the higher cost of rail transport coupled with increased competition led to the decline of the area's wheat industry during the 1880s. Subsequently, Solano County farmers turned to other crops, most of which, like vineyards and row crops, required irrigation. While rail transport had contributed to the decline of wheat production, the ease of access it provided gave a boost to produce

farming. By the 1890s, Vaca Valley and the foothills of the Vaca Mountains were covered with orchards encompassing almost all of the available non-irrigated land, and in 1892, Vacaville was formally incorporated.

After peaking in the mid-1910s, fruit production in the Vacaville area declined due to drought and soil depletion, competition during the Great Depression, and overproduction for the World War I war effort. In the mid-20th century, new employers arrived in the area, resulting in explosive growth in Vacaville. The now defunct Basic Vegetable Products company located a 1,000-worker onion dehydrating facility in Vacaville, and in 1942, Suisun Air Base (now Travis Air Force Base) was established just to the south of Vacaville.

The Vacaville area contains over 200 identified historic resources, including the Peña Adobe, Will H. Buck House, Vacaville Town Hall, the site of the First Vacaville Buddhist Church, Pleasants/Hoskins Ranch district, and Vaca Adobe, which are all listed in the National Register. In addition to the Pleasants/Hoskins Ranch district, the City has identified the following five other historic districts, each as an aggregation of resources related by a common historical theme:

- Buck Avenue District, which includes 15 contributing buildings on the 100, 200, and 300 blocks of Buck Avenue.
- Monte Vista Avenue District, which includes nine contributing buildings on Bush Street and East Monte Vista Avenue.
- 100/200 Block of Kendal Street, which includes 14 contributing buildings.
- 300/400 Block of Kentucky Street, which includes seven contributing buildings.
- Parker Addition, which includes 56 contributing buildings on Boyd Street, Catherine Street, Davis Street, Elizabeth Street, Stevenson Street, and William Street.

The City has also designated the Downtown and a parcel containing a building that served as St. Mary's Catholic Church from 1930 to 1956 as historical preservation zones with design standards to enhance the historical characters of these areas.

Native American Tribal Cultural Resources

Native American tribal cultural resources include sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe. While some tribal cultural resources include physical archaeological resources, described above, cultural resources are not limited to physical resources that have scientific significance. Tribal cultural resources also include cultural landscapes and non-unique archeological resources. Non-unique resources are resources that are deemed culturally significant to a tribe, but do not contain information needed for scientific purposes, and may not be the best specimen in terms of quality, uniqueness, or age.

Aside from the prehistoric archaeological resources discussed above, no Native American tribal cultural resources have been identified by records searches, literature reviews, and

consultation with interested parties. However, because the Vacaville area was part of the ancestral territory of Native Americans, there are likely unrecorded cultural resources that may be valued by Native American Tribes for reasons other than scientific significance. To ensure that tribal cultural resources are not impacted by development, the City will continue to consult with the Native American Tribes with ancestral ties to the Vacaville area.

Goals, Policies, and Actions

Goal COS-6	**Protect and enhance cultural resources for their aesthetic, scientific, educational, and cultural values.**

Policies

Policy COS-P6.1	Consult with those Native American Tribes with ancestral ties to the Vacaville city limits regarding proposed new development projects and land use policy changes.
Policy COS-P6.2	Require that a records search of the California Historical Resources Information System be conducted and reviewed by a cultural resources professional for proposed development areas to determine whether the site contains known prehistoric or historic cultural resources and the potential for as-yet-undiscovered cultural resources.
Policy COS-P6.3	Require that areas found to contain significant historic or prehistoric artifacts be examined by a qualified consulting archaeologist or historian for appropriate protection and preservation.
Policy COS-P6.4	Require that if cultural resources, including archaeological or paleontological resources, are uncovered during grading or other on-site excavation activities, construction shall stop until appropriate mitigation is implemented.
Policy COS-P6.5	Require that any archaeological or paleontological resources on a development project site be either preserved in their sites or adequately documented as a condition of removal. When a development project has sufficient flexibility, avoidance and preservation of the resource shall be the primary mitigation measure, unless the City identifies superior mitigation. If resources are documented, coordinate with descendants and/or stakeholder groups, as warranted.
Policy COS-P6.6	Treat human remains discovered during implementation of public and private projects within the city with respect and dignity.

Policy COS-P6.7 Continue to preserve historic resources by delineating historic preservation districts in the Land Use and Development Code and requiring design review of proposals affecting historic buildings.

Policy COS-P6.8 Continue to require new buildings in historic districts to be complementary to the character of the existing buildings.

Actions

Action COS-A6.1 Consult with Native American Tribes with ancestral ties to Vacaville to discuss tribal cultural resources and to create agreed upon parameters defining what type of projects will be routinely referred to the Tribes (e.g. project types, projects located in specific geographic locations).

Goal COS-7 Protect and enhance the historic value of the Downtown area.

Policies

Policy COS-P7.1 Continue to encourage the rehabilitation, restoration, and reconstruction of designated historic structures in the Downtown historic district to preserve the architectural, historical, and cultural significance of those buildings.

Policy COS-P7.2 Allow existing historic structures and properties in the Downtown that exceed currently allowed densities to remain at their existing density, even if uses change or the property is substantially rehabilitated, in order to preserve the historic nature of the property.

Policy COS-P7.3 Allow existing residential uses that qualify as historic resources to remain on parcels designated Commercial General in the Downtown area if those residential uses contribute to the historic nature of the property.

Actions

Action COS-A7.1 Hire a cultural resources professional to study the creation of a Historic Preservation District for the residential areas west of Downtown. Use the results of this study to determine whether the district should be established.

Scenic Resources

Background Information

Vacaville's scenic resources are a valued local asset for the community. Views of and from the city serve to situate the community in its local environment and landscape, and comprise an important element of Vacaville's quality of life.

Most of Vacaville's scenic resources are associated with the open space, natural resources, and agricultural uses of the Planning Area. Such areas include the ***riparian corridors*** - the habitat and vegetation zones associated with the banks and floodplains of a river, stream, or lake - that run throughout the city, views of the rural and undeveloped lands surrounding the city, and Vacaville's hillside areas. Although views of the surrounding ridgelines and hilltops are an important contributor to the identity of the city, the General Plan addresses development on ridgelines and hills in the Safety Element in order to acknowledge and prevent risks to life and property that can result from such development.

Many of the scenic resources that are valued by Vacaville residents, such as the ridgelines of the Vaca Mountains and English Hills, are located outside the city limits or even beyond the Planning Area boundary. There are no State-designated scenic highways in Vacaville.

Goals, Policies, and Actions

Goal COS-8	**Maintain and enhance the quality of Vacaville's scenic and visual resources.**

Policies

Policy COS-P8.1	Preserve scenic features and the feel of a city surrounded by open space, and preserve view corridors to the hills and other significant natural areas.
Policy COS-P8.2	Retain major ridgelines and hillsides as open space.

Greenhouse Gases

Background Information

A balance of naturally occurring gases in the atmosphere determines the earth's climate by trapping solar heat through a phenomenon known as the greenhouse effect. ***Greenhouse gases (GHGs)***, including carbon dioxide, methane, nitrous oxide, chlorofluorocarbons, and water vapor, keep solar radiation from exiting our atmosphere. In a process very similar to the windows on a greenhouse, GHGs trap so much heat that the temperature within the earth's atmosphere is rising.

GHGs are emitted through both natural processes and human activities. Emissions from human activities, such as electricity production, motor vehicle use, and agriculture, are contributing to the concentration of GHGs in the atmosphere and have led to a trend of unnatural warming of the earth's climate, which is known as global warming.

Coping with climate change and reducing GHG emissions is ultimately part of the larger challenge of fostering ***sustainable communities*** – communities that engage in practices that meet the needs of the present without compromising the ability of future generations to meet their own needs. A sustainable community is one that is economically, environmentally, and socially healthy and resilient. Climate change goals are most effectively accomplished when efforts are focused on integrating principles of sustainability within sectors such as transportation, buildings, ecosystems, and water systems. One way to integrate sustainability into a community is by creating compact, walkable development. Walkable, mixed-use communities provide their residents with retail and services within walking distance of their homes and workplaces, thereby reducing the need to make automobile trips and, consequently, reducing GHG emissions. In addition, green building practices that promote energy and resource conservation can be effective in cities like Vacaville, where energy use generates a significant portion of the city's GHG emissions.

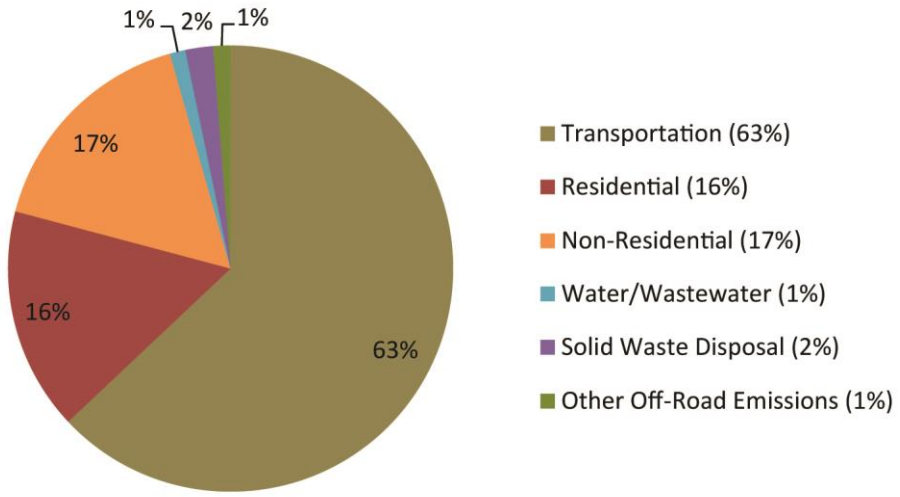
In 2006, the Governor of California signed Assembly Bill (AB) 32, codified under the Global Warming Solutions Act, into legislation. The Act requires that California cap its GHG emissions at 1990 levels by 2020. This legislation requires the California Air Resource Board (CARB) to establish a program for statewide GHG emissions reporting, as well as monitoring and enforcement of that program. CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. To meet these regulatory requirements, CARB published a list of discrete GHG emissions reduction measures that can be implemented immediately. In addition, CARB's Early Action Plan identified regulations and measures that could be implemented in the near future to reduce GHG emissions.

The main measures to reduce GHG emissions are contained in the AB 32 Scoping Plan, which was approved on December 12, 2008. This plan includes a range of GHG reduction actions. Central to the draft plan is a cap and trade program covering 85 percent of the State's emissions. This program will be developed in conjunction with the Western Climate Initiative, comprised of seven states and three Canadian provinces, to create a regional carbon market. The plan also proposes that utilities produce a third of their energy from renewable sources such as wind, solar, and geothermal, and proposes to expand and strengthen existing energy efficiency programs and building and appliance standards. The plan includes full implementation of the Pavley clean car standards, whereby the California Environmental Protection Agency requires reductions of GHG emissions for passenger cars, pick-up trucks, and sport utility vehicles. Less polluting and more efficient cars and trucks allow consumers to save on operating costs through reduced fuel use. The standards also call for development and implementation of the Low Carbon Fuel Standard, which will require oil companies to make cleaner domestic-produced fuels.

Senate Bill (SB) 375 also responds to AB 32. SB 375 calls for the automobile and light truck industry to produce reduced-emission vehicles and requires metropolitan planning organizations (MPOs) to prepare sustainable communities strategies, which will demonstrate how a region will meet CARB's GHG reduction targets by reducing the amount of vehicle miles traveled. The Association of Bay Area Governments and the Metropolitan Transportation Commission are currently leading the effort to prepare the sustainable communities strategy for the Bay Area, including Vacaville.

The City inventoried baseline GHG emissions that occurred in 2008 in Vacaville from the following sectors: transportation, residential and non-residential energy use (electricity and natural gas), moving and treating water/wastewater, solid waste disposal, and other off-road emissions (e.g. from lawnmowers and construction equipment). This inventory provides a baseline against which to measure future reductions in GHG emissions. Figure COS-3 represents the 2008 GHG emissions in Vacaville by sector. The transportation sector represents the largest source of GHG emissions in Vacaville followed by energy use.

FIGURE COS-3 2008 GHG EMISSIONS IN VACAVILLE



Energy and Conservation Action Strategy

The City of Vacaville adopted an Energy and Conservation Action Strategy (ECAS) in 2015 to set targets and establish measures to reduce GHG emissions in Vacaville. The ECAS includes an inventory of 2008 GHG emissions and models 2020 business as usual forecasts of GHG emissions. The ECAS also includes targets for GHG emission reductions, measures that will enable the City to meet those targets through municipal and communitywide actions, and a monitoring and implementation plan.

Goals, Policies, and Actions

Policies relevant to GHGs and climate change are identified below and can also be found in the following elements:

- Land Use
- Transportation
- Safety

Goal COS-9	**Reduce greenhouse gas emissions and improve the sustainability of actions by City government, residents, and businesses in Vacaville.**

Policies

Policy COS-P9.1	Maintain the Energy and Conservation Action Strategy.
Policy COS-P9.2	Promote land use patterns that reduce the number and length of motor vehicle trips.
Policy COS-P9.3	To the extent feasible, encourage a balance and match between jobs and housing.
Policy COS-P9.4	Encourage higher density residential and mixed-use development adjacent to commercial centers and ***transit corridors*** – the land along or within walking distance of a street served by transit.
Policy COS-P9.5	Encourage employment areas to include a mix of support services to minimize the number of employee trips.
Policy COS-P9.6	Encourage retail and office areas to be located within walking and biking distance of existing and proposed residential developments.
Policy COS-P9.7	Continue to work with the Solano Transportation Authority on regional transportation solutions that will reduce vehicle miles traveled and greenhouse gas emissions.
Policy COS-P9.8	Promote green building practices in new development.

Actions

Action COS-A9.1 Implement the Energy and Conservation Action Strategy and monitor its effectiveness every five years by conducting a greenhouse gas emissions inventory. Adjust the Energy and Conservation Action Strategy as needed based on these calculations to ensure that the City is on track to meet its greenhouse gas emissions reduction target.

Action COS-A9.2 Continue to provide alternative fuel infrastructure throughout the city, such as electric vehicle charging stations, and conduct periodic studies to ensure that there is demand for such facilities as technologies change.

Action COS-A9.3 Continue to purchase alternative fuel, low emission vehicles for the City's vehicle fleet.

Energy Conservation

Background Information

Energy production, conservation, and patterns of energy consumption are of growing importance to individuals, agencies, and jurisdictions. Energy price fluctuations in the late 1990s and increases in early 2001, combined with rolling blackouts, have led to a renewed interest in energy conservation.

The residential sector's energy demands constitute approximately 52 percent of the electricity and natural gas use within the city limits, as shown in Table COS-4. Typically, the most important factors influencing residential energy consumption are the size of the house, the type of house (detached single-family or multi-family structure), the number of major appliances, and the construction and siting of the structure. Residential energy needs are often fulfilled by electricity or a combination of gas and electricity. Space heating is the most energy-consuming activity in residential structures.

The State of California requires local governments to address energy conservation and efficiency in new construction. The State Building Standard Code, including Title 24, requires energy conservation and efficiency measures for any new structures, additions to existing structures, changes to the footprint of structures, or changes to water and heating systems. In Vacaville, the Community Development Department is responsible for enforcing all the provisions of Title 24.

TABLE COS-4 **2005 ENERGY USE IN VACAVILLE**

Sector	Percent of Total (%)
Residential	**52%**
Electricity	23%
Natural Gas	29%
Commercial/Industrial	**47%**
Electricity – Commercial	24%
Electricity – Industrial	1%
Natural Gas – Commercial/Industrial	23%

Note: Due to rounding, numbers may not total 100 percent.
Source: AECOM 2011.

Goals, Policies, and Actions

Goal COS-10 Promote a sustainable energy supply.

Policies

Policy COS-P10.1 Encourage the development of energy generated by renewable fuel sources within the city, provided that significant adverse environmental impacts associated with such development can be successfully mitigated.

Policy COS-P10.2 Encourage solar-oriented and renewable design and ***grid-neutral development*** – development that generates enough energy to off-set its demands – by encouraging streets that are oriented east-west to facilitate the maximization of south-facing roofs that best accommodate solar panels.

Policy COS-P10.3 Encourage the installation of solar voltaic panels on new homes and businesses through reduced building permit fees or other incentives.

Policy COS-P10.4 Encourage the use of solar water and pool heaters.

Goal COS-11 Conserve energy and fuel resources by increasing energy efficiency.

Policies

Policy COS-P11.1 Require that new development incorporate energy-efficient design features for HVAC, lighting systems, and insulation that exceed Title 24.

Policy COS-P11.2 Require that site and structure designs for new development promote energy efficiency.

Policy COS-P11.3 Promote and reward the energy efficiency efforts of local businesses through recognition on the City's website and other outreach.

Actions

Action COS-A11.1 Pursue grants to address existing energy inefficiencies in City facilities.

Action COS-A11.2 Review and update the Land Use and Development Code and building codes to allow for innovative energy-efficient technologies as long as they do not significantly conflict with other goals in this General Plan.

Air Quality

Background Information

Due to its location, meteorology, land uses, and traffic patterns, Vacaville experiences a variety of air quality issues. The city is located primarily within the Sacramento Valley Air Basin (SVAB); however, a small portion of Vacaville, Lagoon Valley, is located within the San Francisco Bay Area Air Basin. The prevailing winds in Vacaville are moderate in strength and vary from moist clean breezes from the south to dry land flows from the north. The mountains surrounding the SVAB create a barrier to airflow, which can trap air pollutants under certain meteorological conditions. Surface concentrations of pollutants are highest when stagnant conditions are combined with temperature inversions that trap pollutants near the ground.

Air pollutants of concern in Vacaville include ozone (O_3), carbon monoxide (CO), nitrogen oxides (NO_2 and NO), sulfur dioxide (SO_2), and particulate matter (PM). These pollutants originate from sources both within and outside of Vacaville. Vehicle use is the primary source of air pollutants in Vacaville. Vehicles form pollutants both directly by combustion and indirectly by the interaction of combustion byproducts with one another and with ultraviolet (UV) light. PM is produced by both vehicles and wood-burning fireplaces, among other sources. In addition, toxic air contaminants (TACs), such as benzene, butadiene, formaldehyde, and hydrogen sulfide, are of concern because they are harmful in small quantities.

Air quality in Vacaville and in Yolo County to the north is primarily monitored and managed by the Yolo Solano Air Quality Management District (YSAQMD), although a small

southwest portion of the Planning Area is managed by the Bay Area Air Quality Management District (BAAQMD). The YSAQMD and BAAQMD are tasked with achieving and maintaining healthful air quality for their residents by establishing programs, plans, and regulations enforcing air pollution control rules in order to attain all State and federal ambient air quality standards and to minimize public exposure to airborne toxins and nuisance odors. The YSAQMD has adopted several attainment plans to achieve State and federal air quality standards. The YSAQMD continuously monitors its progress in implementing attainment plans and must periodically report to the California Air Resources Board and the US Environmental Protection Agency.

Sensitive receptors include those segments of the population that are most susceptible to poor air quality, such as children, elderly people, and sick people, as well as sensitive land uses, such as schools, hospitals, parks, and residential communities. Air quality problems intensify when sources of air pollutants and sensitive receptors are located near one another. Since residential areas are located throughout the city, as are schools, parks, and medical facilities, the consideration of sensitive receptors is an important aspect of the General Plan.

Goals, Policies, and Actions

Goal COS-12 Maintain and improve air quality.

Policies

Policy COS-P12.1 Cooperate with regional agencies in developing and implementing air quality management plans.

Policy COS-P12.2 Encourage community participation in air quality planning.

Policy COS-P12.3 Encourage project designs that protect and improve air quality and minimize direct and indirect air pollutant emissions by including components that reduce vehicle trips and promote energy efficiency.

Policy COS-P12.4 Require that development projects implement best management practices to reduce air pollutant emissions associated with the construction and operation of the project.

Policy COS-P12.5 Require dust control measures as a condition of approval for subdivision maps, site plans, and all grading permits.

Policy COS-P12.6 Consistent with the Yolo Solano Air Quality Management District's standards, require that any fireplaces in new and significantly renovated residential projects, or commercial projects are pellet-fueled heaters, US EPA Phase II-certified wood burning heaters, or gas fireplaces.

Policy COS-P12.7 Require that sources of stationary air pollutants of concern, such as factories, be located more than 500 feet and/or downwind from residential areas and other sensitive receptors.

Policy COS-P12.8 Evaluate residential development or other projects with sensitive receptors proposed within the buffer distances identified by the California Air Resources Board's Air Quality and Land Use Handbook to ensure sensitive receptors would not be exposed to an increased cancer risk or to ground-level concentrations of non-carcinogenic toxic air contaminants. Permitted stationary air pollutant sources can be identified through the Yolo Solano Air Quality Management District.

Policy COS-P12.9 Use the results of the Health Risk Assessments required by the California Air Toxics "Hot Spots" Act to establish appropriate land use buffer zones around any new sources of toxic air pollutants that pose substantial health risks.

Policy COS-P12.10 Encourage the use of roadway materials that minimize particulate emissions.

Actions

Action COS-A12.1 Amend the Land Use and Development Code to identify land use sources of toxic air contaminants and sensitive users.

Water Resources

Background Information

As described in the Public Facilities and Services Element, Vacaville's water supply comes from both surface water and groundwater, and is drawn from a variety of reserves. The City's current water use is less than half of the City's total water allocation. Residential uses make up the vast majority of water use in the city (approximately 70 percent), followed by commercial/industrial uses and irrigation (each about 10 percent).

New mandatory requirements, per State law (The Water Conservation Act of 2009 – Senate Bill X7-7), mandate the reduction of per capita water use and agricultural water use throughout the state by 20 percent by 2020.

Currently, the City has "standby authority" to impose water conservation during emergencies.

The City's current Urban Water Management Plan (UWMP) addresses the current and projected use and distribution plans for recycled water.

The City owns and operates twelve municipal groundwater wells with very high quality groundwater. Eleven of the wells withdraw water from the deep aquifer in the basal zone of the Tehama Formation. Most City wells are located in the Elmira field. However, new wells are being sited further north, near Interstate 80. A regional program is being implemented to monitor groundwater data to ensure against overdraft and/or contamination.

The major sources of groundwater recharge in the Vacaville area are precipitation, infiltration from streets, subsurface inflow, and deep percolation of applied irrigation water in agricultural areas. Creeks, streams, flood corridors, riparian habitat, and wetlands may accommodate floodwater for groundwater recharge and stormwater management, which is discussed in the Safety Element.

Goals, Policies, and Actions

Goal COS-13	**Promote water conservation as an important part of a long-term and sustainable water supply.**

Policies

Policy COS-P13.1 Encourage and support water conservation programs.

Policy COS-P13.2 Protect and monitor the wells in the City's well field.

Policy COS-P13.3 Prohibit development that would adversely affect the City's well field.

Policy COS-P13.4 Require new development to incorporate Best Management Practices (BMPs) for water use and efficiency and demonstrate specific water conservation measures.

Policy COS-P13.5 Coordinate water conservation and quality programs with the Solano County Water Agency and other appropriate water agencies.

Policy COS-P13.6 Whenever possible, use recycled or non-potable water for irrigation in landscaped areas.

Policy COS-P13.7 Explore installation of dual plumbing in large, new commercial and/or residential developments to enable future use of recycled non-potable water generated on- or off-site.

Actions

Action COS-A13.1 Revise the Land Use and Development Code to require water-use-efficiency best management practices.

Action COS-A13.2 Continue to implement the City's water-efficient-landscape requirements, which address the use of drought-tolerant plant materials and irrigation standards.

Action COS-A13.3 Continue to pursue the development of infrastructure for distribution of recycled or non-potable water for irrigation.

Goal COS-14 Protect the quality and supply of surface water and groundwater resources.

Policy COS-P14.1 Protect the Alamo, Encinosa, Gibson, and Ulatis Creek watersheds by minimizing point and nonpoint source pollutants.

Policy COS-P14.2 Integrate City planning and programs with other watershed planning efforts, including Best Management Practices (BMPs), guidelines, and policies of both the Sacramento and San Francisco Bay Regional Water Quality Control Boards.

Policy COS-P14.3 Encourage pest-tolerant landscapes using native plants to minimize the need for pesticides.

Policy COS-P14.4 Continue educational programs and outreach to promote water quality protection and limit pollution from pesticides and nutrients from businesses, homes, and landscaped areas.

Policy COS-P14.5 Require the implementation of Best Management Practices (BMPs) to minimize erosion, sedimentation, and water quality degradation resulting from construction or from new impervious surfaces.

Policy COS-P14.6 Protect existing open spaces, natural habitat, floodplains, and wetland areas that serve as groundwater recharge areas.

Policy COS-P14.7 Protect groundwater recharge and groundwater quality when considering new development projects.

Action

Action COS-A14.1 Work with the Solano Irrigation District, nearby cities, and/or Solano County to develop a recharge area map to guide future development. Developments proposed in areas identified as "valuable" to the recharge area shall mitigate adverse impacts to the greatest extent possible.

Military Installations

Background Information

There are no military installations within the Vacaville city limits or Sphere of Influence. However, as shown in Figure COS-4, Vacaville is within the Travis Air Force Base's Area of Influence, an area where the Air Force Base has advisory status on long-range planning efforts of nearby jurisdictions. The Travis Air Force Base employs over 14,000 military personnel and civilian employees and is the county's largest employer. The base encompasses approximately 10 square miles and generates frequent aircraft overflights.

Goals, Policies, and Actions

Goal COS-15	**Coordinate with the Travis Air Force Base on planning issues within its Area of Influence.**

Policies

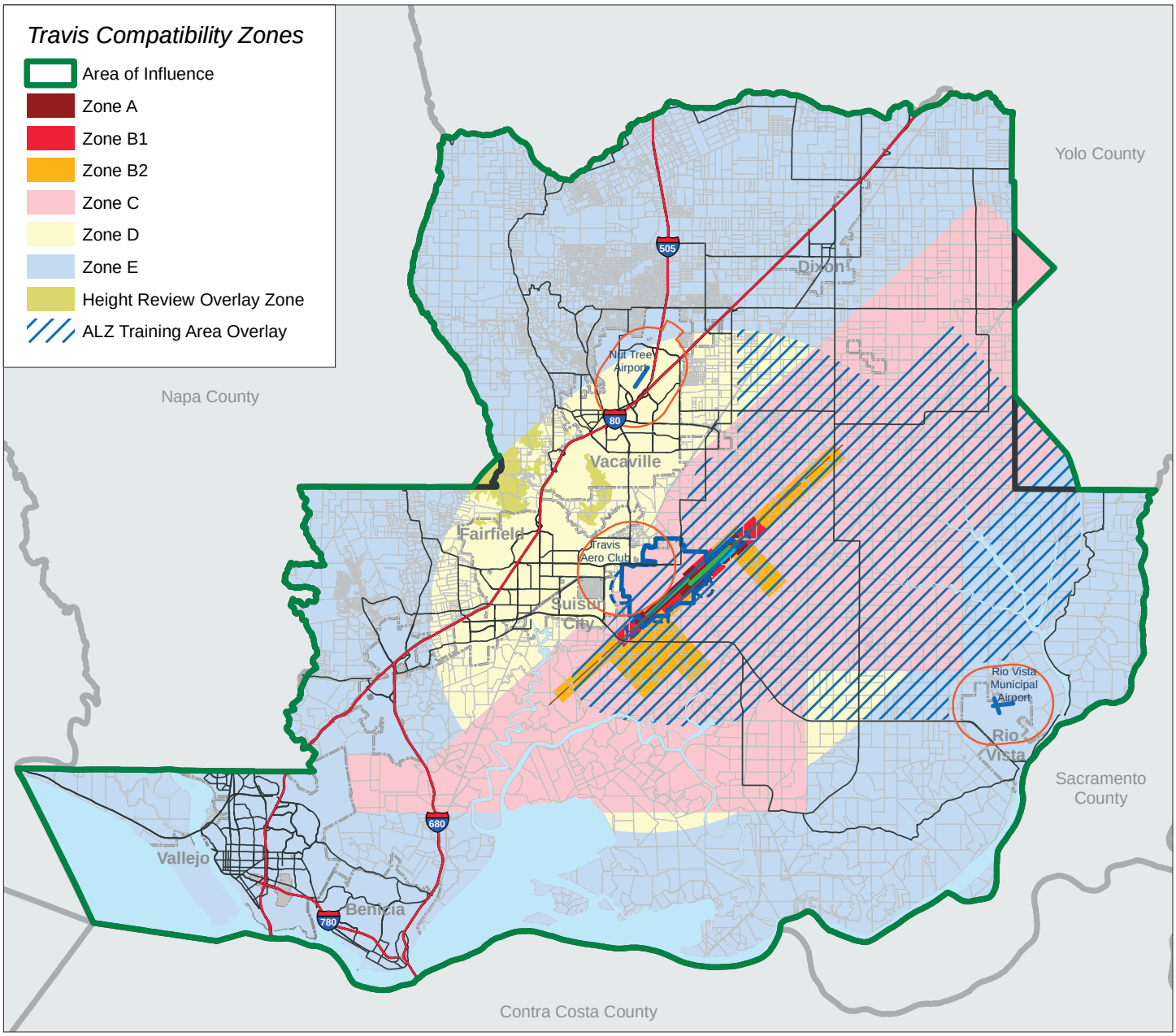
Policy COS-P15.1 Consult Travis Air Force Base officials for review and comment on proposed development projects, General Plan changes, zoning changes, policy and specific plans, and other comprehensive plans that have the potential for significant impacts within the Base's Area of Influence.

Policy COS-P15.2 Consider the needs of Travis Air Force Base for new and expanded infrastructure, as well as on-going maintenance needs for those infrastructure systems, within the Base's Area of Influence.

Mineral Resources

Background Information

According to the U.S. Geological Survey, the Vacaville Planning Area contains limited mineral resources that are being extracted. Near the southern boundary of the Planning Area in the vicinity of Cement Hill, limestone deposits show evidence of some historic use. Stone quarries in the Vaca Mountains produced dimensioned and ornamental stone. Although the western hills contain sandstone and conglomerates that may be used for sands, gravel, and stone, none of these resources are currently being mined. However, State law requires that the General Plan address mineral resources.



Source: Travis Air Force Base Land Use Compatibility Plan, November 2014.

NORTH

0 5 10 Miles

Travis Air Force Base

- Potential Future Assault Strip
- Runways - Existing
- Property Line
- Easement

Other Features

- Area of Influence for Other Airports
- Interstates
- Major Road
- Runways of Other Airports
- County Parcel Lines
- City Limits

FIGURE COS-4

TRAVIS AIR FORCE BASE AREA OF INFLUENCE

Goals, Policies, and Actions

Goal COS-16	**Consider the location of mineral resources in the development review process.**

Policies

Policy COS-P16.1 When reviewing land use proposals, take into account potentially available mineral resources on the property or in the vicinity of the project site.

5 PARKS AND RECREATION ELEMENT

The provision of plentiful, well-designed, and well-maintained parks and recreation facilities significantly contributes to the quality of life in a community. Parks fulfill a number of important functions – they provide green "breathing" spaces within the city which promote healthy lifestyles; they provide children and families a place to play and explore; they provide areas for active sport uses and civic functions; and they provide areas for passive recreation and relaxation. Parks may also incorporate natural features and visual assets of the landscape, in addition to preserving habitat areas that are vital to the city's identity, history, and environmental health. Other recreational facilities such as special-purpose facilities, accessible open spaces, and trails fulfill specific community needs that formal developed parks typically cannot provide.

The Parks and Recreation Element is an optional element under State law. It contains goals and policies that strengthen the City's commitment to providing a high level of parks and recreation facilities and services to Vacaville residents, and provides guidance for new development to incorporate additional recreational facilities as needed to maintain this level of service. These policies reflect the diversity of recreational needs historically desired by Vacaville residents, and attempt to provide flexibility in Vacaville's parks and recreational services so as to appropriately respond when new recreational needs are desired by Vacaville's changing population.

Background Information

Park Classifications

The City's current inventory of parks and recreation facilities is classified into six basic categories:

- **Neighborhood Parks:** Smaller parks that are primarily intended to serve the recreation needs of residential areas within ½ mile (an approximate 10-minute walking distance) of the park. Park facilities are usually oriented towards the recreation needs of children and typically include a multipurpose playfield, a playground, and picnic facilities. When neighborhood parks are located adjacent to schools, they may also include a small recreation building, and be designed for joint use with the school-owned property. Existing neighborhood park sites generally range in size from 1 to 10 acres. However, new neighborhood parks should be designed within a 6- to 9-acre size range, depending upon the neighborhood park needs of the part of the city in which they are located.
- **Community Parks**: Mid-sized parks designed to provide major active-use recreational facilities such as lighted sports fields, sport courts, community buildings, swimming pools, spaces for community festivals, civic events, organized sports, and athletic

competitions. Community parks should ideally also include areas for passive recreation including walking paths with benches, shaded picnic areas, and preserved or created natural areas such as creeks, habitat areas, and unique landforms. Community parks often include appropriate support facilities such as parking areas, restroom buildings, and concession stands. Community parks generally range in size from 12 to 60 acres and are intended to serve the population living within a 1½-mile radius. A community park can also function as a neighborhood park for nearby residential areas.

- **Regional Park:** A large, nature-themed park that is focused on balancing the natural environment with related recreational activities. Lagoon Valley Park is the city's only regional park and is designed to serve the city's entire population and the greater Vacaville region. It includes a wide variety of passive recreation opportunities and amenities, including a 106-acre lake and open fields that are used for many large and regional events. The park is defined by its natural environment of hills, creeks, the lagoon, and the valley. It is intended to provide the public with access and use of these areas while sensitively preserving the habitat and natural environment for which the park is recognized. The historic Pena Adobe and its surrounding grounds are considered a sub-area of the park that provides additional space for group picnics and other events. The park provides trailheads and access to many acres of open space with miles of hiking, biking, and equestrian trails.
- **Accessible Open Space**: Land owned by the City of Vacaville (or other non-profit or public agency) that includes public access for limited recreational use and is maintained in a natural or non-intensive developed state. Publically accessible open space includes lands of geologic, agricultural, ecologic, and scenic significance, and includes certain lands that are used jointly as creekways, drainages, detention basins, and other specific dual purposes. Accessible open space areas are made available to the public for self-guided and low-impact activities that typically include hiking, biking, horseback riding, bird watching, sky gazing, and nature appreciation. Accessible open space often includes developed nature trails that provide the public with defined access and utility of the open space while minimizing negative impacts to the environment. The Land Use Element includes a designation called "Public Open Space," which includes both these accessible open space lands as well as undeveloped areas that are not made accessible to the public for reasons related to public safety or other special concerns. Open space related to biological resources, agricultural lands, cultural resources, and scenic resources is also addressed in the Conservation and Open Space Element. Open space related to public health and safety, including ridgelines and areas with steep slopes, is addressed in the Safety Element.
- **Special Purpose Facilities**: Buildings that house recreational programs and/or facilities targeted to meet the needs of a certain sector of the population or neighborhood. Most of these facilities are located within the boundaries of a park. However, others may be located on properties that are not owned by the City, but operated by the Community Services Department and/or under contract to the Department for its programs.

- **Bikeways, Multi-Use Trails, and Nature Trails**

  Bikeways: Most of the city's paved, off-street bikeways are officially designated as off-street bike paths; however, they also function as multi-use trails and are appropriately shared with walkers, runners, skaters, and other non-motorized forms of transportation. Vacaville follows Caltrans definitions for its paved bikeways; therefore, these facilities are more completely defined and discussed in the Transportation Element. For both recreation and transportation purposes, it is important that bikeways provide logical connections to various destination points and make connections to regional bikeways that are outside of city limits. In some cases, a paved bikeway may be incorporated within a park (or accessible open space) as part of that individual facility's circulation plan.

  Multi-Use Trails: In addition to the paved bike paths built to accommodate a broad range of recreational activities related to walking, running, and bicycle riding, there are a number of unpaved trails that do not qualify as formal bike paths, but they are used by bicyclists, pedestrians. Where appropriate, a multi-use path can include an adjacent but separate bridle path if the width of the right-of-way is sufficient to prevent conflict between bicyclists, pedestrians, and horseback riders. Some of these trails are not much more than informal dirt or gravel maintenance roads, but due to significant use by the public, they may be considered important recreational elements within a park or accessible open space.

  Nature Trails: Nature trails are used by bicycle riders, hikers, and in many cases equestrians, but these unpaved trails tend to primarily serve recreational users who are interested in traversing challenging terrain. Because these trails are typically located in the steep and rugged environment of open space, they are discussed more thoroughly within the accessible open space component of this Element.

In addition, the local school districts own and operate a number of fields and specialized facilities that, in some cases, are made available for public use through policies set by the individual school district. The City recognizes the public ownership of these school facilities and has previously utilized a joint-use agreement with the Vacaville Unified School District to make a wider range of facilities available for the public's use. However, as of the publication of this General Plan, there is not currently an active joint-use agreement between the two agencies.

There are also many privately owned recreational facilities in Vacaville, such as golf courses; swim, tennis, and fitness clubs; ice skating and hockey rinks; bowling alleys; and equestrian centers. While recognizing the availability of the private recreational facilities, this Element focuses primarily on the City's provision of *public* park and recreation facilities.

Park Inventory

The locations of the city's parks are illustrated in Figure PR-1 (page 6), and a complete inventory of existing neighborhood, community, and regional parks are listed in Table PR-1 (page 7).

Accessible Open Space

The natural setting of the city is characterized by the ridges and hillsides west and south of the city, the agricultural valley lands to the north and east, and free-flowing creeks crossing though the city. As the city continues to grow, it is important to consider the impact urbanization can have on the accessible open space areas and to consider how to best preserve and enhance their character and uses. Policies in the Land Use Element express the City's vision for urban form and growth management. Policies in the Conservation and Open Space and Safety Elements help guide the protection of open spaces, particularly hillside and ridge areas.

Accessible open space includes natural landscapes that are essentially undeveloped, but suitable for passive recreational activities that do not require substantial facilities or improvements. This includes lands that are owned, leased, or otherwise controlled by the City of Vacaville, or by some other public or non-profit entity, and are made accessible to the public for recreation, nature preservation, education, viewshed, and other open space purposes.

Figure PR-2 (page 10) illustrates the locations of the publicly-accessible open space areas in Vacaville. Table PR-2 (page 11) lists their acreages.

Trails

Hiking, biking and walking are popular recreational activities for Vacaville residents. Trails provide an important recreational resource in-and-of themselves, but many trails also serve as a support facility in providing access between neighborhoods and important destinations, and in the case of paved trails, can also serve as part of the city's transportation network. Trail use is most often a self-directed recreational activity, but there is also a recognized trend toward increased use of trails by organized groups for special events.

As part of the effort to better serve the needs of Vacaville residents who choose to hike, bike, and walk for recreation, the City seeks to link the neighborhoods of the city to recreational resources in a comprehensive network of pedestrian facilities, bikeways, hiking trails, and multi-use trails, and to accommodate both bicycle and equestrian users wherever appropriate. Although it is a citywide system, each section of the trails system should relate to its immediate surroundings in design and function. Trails within the open spaces and hillsides are typically rustic and particularly conducive to hiking, mountain biking, and horseback riding; by their nature (rugged, steep, and unpaved), most cannot be made to accommodate Americans with Disability Act (ADA) access. By contrast, most of the multi-use trails along the creekways, trails that provide linkages to neighborhood facilities, and those within developed parks are hard surfaced and designed for easy access for all. Most of these paved trails are designed to accommodate maintenance and emergency vehicles, and some also serve a dual purpose of providing maintenance vehicle access to city utilities such as sewer, water, and drainage facilities.

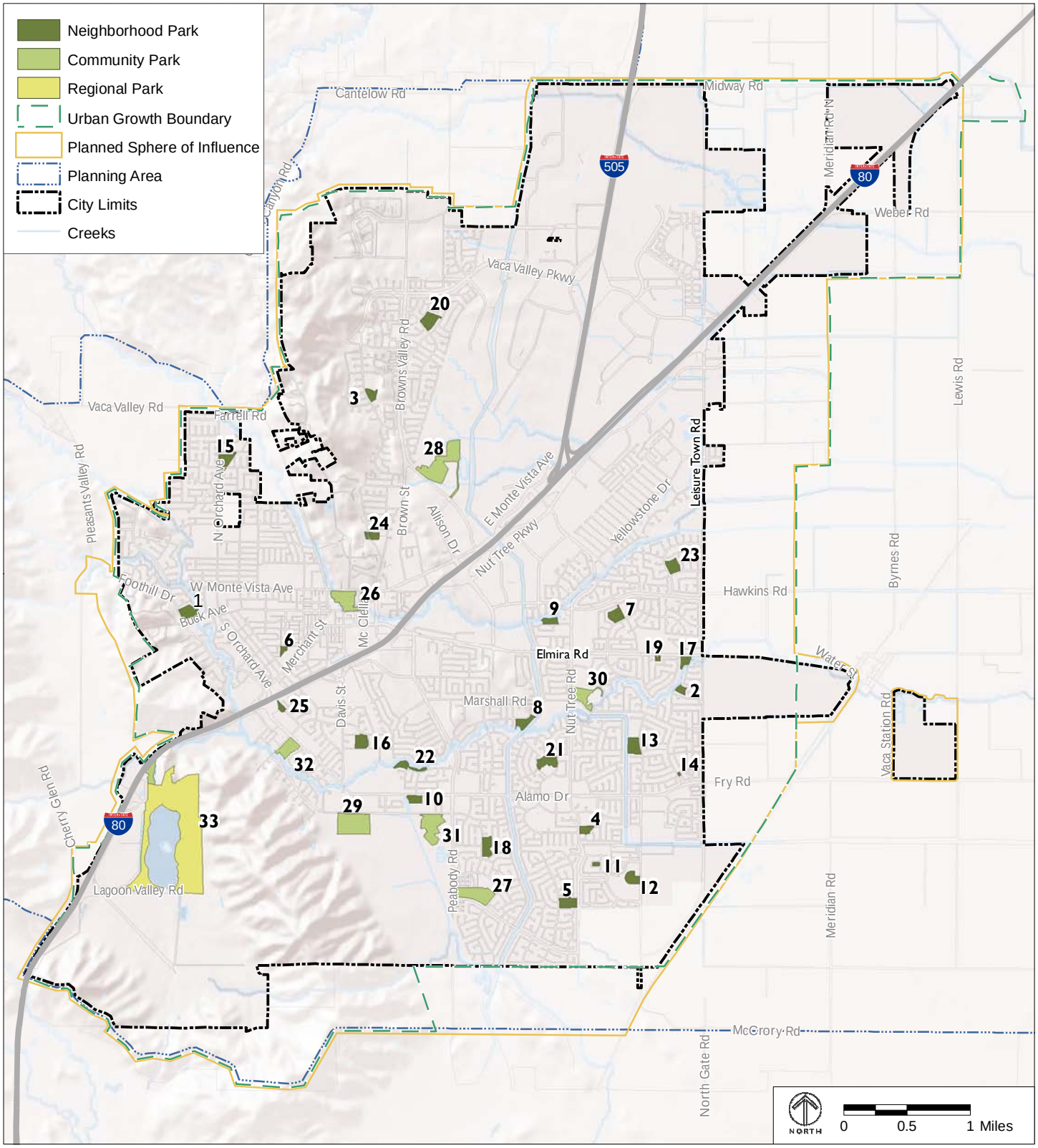
Trail definitions, the trail system, and the various types of trails are further outlined in the Comprehensive Parks, Recreation, and Open Space Master Plan, and are summarized under the Park Classifications in the Background Information section above.

- **Trailhead**: The beginning of a hiking/biking/equestrian trail. Trailheads typically include orientation signs giving distance mileage, information on trail use including safety hazards, and perhaps a natural history of the area. Trailheads are sometimes referred to as staging areas when they also provide appropriate parking areas, restroom facilities, and drinking water, and particularly when they include facilities for horse trailers and equestrian users.

Special Purpose Facilities

With the exception of the Mariposa and Trower Neighborhood Centers as noted below, Vacaville owns and operates the following special purpose facilities, the locations of which are shown in Figure PR-3 (page 12):

- **Three Oaks Community Center.** Includes a large assembly hall with a stage and dressing rooms, an activity room, a multi-purpose room, an arts and crafts room, a computer training room, and ample off-street parking.
- **Walter V. Graham Aquatics Center.** Includes a full size pool with two 35-foot waterslides, a competition pool with 3 and 5 meter diving boards and diving blocks, a children's play pool, and an adjoining covered picnic area with barbeques and play area.
- **Georgie Duke Sports Facility.** Offers a gymnasium for basketball and badminton activities and a fully-equipped boxing room. Drop-in activities provided through the week include: 35+ basketball, adult/youth basketball, badminton, and adult boxing.
- **John A. McBride Center.** Provides flexible function spaces with a commercial kitchen and excellent accessibility. Programs for all ages, including programs for individual 50 years of age and older. It includes on-going classes, bingo, and "drop-in" activities such as cards, billiards, and exercise classes.
- **Ulatis Community Center and Wedding Gardens.** A multi-purpose facility with dividable spaces, banquet seating capacity for 400 people, a commercial kitchen, patio areas, and a garden designed for weddings and other special occasions.
- **Vacaville Performing Arts Theater**. A state-of-the-art performing theater equipped with professional sound and lighting systems, a full orchestra pit with capacity for 32 musicians, a professional-height fly system capable of moving full-sized scenery, and two large dressing rooms.
- **Vacaville Recreation Center.** Equipped for gymnastics training and includes additional indoor space suitable for either a volleyball or basketball court. The facility is also available for rent and is used on occasion for community events such as the annual "Festival of Trees." The building is leased from the adjacent privately-owned Vacaville Ice-Sports Facility.



Note: Park numbers on the map correspond to ID numbers in Table PR-1.

Source: City of Vacaville, 2010.

FIGURE PR-1
PARK LOCATION MAP

TABLE PR-1 **PARK INVENTORY**

ID	Name	Location	Developed Acres
Neighborhood Parks			
1	Alamo Creek Park	Alamo Dr. at Buck Ave.	9.5
2	Arbor Oaks Park	Arbor Oaks Dr. at Leeward Ct.	2.5
3	Browns Valley Park	Wrentham Dr.	4.4
4	Cambridge Park	Nut Tree Rd. at Cambridge Dr.	3.4
5	Cannon Station Park	Nut Tree Rd. at Opal Way	6.6
6	City Hall Park	Walnut Ave. at City Hall	1.6
7	Cooper School Park	Christine Dr. at Notre Dame Dr.	6.6
8	Fairmont-Beelard Park	Beelard Dr. at Matthews Ct.	5.2
9	Hawkins Park	Summerfield Dr. at Newport Cir.	3.1
10	Larsen Park (Irene)	Alamo Dr. at Rosewood Dr.	4.3
11	Little Oak Park	Turnbridge St. at Salisbury Ct.	1.1
12	Magnolia Park (Phase 1)	Vanden Rd. and Cogburn Cir.	5.9
13	Meadowlands Park	Vanden Rd. at Bluebird Dr.	8.1
14	Normandy Meadows Park	Meadowlark Dr. at Chateau Cir.	0.3
15	North Orchard Park	Orchard Ave. at Crestview Dr.	7.9
16	Padan Park	Padan School Rd. and Marshall Rd.	6.5
17	Patwin Park	Elmira Rd. west of Leisure Town Rd.	4.7
18	Pheasant Country Park	Madison Ave. at Nancy Cir.	7.0
19	Pocket Park	Elmira Rd. east of Ralph Ave.	0.9
20	Ridgeview Park	Tipperary Dr. at Bluewater Dr.	7.3
21	Sierra Vista Park	West of Bel Air Dr. on Greenwich Cir.	4.2
22	Southwood Park	Southwood Dr. at Sherwood Ct.	3.8
23	Stonegate Park	Stonegate Dr. at Stonewood Dr.	6.0
24	Trower Park	Markham Ave. at Holly Ln.	4.0

TABLE PR-1 **PARK INVENTORY** *(CONTINUED)*

ID	Name	Location	Developed Acres
25	Willows Park	South of Catalina Ct. on Ogden Way	2.0
		Community Parks	
26	Andrews Park	Monte Vista Ave. at School Rd.	17.9
27	Arlington Park (John)	505 Foxboro Pkwy. (at Peabody Rd.)	17.8
28	Centennial Park	501 Browns Valley Rd.	35.7
29	Keating Park (William)	California Dr. at Alamo Dr.	24.6
30	Nelson Park (Eleanor)	1800 Marshall Rd. (at Nut Tree Rd.)	13.0
31	Patch Park (Al)	1750 California Dr. at Peabody Rd.	19.0
32	Three Oaks Park	1100 Alamo Dr.	11.9
Regional Parks			
33	Lagoon Valley Regional Park	4627 Peña Adobe Rd.	314.0

Note: ID refers to the park's label in Figure PR-1.
Source: City of Vacaville Community Services Department, 2012.

- **Mariposa and Trower Neighborhood Centers**. The "Vacaville Neighborhood Boys and Girls Club" operates these city-owned facilities providing afterschool programming for kindergarten through twelfth grades, and drop-in recreation.

Recreational Programs

The City of Vacaville Community Services Department offers recreational programming for a wide range of ages and interests. Recreational programming is scheduled throughout the year and is advertised in the Events Guide, which is published quarterly. The Events Guide lists a variety of classes offered and upcoming community events. The following are some of the major programs offered by the Vacaville Community Services Department:

- **TGIF –** The Thank Goodness It's Fun (TGIF) program is run by the Community Services Department and offers before and after school enrichment activities for children ages six to twelve. Several TGIF facilities (temporary buildings) are located adjacent to elementary schools for family convenience.
- **Gymnastics –** The Community Services Department provides a wide array of gymnastics programs at the Vacaville Recreation Center located at 551 Davis Street.

- **Aquatics –** Various aquatic programs, such as swim lessons, water polo, and water aerobics, take place at the Graham Aquatic Center.
- **Early Childhood Enrichment –** This program offers activities and classes for children ages 18 months to 5 years.
- **Youth Sports –** These sports programs are designed to introduce participants to a variety of traditional sports and focus on health and fitness. Camps, classes, and leagues are available.
- **Adult Sports and Fitness –** Instructional classes such as tennis, yoga, and martial arts are offered, as well as league volleyball, flag football, basketball, and softball.
- **Cultural Arts –** Music, dance, drama, painting, and drawing classes are offered, as well as a variety of camps.
- **Adult Services/Active Aging –** A variety of classes ranging from computer training to driver safety and foot care to Tai Chi are offered to adults at the McBride Center. A multitude of free services are also available, including legal consultation and health insurance counseling.

Comprehensive Parks, Recreation, and Open Space Master Plan

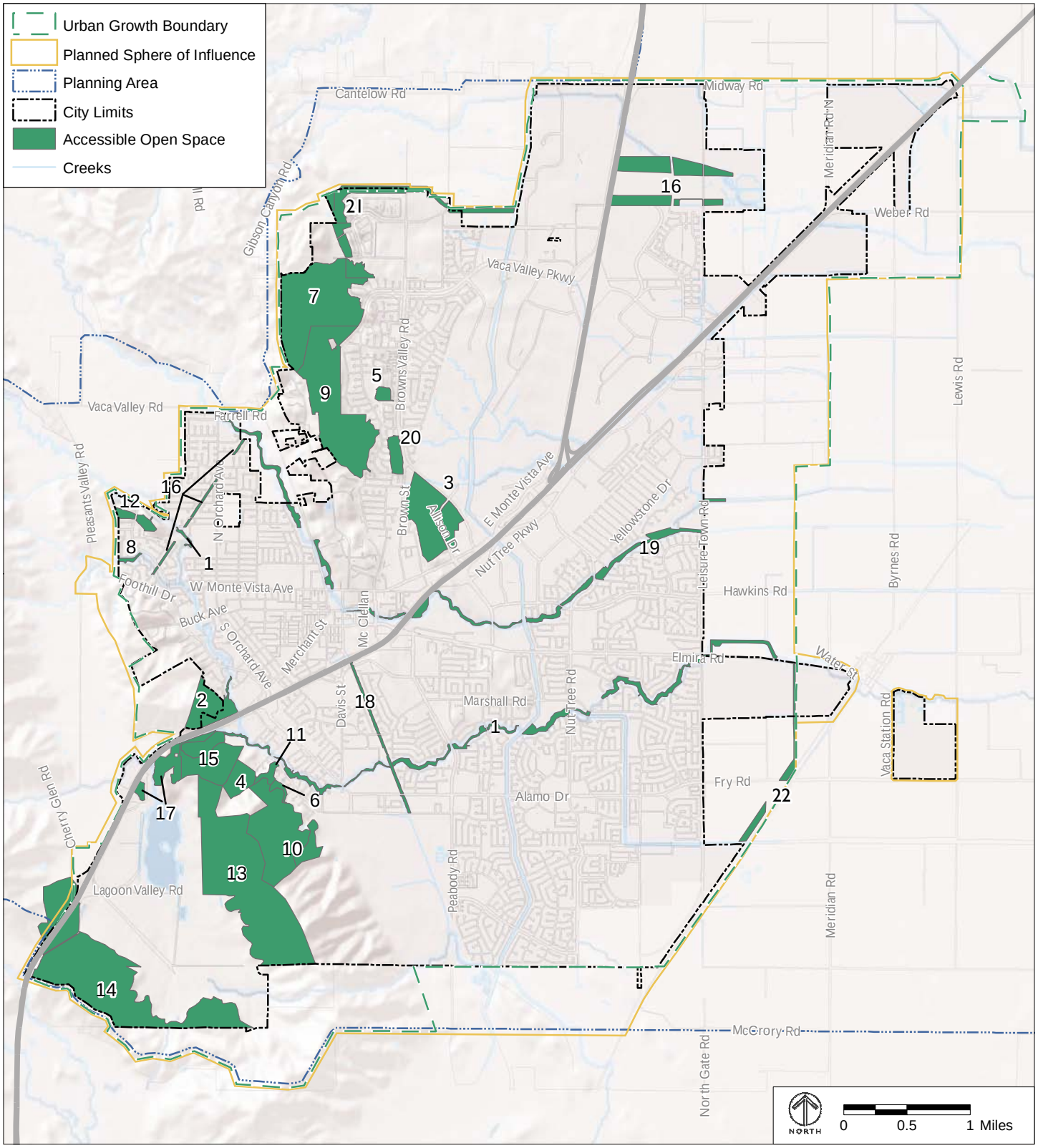
Vacaville's "Comprehensive Parks, Recreation, and Open Space Master Plan" was developed in 1992 to guide the development of parks, recreation, and open space facilities throughout the city. The Master Plan describes the condition of parks and recreation facilities as they existed in 1992, proposes new facilities, and includes policies to implement the Plan. The Plan establishes service standards for parks, recreation, and open space facilities and includes policies for the development of new facilities, and for distributing these amenities throughout the city.

Planned Parks and Open Space

The City of Vacaville has identified locations for future parks in areas that are underserved and areas where future development is anticipated, as well as future open space. Table PR-3 (page 15) and Figure PR-4 (page 14) identify the planned parks and open space in Vacaville.

Park Funding

Funding for the acquisition and development of parks is derived primarily from park development impact fees as authorized under the Mitigation Fee Act (Govt. code 66000), and in some cases by Mello Roos Community Facilities Districts, and grants. However, Action PR-A1.3 directs the City to adopt a Quimby Ordinance, which will also provide funding for park acquisition. Operation of the City's parks, including programs, staff, and other operations, is provided by the Community Services Department and funded through the City's General Fund and user fees. Maintenance of all City parks and recreation facilities is provided by the Public Works Department and funded primarily through the General Fund and numerous maintenance districts as authorized by the Lighting and Landscaping Act of 1972.



Note: Open space numbers on the map correspond to ID numbers in Table PR-2

Source: City of Vacaville, 2010 and 2015.

FIGURE PR-2

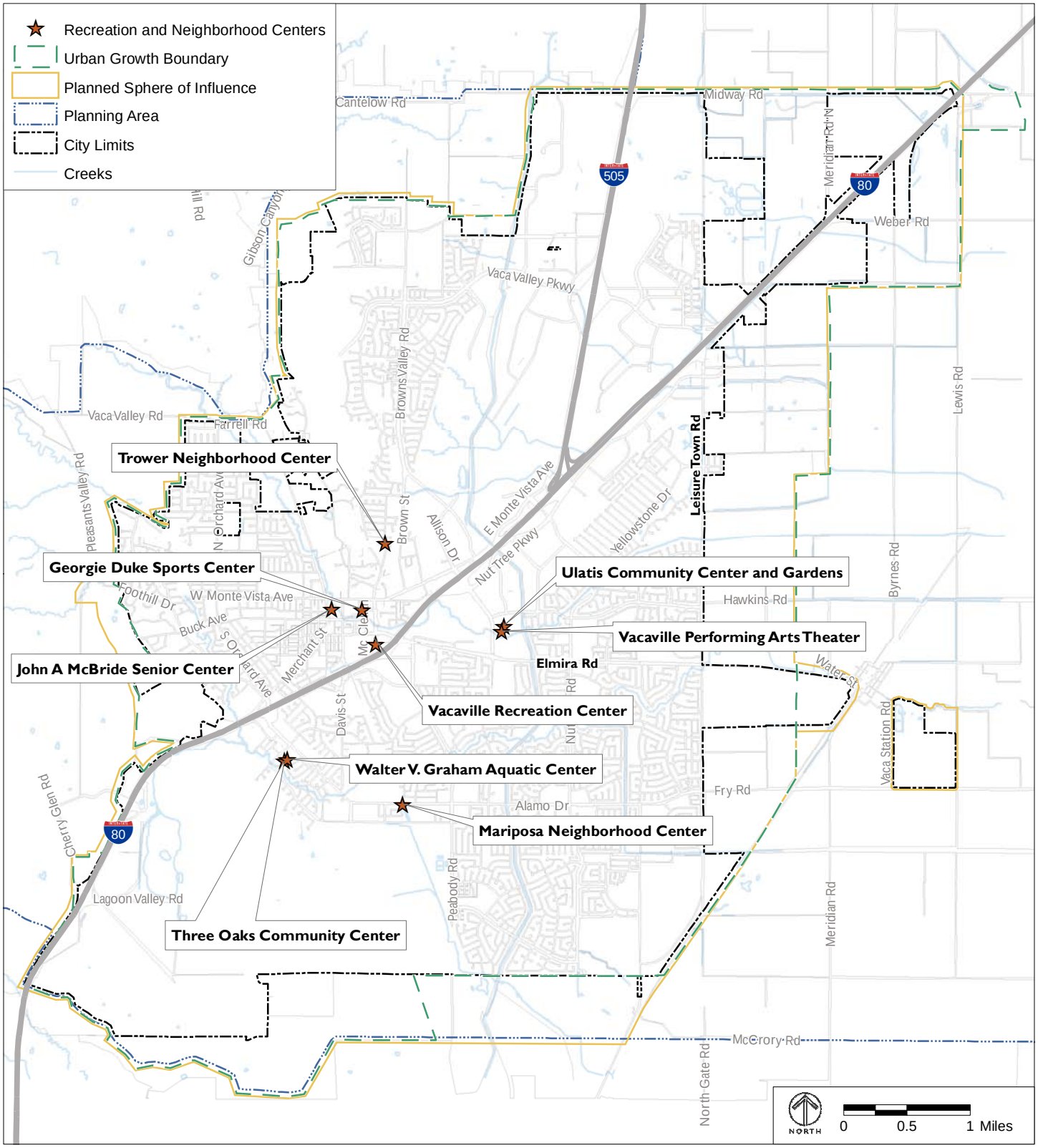
ACCESSIBLE OPEN SPACE LOCATION MAP

TABLE PR-2 **ACCESSIBLE OPEN SPACE INVENTORY**

ID	Name	Approximate Acreage
1	Alamo Creek Open Space & Bike Trail	84
2	Alamo Terrace Open Space	47
3	Allison Open Space	74
4	Alpine Open Space	30
5	Browns Valley Open Space	25
6	California Drive Open Space	4
7	Caliguiri Park & Preserve Open Space	238
8	Foothill Open Space	60
9	Glen Eagle Open Space	264
10	Gonzales Open Space	172
11	Hidden Oaks Open Space	9
12	Hidden Valley Open Space	14
13	Lagoon Valley Eastern Hills Open Space	422
14	Lagoon Valley Southern Hills Open Space	310
15	Laguna Hills Open Space	100
16	PG&E Open Space	102
17	Pena Adobe Open Space	50
18	Southside Bike Trail Open Space	15
19	Ulatis Creek Open Space	83
20	Woodcrest Open Space	7
21	Cheyenne Open Space	70
22	East of Leisure Town Road Agricultural Buffer/Open Space	24

Note: ID refers to the open space label in Figure PR-2.
Source: City of Vacaville Community Services Department, 2012.

The maintenance of the newer neighborhood parks is funded partially by individual Lighting and Landscaping Maintenance Assessment Districts (LLMADs) and augmented by the General Fund. Maintenance of the remaining neighborhood parks, as well as the community parks and Lagoon Valley Regional Park, is provided primarily from the General Fund.



Note: This figure corresponds with the special purpose facilities identified on page PR-5.

Source: City of Vacaville, 2010.

FIGURE PR-3
SPECIAL PURPOSE FACILITIES

Park Standards

Park standards provide a means to measure how much park land should be set aside for recreational use as the city develops. This section establishes the acreage, size, and service area standards for neighborhood, community, and regional parks. No standards are established for the provision of trails and open space. However, the Comprehensive Parks, Recreation, and Open Space Master Plan includes standards for certain special purpose facilities and individual recreation facilities.

Park Acreage per Population

The City's park acreage standards are simple ratios of the City's total desired number of developed park acres, divided by the total population of the city (less those living in the prisons' group housing facilities). The overall standard of providing 4.5 acres of developed parkland per thousand people reflects a minimum goal to maintain this important quality of life component as the city's population increases through the years.

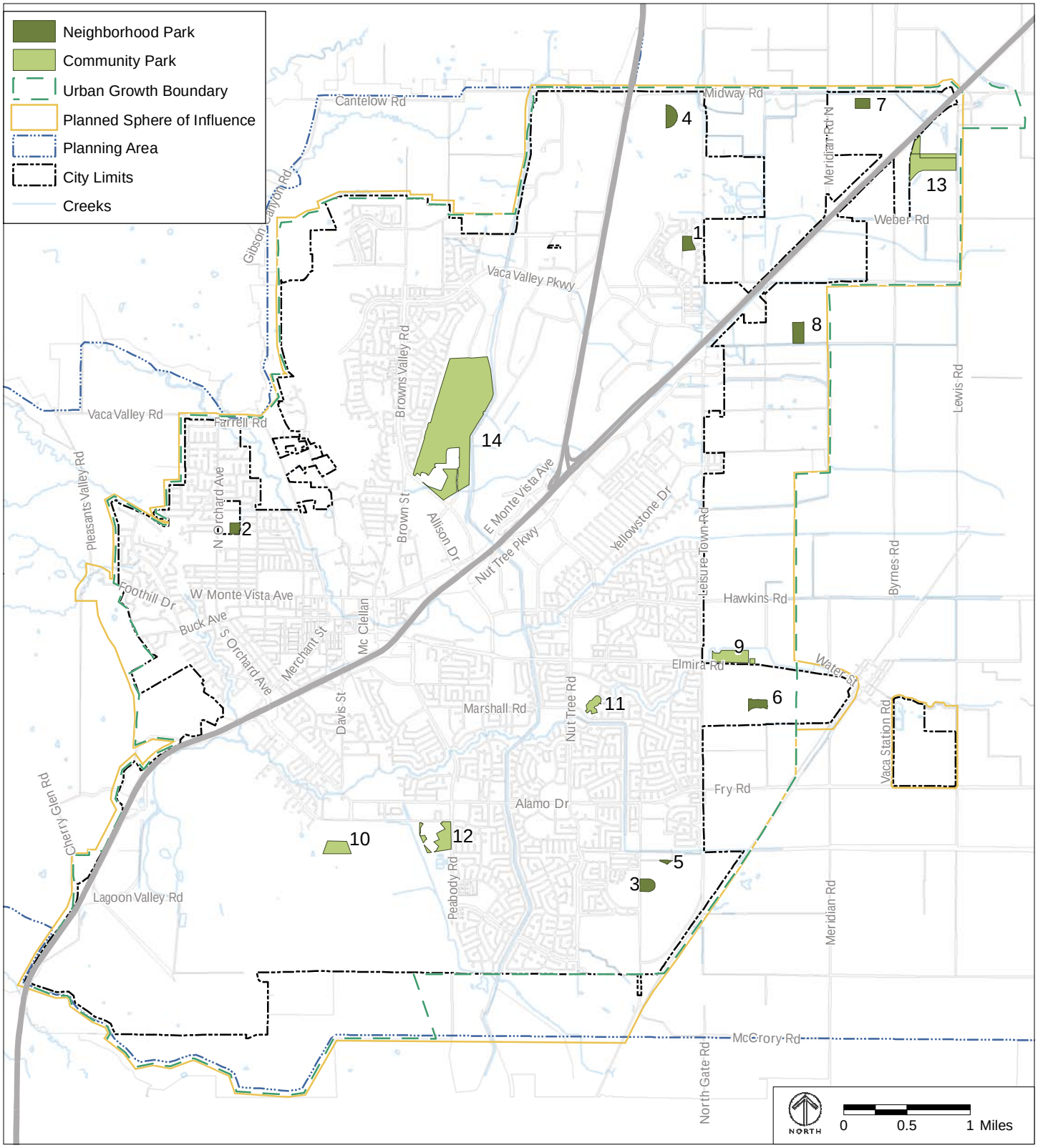
The City's standard of 4.5 acres of developed parkland per thousand residents was established in 1992. As indicated below, this park acreage standard is further divided into the park categories of neighborhood, community, and regional parklands, which are described earlier in this Element:

- Neighborhood Park: 1.8 acres per 1,000 people
- Community Park: 1.7 acres per 1,000 people
- Regional Park: 1.0 acre per 1,000 people
- Total: 4.5 acres per 1,000 people

Park Size

The following park size standards provide efficiencies in programming and maintenance:

- New neighborhood parks must be a minimum of 6 acres in size, and can be as large as 9 acres as needed to serve the local service area. New neighborhood parks less than 6 acres may be approved in infill areas where there is a documented shortfall of parkland.
- New community parks must be a minimum of 10 acres in size, and may be up to 40 acres as needed to serve the planned service area. Centennial Park is a notable exception to this size standard in that it is intended to ultimately include all 265 acres and serve the entire city.
- Lagoon Valley Regional Park is the city's only regional park at slightly over 300 acres. The City does not anticipate adding any new regional parks within the planning period of this General Plan.



Note: Park numbers on the map correspond to ID numbers in Table PR-3

Source: City of Vacaville, 2010 and 2015.

FIGURE PR-4
PLANNED PARKS

TABLE PR-3 **PLANNED PARKS**

ID	Name	Location	Acres
Neighborhood Parks			
1	Corderos Park	1100 Parkside Dr. (North Village)	7.2
2	Fruitvale Park	South of Fruitvale Rd.	6.0
3	Magnolia Park (Phase 2) (Southtown)	Vanden Rd. and Cogburn Cir.	6.9
4	North Village AP-2	East of North Village Pkwy.	TBD
5	Redbud Park (Southtown)	Northeast of Magnolia Park	1.3
6	East of Leisure Town Road Park	East of Leisure Town Road Growth Area	6.0
7	Northeast Area Park - North	Northeast Growth Area	6.0
8	Northeast Area Park – South	Northeast Growth Area	9.0
Community Parks			
9	Elmira Park	Elmira Rd. east of Leisure Town Rd.	17.0
10	Keating Park (expansion)	California Dr. and Alamo Dr.	21.0
11	Nelson Park (Eleanor) (expansion)	Nut Tree Rd. and Marshall Rd.	6.0
12	Patch Park (Al) (expansion)	1750 California Dr. (west of Peabody Rd).	15.0
13	Northeast Area Park	Northeast Growth Area	36.0
14	Centennial Park	501 Brown's Valley Rd.	265.1

Notes: ID refers to the park or open space label in Figure PR-4. Since these parks are not yet built, final names may be different.
Source: City of Vacaville Community Services Department, 2012.

Park Service Areas

For analysis purposes, the service area standard is represented as a radius drawn around a neighborhood or community park, rather than as travel time; although significant barriers to transportation, such as freeways and canals, should be taken into consideration. All residential areas of the city should be served by a neighborhood and a community park within the service area standards provided below; although, a community park may serve the residents within ½ mile as their neighborhood park. There is no service area standard for regional parks because Lagoon Valley Regional Park serves the greater Vacaville region and it is expected that most users will need to travel a distance to access the park.

- Neighborhood Park: ½ mile maximum (approximately a 10-minute walk)
- Community Park: 1½ miles maximum

Recreational Facilities

The Comprehensive Parks, Recreation, and Open Space Master Plan specifies long-range facility standards and programming recommendations for all the listed parks. Service ratios are provided for a variety of specific recreation facilities, including gymnasia, tennis courts, baseball/softball fields, golf courses, and community centers, among others. Additionally, the Master Plan makes general recommendations for the provision of programming based on education, demographic, and recreation trends. Since the Master Plan was approved in 1992, many of the listed recommendations have been accomplished, a number of planned facilities have been constructed, and trends and other changes in recreational activities suggest that this document should be updated to better reflect the current recreational needs of the city's residents.

Goals, Policies, and Actions

Goal PR-1	**Develop and maintain a high-quality public park system that provides varied recreational opportunities for city residents, workers, and visitors.**

Policies

Policy PR-P1.1 Provide new parks according to the standards established in this Element to ensure adequate distribution, size, and access.

Policy PR-P1.2 Provide neighborhood parks to serve the unique recreational, cultural, and educational needs of Vacaville's diverse neighborhoods. Design new neighborhood parks to have a unique character, appeal to children, and avoid standardized, programmatic designs.

Policy PR-P1.3 Provide community parks to encompass a range of uses, including active high-investment (e.g. gymnasiums and swimming pools), active low-investment (e.g. playfields and picnic facilities), and passive recreational facilities (e.g. natural areas suitable for quiet reflection). Community parks shall serve large portions of the city by providing facilities suitable for recreational and cultural activities beyond those supplied by neighborhood parks.

Policy PR-P1.4 Maintain, improve, and preserve Vacaville's Lagoon Valley Regional Park to serve the region with a variety of nature-oriented and passive recreational opportunities.

Policy PR-P1.5 Support and encourage the location of special use recreation facilities, such as community gardens, dog parks, and skate parks, on available park or other public lands, where compatible with the existing and planned uses of surrounding properties.

Policy PR-P1.6 Make provisions for elderly and disabled individuals to freely access and utilize parks and recreational facilities, according to local, State, and federal codes.

Policy PR-P1.7 Encourage the development of private and commercial recreational facilities at appropriate locations. However, private recreational facilities shall not count towards the park standards established in this Element.

Policy PR-P1.8 Make designated open spaces more accessible to the public with a linked park and trail system that takes advantage of surrounding open space.

Policy PR-P1.9 Maintain recreational fishing at Lagoon Valley Regional Park.

Actions

Action PR-A1.1 Update the Comprehensive Parks, Recreation, and Open Space Master Plan to include a broader description of desired park facilities and allow staff the flexibility to include the facilities desired by the public, and continue to implement this Master Plan.

Action PR-A1.2 Develop the Trails and Trailhead system as outlined in the Comprehensive Parks, Recreation and Open Space Master Plan. Provide additional trails and facilities where they are feasible and appropriate. Connect the trails system to the bikeways system wherever feasible and appropriate.

Action PR-A1.3 Implement a Quimby Ordinance requiring that park provision be considered and incorporated in the subdivision process.

Goal PR-2	**Ensure that new development is responsible for providing new parks and recreation facilities in accordance with the City's park and recreation standards and for providing its fair share of neighborhood park maintenance costs.**

Policies

Policy PR-P2.1 All parks and recreation facilities required by the park standards in this Element shall be publicly owned, operated, and maintained, except as otherwise allowed by the Quimby Act.

Policy PR-P2.2 New parks and recreation facilities shall be funded, at least in part, by fees paid by new development, or as turn-key facilities with new development, as described in Policy PR-P2.5.

Policy PR-P2.3 Require that proponents of large projects subject to Specific Plans and/or Development Agreements work with City staff early in the planning process to ensure that the project includes an adequate amount of developed parkland to satisfy the City's standards.

Policy PR-P2.4 Require all residential developers, including apartment builders, to provide sufficient parks and other recreational facilities to meet the standards established by the Comprehensive Parks, Recreation, and Open Space Facilities Master Plan by dedicating land and/or paying in-lieu fees for land acquisition, and by paying Park Development Impact Fees for the construction of new facilities.

Policy PR-P2.5 Encourage development of turn-key neighborhood parks, which are completed in conjunction with development of a new subdivision, rather than payment of impact fees.

Policy PR-P2.6 Work with residential developers to ensure that parks and recreational facilities planned to serve new development will be available concurrently with need.

Policy PR-P2.7 Encourage new non-residential development that would bring workers to Vacaville to incorporate park and recreation facilities into the project design.

Policy PR-P2.8 Ensure that all new residential development will either annex into or set up a new park maintenance district in accordance with the Landscaping and Lighting Act of 1972.

Actions

Action PR-A2.1 Adjust park impact fees to reflect a more accurate cost of developing parkland based on real development costs. Include an adjustment factor for the cost of responding to changing requirements, such as the Americans with Disabilities Act, playground safety standards, CEQA requirements, and new building technology that combats vandalism (e.g. concrete tables and video surveillance systems).

Goal PR-3	**Locate new parks to maximize safety, site efficiency, public safety, and convenient public access.**

Policies

Policy PR-P3.1 Locate new neighborhood parks adjacent to new elementary schools where possible. Whenever possible, work with the school district to design both the park and school to maximize the benefits for the public.

Policy PR-P3.2 Prohibit new neighborhood parks adjacent to arterial streets.

Policy PR-P3.3 Wherever possible, site new parks and recreation facilities to promote pedestrian and bicycle access and prevent the need to cross major roadways.

Policy PR-P3.4 Locate parks and recreation facilities to take advantage of natural features, adjoining open space, trail access, lands that may be jointly-used for recreation purposes, ***land use buffers*** (i.e. areas of open space or low-intensity uses between potentially conflicting land uses), urban separators, and easements.

Actions

Action PR-A3.1 Coordinate with public safety staff in the design of parks and in the development of standards for park design. Incorporate these standards into the Update to the City's Comprehensive Parks, Recreation, and Open Space Master Plan.

Goal PR-4	**Provide and maintain parks that reflect, preserve, and respect Vacaville's natural setting and the public's investment in each facility.**

Policies

Policy PR-P4.1 Provide the public with clear signage regarding appropriate usage of parks, open space, trails, and other recreational facilities. Ensure that park regulations and local laws are appropriate and enforceable.

Policy PR-P4.2 Promote the environmental and recreational qualities of Lagoon Valley Regional Park through outreach to Vacaville residents and employees, as well as to the greater Vacaville region.

Policy PR-P4.3 Develop and follow operations policies to prevent the degradation or despoilment of the City's parklands through inappropriate uses.

Policy PR-P4.4 Preserve and enhance the natural areas and biotic resources within parks, such as riparian corridors, wildlife habitat, and oak woodlands. Integrate these resources into the recreational experience in ways that emphasize their importance and enjoyment to park users, such as providing trails, viewing platforms, and interpretive signage.

Goal PR-5 Engage in coordinated and cooperative park planning efforts.

Policies

Policy PR-P5.1 Involve interested members of the public, other public agencies, and private organizations in park and recreational facility planning.

Policy PR-P5.2 Work with the local school district to design parks located adjacent to schools to maximize the public benefits of both the park and school.

Policy PR-P5.3 Cooperate with special districts, Solano County, the State, and other agencies that provide recreational facilities to ensure that Vacaville residents have access to recreational facilities outside of those that can be provided by the City.

Policy PR-P5.4 In the event that local school districts decide to sell surplus property, the City shall consider acquiring the land for use as a public park or other recreational facility, subject to available funding, local park needs and the suitability of the site.

Goal PR-6 Provide parks and recreational programs that promote and support a healthy lifestyle in Vacaville.

Policies

Policy PR-P6.1 Encourage public and private providers of recreational activities in Vacaville to collaborate with Solano County Public Health and other public health agencies to design healthy recreation programs that incorporate physical activity and healthy eating.

Policy PR-P6.2 Design parks to ensure that Vacaville continues to provide a combination of both active and passive recreational opportunities for all age levels, including walking, jogging, organized team sports, and informal group sports.

Actions

Action PR-A6.1 Conduct a review of park and recreation facilities to identify ways that they could be utilized to promote healthy lifestyles and activities for all age levels, including diet, exercise, and mental well-being.

6 PUBLIC FACILITIES AND SERVICES ELEMENT

The Public Facilities and Services Element provides information and policy guidance regarding the availability of public facilities and services needed to support existing and future development in Vacaville. It addresses the changing public services and infrastructure needs of Vacaville and provides for their logical and timely extension to keep pace with growth. This element covers the following topics:

- Fire, Rescue, and Emergency Medical Services
- Law Enforcement
- Schools
- Public Buildings
- Technology and Telecommunications
- Other Community Services
- Solid Waste and Recycling
- Water Service
- Wastewater

State law requires that general plans address "the circulation of people, goods, energy, water, sewage, storm drainage, and communications." In this General Plan, the Transportation Element and the Public Facilities and Services Element fulfill this requirement. This Public Facilities and Services Element also fulfills the State law requirement that general plans include "the proposed general distribution and general location and extent of the uses of the land for…solid and liquid waste disposal facilities," as well as information on "the general location and extent of existing and proposed… public utilities and facilities."

The beginning of each section below contains brief background information on the major planning issues. The second part contains goals, policies, and actions related to the specific public service or infrastructure category.

The coordination of land use, public services, and utilities is discussed in the Land Use Element. Water conservation is addressed in the Conservation and Open Space Element. Stormwater management is addressed in the Safety Element.

Fire, Rescue, and Emergency Medical Services

Background Information

The Vacaville Fire Department (VFD) provides fire and emergency medical services to approximately 28 square miles within the City of Vacaville, as well as emergency medical services to

approximately 160 square miles of unincorporated county land surrounding the city. VFD responds to calls to service for fires, hazardous materials emergencies, certain technical emergencies, vehicle accidents and extrication incidents, and first responder and transport services. VFD also organizes and conducts a fire prevention and public education program in Vacaville, including business and occupancy inspections.

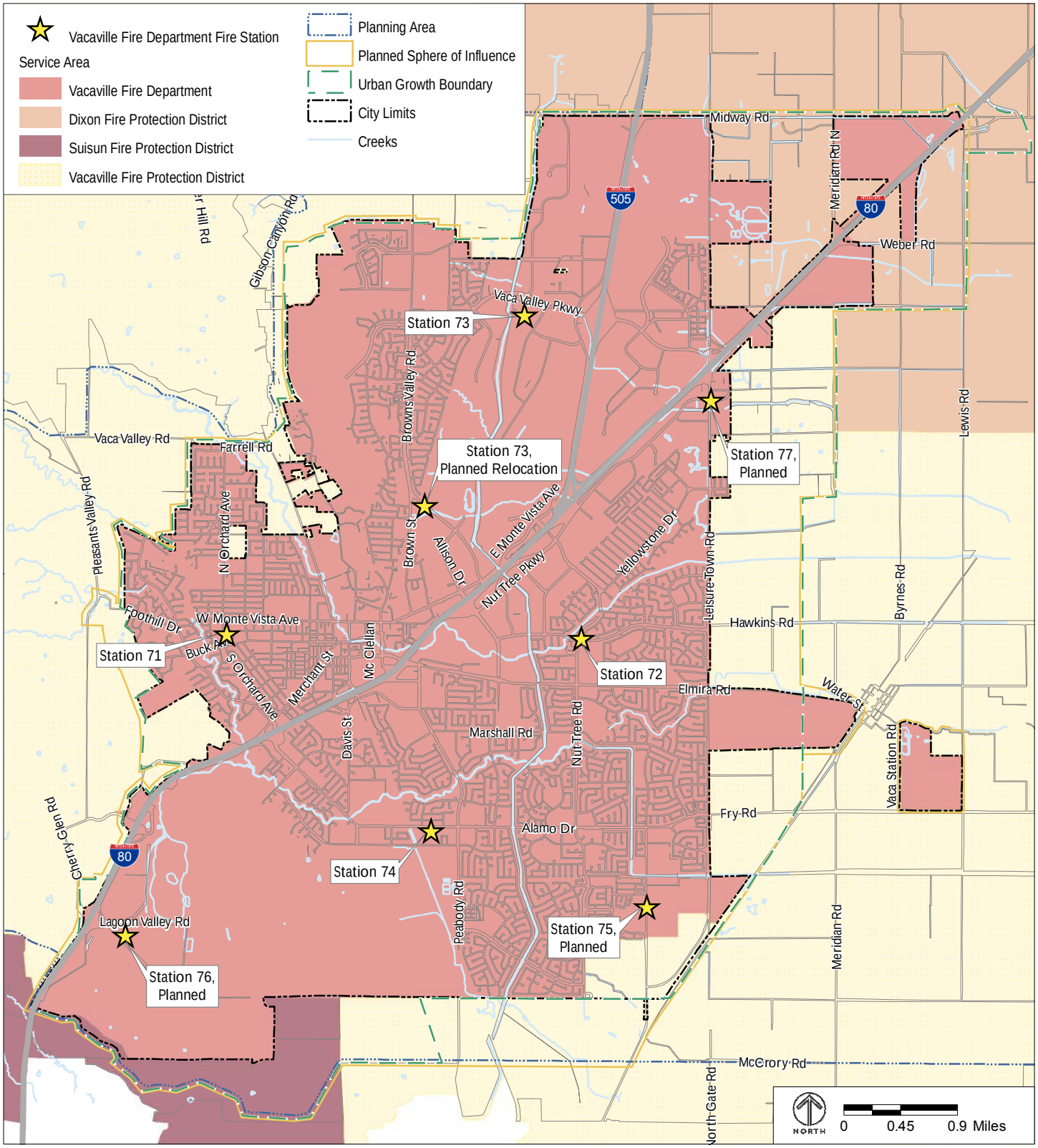
VFD maintains several facilities and a variety of equipment. In addition to its administrative offices at City Hall, VFD has four existing fire stations in the city, as shown in Figure PUB-1: Stations 71 (serves as the main station), 72, 73, and 74. Beyond ambulances and basic fire engines, VFD maintains and operates a variety of specialty and support equipment.

As of the preparation of this General Plan in 2013, there are plans in place to develop three new fire stations and relocate one existing station, which are all shown on Figure PUB-1. Planned fire stations include:

- Station 75, which will be located in and will serve the Southtown area.
- Station 76, which will be located in Lagoon Valley in southwest Vacaville.
- Station 77, which is planned at Orange Drive and Leisure Town Road, but contingent on the planned relocation of Station 73.

Funding for VFD comes from the City's General Fund, ambulance transport fees, Special Paramedic tax, Inspections fees, impact fees from new development, and from public safety ***Community Facilities Districts (CFDs)***, which have been formed for new development areas to offset the costs of providing public safety services to such areas through the levy of special taxes.

Fire service for the areas surrounding the city limits is provided by fire protection districts, including the Vacaville Fire Protection District, Dixon Fire Protection District, and Suisun Fire Protection District. In addition, VFD is actively involved in formal agreements with the City of Dixon, the City of Fairfield, and the Vacaville Fire Protection District to provide automatic aid responses in designated areas. VFD also participates in a Mutual Aid Plan with other fire departments in Solano County.



Note: The City's ambulance service provides additional coverage to the north and east of the city that is not illustrated on this figure.
Source: Solano County, 2008 and City of Vacaville, 2010.

FIGURE PUB-1
FIRE PROTECTION SERVICE PROVIDERS

Goals, Policies, and Actions

Goal PUB-1	**Provide adequate fire, rescue, and emergency medical services to serve existing and new development.**

Policies

Policy PUB-P1.1 Prohibit any development that will not, even with identified mitigation measures, maintain standards for fire, rescue, and emergency medical service. All service standards shall be met prior to project occupancy. Allow exceptions to these services standards only when there are overriding findings of special circumstances or economic or social benefits.

Policy PUB-P1.2 Ensure that new development pays a fair and equitable amount to offset the costs for fire, rescue, and emergency medical response services by collecting impact fees, requiring developers to build new facilities, and requiring the new areas to create or annex into a Community Facilities District.

Policy PUB-P1.3 Establish Community Facilities Districts or other funding mechanisms to provide standby fire protection services (i.e. fire protection services during the construction phase of new development, adding permanent staffing levels as construction progresses), if necessary.

Policy PUB-P1.4 Identify and mitigate fire hazards during the project review and approval process.

Policy PUB-P1.5 Require that new development satisfy fire flow and hydrant requirements and other design requirements as established by the Fire Department.

Policy PUB-P1.6 Plan future fire station locations to maintain or enhance current response levels.

Policy PUB-P1.7 Continue to coordinate fire protection services with the other agencies to ensure coverage for all areas within Vacaville's Planning Area.

Actions

Action PUB-A1.1 Develop a public safety facilities plan for fire, rescue, and emergency medical services. Include the following elements in the plan:

- Analysis of current fire, rescue, and emergency medical facilities and equipment, and their adequacy to service the existing planning area.

- Projections of the impacts of new development on the provision of fire, rescue, and emergency medical services to the existing and new areas of the community. These projections should include the adequacy of facilities and equipment, response times, communications systems, and the adequacy of the water system for firefighting needs.
- Response time standards for fire, rescue, and emergency medical services, and adequate personnel and facilities to meet the established standards.
- Hazardous materials use, storage, and disposal standards.
- Detailed Wildland Fire Hazard Area map for areas of local responsibility, similar to Figure SAF-9 in the Safety Element.

Law Enforcement

Background Information

The Vacaville Police Department (VPD) provides law enforcement service to the City of Vacaville. Responsibilities of VPD include a 24/7 communication center, crime suppression and prevention, investigations, traffic patrol, and emergency service. In addition, VPD oversees the Reserve Officer and Cadet Programs and administers specialty units. There is one main VPD police station, which is located at 660 Merchant Street, adjacent to Vacaville City Hall. VPD is currently meeting or exceeding its adopted standards for response times.

Funding for VPD mainly comes from the City's General Fund. A small percentage of other funding comes from grants and development impact fees. In addition, public safety CFDs have been formed for new development areas to offset the costs of providing public safety services to such areas through the levy of special taxes.

VPD participates in a regional Office of Emergency Services mutual aid agreement. By participating in this mutual aid agreement, VPD commits staff and other resources to assist with disasters throughout the state. In return, VPD receives assistance from outside entities should a significant emergency occur in Vacaville. Additionally, the Solano County Sheriff's Office provides law enforcement and emergency response in unincorporated parts of Solano County and provides a small degree of support for Vacaville police, assisting the City with police services approximately ten to 15 times per year.

Goals, Policies, and Actions

Goal PUB-2	**Maintain a safe environment in Vacaville through the enforcement of the law.**

Policies

Policy PUB-P2.1 Maintain adequate police staffing, performance levels, and facilities to serve Vacaville's existing population as well as any future growth.

Policy PUB-P2.2 Prohibit any development that will not, even with identified mitigation measures, maintain standards for law enforcement service. All service standards shall be met prior to project occupancy. Allow exceptions to these services standards only when there are overriding findings of special circumstances or economic or social benefits.

Policy PUB-P2.3 Ensure that new development pays a fair and equitable amount to offset the costs for law enforcement services by collecting impact fees and requiring the creation of or annexation into a Community Facilities District.

Policy PUB-P2.4 Identify and mitigate law enforcement hazards during the project review and approval process.

Policy PUB-P2.5 Require physical site planning that prevents crime by locating walkways, open spaces, landscaping, parking lots, parks, play areas, and other public spaces in areas that are visible from buildings and streets.

Actions

Action PUB-A2.1 Develop a public safety facilities plan for law enforcement services. Include the following elements in the plan:

- Analysis of current law enforcement facilities and equipment, and their adequacy to service the existing planning area.
- Projections of the impacts of new development on the provision of law enforcement services to the existing and new areas of the community. These projections should include the adequacy of facilities and equipment, response times, and communications systems.
- Response time standards for law enforcement services, and adequate personnel and facilities to meet the established standards.

Action PUB-A2.2 Provide neighborhood security and crime prevention information and training to neighborhood groups and homeowners' associations.

Schools

Background Information

Schools play a central role in the daily life of the city. New families contemplating a home in Vacaville look at the quality of local schools as part of their evaluation of whether to settle in town, and existing residents are actively engaged in schools to help them maintain a high level of achievement. School children require an environment that excites and stimulates learning. Moreover, because children spend a significant part of their lives in school, school buildings constitute important landmarks in the image that the young residents of Vacaville form of their community.

The City of Vacaville does not have jurisdiction over local schools. However, schools are an important part of the community, and the General Plan can support the mission of local school districts and the provision of high-quality education for Vacaville's children.

School Districts

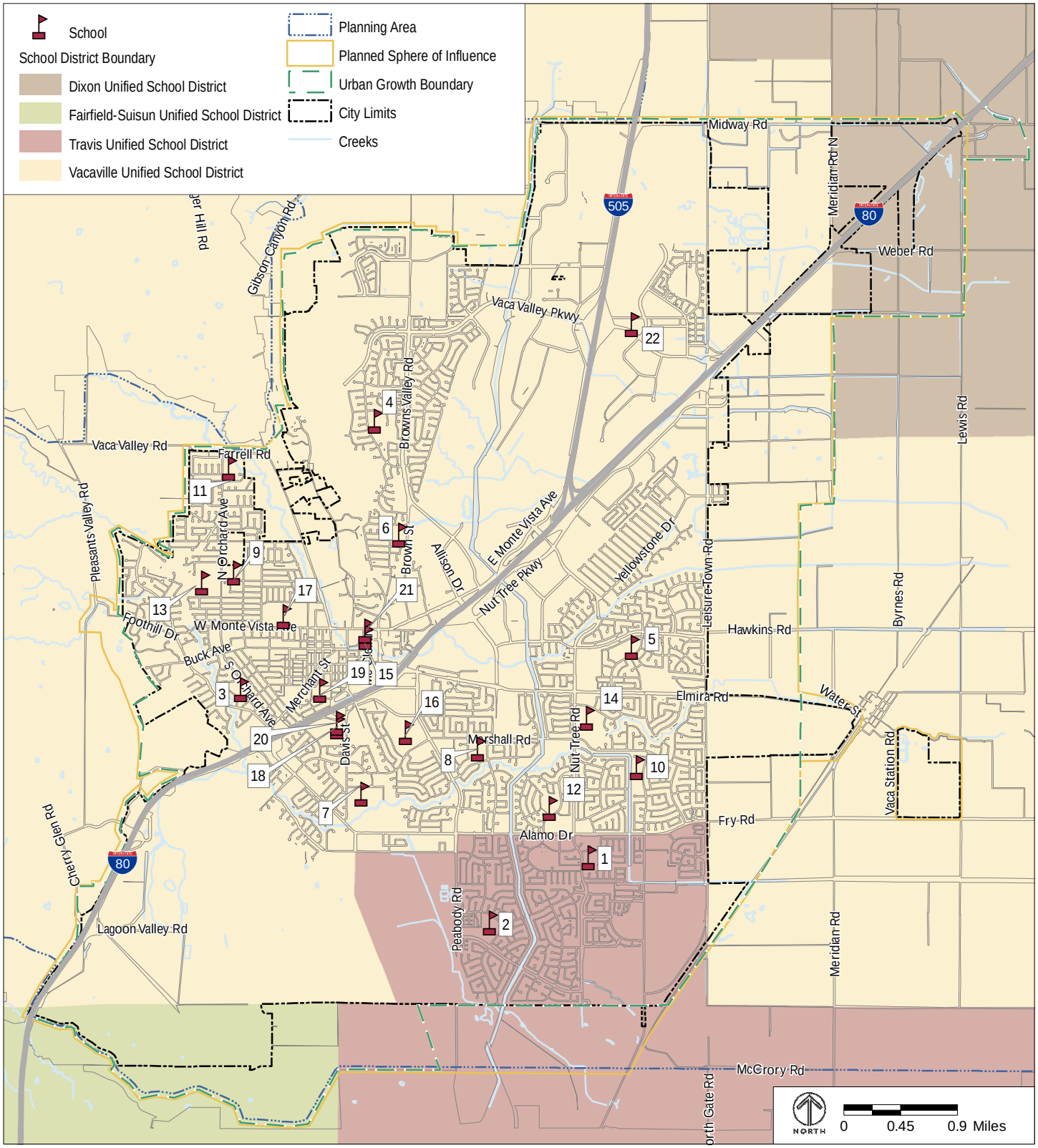
The City of Vacaville is served mainly by the Vacaville Unified School District (VUSD) and the Travis Unified School District (TUSD). However, a portion of the city is located within the Dixon Unified School District (DUSD), and a small portion of the Lower Lagoon Valley area falls within the jurisdiction of the Fairfield-Suisun Unified School District (FSUSD). Figure PUB-2, School Districts and Existing Schools, illustrates the current boundaries of the four school districts serving the City of Vacaville and shows the location of existing schools. Planned school sites, which are considered preliminary, are shown in Figure PUB-3.

Solano Community College

Solano Community College, established in 1945, offers associates degrees in a variety of fields, as well as other academic programming. The college has a main campus in Fairfield and satellite campuses in Vacaville, Vallejo, and Travis Air Force Base. The Vacaville Center of Solano Community College is located at 2000 North Village Parkway, off Vaca Valley Parkway. This satellite campus offers general education courses, job training in computer applications, and training for a variety of vocational programs.

School Funding

Senate Bill (SB) 50, approved by the California Legislature in 1998 and funded by Proposition 1A, limits the power of Vacaville or any other city or county to require fiscal mitigation on home developers as a condition of approving new development, and provides for a standardized developer fee for schools. California Government Code Sections 65995 to 65998 set forth provisions



Source: City of Vacaville, 2010.

Travis Unified School Distrct
1 Cambridge Elementary School
2 Foxboro Elementary School

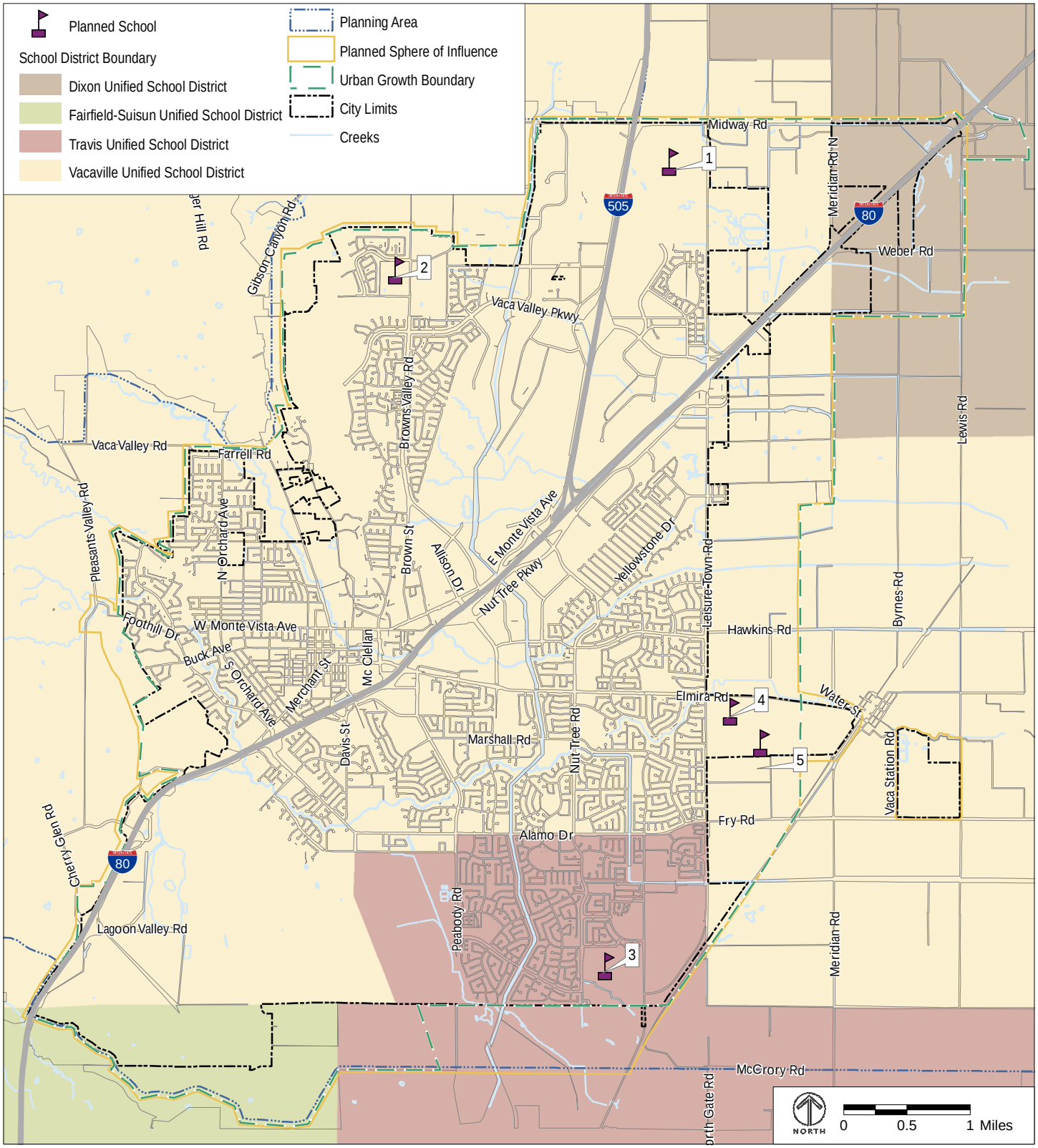
Vacaville Unified School District
3 Alamo Elementary School
4 Browns Valley Elementary School
5 Cooper Elementary School
6 Edwin Markham Elementary School
7 Eugene Padan Elementary School

Vacaville Unified School District (con't)
8 Fairmont Elementary School
9 Hemlock Elementary School and ACE Charter School
10 Jean Calison Elementary School
11 Orchard Elementary School
12 Sierra Vista Elementary School
13 Willis Jepson Middle School
14 Vaca Pena Middle School
15 Country High School
16 Will C. Wood High School

Vacaville Unified School District (con't)
17 Vacaville High School
18 Elise P. Buckingham Charter School
19 Vacaville Community Prep Day School
20 Vacaville Independent Study Program
21 Vacaville Adult School

Solano Community College
22 Solano Community College Vacaville Center

FIGURE PUB-2
SCHOOL DISTRICTS AND EXISTING SCHOOLS



Source: City of Vacaville, 2010.

1 North Village Elementary School
2 Rice McMurty Elementary School
3 Vanden Meadows Elementary School
4 Brighton Landing Private High School
5 East of Leisure Town Road Elementary School - South

FIGURE PUB-3

SCHOOL DISTRICTS
AND PLANNED SCHOOLS

to implement SB 50. Specifically, according to Section 65995(3)(h), the payment of statutory fees is "deemed to be full and complete mitigation" of the impacts of any land use decision or development project approval on the provision of adequate school facilities. Local school districts in Vacaville are responsible for implementing the specific methods for mitigating school impacts under the Government Code.

In addition to the use of developer fees, school districts may acquire funds to provide school services in specific areas through the creation of a Community Facilities District (CFD). The Mello-Roos Community Facilities Act of 1982 allows the City Council to create such a district with a two-thirds vote by area landowners, and may authorize a special tax and sell bonds to meet service costs. School districts may also initiate the formation of a CFD.

The City of Vacaville should work closely with all school districts to devise an on-going means of financing school construction within the districts to accommodate the anticipated growth under this General Plan.

Goals, Policies, and Actions

Goal PUB-3	**Support high quality education for Vacaville's school children as a community priority.**

Policies

Policy PUB-P3.1	Encourage school districts to provide permanent facilities that are located within close proximity to residential neighborhoods.
Policy PUB-P3.2	Encourage school districts to promote innovative and high-quality design in school building architecture, landscaping, and campus layout.
Policy PUB-P3.3	Encourage school districts to locate elementary schools away from major streets to avoid vehicular noise and traffic hazards.
Policy PUB-P3.4	Encourage school districts to design school sites with adequate on-site pick-up and drop-off areas to prevent school-related traffic congestion on the fronting and surrounding roadways.
Policy PUB-P3.5	Encourage school districts to locate schools on sites with access to more than one street to avoid congestion on nearby streets.
Policy PUB-P3.6	Encourage school districts to provide direct, safe, and convenient pedestrian and bicycle access between school sites and nearby residential neighborhoods to provide safe passage for students and teachers.

Policy PUB-P3.7 Encourage school districts to implement and update, as needed, facility master plans.

Policy PUB-P3.8 Encourage neighboring school districts to modify jurisdictional boundaries where such changes would benefit the safety of school children and reduce their travel time to school.

Goal PUB-4	**Promote close cooperation and coordination between the City of Vacaville and the school districts.**

Policies

Policy PUB-P4.1 Regularly inform the school districts of policies and projects that may affect the provision of educational facilities and services.

Policy PUB-P4.2 Work with the school districts to plan educational facilities with sufficient permanent capacity to meet the needs of current and projected future enrollment, and ensure that there are mechanisms to provide for the timely construction of the facilities.

Policy PUB-P4.3 In conjunction with the approval of residential development, cooperate with local school districts to ensure that sufficient school facilities are available to serve the enrollment generated by the new development.

Policy PUB-P4.4 If planned school sites, as shown in Figure PUB-3, are not required or are needed in an alternate location, as determined by the school districts, the land use designation of the site will revert to the predominant land use in the area through a General Plan Amendment process.

Public Buildings

Background Information

The City of Vacaville owns and/or operates numerous public buildings in the city, including City Hall, a public works corporation yard, remote City offices at the corner of Buck Avenue and Eldridge Street, and the Easterly Waste Water Treatment Plant. City Hall is located at 650 Merchant Street. The facility provides for governance and administrative functions, such as the City Council, City Manager, City Attorney, Finance Department, and the City Clerk, and also houses the administrative offices of multiple City departments, including Community Development, Police, Fire, and Public Works. The Public Works corporation yard is located at 1001 Allison Drive, just east of Downtown Vacaville. It provides facilities for municipal building, engineering, and maintenance, and public works functions. The remote City offices located at the corner of Buck Avenue and Eldridge Street house the City's Community Services and Housing Services

departments. The Easterly Waste Water Treatment Plant, which is discussed further in the wastewater section of this Element, is located at 6040 Vaca Station Road and treats wastewater collected in the city.

There are two libraries in Vacaville and both are maintained by the Solano County Library System in cooperation with the Vacaville Unified School District Library District. The Town Square branch of the Vacaville Public Library, located at 1 Town Square Place, opened in 2005 and features 25,000 square feet of space. The Cultural Center branch, located at 1020 Ulatis Drive, was remodeled in 2005 and features 24,000 square feet of space. Both libraries feature a meeting room, a study room, and a computer center, as well as additional equipment and technological amenities.

Public safety facilities (i.e. police and fire stations) and schools are covered in separate sections of this element. Recreational facilities and community centers are covered in the Parks and Recreation Element.

Goals, Policies, and Actions

Goal PUB-5	**Build and maintain public buildings that are a source of civic pride for all residents.**

Policies

Policy PUB-P5.1	Locate public administrative buildings centrally.
Policy PUB-P5.2	Design public buildings and facilities to maintain and improve the beauty of Vacaville.
Policy PUB-P5.3	Design public buildings to fit into and complement their ultimate surroundings, and buffer public buildings from their surroundings to shield unsightly areas from public view.
Policy PUB-P5.4	Provide adequate landscaping for all public buildings and installations.
Policy PUB-P5.5	Construct public works satellite facilities as necessary to effectively serve new development.
Policy PUB-P5.6	Encourage public buildings to accommodate multiple community uses.

Goal PUB-6	**Provide sufficient library services to meet the informational, cultural, and educational needs of Vacaville.**

Policies

Policy PUB-P6.1 Explore opportunities to expand library services in Vacaville to keep pace with new development. Work with the Solano County Library System and the Vacaville Unified School District Library District to expand existing facilities and/or build another branch library to better serve residents located in other areas of the city.

Policy PUB-P6.2 Encourage the Solano County Library System and the Vacaville Unified School District Library District to maintain or increase library operations funding as budgets allow.

Policy PUB-P6.3 Encourage the Solano County Library System and the Vacaville Unified School District Library District to ensure that libraries are accessible to all residents, including elderly, disabled, or other underserved populations.

Policy PUB-P6.4 Support joint use of library facilities by various community groups.

Policy PUB-P6.5 Support implementation of Solano County's Libraries Master and Strategic Plans.

Technology and Telecommunications

Background Information

A wide variety of utilities and technologies are central to a modern community. Adequate provision of these utilities and services allows businesses to prosper, homes and schools to be connected to educational resources from across the world, and government services to be easily accessed by citizens. Likewise, lack of these facilities can be a major detriment to the health and development of a community. Since most of these facilities and services are provided by private companies, a partnership between government, industry, and citizens is needed. In addition, because the field of technology and telecommunications changes very rapidly, policies and regulations need to be flexible enough to respond to the changing marketplace.

Many of the facilities necessary to provide telecommunications services are located in the public right-of-way, or in public utility easements adjacent to the right-of-way. To avoid damage to the public investment in landscaping and roads, and to avoid disruption to residential neighborhoods, maintenance and installation work should be coordinated and properly scheduled. Some utility franchises are established by State law (e.g. telephone), while other franchises are left to local negotiations, although both examples have severe and substantial limitations on the exercise of local authority. These franchise agreements provide rights to use of the right-of-way to the franchisee, and provide the City with money to help pay for the repair of damages caused by installa-

tion and maintenance work. Franchise agreements also provide the City with tools to ensure services are provided to areas that may be less economically desirable for the provider to serve.

Telecommunications facilities can impact the appearance of a community. Too many aboveground facilities can detract from the residential character of neighborhoods. In many older residential and commercial areas, electrical distribution lines are located on poles in the public right-of-way, which can disrupt the aesthetic characteristics of a neighborhood or commercial center. In newer developments, the distribution lines for electricity are placed underground, along with cable television, telephone, and natural gas lines.

Access to the Internet is an essential feature of schools and businesses. In addition, more workers are telecommuting, working from their home by connecting to the main office through telecommunications technology. This benefits the community and region by reducing traffic and providing citizens with more time to commit to their families, local organizations, and activities.

As citizens and businesses have come to rely on the Internet for economic and educational activities, they also expect the same sort of access and service from government. The City's website helps residents sign up for programs, take out permits, and participate in general governance more effectively. In addition, the City has established a "control network" to accurately identify all new parcels and facilities in new development projects, which will assist emergency response planning, modeling to determine future facility needs, and general mapping activities. Telecommunications services have also become important tools for law enforcement and emergency medical services. Not only is radio used to dispatch units, but data on suspects and patient records is commonly sent to vehicle-based computer systems. Global Positioning System (GPS) receivers are also used to keep track of emergency response vehicles, and an Opticom traffic signal system provides green lights for emergency vehicles through intersections.

Goals, Policies, and Actions

Goal PUB-7	**Promote the development of state-of-the-art technology and telecommunications facilities that benefit the public.**

Policies

Policy PUB-P7.1	Ensure that technological facilities and services are available to the broadest possible cross-section of residents, businesses, and institutions in Vacaville.
Policy PUB-P7.2	Monitor changes to technology and federal and State regulations to ensure that Vacaville is able to respond to those changes in a timely manner.
Policy PUB-P7.3	Coordinate City telecommunications services with other local, regional, State, and federal governmental agencies to provide citizens the greatest

possible open and convenient access to governmental programs and information.

Policy PUB-P7.4 Support telecommunications and other technologies necessary to develop quality jobs and educational facilities in Vacaville.

Policy PUB-P7.5 Ensure that the City's telecommunications and Internet services are capable of providing timely emergency information.

Actions

Action PUB-A7.1 Develop and maintain appropriate ordinances, policies, and master plans to regulate the installation of telecommunications facilities for the best interests of the community. As new technologies emerge, amend existing regulations or adopt new ones, consistent with the best interests of the community.

Action PUB-A7.2 Amend the Telecommunications chapter of the Land Use and Development Code as needed to keep up-to-date on changes in telecommunications technology and practices.

Other Community Services

Background Information

As the City grows, there will be an increasing demand and support for community services and cultural facilities. Most services that enhance the quality of life within the city, such as health services, child-care services, and cultural and community facilities, such as theaters, galleries, places of worship, are provided by private businesses or public agencies other than the City. However, the City provides some of these services, such as the Vacaville Cultural Center, which includes a performing arts facility.

Goals, Policies, and Actions

Goal PUB-8 Encourage the development of public and institutional uses in Vacaville, including educational, cultural, health-care, and day-care facilities.

Policies

Policy PUB-P8.1 Encourage participation by the private sector in funding public or nonprofit facilities and services that will be used by Vacaville residents and jobholders.

Policy PUB-P8.2 Encourage public and private community facilities such as churches to be located near residential areas on arterial or collector streets.

Policy PUB-P8.3 In order to facilitate negotiation between potential users and developers during the early stages of project design, encourage designation of sites for membership organizations on development plans.

Policy PUB-P8.4 Encourage day-care facilities in residential areas if there is sufficient available space for outdoor activity and if traffic, parking, and noise impacts can be mitigated.

Policy PUB-P8.5 When reviewing development proposals that include significant job-generating uses, coordinate with the project proponent to determine the need for and, where applicable, the location of day-care facilities at the time a specific plan, tentative map, or development plan is approved.

Policy PUB-P8.6 Continue to develop a cultural resources program, including visual arts and performing arts.

Actions

Action PUB-A8.1 Implement zoning designation(s) that will clearly delineate major institutions and public facilities and their uses and establish appropriate development standards.

Solid Waste and Recycling

Background Information

The City of Vacaville contracts with a private waste collection company to provide weekly solid waste, green waste, and recyclable material collection to Vacaville residents and commercial businesses. The California Department of Resources Recycling and Recovery (CalRecycle) has allocated the City of Vacaville with a disposal rate target of 6.5 pounds of waste per person per day. In 2010, the City of Vacaville's disposal rate was 4.9 pounds of waste per person per day, which was well below the CalRecycle target.

Recyclable material can also be taken to several drop-off recycling centers throughout the city, including a recycling Center located at 855½ Davis Street. Recyclable material collected by the private waste collection company is sent to a material recovery facility.

Solid waste collected from Vacaville is deposited at the Hay Road Landfill. In 2009, the landfill received 126,000 tons of solid waste, of which 48 percent was from Vacaville residents and

businesses. The total capacity of the landfill is 37 million cubic yards. As of 2012, it is projected that the landfill will reach capacity in 2069.

Vacaville residents can dispose of household hazardous waste at the Household Hazardous Waste Facility. The Household Hazardous Waste Facility also accepts commercial hazardous waste from Conditionally Exempt Small Quantity Generators (CESQGs) that generate less than 220 pounds or 27 gallons of hazardous waste for a fee.

Division 8.08 (Solid Waste, Yard Waste, and Household Hazardous Waste) of the Vacaville Municipal Code regulates the collection and disposal of solid waste, yard waste, and household hazardous materials. All Vacaville residents must pay to have their solid and yard waste collected. Solid and yard waste may not be burned or buried within the city limit. Household hazardous waste must be disposed of at a licensed and permitted collection facility. In addition, the Land Use and Development Code (Division 14.09 of the Municipal Code) requires that residential, commercial, business, industrial, and public districts provide areas for the collection of recyclable material and solid waste.

Goals, Policies, and Actions

Goal PUB-9	**Reduce the volume of solid waste generated in Vacaville through recycling and resource conservation.**

Policies

Policy PUB-P9.1	Improve upon, and expand, waste disposal programs and methods in order to meet or exceed State waste diversion requirements.
Policy PUB-P9.2	Strive for a minimum 90 percent of City residents to participate in waste diversion programs.
Policy PUB-P9.3	Maintain and expand the citywide curbside recycling program.
Policy PUB-P9.4	Maintain and expand the citywide household hazardous waste collection program.
Policy PUB-P9.5	Maintain and expand the citywide separate yard waste collection and composting program.
Policy PUB-P9.6	Continue to emphasize public education about the City's various waste reduction and diversion programs to increase participation and diversion quantities.
Policy PUB-P9.7	Encourage local businesses to expand their recycling efforts and to reduce packaging of products manufactured in the city.

Policy PUB-P9.8 Design or improve public buildings with on-site storage facilities for recycled materials.

Policy PUB-P9.9 Require that construction sites provide for the salvage, reuse, or recycling of construction and demolition materials and debris.

Policy PUB-P9.10 Require the use of post-consumer recycled paper and other recycled materials in all City operations whenever possible.

Actions

Action PUB-A9.1 Consider adopting a procurement ordinance to purchase recycled goods, thereby creating a market for recycled materials.

Action PUB-A9.2 Amend the Land Use and Development Code to require at least 50 percent diversion (i.e. reuse or recycling) of non-hazardous construction waste from disposal.

Water Service

Background Information

The City provides potable water to users within the city limits via a network of water mains, transmission mains, reservoirs, groundwater wells, booster pump stations, and treatment plants.

Water Supply

Water supply for the city comes from both surface water and groundwater, and is drawn from a variety of reserves, including the following:

- **Solano Project.** The Solano Project was constructed by the Bureau of Reclamation in 1958. The main feature of the Solano Project is Monticello Dam, which provides storage for approximately 1.6 million acre-feet (AF) of water in Lake Berryessa. In addition to its direct entitlement, Vacaville entered into an agreement with the Solano Irrigation District (SID) that augments the city's allocation of Solano Project water.
- **State Water Project (North Bay Aqueduct).** Pursuant to agreements with the Solano County Water Agency (SCWA) and the Kern County Water Agency (KCWA), surface water received from the State Water Project is delivered through the North Bay Aqueduct (NBA) to the City of Vacaville. Because the NBA is part of the entire State Water Project, any shortages occurring in the State Water Project impact the water availability from the NBA, making it a less reliable source than the Solano Project.
- **Settlement Water.** The California Water Code includes area-of-origin statutes, which state that an area shall not be deprived of the prior right to water reasonably required to adequately supply the beneficial needs of the area. In settlement of area-of-origin water

right applications by the cities of Fairfield, Benicia, and Vacaville, the California Department of Water Resources (DWR) provides "Settlement Water" to Vacaville. This is part of the State Water Project.

- **Municipal Groundwater Wells.** The City owns and operates twelve municipal groundwater wells with very high quality groundwater. Vacaville continues to explore well field expansion as a means of maintaining adequate water supply.

Areas outside the city limits are generally agricultural and/or rural residential and rely on private groundwater wells and/or potable water service from the Solano Irrigation District (SID).

In 2002, the California legislature passed Senate Bill (SB) 610, which requires new development projects to assess the sufficiency of water supply. SB 610 requires the local public water system to prepare a Water Supply Assessment for large development projects, which are defined in the legislation. A Water Supply Assessment must document water supply sources, quantify existing and future demand for water, evaluate potential impacts of short and prolonged droughts, and compare water supply and demand in order to evaluate water supply sufficiency.

Water Treatment and Distribution

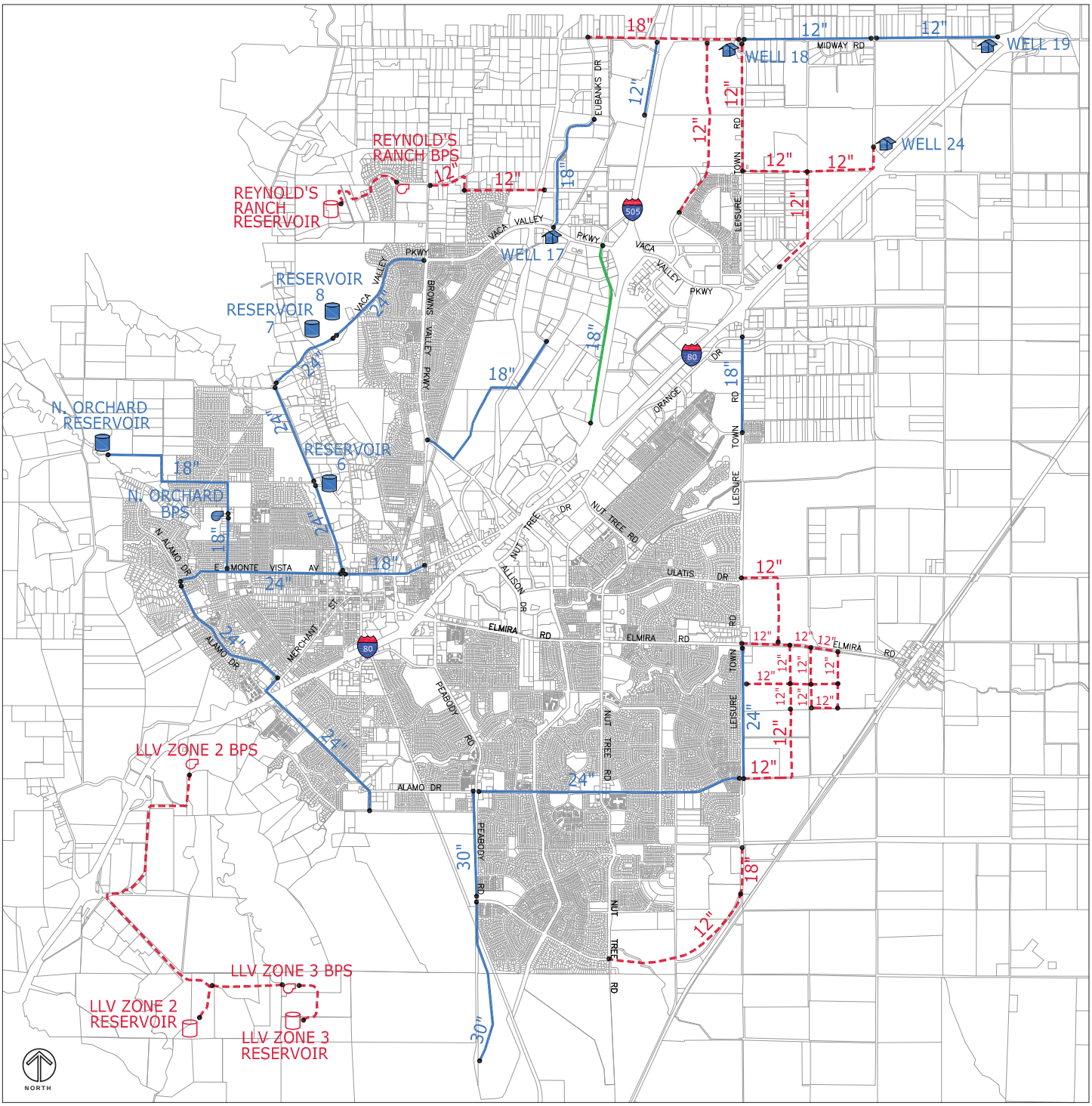
The City operates two water treatment facilities:

- The Diatomaceous Earth Water Treatment Plant (DE Plant), which is located on Elmira Road and owned by the City.
- The North Bay Regional Water Treatment Plant (NBR Plant), which is located in Fairfield and jointly owned with the City of Fairfield.

The City's distribution system consists of one main pressure zone, which primarily serves development with building pad elevations between 82 and 222 feet, and several upper pressure zones, which serve development above 222 feet. The system includes approximately 292 miles of distribution pipelines, including 18-inch, 24-inch, and 30-inch transmission mains, as well as 4-inch to 12-inch water distribution mains. In addition, water is stored by the City in various elevated storage reservoirs, including five reservoirs in the main zone and three reservoirs in the upper pressure zones. New major water distribution system infrastructure required to serve the General Plan by its horizon year of 2035 is shown in Figure PUB-4.

Urban Water Management Plan

In accordance with State law, the City has adopted an Urban Water Management Plan (UWMP), which compares projected water use to available water supply sources over the next 20 years. The UWMP is updated every five years.



Source: NV5, 2012.

- PLANNED WATER LINES (CITY)
- PLANNED WELLS/PLANTS (CITY)
- PLANNED RESERVOIRS (CITY)
- PLANNED BOOSTER PUMP STATIONS (CITY)
- PLANNED WATER LINES (DEVELOPER)
- PLANNED RESERVOIRS (DEVELOPER)
- PLANNED BOOSTER PUMP STATIONS (DEVELOPER)
- WATER LINES UNDER DESIGN/CONSTRUCTION (CITY)

FIGURE PUB-4

YEAR 2035 PLANNED WATER SYSTEM IMPROVEMENTS

Goals, Policies, and Actions

Goal PUB-10 Ensure that a reliable water supply can be provided within the city.

Policies

Policy PUB-P10.1 Continue to pursue additional water supplies to meet the city's future demands.

Policy PUB-P10.2 Require new development to construct water source or storage facilities if the project's Water Supply Assessment indicates a deficiency in the water source.

Actions

Action PUB-A10.1 Continue to update the Urban Water Management Plan every five years.

Goal PUB-11 Provide adequate water infrastructure facilities to meet current and future populations.

Policies

Policy PUB-P11.1 Maintain water storage, conveyance, and treatment infrastructure in good working condition in order to supply domestic water to all users with adequate level of service.

Policy PUB-P11.2 Replace existing water mains with larger mains, as necessary, to serve intensified land use in developed areas per the adopted Water System Master Plan.

Policy PUB-P11.3 Assess the adequacy of water utilities in existing developed areas, and program any needed improvements in coordination with new infrastructure that will serve developing areas.

Actions

Action PUB-A11.1 Continue to update the five-year Capital Improvement Plan to provide for needed water facilities in relation to the City's financial resources.

Action PUB-A11.2 Develop a long-range strategic capital development plan for water facilities consistent with the General Plan.

Goal PUB-12	**Promote coordination between land use planning and water facilities and service.**

Policy PUB-P12.1 Prohibit any development that will not meet standards of water service. All service standards shall be met prior to project occupancy.

Policy PUB-P12.2 Do not allow development in the main water pressure system (Zone 1) to exceed a pad elevation of 222 feet (*NAVD 88*) unless, and until, an upper pressure zone water storage and distribution system (Zone 2) has been constructed to serve such development, or until it can be demonstrated to the satisfaction of the Director of Public Works that equivalent standard pressures to the street and to all structures can be provided by the Zone 1 water system without modification.

Policy PUB-P12.3 Ensure that new development provides fair share funding for all required water utility infrastructure and facilities.

Policy PUB-P12.4 Require that new development designates water service corridor easements or routes when tentative maps or specific plans are approved.

Policy PUB-P12.5 Require buffer landscaping and multiple use, where feasible, of water utility sites and rights-of-way to harmonize with adjoining uses.

Policy PUB-P12.6 Prohibit extension of water service infrastructure into the Upper Lagoon Valley that would promote its urban development.

Wastewater

Background Information

Wastewater collection and treatment is provided by the City of Vacaville.

Wastewater Collection

The City owns and operates the wastewater collection system in Vacaville, which consists of gravity and pressure sewers, lift stations, and associated facilities. The City performs routine wastewater collection system flow monitoring at various permanent metering locations throughout the city and at the Easterly Wastewater Treatment Plant (WWTP). Additionally, the City maintains a collection system model for the purpose of simulating peak flow conditions in major sewers to determine existing and future needs for collection system improvements. Based on this model, the City uses Development Impact Fees to replace undersized facilities, giving priority to those facilities that are expected to reach capacity in the near future.

New major wastewater collection infrastructure required to serve the General Plan by its horizon year of 2035 is shown in Figure PUB-5.

Wastewater Treatment

The Easterly Waste Water Treatment Plant (WWTP), located east of the city, near Elmira, provides treatment of wastewater from residential, commercial, and industrial dischargers throughout the city. Effluent from the Easterly WWTP is discharged into Old Alamo Creek adjacent to the WWTP site. Current wastewater flows are within the design capacity of the WWTP.

The City of Vacaville has an adopted Sewer System Management Plan that responds to the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems and provides a general framework for collection system operation, maintenance, and overflow prevention.

Goals, Policies, and Actions

Goal PUB-13	**Collect, transmit, treat, and dispose of wastewater in ways that are safe, sanitary, and environmentally acceptable.**

Policies

Policy PUB-P13.1 Maintain wastewater conveyance, treatment, and disposal infrastructure in good working condition in order to supply municipal sewer service to the city's residents and businesses.

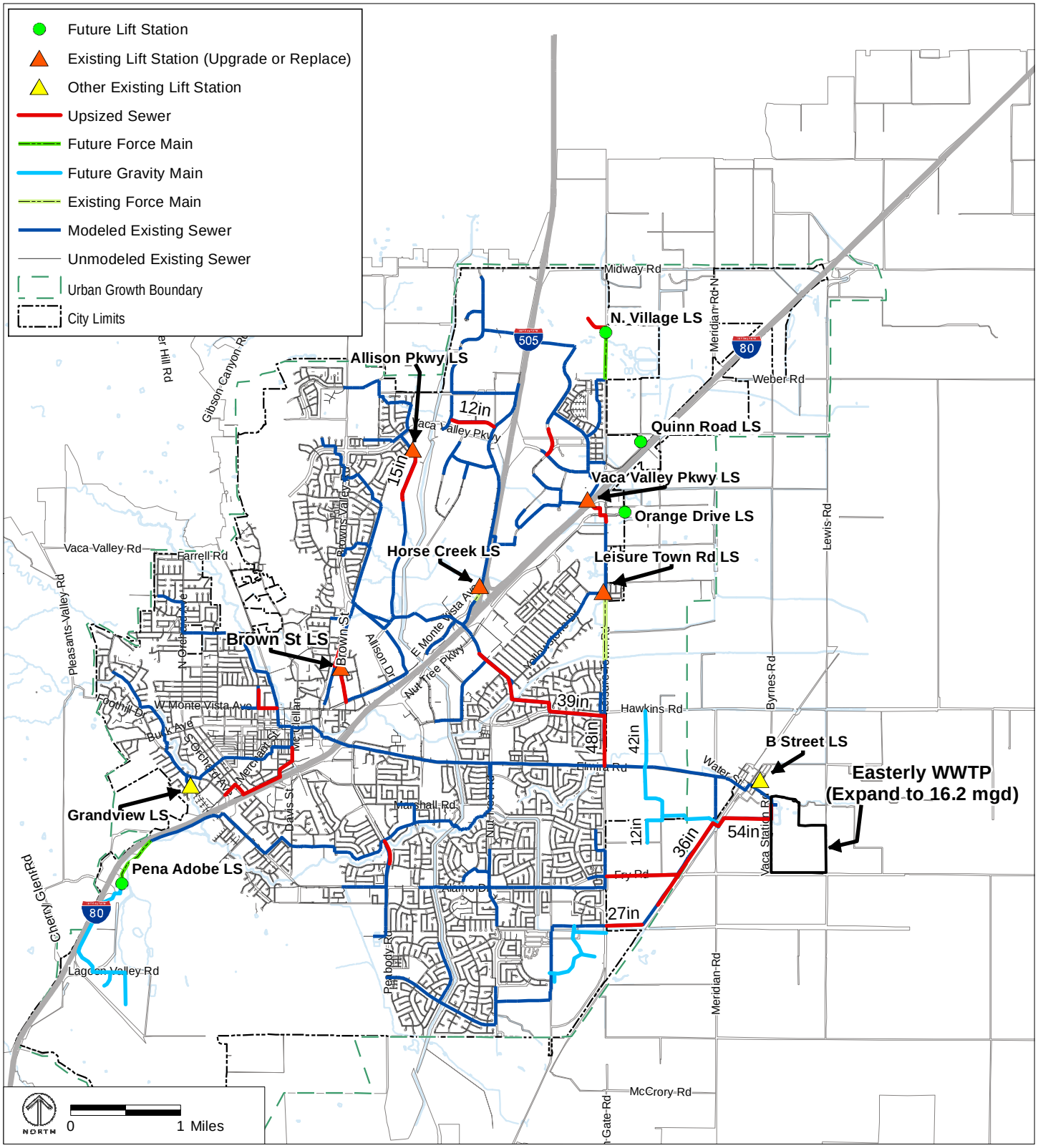
Policy PUB-P13.2 Provide for the replacement of future obsolete or deteriorated wastewater infrastructure in long-range strategic capital planning.

Policy PUB-P13.3 Require that new habitable structures located within the city limits connect to the public wastewater collection system.

Policy PUB-P13.4 Plan, construct, and maintain wastewater treatment facilities to provide a level of wastewater treatment that meets State discharge requirements and to plan for expanding wastewater treatment capacity, consistent with anticipated needs.

Actions

Action PUB-A13.1 Implement and maintain the Sewer System Management Plan in accordance with regulatory requirements to ensure that the wastewater collection system is adequately sized, protected from deleterious substances, and maintained to minimize the risk of sanitary sewer overflows.



Source: West Yost Associates, 2012.
Notes: 1. WWTP = Wastewater Treatment Plant
2. LS = Lift Station
3. The modeled gravity sewer lines consist of all trunk sewers 12 inches in diameter and greater, plus selected smaller diameter sewers in key areas.
4. Alignment, identification, and sizing of improvements subject to change through periodic Master Planning activities.

FIGURE PUB-5

MAJOR WASTEWATER FACILITIES UPGRADES IN 2035

Goal PUB-14 Coordinate wastewater conveyance, treatment, and disposal with land use planning.

Policies

Policy PUB-P14.1 Assess the adequacy of wastewater infrastructure in existing developed areas, and program any needed improvements in coordination with new infrastructure that will serve developing areas.

Policy PUB-P14.2 Replace existing sewers, lift station pumps, and associated equipment and facilities with larger facilities as necessary to serve intensified land use in developed areas.

Policy PUB-P14.3 Ensure that new development provides adequate funding for all wastewater infrastructure and facilities.

Policy PUB-P14.4 Prohibit any development that will not maintain adequate standards for wastewater service. All wastewater service standards shall be met prior to project occupancy.

Policy PUB-P14.5 Require that new development designate sewer easements or routes when tentative maps or specific plans are approved.

Policy PUB-P14.6 Prohibit extension of wastewater infrastructure into the Upper Lagoon Valley that would promote its urban development.

Policy PUB-P14.7 Long-range strategic capital development plans for areas with concentrations of unoccupied Business Park or Technology Park shall be in accordance with the sewer master plan that may include one or more unassigned "point loads" in order to accommodate large employers with high wastewater flows.

Actions

Action PUB-A14.1 Continue to update the five-year Capital Improvement Plan to provide for needed wastewater facilities in relation to the City's financial resources.

Action PUB-A14.2 Develop and maintain, through regular updates, a long-range strategic capital development plan for wastewater facilities consistent with the General Plan.

Goal PUB-15 Pursue innovative solutions for wastewater treatment and disposal or reuse that are compatible with the environment.

Policies

Policy PUB-P15.1 Require buffer landscaping and multiple use, where feasible, of wastewater utility sites and rights-of-way to harmonize with adjoining uses.

Policy PUB-P15.2 Seek out cost effective and environmentally sustainable methods of distributing and using recycled water for non-potable uses.

7 SAFETY ELEMENT

The Safety Element provides information about risks in Vacaville due to natural and human-made hazards. It addresses the protection of the community from any unreasonable risks associated with the effects of:

- Geologic hazards, including earthquakes, ground failure, and slope instability
- Flooding and dam failure
- Wildland fires
- Hazardous materials and waste
- Climate change

This Element also contains information and policies regarding general emergency preparedness.

The Safety Element establishes mechanisms to reduce death, injuries, and damage to property, and to address the negative effects of public safety hazards like flooding, fires, and seismic events. Hazards are an unavoidable aspect of life, and although the Safety Element cannot eliminate risk completely, it contains policies to minimize risk exposure.

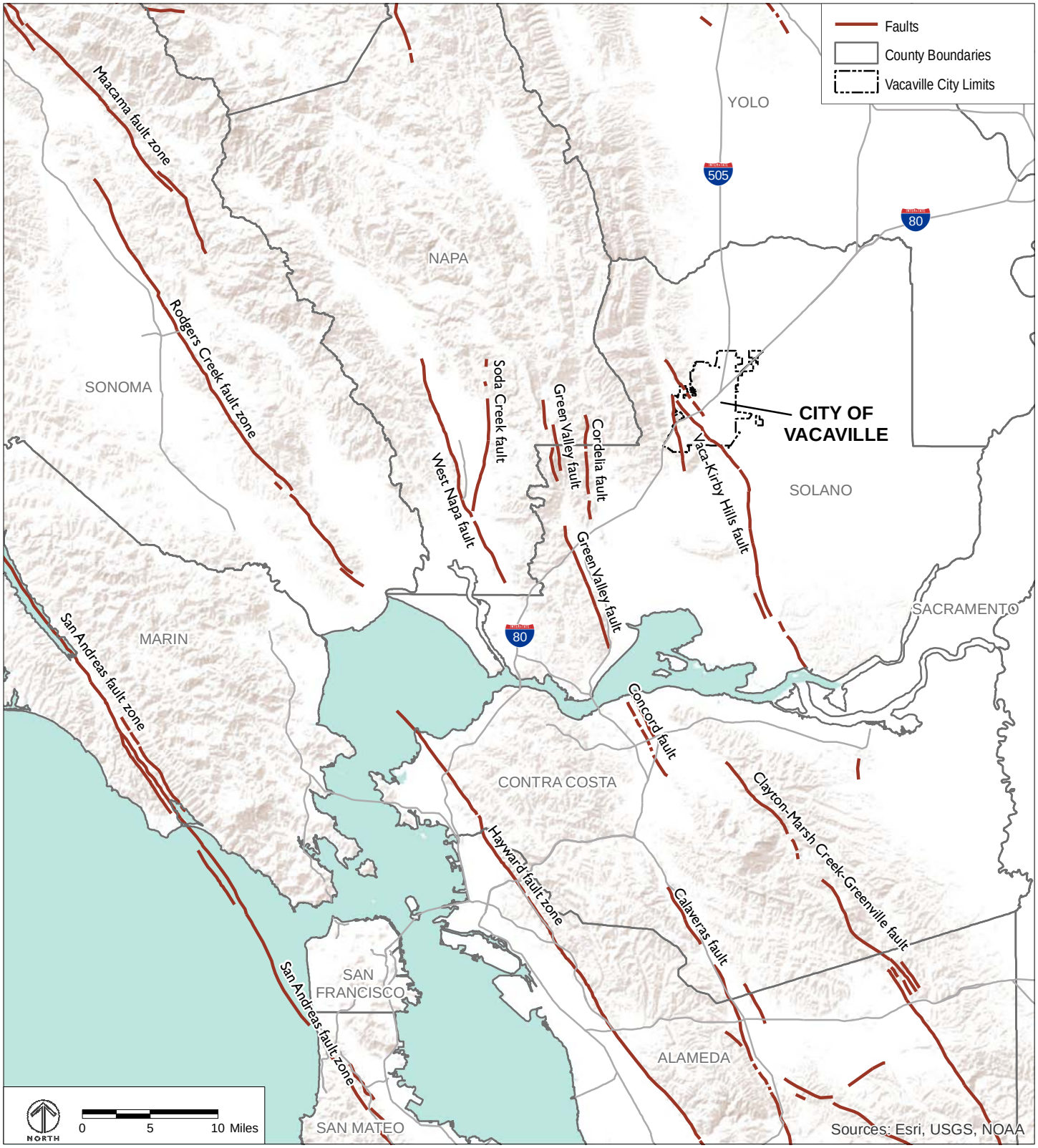
Geologic and Seismic Hazards

Background Information

Earthquake Hazards

The law requires the California Geological Survey (CGS) to establish regulatory zones (known as Earthquake Fault Zones or Alquist-Priolo Zones) around the surface traces of active faults and to issue maps to all affected cities, counties, and State agencies for use in planning and controlling development. Figure SAF-1 shows the approximate location of the major fault zones in the Vacaville region.

The Vaca-Kirby Hills Fault system is the only fault system that passes through the Vacaville Planning Area. The Vaca Fault has not experienced displacement within the past 11,700 years, and there is no evidence for displacement along the Kirby Hills Fault during the last 700,000 years. The Green Valley Fault system, which lies 12 miles to the southwest of Vacaville, has been active within the past 200 years. While more likely than either of the two previous faults to have seismic impacts on Vacaville, the ***United States Geological Survey (USGS)***, a federal science organization that examines natural resources, natural hazards, and our environment, estimates the probability of a magnitude 6.7 or greater earthquake along this fault prior to 2036



Source: Solano County, 2008, U.S. and Califonia Geological Surveys and City of Vacaville, 2010.

FIGURE SAF-1
REGIONAL FAULTS

to be only 3 percent. The Rogers Creek Fault, part of the Hayward Fault System, lies roughly roughly 24 miles to the southwest of Vacaville and has an estimated 16 percent probability of producing a magnitude 6.7 or greater earthquake prior to 2036.[1]

Ground Shaking

Vacaville is located within a seismically active region and earthquakes have the potential to cause ground shaking of significant magnitude. Any slip along all or part of a fault surface releases accumulated energy that radiates in all directions away from the source. This occurs in the form of earthquake waves. The intensity of the ground shaking varies depending on the severity of earthquake activity, proximity to that activity, and local soil and geological conditions.

Liquefaction

Liquefaction occurs when loosely packed sandy or silty materials saturated with water are shaken hard enough to lose strength and stiffness. Liquefied soils behave like a liquid and are responsible for tremendous damage in an earthquake. For example, it can cause buildings to collapse, pipes to leak, and roads to buckle.

As shown in Figure SAF-2, Vacaville is generally characterized by areas of very low, low, and moderate risk of liquefaction. However, there are some areas with a high and very high risk of liquefaction in Vacaville due to the underlying soil types or other geologic features. For example, areas along and adjacent to Vacaville's major water ways, Ulatis and Alamo Creeks, feature high and very high levels of liquefaction susceptibility. These creek corridors cross through the community and include central areas of the city.

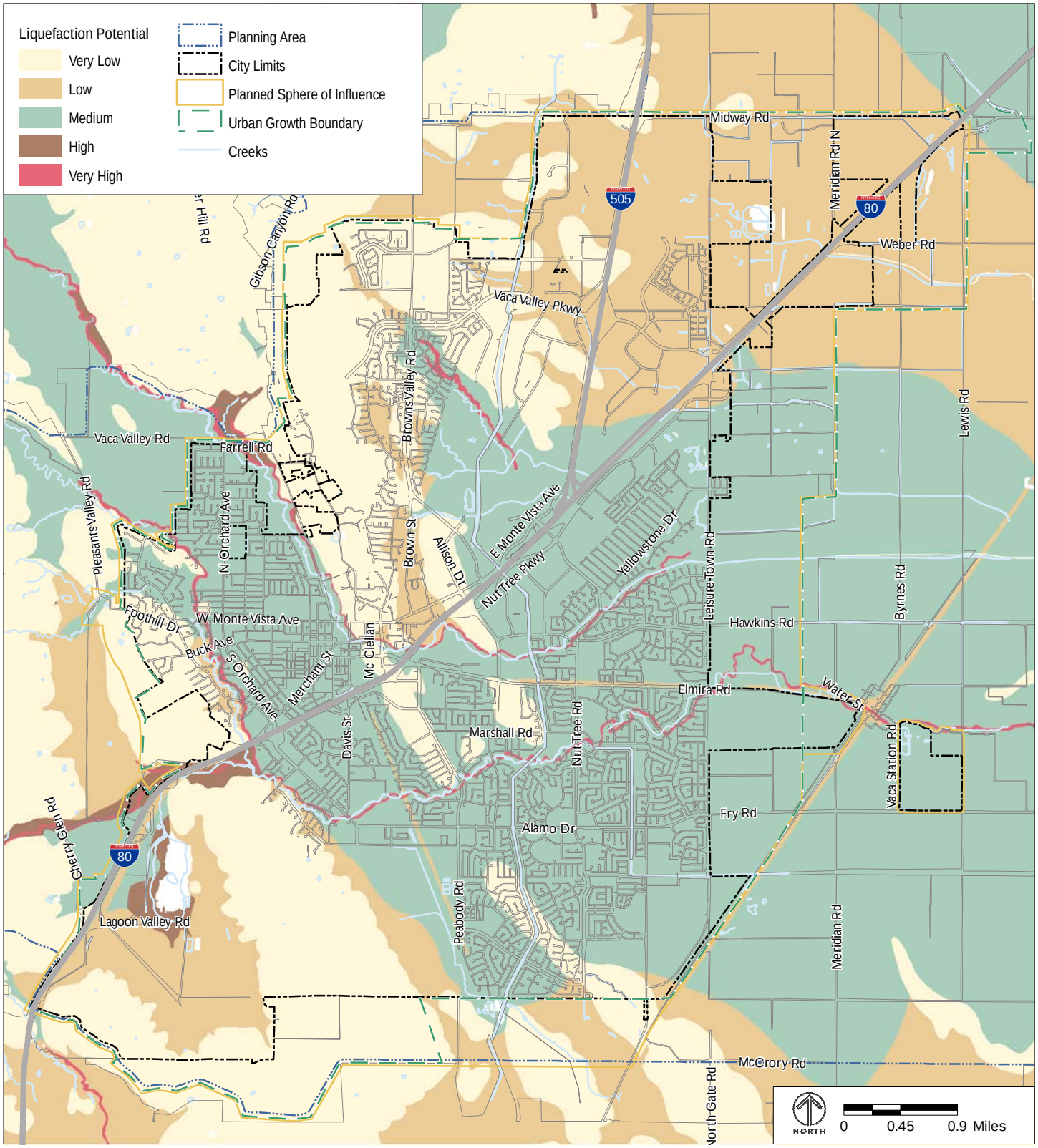
Landslides and Ground Failure

Landslides and slope instability are characterized by the movement of soils and bedrock down steep slopes. This movement results from wet weather, seismic shaking, and/or improper construction, grading, and drainage. Because portions of western Vacaville include the foothills of the Vaca Mountains, there is a potential for landslides throughout this area.

As shown in Figure SAF-3, the vast majority of Vacaville's area is described as flatland by the USGS with some sloped areas having had small scattered landslides. Very small areas on the northern and western edges of the city limit have had mapped landslides; however, these areas are sparsely developed.

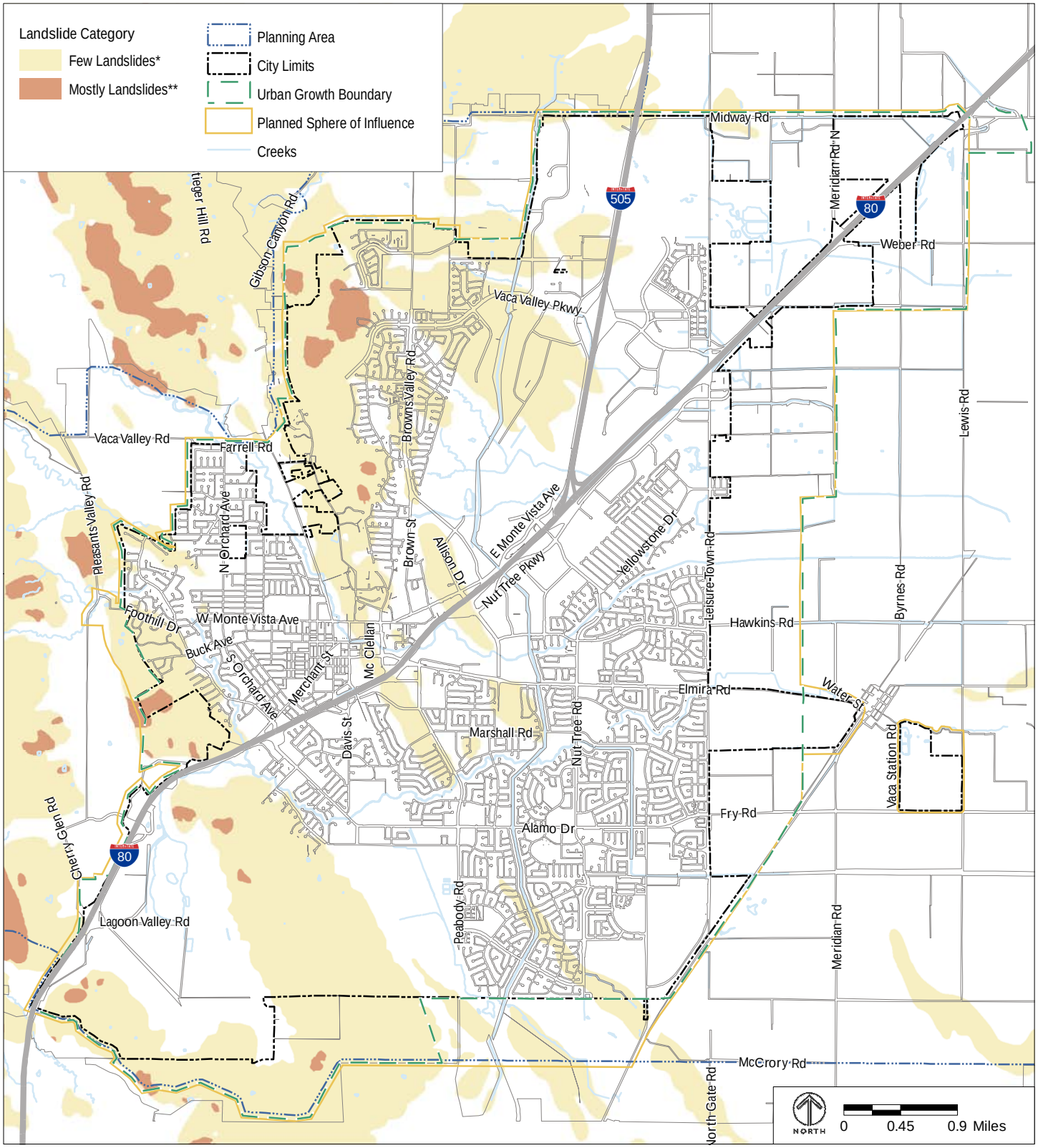
Figure SAF-4 shows slopes in Vacaville. Areas with steeper slopes, in combination with other factors described above, are more susceptible to landslides than areas on shallow slopes.

[1] USGS, 2008 Bay Area Earthquake Probabilities, available at http://earthquake.usgs.gov/regional/nca/ucerf/, accessed May 23, 2012.



Source: Solano County, 2008, U.S. and California Geological Surveys and City of Vacaville, 2010.

FIGURE SAF-2
LIQUEFACTION POTENTIAL



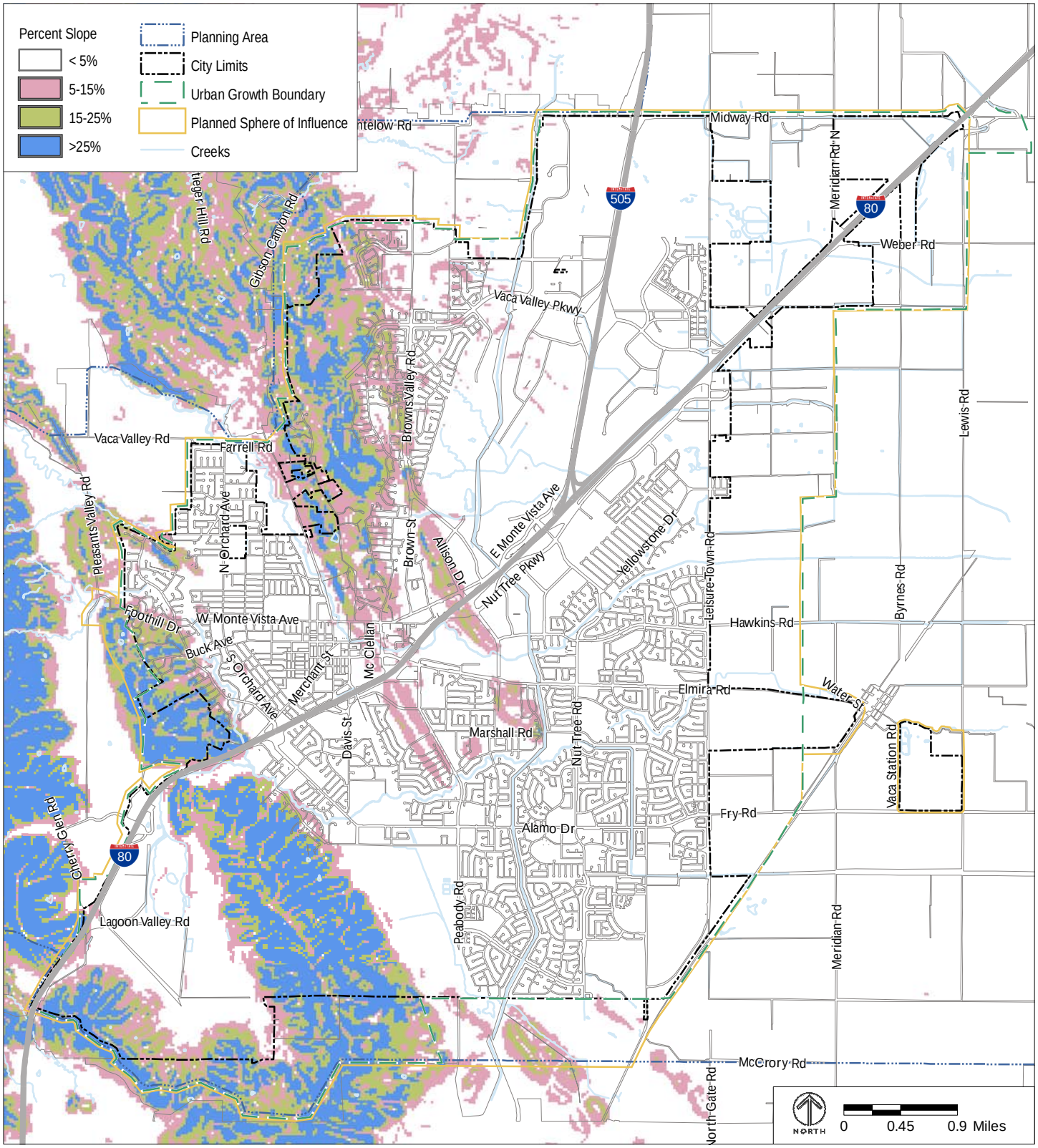
Source: Solano County, 2008, U.S. and California Geological Surveys and City of Vacaville, 2010.

*Few Landslides consists of few, if any, large mapped landslides, but locally contains scattered small landslides in questionably identified larger landslides.

**Mostly Landslides consists of mapped landslides with intervening areas typically narrower than 1500 feet and narrow borders around landslides.

FIGURE SAF-3

HISTORIC MAPPED LANDSLIDES



Source: Solano County, 2008, U.S. and California Geological Surveys and City of Vacaville, 2010.

FIGURE SAF-4
PERCENT SLOPE

Expansive Soils

Certain types of soils have characteristics that make them more susceptible to geotechnical hazards, such as erosion and expansion. Soils subject to expansion increase when water is added and shrink when water dries out. Identifying local soil types and understanding their characteristics help cities to establish appropriate engineering and construction standards for new buildings and remodeling. The primary soil types in the Vacaville area are silty, sandy, and clay loams, with a smaller portion being made up of purely clay soils. Though not all types of clay are expansive, soils with a clay component are more prone to expansion. Approximately 64 percent of Vacaville's soils contain at least some clay component.

Subsidence

Land ***subsidence*** is the sinking of a large area of ground surface with little or no horizontal movement. Subsidence areas are associated with land over areas where groundwater or natural gas is extracted, and can also occur from seismic activity. Subsidence can occur throughout Vacaville, but particularly in any areas where groundwater has been extracted.

Goals, Policies, and Actions

Goal SAF-1	**Minimize exposure to geologic hazards, including slope instability, subsidence, and expansive soils, and to seismic hazards, including groundshaking, fault rupture, liquefaction, and landslides.**

Policies

Policy SAF-P1.1 Consider geologic conditions when designating land use and designing development in Vacaville. Where potential geologic or seismic risks are high and unmitigable, retain low-occupancy or open space forms of use.

Policy SAF-P1.2 Prohibit development on ridges and slopes at or exceeding 25 percent, as shown in Figure SAF-4.

Policy SAF-P1.3 Evaluate and consider the geologic and soil hazards for any proposed extension of urban or suburban land uses into areas that are characterized by slopes from 15 to 25 percent, as shown in Figure SAF-4.

Policy SAF-P1.4 Determine the geologic suitability of proposed development sites during the earliest stages of the planning process. Such analyses should consider the potential structural engineering needs of the project and the impacts development activities may have on adjacent lands.

Policy SAF-P1.5 Require geotechnical studies prior to approving rezoning requests, specific plans, or subdivision maps in areas that have experienced landslides in the past, as shown in Figure SAF-3, and that are within ¼ mile of a fault.

Policy SAF-P1.6 Require preparation of a soils report prior to issuing a building permit, except where the Building Official determines that a report is not needed.

Policy SAF-P1.7 Require comprehensive geologic and engineering studies of critical structures such as hospitals, fire and police stations, utility centers and substations, emergency communications facilities, overpasses, and bridges, regardless of location.

Policy SAF-P1.8 To the extent practical, do not locate structures intended for human occupancy over the trace of an inactive fault. Allow roads to be built over active faults only where alternatives are impractical.

Policy SAF-P1.9 To the extent practical, do not allow facilities and structures that are public, high-occupancy, or critical in disaster situations (e.g. hospitals, fire and police stations, and bridges) to be sited in areas highly susceptible to damage resulting from earthquakes. If locating such a facility or structure in a high-risk area is deemed essential to the public welfare, require that they be sited, designed, and constructed with due consideration of the potential for damage.

Policy SAF-P1.10 Limit cut slopes to 2:1 (50 percent slope) except where an engineering geologist can establish that a steeper slope would perform satisfactorily over the long term. Where practicable, require more gentle slopes than the 2:1 standard. Encourage use of retaining walls, rock-filled crib walls, or stepped-in buildings as alternatives to high cut slopes.

Policy SAF-P1.11 Require contour rounding and revegetation to preserve natural qualities of sloping terrains, mitigate the artificial appearance of engineered slopes, and control erosion. Encourage the use of native trees and shrubbery in revegetation areas.

Policy SAF-P1.12 Require financial protection for public agencies and individuals as a condition of development approval for projects that are located in areas where geologic conditions indicate a potential for high maintenance or repair costs.

Policy SAF-P1.13 Require the formation of geological hazard abatement districts or other methods to reduce potential exposure to geologic hazards prior to development approval in a high risk area. Such measures ensure that geotechnical mitigation measures are maintained over the long term and that financial risks are equitably shared among owners rather than borne by the City.

Actions

Action SAF-A1.1 Consider implementing a hazard reduction program for existing development in high-risk zones. This would include inspection of structures for conformance with the Building Code and could give priority for inspection to emergency and critical facilities, older structures, and public facilities.

Flooding and Storm Drainage

Background Information

Storm Drainage

In general, creeks in Vacaville flow in an east-southeasterly direction and ultimately drain into the Sacramento River via Cache Slough. The southern portion of Vacaville drains either to the Noonan Drain, which discharges ultimately to Barker Slough, or to Union Creek, which discharges to Suisun Bay. The major stream courses within the city include:

- Alamo Creek, including its tributaries Laguna Creek and Encinosa Creek
- Ulatis Creek
- Horse Creek, including its tributary Pine Tree Creek
- Gibson Canyon Creek

There are two existing reservoirs in Vacaville: Lagoon Valley Lake, which is a tributary to Laguna Creek, draining a portion of Lower Lagoon Valley, and the Basherini Reservoir located on Vine Street, which is owned and operated by the Solano Irrigation District.

The major creeks that flow through Vacaville are largely in their natural state and alignment, except at the eastern edge of the city where flood control channels have been constructed. The natural, unaltered portions of the creeks generally do not have adequate flow capacity to convey a 100-year storm event, which is a storm that has a 1 percent chance of occurring in any given year. In addition, there is not adequate capacity in some areas to accommodate a 10-year storm event, which is a storm that has a 10 percent chance of occurring in any given year. Occasionally, overbank flows in Vacaville have resulted in flooding of residential properties, road blockages, and traffic disruptions.

To address these flooding problems, Vacaville uses a variety of flood control facilities and measures. As shown in Figure SAF-5, the City has built several regional detention basins that reduce the flow from the Vaca Mountains before they reach the city in order to reduce urban flooding. The City also maintains a network of storm drains, and works to keep channel flowlines free from debris and vegetation. As part of past flood control efforts, certain creekways have been engineered to handle larger volumes of stormwater than they would in their natural states. In addition, Vacaville's Residential Design Guidelines minimize the extent of

Existing Detention Basins

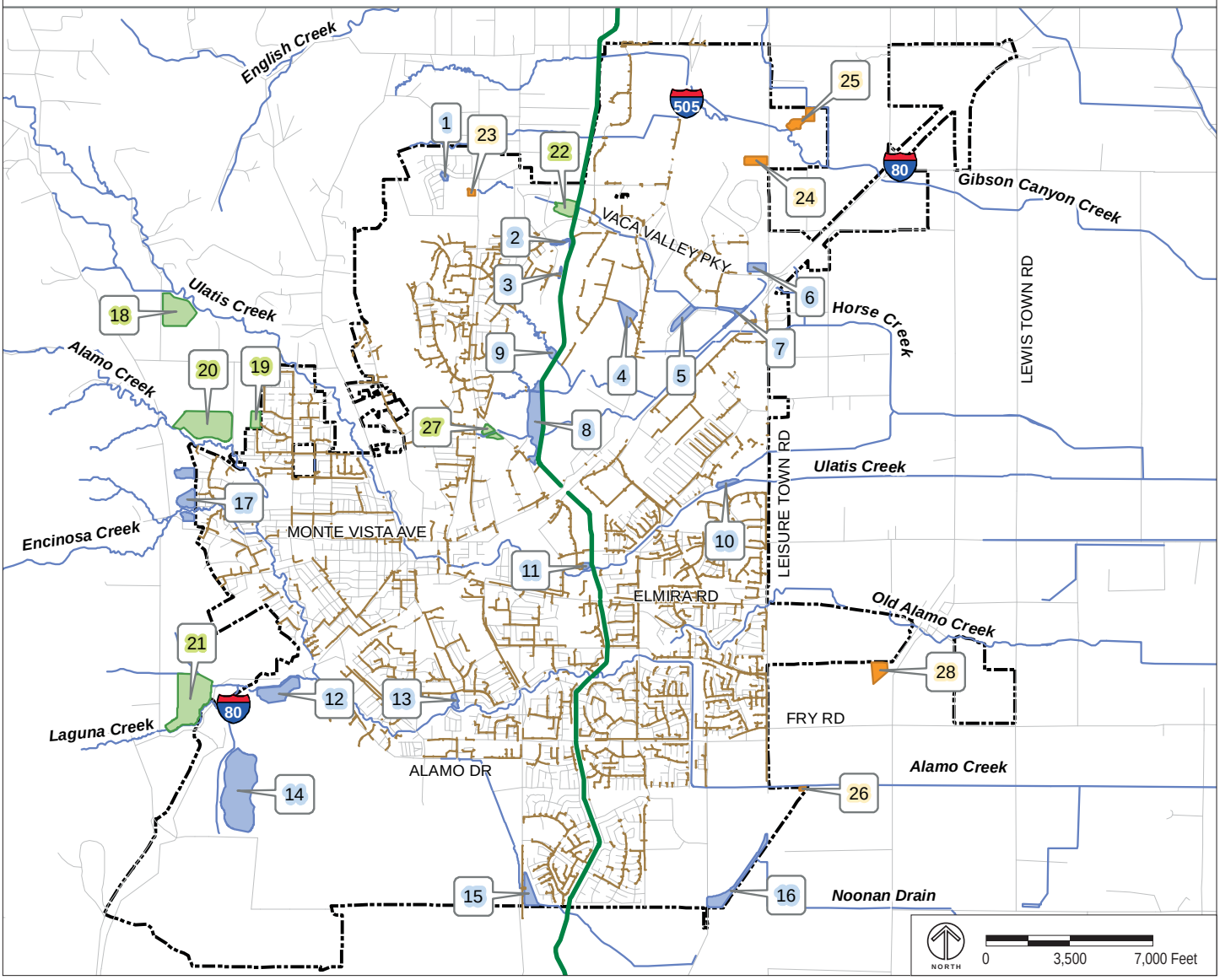
1. Temporary Cheyenne Basin
2. North Horse Basin #1
3. Middle Horse Basin #1
4. Middle Horse Basin #2
5. Vaca Valley Basin
6. North Village Basin #1
7. I-80 Basin
8. South Horse Basin #1
9. South Horse Basin #2
10. Stonegate Basin
11. Ulatis Basin #2
12. Lagunitas Basin
13. Alamo Basin #2
14. Lagoon Lake
15. Union Basin
16. Southtown Basin
17. Pleasants Valley Detention Basin

Proposed Detention Basins City Projects

18. Ulatis Basin
19. Ulatis/Florence Basin
20. Alamo Basin
21. Laguna Basin
22. North Horse Basin #2
27. Pine Tree Basin #1

Proposed Detention Basins Development Projects

23. Rancho Rogelio Project
24. North Village Basin #2
25. North Village Basin #3 (Gibson Canyon Creek Basin)
26. Alamo Basin #3
28. Brighton Landing



Storm Drains
Creeks
Putah South Canal
Existing Detention Storage
Proposed City Detention Storage
Proposed Development Detention Storage
City Limits

FIGURE SAF-5

EXISTING AND PROPOSED DRAINAGE FACILITIES

impervious surfaces, surfaces through which water cannot penetrate, such as a roof, road, sidewalk, or paved parking lot. Because impervious surfaces do not allow water to penetrate into the ground, they increase runoff volumes and contribute to flooding. Minimizing the amount of permitted impervious surfaces helps reduce flooding.

Recent studies have highlighted the need and potential options for enhanced flood control infrastructure within Vacaville. In 2008, the Solano County Water Agency (SCWA) conducted the Ulatis System Drainage Study, which recommended a number of storm drainage improvements in Vacaville, including new detention basins and channel improvements. The City also maintains the Storm Drainage Master Plan, which identifies storm drainage deficiencies and improvements needed to address existing localized flooding problems. The Storm Drainage Master Plan identifies regional detention basins to mitigate the increase in runoff from new development. New development is required to provide 100-year level flood protection within the proposed development area and ensure that developed areas are not adversely impacted.

Floodplain Development Regulations

Regulation of development in known flood-prone areas, based on Federal Emergency Management Agency (FEMA) mapping and other information, is a key tool in reducing flooding risks to life and property. The key development regulations in known flood-prone areas are as follows:

- **Central Valley Flood Protection Plan**. According to California Government Code Sections 65302.9 and 65860.1, every jurisdiction located within the Sacramento-San Joaquin Valley, which includes Vacaville, is required to update its General Plan and Zoning Ordinance in a manner consistent with the Central Valley Flood Protection Plan (CVFPP) within 24 months after the CVFPP's adoption, which occurred in 2012. In addition, the locations of the State and local flood management facilities, locations of flood hazard zones, and the properties located in these areas must be mapped and consistent with the CVFPP. The planning area of the CVFPP is called the Systemwide Planning Area. Vacaville is not included within this area. The CVFPP also catalogs the State Plan of Flood Control, which is the collection of State and federal flood protection system in the Central Valley. None of the facilities within the State Plan of Flood Control are located in Vacaville.
- **AB 5, SB 5, SB 17, and AB 162.** In 2007, several State laws were passed to address flooding risks in California. AB 5 (Wolk), SB 5 (Machado), SB 17 (Florez), and AB 162 (Wolk) require that urban and urbanizing areas in the Sacramento Valley and San Joaquin Valley, such as Vacaville, achieve, or make adequate progress toward achieving, 200-year protection by the year 2015 in order to continue to approve development in the floodplain. Specifically, AB 162 requires that each local jurisdiction's Safety Element include 200-year floodplain maps. Maps must be based on the best available data on flood protection, including areas protected by State and federal project levees, and areas

outside of these areas. As of the preparation of this General Plan in 2013, the 200-year floodplain for the Vacaville study area had not been mapped.

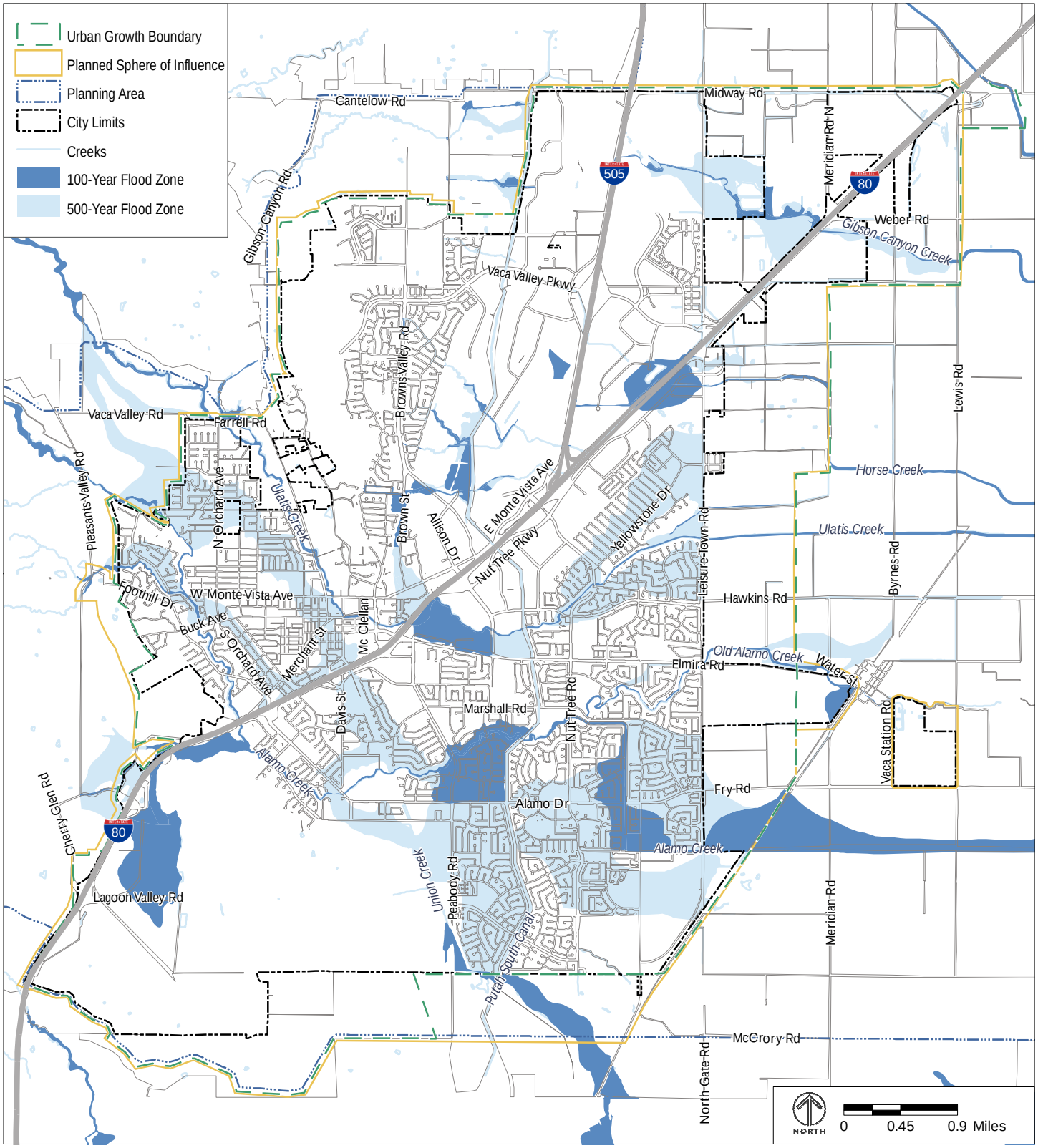
State legislation also requires a jurisdiction's Safety Element to include a Levee Flood Protection Zone map and an Alluvial Fan Floodplain Evaluation and Delineation map. However, because Vacaville is not within a Levee Flood Protection Zone, this Safety Element does not include such a map. In addition, the Alluvial Fan Floodplain Evaluation and Delineation Map program only applies to counties within Southern California.

Flood Zones

The most recent mapping of areas subject to flooding, shown in Figure SAF-6, was prepared by FEMA in 2009. This shows the boundaries of the 100- and 500-year flood plains.

Vacaville has adopted a Floodplain Management Ordinance (Section 14.18 of the Municipal Code) that outlines the requirements for construction within a designated 100-year floodplain or areas prone to flooding. Specifically,

- Residential construction, either new or a substantial improvement, must have the lowest floor, including the basement, elevated to, or above, the base flood elevation, the computed elevation to which floodwater is anticipated to rise during a 100-year storm event. A 100–year storm is defined as storm that has a 1 percent chance of occurring in any given year. Upon the completion of the structure, the elevation of the lowest floor must be certified by a registered professional engineer or surveyor, and verified by the community building inspector to be properly elevated.
- Nonresidential construction, either new or a substantial improvement, must either be elevated to conform to the requirements described above for residential construction, or be flood-proofed below the base flood elevation. If the structure is flood-proofed, it must be watertight with the wall substantially impermeable to the passage of water, have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy, and be certified by a registered engineer or architect.
- All preliminary subdivision proposals must identify the special flood hazard area and the elevation of the base flood.
- All subdivision plans must provide the elevation of the proposed structure(s) and pad(s). If the site is filled above the base flood elevation, the lowest floor and pad elevations must be certified by a registered professional engineer or surveyor.
- All subdivision proposals must be consistent with the need to minimize flood damage.
- All subdivision proposals must have public utilities and facilities located and constructed to minimize flood damage.
- All subdivisions must provide adequate drainage to reduce exposure to flood hazards.



Source: FEMA, 2009.

FIGURE SAF-6
FEMA FLOOD ZONES

- Encroachments within designated floodways are prohibited, including fill, new construction, substantial improvement, and other new development, unless certification by a registered professional engineer is provided demonstrating that encroachments do not result in any increase in the base flood elevation during the occurrence of the base flood discharge.

Dam Inundation

All dams pose the potential risk of failure, most likely from seismically-induced ground shaking or another seismic event, which threatens the area below the dam with inundation of water spilling from the dam. Since 1972, the State has required inundation maps for most dams, showing those areas within the potential dam failure inundation zone. As illustrated in Figure SAF-7, the northeastern portion of Vacaville is subject to potential dam inundation by the Monticello Dam. The inundation map shows the area likely to flood should the dam fail. Constructed between 1953 and 1957 in Napa County, the Monticello Dam forms Lake Berryessa, which stores over 1.6 million acre-feet of water when full. The California Environmental Quality Act requires that agencies like the City of Vacaville take into consideration risks from dam failure when approving development that would place people or structure in dam inundation areas.

State Awareness Mapping Program

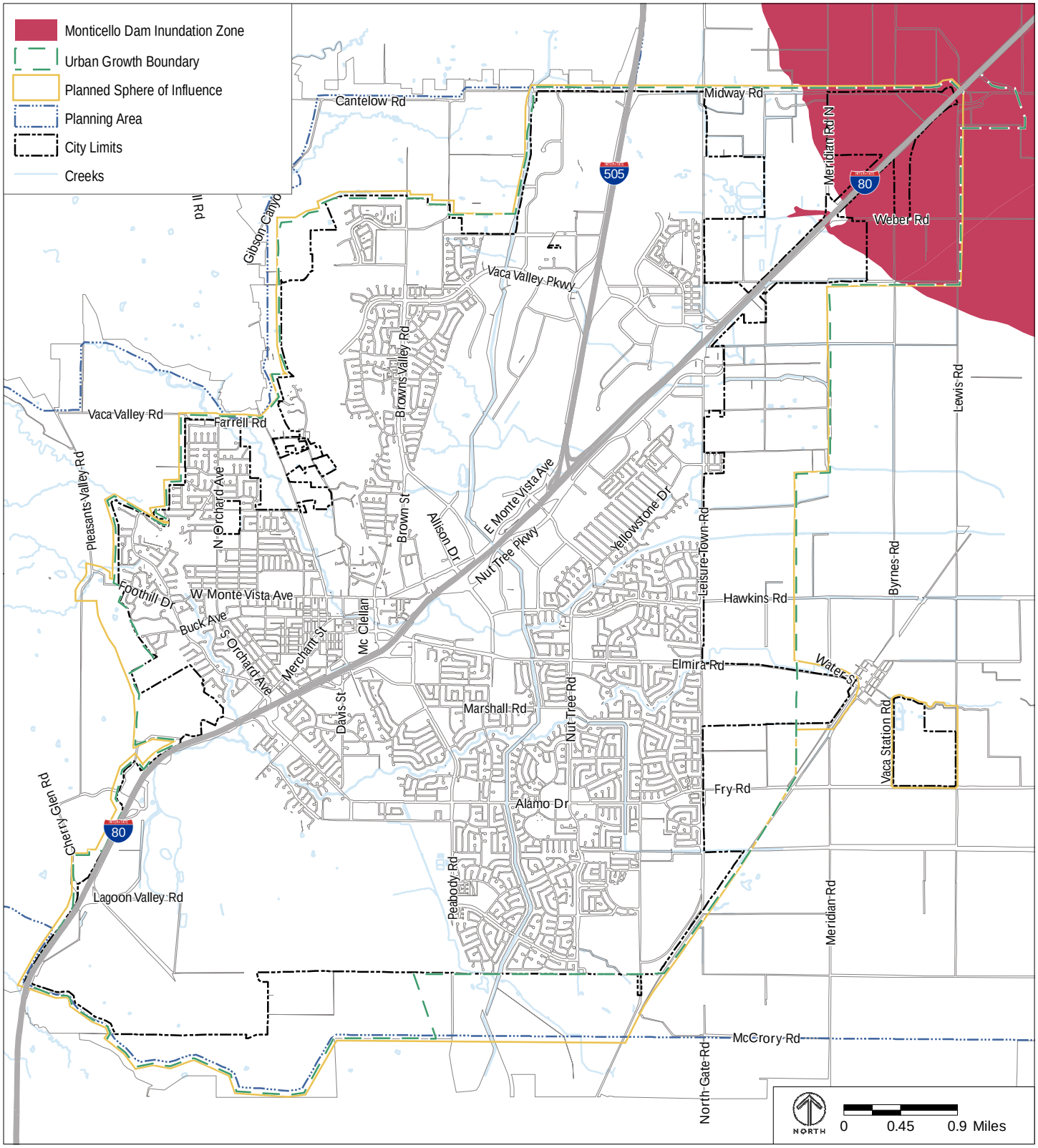
The purpose of the State Awareness Mapping project is to show flood hazards that are not mapped under FEMA's National Flood Insurance Program to give property owners and residents additional information about potential flood hazards. The State has deemed the areas mapped under the Awareness Mapping project as prone to flooding. This designation is advisory only and is not subject to federal or State regulation. Figure SAF-8 shows the Awareness Floodplain Areas within the Vacaville Planning Area.

Goals, Policies, and Actions

Goal SAF-2	**Collect, convey, store, and dispose of stormwater in ways that provide an appropriate level of protection against flooding, account for existing and future development, and address applicable environmental concerns.**

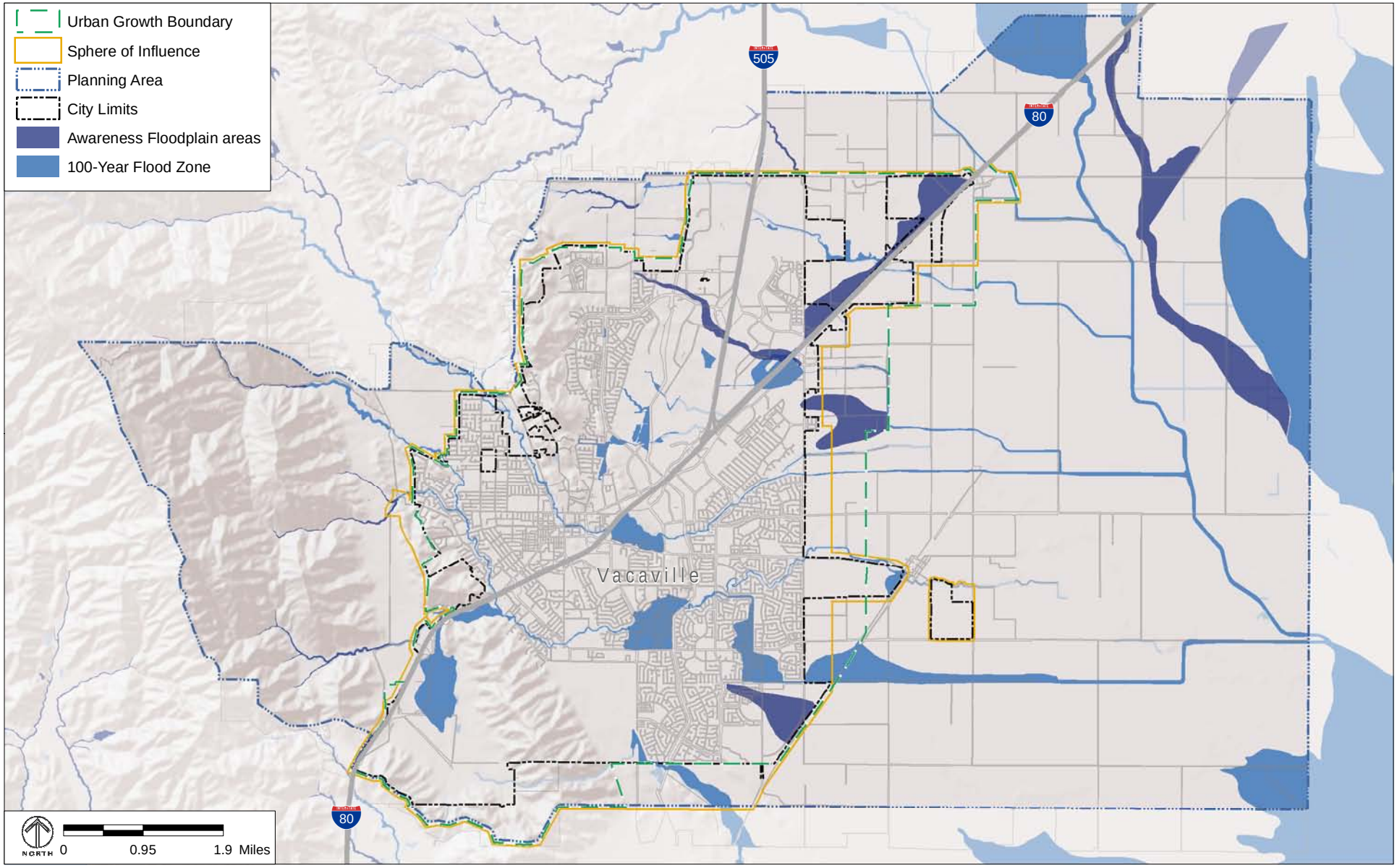
Policies

Policy SAF-P2.1	Continue to develop a comprehensive system of drainage improvements to minimize flood hazards, and maintain storm drainage infrastructure in good condition.
Policy SAF-P2.2	Assess the adequacy of storm drainage utilities in existing developed areas, and program any needed improvements in coordination with new infrastructure that will serve developing areas.



Source: State of California, Governor's Office of Emergency Services, 2000.

FIGURE SAF-7
DAM INUNDATION AREAS



Note: Awareness Floodplain areas have been deemed by the State to be prone to flooding. This designation is advisory only and is not subject to federal or State regulation.

Source: City of Vacaville, 2011; CA Dept. of Water Resources, 2002; FEMA, 2009.

FIGURE SAF-8

AWARENESS FLOODPLAIN AREAS

Policy SAF-P2.3 Encourage the formation of flood control assessment districts for areas with flooding and drainage problems.

Policy SAF-P2.4 Design storm drainage infrastructure to serve dual purposes to the extent possible. This includes the following:

- Drainage facilities integrated into recreation corridors with bike paths, sidewalks, and landscaping.
- Drainage channels integrated with transportation and environmental corridors.
- Active and passive recreation areas incorporated into detention basins where feasible.

Policy SAF-P2.5 Maintain open areas needed to retain stormwater and prevent flooding of urban or agricultural land.

Policy SAF-P2.6 Require new development adjacent to creeks to dedicate the area within 40 feet of the stable top of bank to the City and be designed to allow access to, and visibility of, creek areas for maintenance and public safety purposes.

Actions

Action SAF-A2.1 Study the feasibility of establishing specific fees for those areas in which flooding and drainage problems exist. Assessed fees would be used to mitigate flooding through physical improvements.

Action SAF-A2.2 Develop a financing plan for the construction of upstream regional flood control detention basins.

Action SAF-A2.3 Continue to construct upstream regional flood control detention basins.

Action SAF-A2.4 Continue to update the five-year Capital Improvement Plan to provide for needed storm drainage facilities in relation to the City's financial resources.

Action SAF-A2.5 Develop a long-range strategic capital development plan for storm drainage facilities consistent with the General Plan.

Action SAF-A2.6 Update the City’s Storm Drainage Master Plan to identify storm drain facility improvements necessary to eliminate existing flooding hazards and drainage problems.

Action SAF-A2.7 Continue to implement the storm drain facility improvements identified in the City’s Storm Drainage Master Plan and the Ulatis System Drainage Study.

Action SAF-A2.8 Continue to cooperate with the Solano County Water Agency on developing a comprehensive stormwater management program to accommodate additional development in undeveloped areas.

Goal SAF-3 Provide effective storm drainage facilities for development projects.

Policies

Policy SAF-P3.1 Evaluate the storm drainage needs for each project; this evaluation should account for projected runoff volumes and flow rates once the drainage area is fully developed. In the Alamo Creek watershed upstream of Peabody Road (including Alamo, Laguna, and Encinosa creeks), require post-development 10-year and 100-year peak flows to be reduced to 90 percent of predevelopment levels. In the remainder of Vacaville, for development involving new connections to creeks, peak flows shall not exceed predevelopment levels for 10- and 100-year storm events.

Policy SAF-P3.2 Continue to require development impact fees to fund necessary storm drainage improvements, including drainage detention basins.

Policy SAF-P3.3 Require a Storm Drainage Master Plan to be prepared for new development projects to ensure new development adequately provides for on-site drainage facilities necessary to protect the new development from potential flood hazards and ensure that potential off-site impacts are fully mitigated.

Policy SAF-P3.4 Require that new development designate storm drainage easements or routes when tentative maps or specific plans are approved.

Policy SAF-P3.5 Prohibit extension of storm drainage infrastructure into the Upper Lagoon Valley that would promote its urban development.

Actions

Action SAF-A3.1 Maintain the City's Storm Drainage Master Plan, which ensures that new development adequately provides for on-site and downstream off-site mitigation of potential flood hazards and drainage problems.

Action SAF-A3.2 Revise the Land Use and Development Code to limit the amount of impervious surfaces in non-residential parking lots.

Goal SAF-4 Protect people and property from flood risk.

Policies

Policy SAF-P4.1 Prohibit development within mapped flood-prone areas unless mitigation of flood risk is assured.

Policy SAF-P4.2 Require that the lowest floor of any new construction or substantial improvement be elevated a minimum of 1 foot above the 200-year flood elevation.

Policy SAF-P4.3 When reviewing proposals for new development in dam inundation areas, consider risks from potential dam failure.

Policy SAF-P4.4 Require that new development mitigate its additional runoff and mitigate removal of any floodplain areas.

Policy SAF-P4.5 Continue to participate in the National Flood Insurance Program (NFIP) and provide information to residents and business owners about the NFIP, Federal Emergency Management Agency Flood Insurance Rate Maps, and flood map changes.

Actions

Action SAF-A4.1 Regularly update the Floodplain Management Ordinance to be in accordance with the National Flood Insurance Rate Map regulations.

Action SAF-A4.2 Assist the Federal Emergency Management Agency in updating the Flood Insurance Rate Maps for the Vacaville area and identifying 100-year flood zones.

Action SAF-A4.3 Review and revise the Safety Element concurrently with the adoption of each Housing Element to identify any new housing areas prone to flood hazards.

Action SAF-A4.4 Annually review the Land Use Element to account for new flood information made available during the previous year.

Action SAF-A4.5 Update the Land Use and Development Code to appropriately reflect the Central Valley Flood Protection Plan and to identify current flood hazards and information.

Action SAF-A4.6 Support the efforts of levee owners and regional, State, or federal agencies to design and reconstruct levees that do not meet flood protection standards to bring them into compliance with adopted State and/or federal standards.

Action SAF-A4.7 Amend the Safety Element to include the 200-year floodplain map once it becomes available.

Wildland Fires

This section addresses wildland fires. Additional information and policies regarding urban fires are contained in the Public Facilities and Services Element.

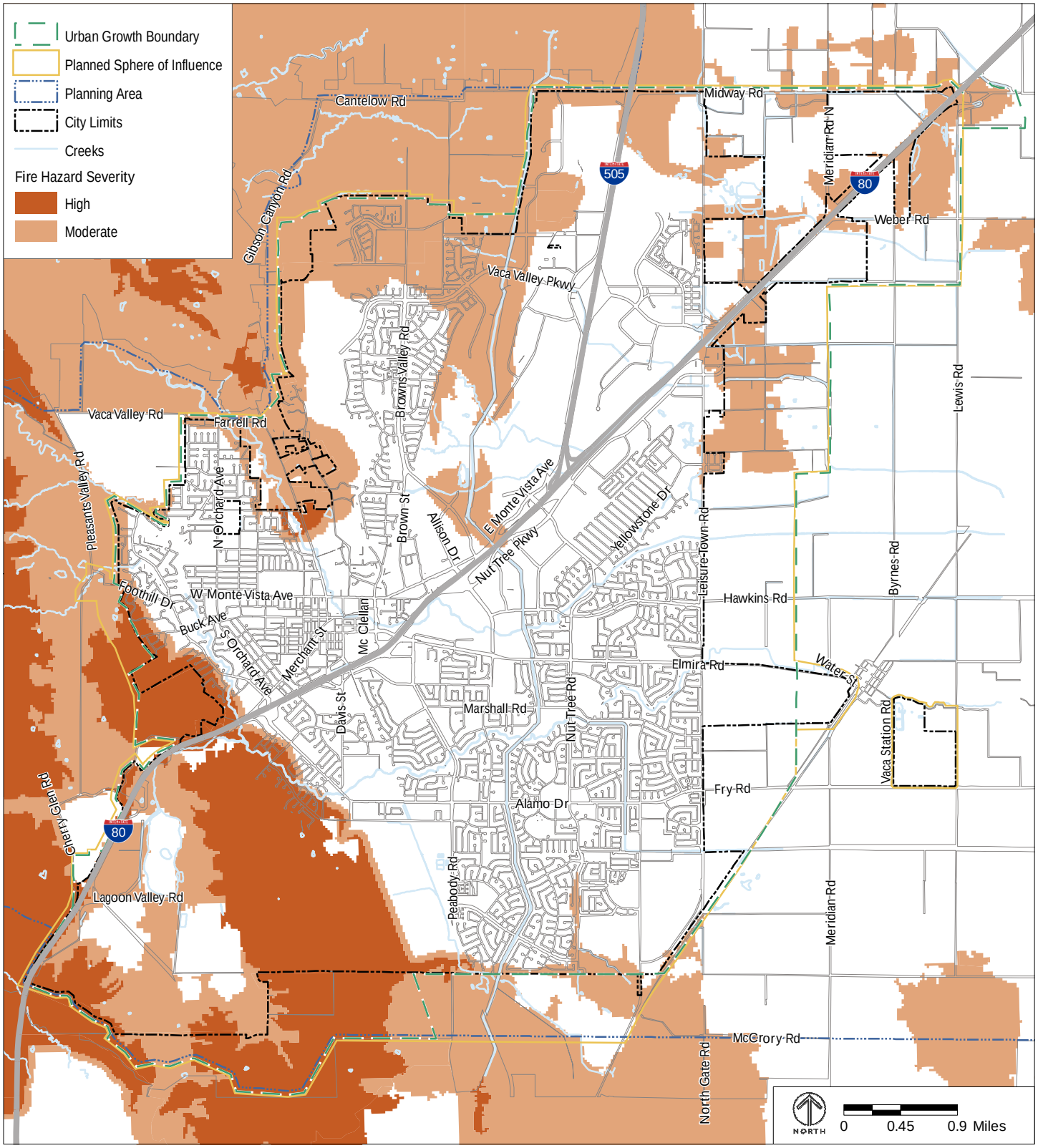
Background Information

Highly flammable vegetation and warm, dry summers create the potential for wildland fires in Vacaville. The risk of wildland fires is related to a combination of factors, including winds, temperatures, humidity levels, and fuel moisture content. Of these four factors, wind is the most crucial. Steep slopes also contribute to fire hazards by intensifying the effects of wind and making fire suppression difficult. Where there is easy public access to dry vegetation, fire hazards increase due to greater chance of human carelessness. High hazard areas in Vacaville include outlying residential parcels and open lands adjacent to residential areas.

To quantify this potential risk, the California Department of Forestry (CDF) has developed a Fire Hazard Severity Scale that utilizes three criteria in order to evaluate and designate potential fire hazards in wildland areas. The criteria are fuel loading (vegetation), fire weather (winds, temperatures, humidity levels, and fuel moisture contents), and topography (degree of slope). Figure SAF-9 shows the Fire Hazard Severity Zones for the City of Vacaville.

In addition to the Fire Hazard Severity Zones mapped by CDF in Figure SAF-9, open agricultural lands in eastern Vacaville pose a threat related to grass fires. Grass fires can travel very fast, and threaten nearby residential areas. Grass fire threats in open agricultural lands are a significant concern in the growth areas in the eastern portion of the city, which are shown in Figure LU-3 in the Land Use Element.

To reduce risks from wildland fires, the City of Vacaville adopted Chapter 14.20.290 of the Municipal Code, Standards for New Construction Adjacent to Open Space Lands Where Wildfire is a Threat. Chapter 14.20.290 provides development standards for new construction adjacent to permanent open or other open lands where no development is anticipated in the near future (as identified in the General Plan) and where wildfire is a threat. Some of the fire reduction strategies incorporated in the code include providing for fire access roads, maintaining a defensible space of non-combustible vegetation around structures, and installing indoor sprinkler systems.



Source: CA Department of Forestry and Fire Protection, 2007.

FIGURE SAF-9
CALFIRE FIRE HAZARD SEVERITY ZONES

Goals, Policies, and Actions

Goal SAF-5 Protect lives and property from wildland fire hazards.

Policies

Policy SAF-P5.1 Reduce the risk from wildfires by restricting development in High and Very High Hazard areas, as shown in Figure SAF-9.

Policy SAF-P5.2 Require that all development in areas of potential wildland fire hazards, including agricultural areas east of Leisure Town Road, include the following:

- Fire breaks adjoining open space areas.
- Adequate access to adjoining open space areas.
- Clearance around structures.
- Fire-resistant ground cover.
- Fire-resistant roofing materials.
- Adequate emergency water flow.

Policy SAF-P5.3 Require that all development adjacent to open agricultural lands comply with State law regarding defensible open space, even if the agricultural lands are designated for future development.

Policy SAF-P5.4 Incorporate drought-resistant and fire-resistant plants in public works projects in areas subject to wildland fires.

Policy SAF-P5.5 Regularly train Vacaville Fire Department staff for wildland firefighting conditions.

Policy SAF-P5.6 Require all development applications to be reviewed and approved by the Fire Department prior to project approval.

Actions

Action SAF-A5.1 Implement standards to address wildfire threat from agricultural areas in the East of Leisure Town Road and Northeast Growth Areas, which are shown in Figure LU-3.

Action SAF-A5.2 Amend Chapter 14.20.290 of the Vacaville Land Use and Development Code, Standards for New Construction Adjacent to Open Space Lands Where Wildfire is a Threat, to be consistent with State law.

Hazardous Materials and Waste

Background Information

Products as diverse as gasoline, paint solvents, film processing chemicals, household cleaning products, refrigerants, and radioactive substances are categorized as hazardous materials. What remains of a hazardous material after use or processing is considered to be a ***hazardous waste***. The handling, transportation, and disposal of such waste is a concern to all communities. Improper handling of hazardous materials or waste may result in significant impacts on human health and the environment.

Many businesses and residents in Vacaville use hazardous materials and generate some amount of hazardous waste. Common hazardous waste is generated from gasoline service stations, dry cleaners, automotive mechanics, auto body repair shops, machine shops, printers and photo processors, and agriculture. Most of these wastes are petroleum-based or hydrocarbon hazardous waste and include cleaning and paint solvents, lubricants, and oils. However, medical wastes, defined as potential infectious waste from sources such as laboratories, clinics, and hospitals, are also included among the hazardous wastes found in Vacaville.

Hazardous materials and hazardous wastes in Vacaville are heavily regulated by a range of federal, State, and local agencies. One of the primary hazardous materials regulatory agencies is the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC). DTSC is authorized by the US Environmental Protection Agency (EPA) to enforce and implement federal hazardous materials laws and regulations.

Solano County has taken the lead in preparing and adopting a hazardous waste management plan for all waste projected to be generated in the county. State law requires all businesses to prepare an inventory of hazardous materials they use and store. The County's Department of Environmental Management receives this information and distributes it to local fire protection agencies.

In Vacaville, limited quantities of household hazardous waste may be transported to and dropped off at a recycling center. Local small businesses may also contract with the waste collection service provider to regularly dispose of larger quantities of waste.

Goals, Policies, and Actions

Goal SAF-6	**Minimize risks from the harmful effects of hazardous materials and waste.**

<u>Policies</u>

Policy SAF-P6.1 Work with Solano County and other public agencies to inform consumers about household use and disposal of hazardous materials.

Policy SAF-P6.2 Cooperate with Solano County on implementation of the Hazardous Waste Management Plan, and review development proposals involving hazardous waste facilities to ensure consistency with that Plan.

Policy SAF-P6.3 Require industrial uses that rely extensively on the use of hazardous materials to adopt or have in place an acceptable use, storage, disposal, and emergency response program that has been approved by appropriate agencies.

Policy SAF-P6.4 Require adequate separation between areas where hazardous materials are present and sensitive uses such as schools, residences, and public facilities.

Policy SAF-P6.5 In areas historically used for commercial or industrial uses, require that developers conduct an environmental investigation to ensure that the site was not contaminated by the previous use.

Policy SAF-P6.6 Promote the safe transport of hazardous materials through Vacaville by implementing the following measures:

- Maintain formally-designated hazardous material carrier routes to direct hazardous materials away from populated and other sensitive areas.
- Prohibit vehicles transporting hazardous materials from parking on City streets.
- Require that new pipelines and other channels carrying hazardous materials avoid residential areas and other immobile populations to the extent possible.

Actions

Action SAF-A6.1 Continue to maintain and implement a hazardous materials information disclosure program.

Action SAF-A6.2 Amend the Land Use and Development Code to specify development standards for properties where hazardous materials are present, including adequate separation and buffers from sensitive uses such as schools, residences, and public facilities.

Disaster and Emergency Preparedness

Background Information

The City of Vacaville has adopted the Association of Bay Area Governments' (ABAG's) regional hazard mitigation plan as the City's local hazard mitigation plan. The product of a

regional effort orchestrated by ABAG, the Multi-Jurisdictional Local Hazard Mitigation Plan for the San Francisco Bay Area responds to the threats posed by potential hazards and disasters in the Bay Area. The document seeks to improve the resilience of critical systems, including infrastructure, health, housing, the economy, government services, education, the environment, and land use. To do so, the document analyzes natural and human-made risks to these systems and discusses strategies for avoidance, preparation, and mitigation. The document emphasizes probable natural disasters, including earthquakes, wildfires, flood, major storms, and tsunamis, among others. The report includes actions and strategies for local and regional governments to strengthen systems before disasters and manage them during a subsequent recovery.

The Solano County Office of Emergency Services has also prepared a Multiple Hazard Mitigation Plan that assesses hazards, assigns responsibilities, and prescribes evacuation routes for all of Solano County, including Vacaville.

Goals, Policies, and Actions

Goal SAF-7	**Reduce risk to life and property associated with emergencies and natural and manmade disasters.**

Policies

Policy SAF-P7.1	Promote public awareness of potential disaster scenarios for Vacaville and encourage individual preparedness.
Policy SAF-P7.2	Provide education and support to neighborhood- or block-level efforts to prepare for disasters.
Policy SAF-P7.3	Maintain an adequate level of disaster response preparedness through careful review of proposed developments and through staff training in and exercise of the local hazard mitigation plan.
Policy SAF-P7.4	Require that emergency access routes be kept free of traffic impediments.
Policy SAF-P7.5	Maintain comprehensive Emergency Response Plans.

Actions

Action SAF-A7.1	Adopt a comprehensive disaster response plan in coordination with adjoining communities. The plan should include procedures, including teaming and mutual aid, to follow during and after a major earthquake, wildland fire, hazardous substance release, or other catastrophic event.
Action SAF-A7.2	Identify and regularly update emergency access routes.

Action SAF-A7.3 Conduct periodic drills using emergency response systems to test the effectiveness of City procedures.

Climate Change Adaptation

This section focuses on hazards associated with climate change. Additional information and policies to reduce greenhouse gas emissions are contained in the Conservation and Open Space Element.

Background Information

As discussed in the Conservation and Open Space Element, many people, and the State of California, believe that greenhouse gas emissions from human activities are contributing to a concentration of these gases in the atmosphere, and have led to a trend of unnatural warming of the earth's climate, which is known as global warming. The climate and natural resources in California could be adversely affected by the global warming trend. Droughts and wildland fires are expected to become more severe. Increased precipitation and sea level rise could increase coastal flooding, saltwater intrusion, and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include, but are not necessarily limited to, more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters, such as flooding, hurricanes and drought; and increased levels of air pollution.

Goals, Policies, and Actions

Goal SAF-8	**Improve Vacaville's ability to adapt and respond to the impacts of climate change.**

Policies

Policy SAF-P8.1 Promote awareness of climate change and its impacts.

Policy SAF-P8.2 Collaborate regionally to prepare for the effects of climate change.

Actions

Action SAF-A8.1 Develop a Climate Change Preparedness Plan that will prepare for the impacts of climate change on the city's economic and natural systems and provide a climate-resilient community.

Action SAF-A8.2 Establish a Climate Change Contingency Fund that the City can use to respond to extreme or unusual climate events.

Action SAF-A8.3 Establish a regional climate change working group to share information and foster cooperation between Vacaville, neighboring communities, and regional agencies.

8 NOISE ELEMENT

Section 65302(f) of the California Government Code requires that General Plans contain a Noise Element that can be used as a guide for establishing a pattern of land uses that minimize the exposure of community residents to excessive noise. Local governments are required to analyze and quantify noise levels and exposure to noise through field measurements or noise modeling, and to use the Noise Element to address existing and foreseeable noise problems.

Background Information

Noise is generally defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, or sleep. Noise is especially a concern in the vicinity of ***noise-sensitive uses***, which are generally defined as locations where people reside or where the presence of unwanted sound could adversely affect the use of land, such as residences, schools, and hospitals.

Fundamental Concepts

To the human ear, sound has two significant characteristics: ***pitch*** and ***loudness***. Pitch is the number of complete vibrations, or cycles per second of a sound wave (frequency), which results in the range of tone from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment. It is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. Table NOI-1 contains a list of typical acoustical terms and definitions.

Measurement of Sound

A ***decibel (dB)*** is a unit of measurement which indicates the relative intensity of a sound. The zero point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3 dB or less are only perceptible in laboratory environments.

Since the human ear is not equally sensitive to all pitches (i.e. sound frequencies) within the entire noise spectrum, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity in a process called "A-weighting," expressed as "dBA." The ***dBA***, or A-weighted decibel, refers to a scale of noise measurement that approximates the range of sensitivity of the human ear to sounds of different frequencies. Table NOI-2 shows representative noise sources and their corresponding noise levels in dBA.

TABLE NOI-1 **DEFINITIONS OF ACOUSTICAL TERMS**

Term	Definitions
Decibel, dB	A unit of measurement that denotes the ratio between two quantities proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in 1 second (i.e. number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
L_{01}, L_{10}, L_{50}, L_{90}	The fast A-weighted noise levels equaled or exceeded by a fluctuating sound level for 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 decibels to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, time of occurrence, and tonal or informational content, as well as the prevailing ambient noise level.

Source: Harris, C.M, 1998, Handbook of Acoustical Measurements and Noise Control.

Because sound can vary in intensity by over one million times within the range of human hearing, a logarithmic loudness scale[1] is used to keep sound intensity numbers at a convenient and manageable level. Thus, a 10 dBA increase in the level of a continuous noise represents a perceived doubling of loudness, while a 20 dBA increase is 100 times more intense, and a 30 dBA increase is 1,000 times more intense.

As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level. Noise levels attenuate, or diminish, as distance from the source increases based on an inverse square rule, depending on how the noise source is physically configured.

[1] Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve. The logarithmic decibel scale allows an extremely wide range of acoustic energy to be characterized in a manageable notation.

TABLE NOI-2 **TYPICAL A-WEIGHTED SOUND LEVELS**

Noise Source	A-Weighted Sound Level in Decibels	Noise Environment
Near Jet Engine	140	Deafening
Civil Defense Siren	130	Threshold of pain
Hard Rock Band	120	Threshold of feeling
Accelerating Motorcycle at a Few Feet Away	110	Very loud
Pile Driver; Noisy Urban Street/Heavy City Traffic	100	Very loud
Ambulance Siren; Food Blender	95	Very loud
Garbage Disposal	90	Very loud
Freight Cars; Living Room Music	85	Loud
Pneumatic Drill; Vacuum Cleaner	80	Loud
Busy Restaurant	75	Moderately loud
Near Freeway Auto Traffic	70	Moderately loud
Average Office	60	Moderate
Suburban Street	55	Moderate
Light Traffic; Soft Radio Music in Apartment	50	Quiet
Large Transformer	45	Quiet
Average Residence Without Stereo Playing	40	Faint
Soft Whisper	30	Faint
Rustling Leaves	20	Very faint
Human Breathing	10	Very faint

Source: LSA Associates, Inc., 2009.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. The predominant rating scales for communities in California are the equivalent continuous sound level (L_{eq}), the community noise equivalent level (CNEL), and the day-night average level (L_{dn}), which are all defined in Table NOI-1. L_{eq} represents an average of the sound energy occurring over a specified period. This descriptor is useful because sound levels can vary markedly over a short period of time. The most common averaging period for L_{eq} is hourly, but it can be of any duration. CNEL is the energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring between 10:00 p.m. and

7:00 a.m. (defined as sleeping hours) and 5 dB added to the A-weighted sound levels occurring between 7:00 p.m. and 10:00 p.m. (defined as relaxation hours), in order to adjust for the fact that noise during these hours is more disruptive than noise during the day. L_{dn} is similar to the CNEL scale, but without the adjustment for events occurring during the evening relaxation hours. CNEL and L_{dn} are normally exchangeable.

The noise environments discussed in this Element are specified in terms of maximum levels, denoted by L_{max}. L_{max} is the highest exponential time averaged sound level that occurs during a stated time period. L_{max} reflects peak operating conditions, and addresses the annoying aspects of intermittent noise.

Effects of Noise

According to the US Department of Housing and Urban Development's 1985 Noise Guidebook, permanent physical damage to human hearing can occur at prolonged exposure to noise levels higher than 85 to 90 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, and thereby affecting blood pressure, functions of the ear and the nervous system, and triggering emotional reactions like anger, depression, and anxiety. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear, even with short-term exposure. This level of noise is called the threshold of feeling. For avoiding adverse effects on human physical and mental health in the workplace or in communities, the US Department of Labor, Occupational Health and Safety Administration requires the protection of workers from hearing loss when the noise exposure equals or exceeds an 8-hour time-weighted average of 85 dBA.

Unwanted community effects of noise occur at levels much lower than those that cause hearing loss and other health effects. Annoyance occurs when noise interferes with sleeping, conversation, or noise-sensitive work, including learning or listening to the radio, television, or music. According to the World Health Organization, during daytime hours, few people are seriously annoyed by activities with noise levels below 55 dBA, or moderately annoyed with noise levels below 50 dBA.

Existing Noise Levels

This section summarizes existing noise levels in Vacaville, including mobile noise sources and stationary noise sources.

The primary source of noise in Vacaville is vehicle traffic from highways and major roadways. Additional noise sources include the Union Pacific Railroad, Nut Tree Airport, and Travis Air Force Base. In addition, industrial areas within Vacaville are a source of stationary noise.

Mobile Noise Sources

This section describes existing mobile noise sources, including traffic, railroads, and aircraft.

Traffic
Motor vehicles have distinctive noise characteristics and are a dominant noise source in Vacaville. The amount of noise varies according to many factors, such as the volume of traffic, vehicle mix (i.e. percentage of cars and trucks), average traffic speed, and distance from the receptor. Major contributing roadway noise sources include Interstate 80, Interstate 505, Leisure Town Road, Vaca Valley Parkway, Monte Vista Avenue, Peabody Road, Elmira Road, Alamo Drive, and other arterial and collector roadways throughout the city.

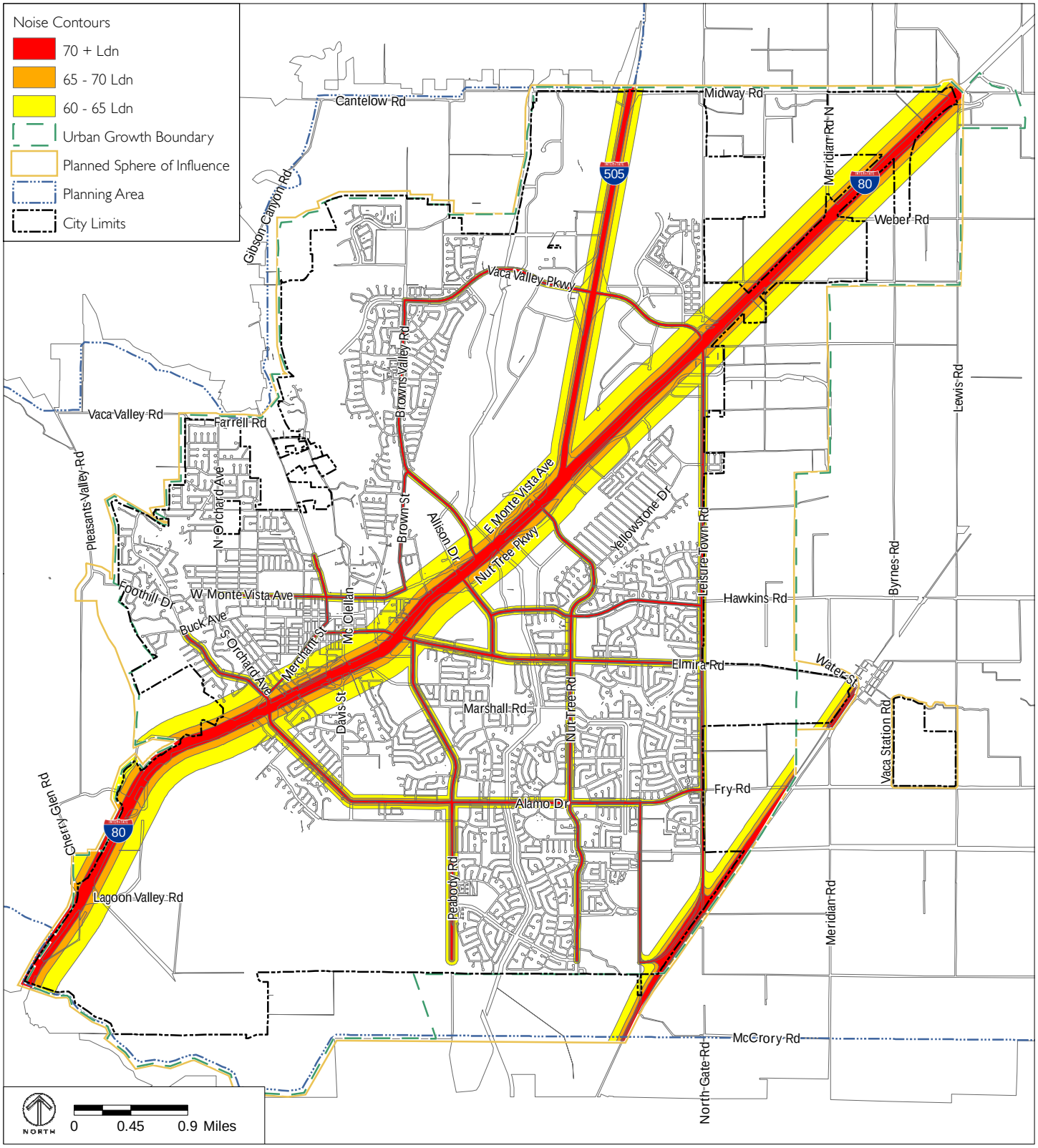
Existing traffic-related noise conditions along roadways within the city are shown in Figure NOI-1.

Railroad
Rail operations are a source of noise in Vacaville. Factors that influence the overall impact of railroad noise on adjacent uses include the distance of buildings from the tracks, surrounding land topography, frequency of train operations, and the lack or presence of sound walls or other barriers between the tracks and adjacent uses.

The train activity along the Union Pacific rail line bordering the southeast portion of the city includes Amtrak passenger trains and freight trains. Noise from existing train operations are estimated to be up to 76 dBA L_{dn} at 50 feet from the railroad centerline without warning horns, and up to approximately 91 dBA L_{dn} at 50 feet from at-grade railroad crossings when warning horns are sounded. The contributions to the existing noise contours from current rail operations are shown in Figure NOI-1.

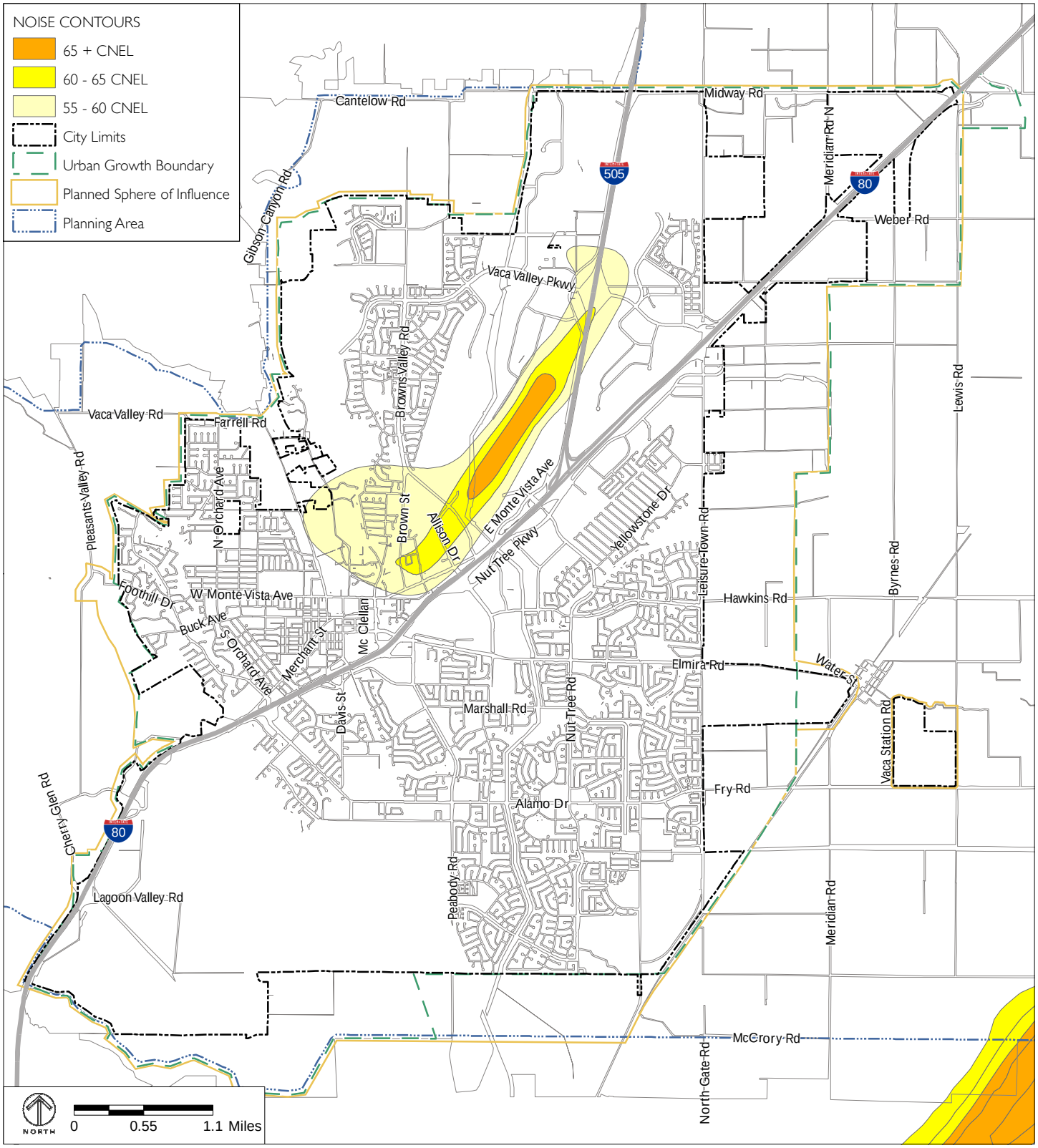
Aircraft
Aircraft overflights contribute to the ambient noise levels in Vacaville. The Nut Tree Airport is located in the north central portion of Vacaville, and Travis Air Force Base is located southeast of the city limits. The existing noise contours for each of these airports are provided in Figure NOI-2; Figure NOI-3 provides a zoomed in view of the Nut Tree Airport Noise Contours.

This Noise Element includes Policy NOI-P1.4 prohibiting new residential land uses in locations where the exterior noise associated with aircraft operations at Nut Tree Airport or Travis Air Force Base exceeds 60 dB CNEL, which is commonly accepted throughout California as the maximum noise exposure level that is compatible with low-density, single-family residential development. Existing land uses in the portions of the city that lie within the 60 dBA CNEL noise contour of the Nut Tree Airport include open space, business park, and industrial land uses, and a few residential land uses in the area north of Monte Vista Avenue between Brown Street and Browns Valley Parkway. The City has also adopted a Policy Plan for the Nut Tree Ranch property allowing the future development of a mixed-use commercial, residential, office, and entertainment development on this site, portions of which lie within the 60 dBA CNEL noise contour. Residential land uses are also located adjacent to, but outside of, the 60 dBA CNEL noise contour for Nut Tree Airport.



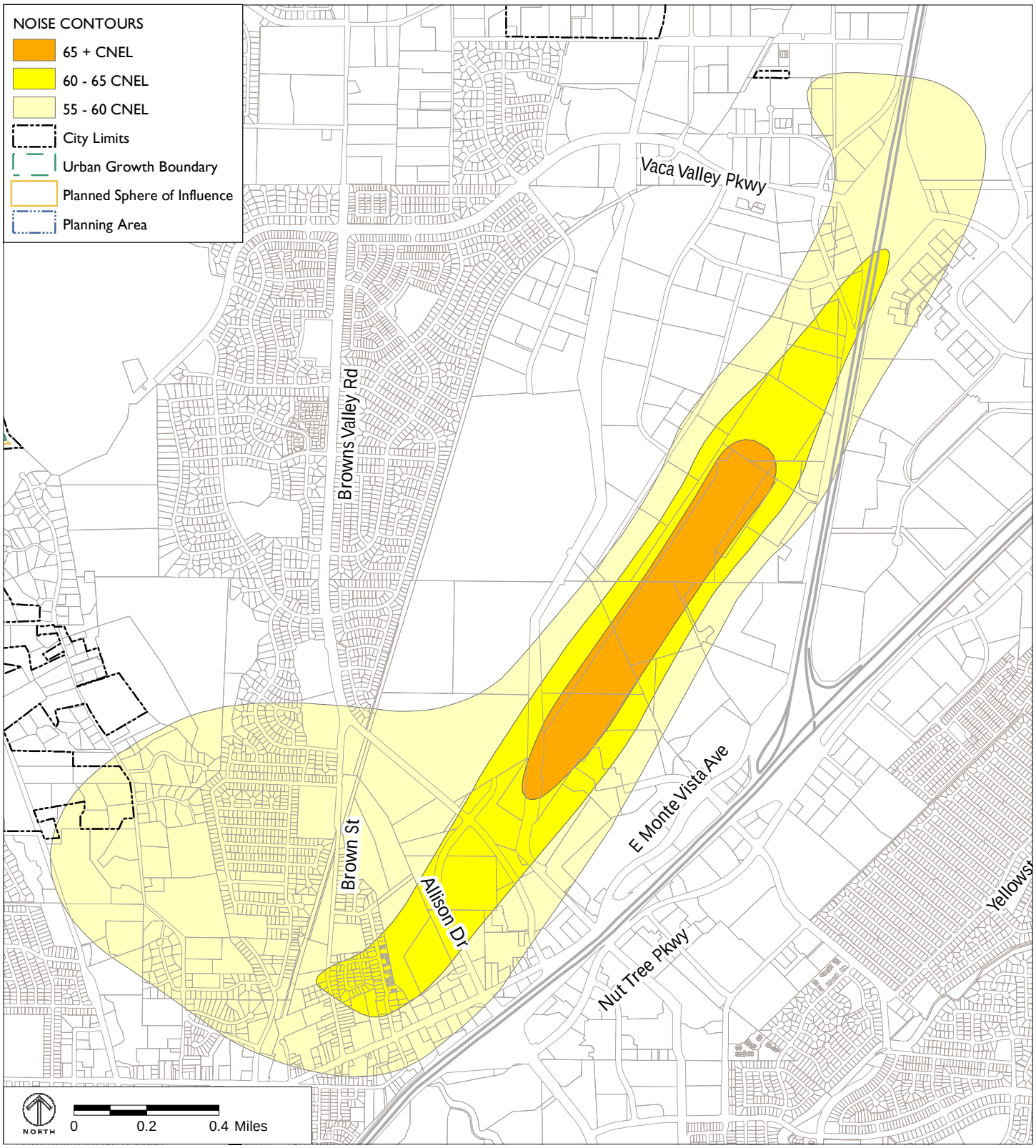
Source: LSA Associates, 2012.

FIGURE NOI-1
EXISTING NOISE LEVEL CONTOURS



Source: Nut Tree Airport, 2012. Depiction: The Planning Center/DC&E, 2012. Travis AFB: City of Vacaville, 2012.

FIGURE NOI-2
AIRPORT NOISE CONTOURS



Source: Nut Tree Airport, 2012. Depiction: The Planning Center/DC&E, 2012.

FIGURE NOI-3
NUT TREE AIRPORT NOISE CONTOURS

As shown on Figure NOI-2, no portion of Vacaville lies within the 60 dBA CNEL noise contour of the Travis Air Force Base airfield.

Stationary Noise Sources

Existing stationary noise sources throughout most of the city include heating ventilation and conditioning (HVAC) mechanical systems, delivery truck idling and loading/unloading activities, and recreational and parking lot activities, such as slamming car doors and talking. Of these noise sources, noise generated by delivery truck activity typically generates the highest maximum noise levels. Delivery truck loading and unloading activities can result in maximum noise levels ranging from 75 dBA to 85 dBA L_{max} at 50 feet. Typical parking lot activities, such as people conversing or doors slamming, generates approximately 60 dBA to 70 dBA L_{max} at 50 feet. Other noise sources specific to commercial centers and industrial zones of the city include light and medium industrial land uses, which can vary in noise levels.

Future Noise Sources

Noise contours for 2035 are shown in Figure NOI-4. These noise contours are based on projected land uses in 2035, the General Plan horizon year.

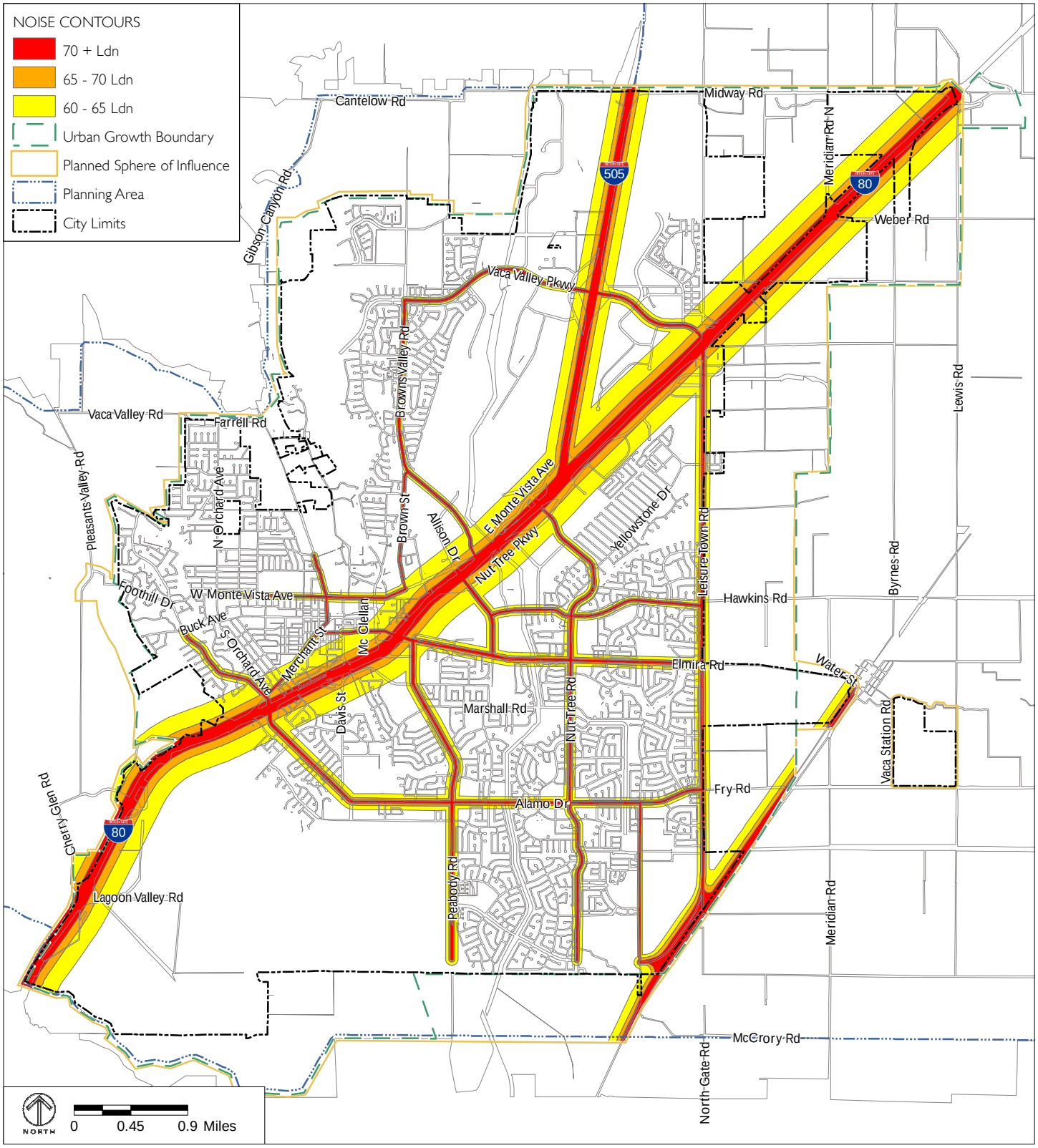
A new commuter rail station, the Vacaville/Fairfield Multi-Modal Rail Station, is planned to be constructed in northeast Fairfield along Amtrak's Capitol Corridor. Although the construction of the station itself will not result in a direct increase in the number of train trips, it is possible that trips will be expanded in the future, which could increase noise from railroad operations.

The Nut Tree Airport also intends to conduct several improvements to its facility, including adding more hangars and expanding the aircraft parking areas. These proposed changes, along with the ability to accommodate additional aircraft, will likely increase noise from the airport.

Noise and Land Use Compatibility Guidelines

The objective of the noise and land use compatibility guidelines is to provide the community with a means of judging the noise environment that it deems to be generally acceptable and to minimize noise-related complaints from residents. The compatibility policies shown in Table NOI-3 should be used in conjunction with the future noise exposure levels in Figure NOI-4 to identify locations that may require special treatment to minimize noise exposure.

If ambient noise levels in the area of a proposed project would exceed "normally acceptable" thresholds for the proposed land use category as shown in Table NOI-3, the City shall require a detailed analysis of feasible noise reduction requirements. As needed, noise insulation features shall be included in the design of such projects in order to reduce exterior noise levels to meet the acceptable thresholds, or, for uses with no active outdoor use areas, to ensure maintenance of acceptable interior noise levels for the proposed land use.



Source: LSA Associates, 2012.

FIGURE NOI-4
FUTURE NOISE LEVEL CONTOURS IN 2035

Goals, Policies, and Actions

Noise Standards

Goal NOI-1	**Maintain an acceptable noise environment in all areas of the city.**

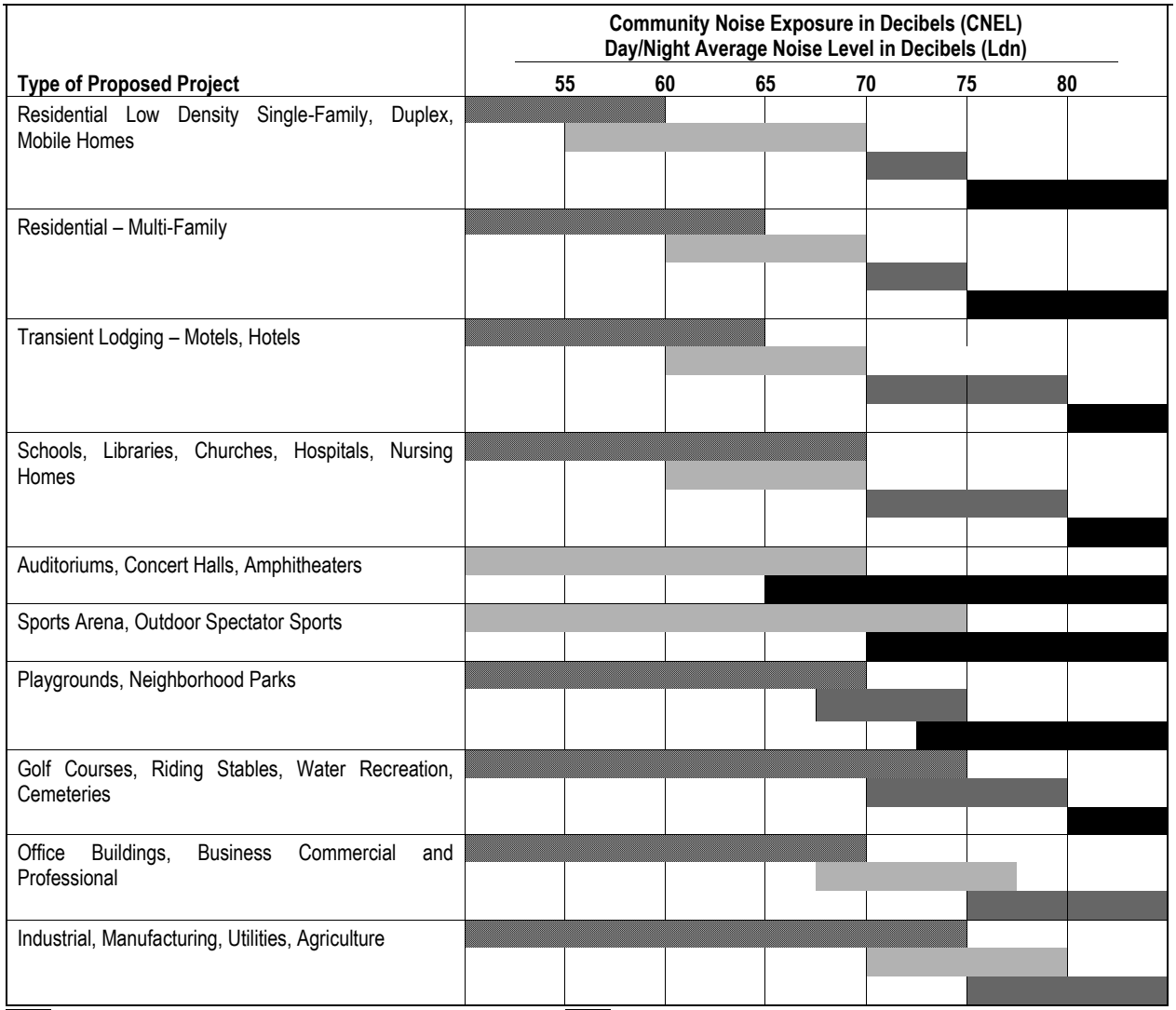
Policies

Policy NOI-P1.1 Require an acoustical analysis for all proposed projects that would locate noise sensitive land uses where the projected ambient noise level is greater than the respective ”normally acceptable” noise level as indicated on Table NOI-3, and require mitigation of noise impacts that exceed the land use compatibility standards.

Any acoustical analysis prepared pursuant to this Noise Element shall comply with the following:

- Be performed according to a scope of work that has been approved by the Director of Community Development.
- Be the financial responsibility of the applicant.
- Be prepared by a qualified person experienced in the fields of noise assessment and architectural acoustics.
- Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions, predominant noise sources, and peak noise sources.
- Estimate existing and projected cumulative (2035) noise levels in terms of CNEL, and compare those levels to the adopted policies of the Noise Element.
- Recommend appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element, giving preference to proper site planning and design over the construction of noise barriers or structural modifications to buildings. Where the noise source in question consists of intermittent single events, the report must address the effects of maximum noise levels in sleeping rooms in terms of possible sleep disturbance.
- Estimate noise exposure after the prescribed mitigation measures have been implemented.
- Describe a post-project monitoring program that could be used to evaluate the effectiveness of the proposed mitigation measures.

TABLE NOI-3 LAND USE COMPATIBILITY STANDARDS FOR COMMUNITY NOISE ENVIRONMENTS



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

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

CONDITIONALLY ACCEPTABLE
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.

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

Note: This table provides land use compatibility standards for all noise sources. While the prior General Plan established different standards for different noise sources, it has since become common practice to establish one set of land use compatibility standards for all noise sources because it is often difficult to definitively determine which portion of ambient noise levels are attributable to a particular noise source.
Source: State of California General Plan Guidelines, 2003.

Policy NOI-P1.2 Require that noise created by new transportation and non-transportation noise sources be mitigated, to the extent that is technically and economically feasible, to comply with the noise level standards of Table NOI-3.

Policy NOI-P1.3 Allow minor exceptions to the noise level design standards in Table NOI-3 in circumstances where mitigation requirements are not technically or economically feasible and not consistent with other City goals, standards, and policies.

Policy NOI-P1.4 Prohibit new residential land uses where the exterior noise associated with aircraft operations at Nut Tree Airport or Travis Air Force Base exceeds 60 dB CNEL.

Policy NOI-P1.5 When considering applications for a change in land use, follow the noise and land use compatibility guidelines in Table NOI-3.

Actions

Action NOI-A1.1 Amend the Land Use and Development Code to incorporate Policy NOI-P1.1.

Sensitive Receptors

Goal NOI-2	**Protect noise-sensitive uses from excessive noise.**

Policies

Policy NOI-P2.1 Reduce outdoor noise levels in existing residential areas, where economically and aesthetically feasible.

Policy NOI-P2.2 Discourage residential areas from directly abutting Interstate 80 or 505.

Policy NOI-P2.3 Design subdivisions to minimize the transportation-related noise impacts to adjacent residential areas.

Policy NOI-P2.4 Maintain smooth street surfaces adjacent to land uses that are sensitive to noise intrusion.

Policy NOI-P2.5 Encourage the use of open space, earthen berms, parking, accessory buildings, and landscaping to buffer new and existing development from noise. Use sound walls only when other methods are not practical or when recommended by an acoustical expert as part of a mitigation program.

Policy NOI-P2.6 Require that the effects of sound walls on noise levels in surrounding areas be considered and taken into account in the design, location, and construction of sound walls.

Policy NOI-P2.7 Require that vibration-sensitive buildings (e.g. residences) are sited at least 100 feet from the centerline of railroad tracks whenever feasible. Require a study demonstrating that groundborne vibration issues associated with rail operations have been adequately addressed prior to allowing the development of vibration-sensitive buildings within 100 feet of the centerline of railroad tracks.

Actions

Action NOI-A2.1 Request that Caltrans provide sound walls along Interstate 80 adjacent to existing residential areas where sound walls are the only practical noise mitigation.

Action NOI-A2.2 Review all non-residential development proposals for noise impacts on noise sensitive land uses, such as residences, schools, and hospitals.

Mobile Noise Sources

Goal NOI-3	**Minimize noise from mobile sources.**

Policies

Policy NOI-P3.1 Limit truck traffic to designated truck routes.

Policy NOI-P3.2 Utilize City traffic officers to enforce the use of approved truck routes.

Policy NOI-P3.3 Require increased setbacks for commercial and office development that adjoins freeways.

Policy NOI-P3.4 Work with the Solano County Airport Land Use Commission and other agencies to reduce noise generated from sources outside the City's jurisdiction.

Actions

Action NOI-A3.1 Update aircraft noise projections as future operations at the Nut Tree Airport and Travis Air Force Base are projected to change.

Stationary Noise Sources

Goal NOI-4	**Minimize noise from stationary sources.**

Policies

Policy NOI-P4.1 Preclude the generation of annoying or harmful noise through conditions of approval on stationary noise sources, such as construction and property maintenance activity and mechanical equipment.

Policy NOI-P4.2 Require the following construction noise control measures:

- Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Locate stationary noise-generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction area.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists.
- Limit hours of operation of outdoor noise sources through conditions of approval.

Actions

Action NOI-A4.1 Amend the Land Use and Development Code to incorporate Policy NOI-P4.2.

9 GLOSSARY

This glossary explains the technical terms used in the Vacaville General Plan and common in the field of planning. Definitions come from several sources, including the California Office of Planning and Research and the American Planning Association Glossary of Zoning, Development, and Planning Terms.

Abbreviations

AB: Assembly Bill
ABAG: Association of Bay Area Governments
ADT: Average daily trips
ALUC: Airport Land Use Commission
ALUCP: Airport Land Use Compatibility Plan
AQMD: Air Quality Management District

BAAQMD: Bay Area Air Quality Management District
BMR: Below Market Rate

CEQA: California Environmental Quality Act
CDF: California Department of Forestry
CFC: Chlorofluorocarbon
CFD: Community Facilities District
CIP: Capital Improvement Program
CMF: California Medical Facility
CNEL: Community Noise Equivalent Level
CO_2: Carbon Dioxide
CO: Carbon Monoxide

dB: Decibel
dBA: Decibel "A-Weighted"
DFG: State of California, Department of Fish and Game
DOC: State of California, Department of Conservation
du: Dwelling Unit
DUSD: Dixon Unified School District
DWR: State of California, Department of Water Resources

ECAS: Energy and Conservation Action Strategy
EIR: Environmental Impact Report
EMS: Emergency Medical Services

FAR: Floor Area Ratio
FEMA: Federal Emergency Management Agency
FSUSD: Fairfield-Suisun Unified School District

GPA: General Plan Amendment
GIS: Geographic Information Systems
GHG: Greenhouse Gas

HCFC: Hydrochlorofluorocarbon
HCP: Habitat Conservation Plan
HFC: Hydrofluorocarbon
HOV: High Occupancy Vehicle Lanes

IPCC: Intergovernmental Panel on Climate Change

LAFCO: Local Agency Formation Commission
LEED: Leadership in Energy and Environmental Design
LOS: Level of Service

NBA: North Bay Aqueduct
NO: Nitric Oxide
NO_2: Nitrogen Dioxide
N_2O: Nitrous Oxide

PG&E: Pacific Gas and Electric Company
PUD: Planned Unit Development

SB: Senate Bill
SCWA: Solano County Water Agency
SID: Solano Irrigation District
SF_6: Sulfur Hexafluoride
SPO: Special Performance Option
SOI: Sphere of Influence
SSMP: Sewer System Management Plan
STA: Solano Transportation Authority
SVAB: Sacramento Valley Air Basin

TM: Technical Memorandum
TOD: Transit Oriented Development

TSM: Transportation System Management
TUSD: Travis Unified School District

UGB: Urban Growth Boundary
USGS: United States Geological Survey
UWMP: Urban Water Management Plan

VFD: Vacaville Fire Department
VPD: Vacaville Police Department
VUSD: Vacaville Unified School District

WWTP: Waste Water Treatment Plant

YSAQMD: Yolo-Solano Air Quality Management District

Terminology

Acceptable Risk Hazard. A hazard that is deemed to be a tolerable exposure to danger given the expected benefits to be obtained; the level of loss, injury, or destruction below which no specific action by local government is deemed necessary other than making the risk known.

Acoustical Engineer. An engineer specializing in the measurement and physical properties of sound. In environmental review, the acoustical engineer measures noise impacts of proposed projects and designs measures to reduce those impacts.

Acreage, Gross. The land area that exists prior to any dedications for public use, health, and/or safety purposes.

Acreage, Net. The portion of a site that can actually be built upon, which is the land area remaining after dedication of ultimate rights-of-way for:

- Exterior boundary streets
- Flood ways
- Public parks and other open space developed to meet minimum standards required by City ordinance
- Utility Easements and rights-of-way

Acre Foot. The volume of water that would cover 1 acre to a depth of 1 foot. An acre foot is about the amount of water used each year in and around the home by two average California families.

Action. An action is a program, implementation measure, procedure, or technique intended to help achieve a specified goal. (See "Goal")

Adverse Impact. A negative consequence for the physical, social, or economic environment resulting from an action or project.

Affordability, Housing. The relation of housing costs to household income.

Affordable Housing. Dwelling units for which the housing payment is not more than 30 percent of household gross income for a specified income group.

Apartment-Type Units. Garden-type apartments or condominiums, generally at densities of 14 units per acre or more, designed as stacked units without garages.

Archaeological Resource. Material evidence of past human activity found below the surface of ground or water, portions of which may be visible above the surface.

Arterials. Major thoroughfares that carry large volumes of traffic at relatively high speeds. Arterials are designed to facilitate two or more lanes of moving vehicles in each direction and rarely contain on-street parking.

Assembly Bill (AB). Precedes digits indicating specific bill number (e.g. AB 32). An Assembly Bill is an idea or concept designed by a member of the California Assembly. Once an Assembly Bill is passed in both the State Assembly and Senate it goes to the Governor for signature, veto, or approval without signature.

Association of Bay Area Governments (ABAG). The regional planning agency for the nine Bay Area counties, including Solano County, and the 101 cities and towns within these counties.

Below Market Rate (BMR). BMR housing is subsidized to make it available to households that cannot afford current market price.

Bicycle Lane (Class II facility). A corridor expressly reserved for bicycles on a street or roadway in addition to lanes for use by motorized vehicles.

Bicycle Path (Class I facility). A paved route, not on a street or roadway, expressly reserved for bicycles traversing an otherwise unpaved area. Bicycle paths may parallel roads but are typically separated from them by landscaping.

Bicycle Route (Class III facility). A roadway shared with motorists and identified only by signs, a bicycle route has no pavement markings or lane stripes.

Bikeways. A term that encompasses "bicycle lanes," "bicycle paths," and "bicycle routes."

Buffer. An area established between potentially conflicting land uses, such as agricultural and residential uses, which, depending on the potential impact, may utilize landscaping or structural barriers such as setbacks or roads.

Buildout. Development of land to its full potential, or theoretical capacity, as permitted under current or proposed planning or zoning designations.

California Environmental Quality Act (CEQA). Legislation and corresponding procedural components established in 1970 by the State of California to require environmental review for projects anticipated to result in adverse impacts to the environment.

Caltrans. California Department of Transportation.

Capital Improvement Program (CIP). A program that schedules permanent improvements, usually for a minimum of five years in the future, that fits the projected fiscal capability of the local jurisdiction. The program generally is reviewed on an annual basis for conformance to and consistency with the General Plan.

Carbon Dioxide (CO_2). An odorless, colorless gas formed during respiration, the combustion of fuels, and certain industrial activities, among other processes. CO_2 is the most abundant greenhouse gas, with primary sources from transportation and electrical power generation.

Carbon Monoxide (CO). An odorless, colorless gas formed by the incomplete combustion of fuels; roughly 80 percent of Bay Area CO emissions are estimated to be from motor vehicles.

Chlorofluorocarbon (CFC). An ozone-depleting greenhouse gas previously used as a propellant and a refrigerant.

City. City with a capital "C" generally refers to the City government or administration. City with a lower case "c" may mean any city or may refer to the geographical area.

City Limits. The legal boundaries of the geographical area subject to the jurisdiction of the City of Vacaville's government. For example, development applications for properties located within the city limits must be reviewed by the City.

Collectors. Roadways that connect local streets to "arterials"; collectors usually provide two travel lanes for automobiles, and may also have bicycle lanes.

Community Facilities District (CFD). A special district that is formed to offset the costs of providing public safety services to areas of new development through the levy of special taxes.

Community Noise Equivalent Level (CNEL). A weighted measure of ambient noise using sound levels over the course of a 24-hour period.

Community Separator. Land designated as open space in order to avoid corridor-style urbanization and retain the character of free-standing cities.

Compatible. Capable of existing together without conflict or ill effects.

Complete Streets Act. A law that requires all road construction and improvement projects to evaluate how the right-of-way serves all who use it, including pedestrians, bicyclists, and transit users.

Conditional Use Permit. The discretionary and conditional review of an activity or function or operation on a site or in a building or facility.

Conservation. The management of natural resources to prevent waste, destruction, or neglect.

Cultural Resources. Includes historic, archaeological, and paleontological resources, as well as human remains.

Cumulative Impact. As used in CEQA, the total environmental impact resulting from the accumulated impacts of individual projects or programs over time.

Decibel (dB). A unit used to express the relative intensity of a sound as it is heard by the human ear. The lowest volume a normal ear can detect under laboratory conditions is 0 dB, the threshold of human hearing. Since the decibel scale is logarithmic, 10 decibels are ten times more intense and 20 decibels are a hundred times more intense than 1 dB.

Decibel "A-Weighted" (dBA). The “A-weighted” scale for measuring sound in decibels, which weighs or reduces the effects of low and high frequencies in order to simulate human hearing. Every increase of 10 dBA doubles the perceived loudness even though the noise is actually ten times more intense.

Dedication. The turning over by an owner or developer of private land for public use, and the acceptance of land for such use by the governmental agency having jurisdiction over the public function for which it will be used. Dedications for roads, parks, school sites, or other public uses are often required by a city or county as conditions for approval of a development. (See “In-Lieu Fee”)

Density. The amount of development or people per unit of area or property. (See also “Density, Residential” and “Floor Area Ratio”)

Density, Residential (du/acre). The number of permanent residential dwelling units (du) per acre of land. Densities specified in the General Plan are expressed in dwelling units per gross acreage (du/acre). (See “Acres, Gross” and “Acres, Net”)

Density Transfer. The concentration of density from one part of a site to another part of a site. This technique is used to preserve historic, sensitive, or hazardous areas and to accommodate public facilities, such as schools, parks, or utility easements on an individual parcel or within a specific project.

Development. The physical extension and/or construction of non-farm land uses. Development activities include: subdivision of land; construction or alteration of structures, roads, utilities and other facilities; installation of septic systems; grading; deposit of refuse, debris or fill materials; and clearing of natural vegetative cover (with the exception of agricultural activities). The construction of a single-family home on an existing lot, and routine repair and maintenance activities, are exempted.

Development Fees. Direct charges or dedications collected on a one-time basis for a service provided or as a condition of approval being granted by the local government. The purpose of the fee or exaction must directly relate to the need created by the development. In addition, its amount must be proportional to the cost of the service or improvement. Fees can be broken down into two major classes: 1) service charges such as permit fees covering the cost of processing development plans, connection or standby fees for installing utilities, or application fees for reviewing and considering development proposals; and 2) "impact" fees levied on new development to cover the cost of infrastructure or facilities necessitated by development.

Development Review; Design Control; Design Review. The comprehensive evaluation of a development and its impact on neighboring properties and the community as a whole, from the standpoint of site and landscape design, architecture, materials, colors, lighting and signs, in accordance with a set of adopted criteria and standards. “Design Control” requires that specific things be done and that other things not be done. Design Control language is most often found within a zoning ordinance. “Development Review” usually refers to a system established in the Municipal Code, whereby projects are reviewed against certain standards and criteria by a specially established design review board or other body such as the Planning Commission.

Disabled. Persons determined to have a physical impairment or mental disorder, which is expected to be of long, continued, or indefinite duration and is of such a nature that the person’s ability to live independently could be improved by more suitable housing conditions.

Duplex. A free-standing house divided into two separate living units or residences, usually having separate entrances.

Dwelling Unit (du). A building or portion of a building containing one or more rooms, designed for or used by one family for living or sleeping purposes, and having a separate bathroom and only one kitchen or kitchenette.

Ecosystem. An interacting system formed by a biotic community and its physical environment.

Endangered Species, California. A native species or sub-species of a bird, mammal, fish, amphibian, reptile, or plant, which is in serious danger of becoming extinct throughout all or a significant portion of its range, due to one or more factors, including loss in habitat, change in habitat, over-exploitation, predation, competition, or disease. The status is determined by the State Department of Fish and Game together with the State Fish and Game Commission.

Endangered Species, Federal. A species which is in danger of extinction throughout all or a significant portion of its range. The status is determined by the US Fish and Wildlife Service and the Department of the Interior.

Environmental Impact Report (EIR). A report required pursuant to the California Environmental Quality Act (CEQA) that assesses all the environmental characteristics of an area, determines what effects or impacts will result if the area is altered or disturbed by a proposed action, and identifies alternatives or other measures to avoid or reduce those impacts. (See "California Environmental Quality Act")

Erosion. The process by which soil and rock are detached and moved by running water, wind, ice, and gravity.

Farmland, Prime. Land which has the best combination of physical and chemical characteristics for the production of crops. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming methods. Prime Farmland must have been used for the production of irrigated crops within the last three years.

Farmland of Local Importance. Land other than Prime Farmland, Farmland of Statewide Importance, or Unique Farmland that is either currently producing crops or that has the capability of production. This land may be important to the local economy due to its productivity.

Farmland of Statewide Importance. Land other than Prime Farmland which has a good combination of physical and chemical characteristics for the production of crops. It must have been used for the production of irrigated crops within the last three years.

Farmland, Unique. Land which does not meet the criteria for Prime Farmland or Farmland of Statewide Importance that is currently used for the production of specific high economic value crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality or high yields of a specific crop when treated and managed according to current farming methods. Examples of such crops may include oranges, olives, avocados, rice, grapes, and cut flowers.

Fault. A fracture in the earth's crust that forms a boundary between rock masses that have shifted.

Flood, 100-year. In any given year, a flood that has a 1 percent likelihood of occurring, and is recognized as a standard for acceptable risk.

Floodplain. The relatively level land area on either side of the banks of a stream regularly subject to flooding.

Floodway. The part of the floodplain capable of conveying the 100-year flood with no more than a 1-foot rise in water. The floodway includes the river channel itself and adjacent land areas.

Floor Area Ratio (FAR). The size of a building in square feet divided by land area, expressed as a decimal number. For example, a 60,000 square foot building on a 120,000 square-foot parcel would have a floor area ratio of 0.50. The FAR is used in calculating the building intensity of non-residential development.

General Plan. A compendium of City policies regarding its long-term development, in the form of maps and accompanying text. The General Plan is a legal document required of each local agency by the State of California Government Code Section 65301 and adopted by the City Council. In California, the General Plan has seven mandatory elements (Circulation, Conservation, Housing, Land Use, Noise, Open Space, and Public Safety) and may include any number of optional elements the City deems important.

General Plan Amendment (GPA). A modification made to the General Plan after enactment.

Geographic Information Systems (GIS). A combination of approaches, programs, methodologies, and technologies to gather, store, manipulate, analyze, present, and interpret spatial information and data.

Goal. A description of the general desired results that Vacaville seeks to create through the implementation of the General Plan. Goals are included in each element of the Plan and may include the key physical or community characteristics that the City and its residents wish to maintain or develop.

Graywater. The less contaminated portion of domestic wastewater, including wash water from clothes washers and laundry tubs.

Greenhouse Effect. A term used to describe the warming of the earth's atmosphere due to accumulated carbon dioxide and other gases in the upper atmosphere. These gases absorb energy radiated from the earth's surface, "trapping" it in the same manner as glass in a greenhouse traps heat.

Greenhouse Gas (GHG). A gaseous compound that contributes to the greenhouse effect.

Grid-Neutral Development. Development that generates enough energy to off-set its demands.

Groundwater. Water that exists beneath the earth's surface, typically found between saturated soils and rock, and is used to supply wells and springs.

Groundwater Recharge. The process whereby water in an aquifer, a water-bearing stratum of permeable rock, sand, or gravel, is replenished; this procedure occurs naturally, unless interrupted by human activity.

Growth Management. The use by a community of a wide range of techniques in combination to determine the amount, type, and rate of development desired by the community and to channel that growth into designated areas. Growth management policies can be implemented through building permit caps, public facilities/infrastructure ordinances, urban limit lines, standards for levels of service, phasing, and other programs.

Habitat. The physical location or type of environment in which an organism or biological population lives or occurs.

Hazardous Waste. Waste that requires special handling to avoid illness or injury to persons or damage to property.

High Occupancy Vehicle Lanes (HOV). Traffic lanes that are designated and reserved for vehicles with a minimum number of passengers during high-volume commute hours in order to encourage carpooling through faster travel. They are enforced with fines and traffic tickets.

Horizon Year. The year through which the General Plan is intended to be effective, or 2035.

Household. Person or persons living in one dwelling unit.

Hydrochlorofluorocarbon (HCFC). A gaseous compound that has been used as an ozone-safe replacement for CFCs, but which acts as a potent greenhouse gas.

Hydrofluorocarbon (HFC). A gaseous compound that has been used as an ozone-safe replacement for CFCs, but which acts as a potent greenhouse gas.

Impervious Surface. Surface through which water cannot penetrate, such as a roof, road, sidewalk, or paved parking lot. The amount of impervious surface increases with development and establishes the need for drainage facilities to carry the increased runoff.

Implementation. Actions, procedures, programs, or techniques that carry out policies.

Income, Above-Moderate. A household whose income exceeds 120 percent of the county median.

Income, Extremely-Low. A household whose income is less than 30 percent of the county median.

Income, Low. A household whose income is between 50 and 80 percent of the county median.

Income, Median. The countywide median income for a four-person household, as defined by the United States Department of Housing and Urban Development (HUD) and the California Department of Housing and Community Development (HCD).

Income, Moderate. A household whose income is between 81 and 120 percent of the median family income for the county.

Income, Very-Low. A household whose income does not exceed 50 percent of the median family income for the county.

Infill Development. Development that occurs on vacant or underutilized land within areas that are already largely developed.

In-lieu Fee. Cash payments that may be required of an owner or developer as a substitute for a dedication of land for public use, usually calculated in dollars per lot, and referred to as in-lieu fees or in-lieu contributions. (See "Dedication")

Jobs/Housing Balance. A ratio used to describe the adequacy of the housing supply within a defined area to meet the needs of persons working within the same area. Jobs/housing balance as used in the General Plan is the ratio of jobs to employed residents.

Landslide. The downslope movement of soil and rock.

Land Use. The occupation or utilization of an area of land for any human activity or any purpose.

Land Use and Development Code. Chapter 14.09 of the City of Vacaville Municipal Code, also known as the Zoning Code. The Land Use and Development Code implements the goals and policies of the General Plan.

Land Use Designation. One particular category in a classification series of appropriate use of properties established by the General Plan Land Use Element.

Leadership in Energy and Environmental Design (LEED). A voluntary, consensus-based national standard for developing and rating high-performance, sustainable "green" buildings. LEED provides a complete framework for assessing building performance and meeting sustainability goals, such as water savings, energy efficiency, materials selection, and indoor environmental quality.

Equivalent Continuous Noise Level (L_{eq}). The average of sound energy occurring over a specified period. The L_{eq} is equivalent to the same average acoustical energy as the time-varying sound that actually occurs during a specified period.

Level of Service (LOS) Standard. A standard used by government agencies to measure the quality or effectiveness of a municipal service, such as police, fire, or library, or the performance of a facility, such as a street or highway.

Level of Service (Traffic). A scale that measures the amount of traffic that a roadway or intersection can accommodate, based on such factors as maneuverability, driver dissatisfaction, and delay.

Level of Service A. A relatively free flow of traffic, with little or no limitation on vehicle movement or speed. Average delays at signalized intersections are less than 35 seconds, and all queues clear in a single signal cycle.

Level of Service B. A steady flow of traffic, with only slight delays in vehicle movement and speed. Average delays at signalized intersections are less than 35 seconds, and all queues clear in a single signal cycle.

Level of Service C. A reasonably steady, high-volume flow of traffic, with some limitations on movement and speed, and occasional backups on critical approaches. Average delays at signalized intersections are less than 35 seconds, and all queues clear in a single signal cycle.

Level of Service D. Designates the level where traffic nears an unstable flow. Intersections still function, but short queues develop and cars may have to wait through one signal cycle during short peaks. Average delays at signalized intersections are 35 seconds.

Level of Service E. Represents traffic characterized by slow movement and frequent (although momentary) stoppages. This type of congestion is considered severe, but is not uncommon at peak traffic hours, with frequent stopping, long-standing queues, and blocked intersections. Average delays at signalized intersections are 80 seconds.

Level of Service F. Describes unsatisfactory stop-and-go traffic characterized by “traffic jams” and stoppages of long duration. Vehicles at signalized intersections usually have to wait through one or more signal changes, and “upstream” intersections may be blocked by the long queues. Average delays at signalized intersections are 80 seconds or more.

Liquefaction. A sudden large decrease in the shearing resistance of a cohesionless soil, caused by a collapse of the structure by shock or strain, and associated with a sudden but temporary increase of the pore fluid pressure.

Local Agency Formation Commission (LAFCO). A five- or seven-member commission within each county that reviews and evaluates all proposals for formation of special districts, incorporation of cities, annexation to special districts or cities, consolidation of districts, and merger of districts with cities. Each county's LAFCO is empowered to approve, disapprove, or conditionally approve such proposals.

Local Street. Provides direct access to properties; generally they carry the lowest traffic volumes.

Mitigation. A specific action taken to reduce environmental impacts to insignificant levels. Mitigation measures are required as a component of an environmental impact report (EIR).

Mixed Use. Any mixture of land uses on a single parcel, including mixtures of residences with commercial, offices with retail, or visitor accommodation with offices and retail. As distinguished from a single use land use designation or zone, mixed use refers to an authorized variety of uses for buildings and structures in a particular area.

Mobile Home. A structure, transportable in one or more sections, built on a permanent chassis and designed for use as a single-family dwelling unit and which: (1) has a minimum of 400 square feet of living space; (2) has a minimum width in excess of 102 inches; (3) is connected to all available permanent utilities; and (4) is tied down (a) to a permanent foundation on a lot either owned or leased by the homeowner or (b) is set on piers, with wheels removed and skirted, in a mobile home park.

Mobile Home Park. A parcel of land under one ownership that has been planned and improved for the placement of two or more mobile homes for rental purposes for nontransient use.

Natural Community. A distinctive group of different organisms that inhabit a common environment, interact with each other, and are relatively independent of other groups.

Nitric Oxide (NO). A gaseous compound that may result from combustion or industrial processes. It is a precursor to nitric acid, which contributes to acid rain, and contributes to the depletion of stratospheric ozone.

Nitrogen Dioxide (NO_2). A reddish brown gas that is a byproduct of the combustion process and is a key to the ground-level ozone production process.

Nitrous Oxide (N_2O) A colorless gas that is byproduct of the combustion process and certain industrial process. It has certain industrial and clinical applications and is both a precursor to ground level ozone and a greenhouse gas.

Noise Contour. A line connecting points of equal noise level as measured on the same scale. Noise levels greater than the 60 Ldn contour (measured in dBA) require noise attenuation in residential development.

Noise-Sensitive Use. A location where people reside or where the presence of unwanted sound could adversely affect the use of land, such as residences, schools, and hospitals.

Non-Conforming Use. A use that was valid when brought into existence, but no longer permitted by later regulation. "Non-conforming use" is a generic term and includes: (1) non-conforming structures (because their size, type of construction, location on land, or proximity to other structures is no longer permitted); (2) non-conforming use of a conforming building; (3) non-conforming use of a non-conforming building; and (4) non-conforming use of land. Any use lawfully existing on any piece of property that is inconsistent with a new or amended General Plan, and that in turn is a violation of a zoning ordinance amendment subsequently adopted in conformance with the General Plan, will be a non-conforming use. Typically, non-conforming uses are permitted to continue for a designated period of time, subject to certain restrictions.

North Bay Regional (NBR) Water Treatment Plant. A joint facility, constructed by Vacaville and Fairfield.

Open Space. Open Space encompasses lands that essentially are unimproved and that have limited development potential due to the physical characteristics of the land, due to the land being restricted to agricultural production, due to the location of the land as a buffer between urban areas, or due to the scenic value of the land and its role in maintaining a community's sense of character or heritage.

Overlay. A land use designation or zoning designation that modifies the basic underlying designation or designations in some specific manner.

Ozone. An oxidant, O_3, that at ground level makes up the largest single portion of smog. In the upper atmosphere, the presence of ozone acts as a protectant against harmful ultraviolet rays.

Parcel. A lot, or contiguous group of lots, in single ownership or under single control, usually considered a unit for purposes of development.

Particulate Matter. Minute, separate airborne solid or liquid particles including smoke, dust, aerosols, metallic oxides, and pollen.

Peak Hour Traffic. The number of vehicles passing over a designated section of a street during the busiest one-hour period during a 24-hour period.

Planned Development (PD). A description of a proposed unified development, consisting at a minimum of a map and adopted ordinance setting forth the governing regulations, and the location and phasing of all proposed uses and improvements to be included in the development.

Planning Area. The Planning Area is the land outside of the city limits and generally outside of the Sphere of Influence that bears a relation to the City's planning and policy direction. The Planning Area does not lead to regulatory powers outside of the city limits. Instead, it signals to the County and to other nearby local and regional authorities that City residents recognize that development within this area has an impact on the future of their community, and vice versa. (See also "Sphere of Influence")

Policy. A specific statement of principle or of guiding actions that implies clear commitment but is not mandatory. A general direction that a governmental agency sets to follow, in order to meet its goals before undertaking an implementing action or program. (See "Action")

Policy Plan. A detailed plan that includes the text and maps or diagrams generally specifying the following for a portion of the area covered by the General Plan:

- Land use.
- Distribution, location, and extent and intensity of major components of public and private transportation, sewage, water, drainage, solid waste disposal, energy, and other essential facilities.
- Standards and criteria by which development will proceed.
- A program of implementation measures including regulations, programs, public works projects, and financing measures. (See also "Specific Plan")

Pump Station. A building or structure containing the necessary equipment to pump water to a higher level.

Response Time. The amount of time for an emergency services response, measured from the time of the distress call until arrival on the scene.

Right-of-Way. 1. The total street width needed to accommodate travel lanes, sidewalks and curbs, and gutters. 2. A strip of land acquired by reservation, dedication, forced dedication, prescription or condemnation, and intended to be occupied or usually occupied by a road, crosswalk, railroad, electric transmission lines, oil or gas pipeline, water line, sanitary storm sewer, or other similar use.

Riparian Corridor. A habitat and vegetation zone that is associated with the banks and floodplains of a river, stream, or lake. Riparian trees and shrubs are typically phreatophytes, plants whose root systems are in constant contact with groundwater.

Safe Routes to Schools. Pedestrian and bicycling routes that provide safe access to and from schools.

Senate Bill (SB), California. Precedes digits indicating specific bill number, e.g. SB 375.

Sensitive Receptors. Members of the population who are most sensitive to air quality, including children, the elderly, the acutely ill, and the chronically ill. The term "sensitive receptors" can also refer to the land use categories where these people live or spend a significant amount of time. Such areas include residences, schools, playgrounds, child care centers, hospitals, retirement homes, and convalescent homes.

Slope, 25 percent. A slope defined by 25 units of vertical elevation per 100 units of horizontal distance, measured on a line perpendicular to contours of equal elevation.

Slope Failure. The process, often sudden, in which a steep slope collapses, usually carrying along structures and vegetation.

Slope, Steep. An area with a greater than 5 percent slope.

Solano Habitat Conservation Plan (HCP). A countywide plan to preserve habitat for endangered, threatened, and special concern plants and animals present in the county.

Solid Waste. Unwanted or discarded material, including garbage, with insufficient liquid content to be free flowing.

Special Performance Option (SPO). An implementation measure that may be enacted by the City Council for the purpose of amending the Land Use Element to allow an alternative land use in a specific area, when such a change may confer a particular public benefit. Such an action would make the alternative land use contingent upon specific conditions, and potentially place time limits on such a use.

Specific Plan. Under Article 8 of the Government Code (Section 65450 et seq), a legal tool for detailed design and implementation of a defined portion of the area covered by a General Plan. A specific plan may include all detailed regulations, conditions, programs, and/or proposed legislation which may be necessary or convenient for the systematic implementation of any General Plan element(s). The contents are the same as those of a policy plan except they will be more comprehensive with respect to utilities and public facilities and their funding. (See also "Policy Plan" and "Planned Development")

Sphere of Influence (SOI). The probable physical boundaries and service area of the city, as determined by the Local Agency Formation Commission (LAFCO) of the county.

Subdivision. The division of a lot, tract, or parcel of land into two or more lots, tracts, parcels, or other divisions of land for sale, development, or lease.

Subdivision Ordinance. An ordinance which specifies the division of a lot, tract, or parcel of land into two or more lots, tracts, parcels or other divisions of land for sale, development, or lease.

Subsidence. The gradual sinking of land as a result of natural or man-made causes.

Sulphur Hexafluoride (SF_6). A colorless, odorless gas used in certain advanced industrial and technological processes and which acts as a potent greenhouse gas.

Sustainable. Describes practices that meet the needs of the present without compromising the ability of future generations to meet their own needs.[1]

Threatened Species, California. A native species or sub-species of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts required by Chapter 1.5 of the State Department of Fish and Game Code.

Threatened Species, Federal. A species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The status is determined by the U.S. Fish and Wildlife Service and the Department of the Interior.

Topography. The configuration of a land surface, including its relief and the position of its natural and man-made features.

Townhouse/Townhome. A series of residences, often two to three stories in height, that are connected side by side in a row with each having a separate street-level entrance.

Traffic Calming. Measures designed to reduce motor vehicle speeds and to encourage pedestrian use, including:

- Narrow streets
- Tight turning radii
- Sidewalk bulbouts
- Parking bays
- Textured paving at intersections
- Parkways between sidewalks and streets

Trailhead. The beginning of a trail, usually marked by information signs.

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[1] World Commission on Environment and Development, 1987, *Our Common Future, Report of the Word Commission on Environment and Development*, Oxford University Press.

Transit Corridor. The land along or within walking distance of a street served by transit.

Transit Oriented Development (TOD). Residential and commercial areas designed to maximize access by public transportation, such as trains and buses. TODs typically have a neighborhood center with a transit station, surrounded by relatively high-density development, with progressively lower-density spreading outwards.

Transportation System Management (TSM). TSM includes programs to reduce single occupancy vehicle travel. Programs include: carpools, vanpools, park and ride lots, transit, bicycle facilities, parking restrictions, flex-time, work hours, and pedestrian facilities. TSM programs are most effective in large office and industrial areas or large employment centers.

Trip Generation Rate. The number of vehicle trips per unit of measure during a 24-hour period. Measured trip-generation rates are used to project the impact of development on the traffic circulation system.

Triplex. A free-standing house divided into three separate living units or residences, usually having separate entrances**.**

Unincorporated Area. Encompasses properties that are located outside of cities. Development in the unincorporated area is subject to County jurisdiction.

Urban Growth Boundary (UGB). The statutory boundary implemented by the City indicating the maximum allowable extent of urbanization. Beyond this boundary, only agricultural or open space uses are typically permitted.

Urban Reserve. A land use designation applied to relatively large, contiguous, geographic areas where comprehensive planning will occur in the future before urbanization occurs.

Urban Service Zone: The City of Vacaville and adjacent land planned for urban use.

Use. The purpose for which a lot or structure is or may be leased, occupied, maintained, arranged, designed, intended, constructed, erected, moved, altered and/or enlarged in accordance with the City Land Use and Development Code and General Plan land use designations.

Utility Corridor. Rights-of-way or easements for utility lines on either publicly or privately owned property.

Vehicle Trip. A trip made by a vehicle (may equal one or more person-trips).

Waste Stream. All solid, semisolid, and liquid wastes including garbage, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semisolid wastes, and other discarded solid and semisolid wastes.

Wastewater. Water that has already been used for washing, flushing, or in a manufacturing process, and therefore contains waste products such as sewage or chemical by-products.

Watershed. The total area above a given point on a watercourse that contributes water to the flow of the watercourse; the entire region drained by a watercourse.

Waterway. A waterway can support its own environment of vegetation, fowl, fish, and reptiles, and appears natural.

Wetlands. An area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation.

Williamson Act. Formerly known as the California Land Conservation Act of 1965, it was designed as an incentive to retain prime agricultural land and open space in agricultural use, thereby slowing its conversion to urban and suburban development. The program entails a ten-year contract between the City or County and an owner of land whereby the land is taxed on the basis of its agricultural use rather than its market value. The land becomes subject to certain enforceable restrictions, and certain conditions need to be met prior to approval of an agreement.

Xeric. Vegetation requiring only a small amount of moisture.

Zoning. The division of a city by ordinance or other legislative regulation into districts or zones, which specify allowable uses for real property and size restrictions for buildings constructed in these areas; a program that implements the land use policies of the General Plan.

Zoning District. A designated area of the city for which prescribed land use requirements and building and development standards are or will be established.

Appendix A: Avoidance and Minimization Measures

APPENDIX A
AVOIDANCE AND MINIMIZATION MEASURES

The following describes best management practices and other measures to be implemented as appropriate to assist in implementation of General Plan Conservation and Open Space Element goals, policies, and actions that minimize impacts to biological resources. These measures are based on the avoidance and minimization measures that are applicable to Vacaville, as drafted in the working version of the Final Administrative Draft of the Solano Habitat Conservation Plan, which is expected to be published in summer/fall 2014.

NOTE

If there are conflicts or overlap between general measures and natural community or special-status species avoidance and minimization measures, the more restrictive natural community or species measures shall apply.

GENERAL CONSTRUCTION BEST MANAGEMENT PRACTICES

Vehicular/Equipment Operation and Maintenance

1. When working in or adjacent to wetlands (e.g. vernal pools, seasonal wetlands, and marshes), streams, and riparian areas, the number of new temporary access routes or use of existing access routes, number and size of staging areas, and the total area of the activity shall be limited to the minimum necessary to achieve the project goal. The boundaries of all new and existing access routes shall be clearly marked or flagged. These areas shall be outside of preserved riparian, wetlands, and other sensitive areas.
2. All fueling and maintenance of vehicles and other mechanized equipment shall be conducted in designated areas located at least 100 feet away from any aquatic habitat where possible. Each designated fueling/maintenance area shall be protected by a containment barrier designed to prevent any spilled or leaked fuel or other contaminants from running into an aquatic habitat. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.
3. All vehicles and other mechanized equipment used during construction shall be checked for oil, fuel, and coolant leaks prior to initiating work. Any equipment found to be leaking fluids shall not be used in or around aquatic habitat features.
4. The potential for wildfires shall be reduced by parking vehicles away from vegetation and by the use of shields, protective mats, and other fire prevention methods when welding, grinding, or conducting other activities that are likely to create a fire hazard. All construction sites shall have adequate sources of water, shovels, and fire extinguishers available for immediate use. All vehicles and heavy equipment used on construction sites shall have on-board fire extinguishers.

5. During the dry season, vehicles shall never be parked or idled so that the undercarriage is in contact with vegetation.
6. In order to reduce the risk of spreading harmful pathogens into natural areas, vehicles and construction equipment that have been off-road in natural areas shall have their tires thoroughly cleaned (by manual scrubbing down or cleaning with a pressure washer) before the vehicle/equipment is allowed to be used in other natural areas. If the vehicle or equipment was operated in a creek or stream, the tires shall also be decontaminated by one of the following procedures:
    a. Allowing the tires to completely dry (for at least 24 hours) before being allowed use or entry in or in the vicinity of another creek or stream.
    b. Cleaning with a 5-percent bleach solution or 99-percent copper sulfate pentahydrate solution (3/4 teaspoon per gallon of water).
    c. Vehicular cleaning work shall be conducted in self-contained work areas at least 100 feet from any aquatic habitat; wash water shall not be disposed of in any natural areas.

Work Area Maintenance/Hazardous Materials

1. Food, trash, and other solid wastes shall be disposed of in properly contained, covered refuse containers and regularly removed from the various structures and facilities. Following construction, all trash and construction debris shall be removed from the work area.

2. Building material storage areas containing hazardous or potentially toxic materials shall have an impermeable membrane between the ground and the hazardous material and shall be bermed to prevent the discharge of pollutants to groundwater and storm water runoff.

3. Materials deleterious or toxic to fish and wildlife including, but not limited to, asphalt, tires, concrete, construction materials, treated wood, and creosote-containing materials must be stockpiled in bermed containment areas that are lined with an impermeable membrane and designed to hold 125 percent of the total capacity of stored materials. All such materials may not be stored within 100 feet from the edge of any water body for more than 48 hours. Contaminated absorbent materials shall be stored in each containment area. Water collected in containment areas shall be disposed of according to federal, State, and local regulations.

4. An emergency response and cleanup plan shall be prepared prior to beginning work at the site. The plan shall detail the methods to be used to contain and clean up spills of petroleum products or other hazardous materials in the work area.

5. Containers for storage, transportation, and disposal of contaminated absorbent materials shall be provided on the project site. Petroleum products and contaminated soils shall be disposed of according to federal, State, and local regulations.

Erosion Control and Water Quality Management

1. A Storm Water Pollution Prevention Plan (SWPPP), prepared in accordance with the State Water Resources Control Board (SWRCB), National Pollutant Discharge Elimination System (NPDES)

Construction General Permit, shall be implemented for all construction activities where required under SWRCB regulations. The SWPPP shall include Best Management Practices (BMPs) for controlling sediment, turbidity, and the release of other pollutants into aquatic habitats during construction. The SWPPP shall be subject to the approval of the Regional Water Quality Control Board (RWQCB) prior to the start of work.

2. Seed mixes shall be composed of native or noninvasive naturalized species. No invasive exotic plant species shall be allowed, including those identified in the California Exotic Pest Plant Council's database, which is accessible at: http://www.cal-ipc.org/ip/inventory/weedlist.php.

3. Any concrete structures below the tops of banks of creeks, wetlands, or other aquatic habitats shall be poured in tightly sealed forms and shall not be allowed contact with surface waters until the cement has fully cured (minimum of 30 days). During that time, the poured concrete shall be kept moist, and runoff from the concrete shall not be allowed to enter aquatic habitats. Commercial sealants may be applied to the poured concrete surface in locations where the exclusion of water flow for a long period is difficult. If a sealant is used, water shall be excluded from the site until the sealant is dry and fully cured according to the manufacturer’s specifications.

4. Water that contacts wet concrete and has a pH greater than 9.0 shall be pumped out and disposed of outside an aquatic habitat.

5. No substances toxic to aquatic life shall be discharged or allowed to leach into an aquatic habitat. Every reasonable precaution to protect aquatic habitats from pollution with fuels, oils, bitumens, calcium chloride, dust suppressants, and other harmful materials shall be implemented.

6. If cofferdams and pumps are used to isolate and dry channel work areas, the water pumped from a work area shall not be allowed to re-enter the stream channel until sediment has settled out using a settling pond, silt basin, Baker tank, or similar detention/settling device.

7. Booms with attached silt curtains with filtering capabilities shall be used around dredging areas to minimize the spread of resuspended sediments in the water column.

Diversion and Dewatering

1. Water drafting, pumping, or other water diversion shall be done in a manner that is not harmful to fish or other aquatic or semiaquatic life. Pump in-flow tubes or hoses shall be screened in a 0.5-millimeter mesh-screened cage to exclude aquatic wildlife that may otherwise be harmed in the process.

2. Any equipment or structures placed in the active channel for water drafting, pumping, or diversion shall be done in a manner that: (a) prevents pollution or siltation, (b) provides sufficient water to pass downstream to maintain adequate flows and temperature for aquatic life below the obstruction, and (c) restores normal flows to the affected stream reach immediately upon completion of work.

Worker Training

When working in or adjacent to sensitive habitat areas, construction personnel shall receive training concerning sensitive species and habitat occurring in the project area. Training shall be provided by a qualified biologist and shall include:

1. Descriptions of the sensitive habitats, special-status, and regulatory requirements for protection of biological resources potentially occurring with work areas;
2. All routine measures required to protect the species/Natural Community during work and the possible State and/or federal penalties for not complying with these requirements;
3. The requirement to stop all work and notify a supervisor or the project biologist if a special-status species is observed in the project site; and
4. Construction personnel shall report to their supervisor any observed incident of death or injury to any State or federally listed threatened or endangered species or damage to a protected habitat area. The supervisor shall immediately notify the City and shall report to the United States Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Association, National Marine Fisheries Service (NOAA NMFS), and/or California Department of Fish and Wildlife (CDFW), as appropriate. The report shall be made to the appropriate agencies within 24 hours of the incident and shall include pertinent information such as the date, time, location, species or habitat, and possible cause of the incident (if known).

Vegetation Management Measures

1. Mechanical control methods such as mowing shall be used as an alternative to the application of herbicides whenever practicable in or near sensitive habitats and areas known to or likely to support special-status species, including riparian and marsh areas, creeks, ponds, vernal pools, and other seasonal wetlands and coastal marshes.

2. Mass application of herbicides shall be avoided to the maximum extent practicable. Spot spraying or more localized applications shall be used instead.

3. Herbicide mixing shall be limited to areas not prone to runoff such as concrete mixing/loading pads, disked soil in flat terrain, or graveled mixing pads.

4. The use of all herbicides shall comply with the requirements specified on the pesticide product labeling and Solano County Department of Pesticide Regulation regulations.

Exclusion Fencing

1. Exclusion fencing, when required, shall be installed and maintained between project work areas and adjacent preserved habitat during all work activities. Exclusion fencing shall be installed prior to required preconstruction surveys and will consist of silt fabric, plywood, aluminum, or other City-approved material. Exclusion fences shall be designed and installed to achieve species and habitats protection objectives based on recommendation from a qualified biologist or as required under applicable permits from USFWS, CDFW, US Army Corps of Engineers, or RWQCB. In general, fences shall be pulled taut at each support to prevent folds or snags.

Support poles will be located on the inside of the exclusion area. Construction personnel will also install an orange plastic-mesh construction fence 1 foot on the development side of the exclusion fence to increase visibility unless the exclusion fence is composed of high visibility materials. Exclusion fencing shall be inspected weekly and repaired immediately when damage is observed during construction work.

NATURAL COMMUNITY AND ASSOCIATED SPECIES MEASURES

Valley Floor Grassland and Vernal Pool

This section provides avoidance and minimization measures for species and sensitive habitats in the Valley Floor Grassland and Vernal Pool Natural Community.

Habitat Avoidance. Maximum avoidance is required in the following locations[1] where:

1. The wetlands contribute to the habitat quality and value of reserve/preserve lands established (or expected to be established) in perpetuity for conservation purposes;
2. The wetlands are adjacent to or contiguous with riparian or stream corridors, or other permanently protected lands; and
3. The wetlands are located in or contiguous to High Value Vernal Pool Conservation Areas.

Where temporary or permanent fill is proposed in any vernal pools or other seasonal wetlands, the project proponent shall provide documentation explaining why avoidance is not practicable.

Site Design Standards. The following site design standards shall apply to all development activities that would affect Valley Floor Grassland and Vernal Pools:

1. All avoided areas shall be preserved and managed consistent with General Plan Policies COS-P1.2 and COS-P1.3 and Action COS-A1.4.
2. Development shall be designed to minimize direct and indirect impacts to wetlands and edge effects to preserved areas.
3. The applicant shall incorporate measures into the project design to accomplish the following:
    a. Preserve and maintain sufficient unaltered watershed area to prevent significant adverse changes in water quality and the volume and timing of inflows to preserved wetlands.
    b. Avoid changes in nutrient input from adjacent upland sources into preserved wetlands.
    c. Provide sufficient upland habitat to support associated amphibian and terrestrial fauna and vernal pool plant pollinator species.
    d. Accommodate linkages/corridors between individual aggregations of vernal pools in a larger vernal pool complex.
    e. Provide a terrestrial buffer to protect the core wetland and associated upland habitat from edge effects associated with surrounding land uses (i.e. prohibit backyards from backing up to

[1] Compliance with these conditions will be determined during the City's environmental review.

preserves, place firebreaks on the development side of preserve/development boundaries, and provide for a vegetated buffer between roads and preserve boundaries).

f. Minimize the potential for spread of invasive species from the development into preserved lands.

4. Development shall not isolate existing populations or suitable habitat areas. To maintain connectivity between adjacent reserves, a corridor shall be established linking these areas.

Buffer Criteria for Development Activities. Vegetated buffers shall be established around preserved vernal pools and seasonal wetlands. Buffers shall be consistent with the following criteria:

1. Vegetated buffers shall consist of valley floor grassland and vernal pool vegetation and/or other natural vegetation (i.e. oak savanna/woodland, coastal marsh or riparian habitats, if applicable).
2. Buffers shall not contain any irrigated or landscaped lands, fire breaks, or public or maintenance access trails or roads.
3. Buffers shall be preserved in perpetuity and managed consistent with Policy COS-1.3

Biological Monitor. A qualified biologist shall monitor all ground-disturbing activities within 100 feet of preserved habitats (or as otherwise specified for species-specific avoidance requirements) to ensure that no unnecessary take of listed species or destruction of their habitat occurs. The biologist shall have the authority to stop all activities that may result in such take or destruction until appropriate corrective measures have been completed. The biologist shall immediately notify the City of any unauthorized impacts and shall report to the USFWS and CDFW within 24 hours of any activities that result in take of listed species.

The biological monitor shall provide instructions to all on-site construction personnel regarding the presence of listed species, the measures required by law to avoid impacts to vernal pool species and their habitat, and the possible penalties for not complying with these requirements.

Habitat Protection During Work Activities. Vernal pool habitat and adjacent grassland/upland areas within the immediate work areas shall be identified and marked in the field prior to staging and construction/ground-disturbing activities.

1. Exclusion fencing shall be installed prior to any required preconstruction surveys and maintained between project work areas and adjacent preserved habitat during all work activities. Exclusion fencing will consist of silt fabric, plywood, aluminum, or other material approved by a qualified biologist or mandated in respective State or federal permits. In California tiger salamander habitat, the base of the fence will be buried a minimum of 3 to 5 inches in the ground to prevent animals from crawling under and be a minimum of 3 feet in height above ground to serve as a barrier for animals moving on the ground surface. Exclusion fences shall also include provisions (e.g. ramps, one-way doors, or exit funnels) for California tiger salamanders and reptile and amphibian species to leave the work area. The fence will be pulled taut at each support to prevent folds or snags. Construction personnel will also install an orange plastic-mesh construction fence 1 foot on the development side of the exclusion fence to increase visibility unless the exclusion fence is composed on high visibility materials. Exclusion fencing shall be inspected weekly and repaired immediately when damage is observed during construction work.

2. The following activities are prohibited, except as otherwise identified in an approved management plan, in all protected vernal pool and grassland habitat: (a) alteration of existing topography or any other alteration or uses for any purposes, including the exploration for or development of mineral extraction; (b) erection of any new structures; (c) dumping, burning, and/or burying of rubbish, garbage, or any other wastes or fill materials; (d) building of any new roads or trails; (e) killing, removal, or alteration of any existing native vegetation; (f) placement of storm water drains; and (g) use of pesticides or other toxic chemicals inconsistent with the product labeling.

Riparian, Stream, and Freshwater Marsh

The Riparian, Stream, and Freshwater Marsh Natural Community avoidance and minimization measures apply to all freshwater, aquatic, marsh and riparian habitats in Vacaville, excluding vernal pools and seasonal wetlands associated with the Valley Floor Grassland and Vernal Pool Natural Community.

Habitat Avoidance. Consistent with General Plan Conservation and Open Space Element Goal COS-2 and associated policies, project proponents shall avoid activities that will result in the loss of riparian or stream habitat that meet any one of the following conditions:

1. Riparian, stream, and associated buffer habitats located in Priority Drainages and Watersheds.
2. More than 300 feet of channel in first or second order streams lacking woody riparian vegetation.
3. Second order streams with riparian vegetation.
4. Third, fourth, and higher order streams in non-priority watersheds.
5. Activities that will create a significant barrier to wildlife movement along the stream corridor and/or significantly affect hydrological connectivity.

If project proponents are proposing to fill any portion of a stream or permanently remove riparian habitat in any of the conditions described above, they must provide documentation explaining why avoidance is not practicable and/or would not contribute to the General Plan Conservation Element goals, policies, and actions. In general, the level of documentation required for a project varies by the significance of the project. Activities involving perpendicular crossings for roads or utility lines are preferable and will generally require less documentation than longitudinal impacts.

Setbacks and Buffer Zones. Native vegetated buffer zones shall be established between development and stream corridors to protect riparian and stream habitats in accordance with the following standards:

1. For infill projects[1], buffer zone widths shall, at a minimum, correspond to existing buffer widths found in the existing adjacent developed areas or a minimum of 1.5 times the drip line of trees and shrubs at maturity, whichever is greater. To the maximum extent practicable, buffer zones

[1] For the purposes of this measure, an infill project must be 5 acres or less in size and be located between two adjacent developments bordering the stream channel (one upstream and one downstream).

shall be widened to accomplish all of the following: (a) restoration of historic riparian vegetation stands; (b) establishment of protected zones of riparian vegetation that are at least the width of four mature riparian tree canopies; and (c) incorporation of existing native perennial upland vegetation (e.g. native grassland, oak woodland, elderberry stands, and other native shrubs).

2. For projects in the urban expansion areas along third or higher order streams and lower order streams that support riparian vegetation, buffer zones shall extend at least 100 feet from either: (a) the top of the bank, or (b) the outside edge of the existing riparian vegetation, whichever distance is greater.
3. Development may encroach into the buffer zone required under Conditions 1 and 2 provided that offsets are provided elsewhere in the buffer zone. The offsets shall be situated in the remainder of the buffer zone and shall be equal or greater in size to the encroachment areas. Under no circumstances shall the total area of all encroachments exceed 25 percent of the total buffer zone area or length as specified in Condition 2.
4. The outer edges of the buffer (not to exceed 25 percent of the buffer width along third or higher order streams and lower order streams that support riparian vegetation) may also be used for public access and passive recreation such as hiking, wildlife viewing, and bicycling. For avoided first and second order streams lacking riparian vegetation, public access is limited to no more than 5 percent of the outer edge of the buffer.
5. For projects in the urban expansion areas along avoided first and second order streams lacking riparian vegetation, stream setbacks shall be at least 25 feet from the top of the bank.
6. For those projects that involve reconstruction/restoration of channelized streams (including both widening of riparian corridors and re-establishment of watercourse meander patterns), setbacks shall be at least 50 feet from either: (a) the top of the bank, or (b) the edge of the restored riparian corridor, whichever distance is greater. Creating meanders from a straight watercourse will require a wide area that encompasses the meanders and the additional 50 feet buffer from the top of bank (of the edge of the meandering watercourse) or edge of riparian vegetation (of a non-meandering watercourse). This area should provide a sufficient buffer for the watercourse and can support other native upland communities such as grasslands and oak woodlands.
7. All buffers and avoided habitats shall be preserved and managed consistent with General Plan Policies COS-P1.2 and COS-P1.3 and Action COS-A1.4.

Project Implementation and Construction

This section addresses the mandatory avoidance and minimization requirements for the post-project approval/project implementation and construction requirements.

Riparian Tree Protection. Where trees and/or riparian shrubs are present and will be preserved, the following measures shall be implemented:

1. Ground disturbance shall avoid the drip line of the riparian trees and shrubs. Temporary construction fencing shall be placed at the edge of the work outside the edge of the tree drip lines. No construction work, storage of equipment or materials, or other disturbance shall be allowed in the protected areas.

1. Excavation work within a distance of 1.5 times the radius of the drip line or within a 25-foot radius of the drip lines, whichever is greater, of native riparian trees shall be done with hand tools or with light mechanized equipment (e.g. mini or light excavator or backhoe) in order to minimize disturbance or damage to roots.
2. An air spade or the equivalent shall be used to aerate and loosen any compacted soil in the structural root zone of protected trees to minimize physical injury to the tree roots.
3. Branch or root pruning of native riparian trees, if required, shall be conducted under the supervision of a Certified Arborist.
4. Equipment staging areas/storage areas shall not be located within a distance of 1.5 times the radius of the drip line or within a 25-foot radius of the drip line, whichever is greater, of native riparian trees.
5. Fill, gravel, or other construction materials shall not be stockpiled in the drip lines of native riparian trees.

Dewatering Activities. Water drafting, pumping, or other water diversion shall be done in a manner that is not harmful to fish or other aquatic or semi-aquatic life:

1. Pump inflow tubes or hoses shall be screened within a 0.5 millimeter mesh-screened cage to exclude aquatic wildlife that may otherwise be harmed in the process.
2. Prior to dewatering, a qualified biologist shall capture and relocate any native fish or other native vertebrate species found at the project site. Captured animals shall be relocated to another suitable water body preapproved by CDFW unaffected by the work or downstream of the work area[1]. All nonnative invasive species shall be captured, removed from the project site, and humanely euthanized.
3. All dewatering shall be pumped into a temporary siltation pond/desilting basin, Baker tank, or similar detention device in order to allow adequate time for settling of sediments prior to their release downstream in accordance with the approved SWPPP.
4. Following adequate settling time, water shall be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any barriers to flow shall be removed in a manner that would allow flow to resume with the least disturbance to the substrate.
5. If coffer dams are used, turbid water pumped out of the dam shall not re-enter the channel until the sediment has settled out to prevent any increase in turbidity in downstream waters.

Habitat Protection and Site Restoration. The following measures shall be implemented to minimize impacts to stream and riparian habitats:

1. Disturbed areas shall be hydroseeded or stabilized using other erosion control measures prior to October 15. Hydroseed mixes used along and immediately above stream banks to stabilize

[1] Transportation of exotic wildlife, without appropriate permits, is prohibited under California Fish and Game Code.

disturbed areas shall not contain fertilizers or nonnative invasive species. When necessary, the City, in consultation with CDFW, may grant extensions of this deadline on a case-by-case basis.

2. Streambed and bank construction work shall not create any physical barriers to fish migration such as artificial berms or a uniformly flat channel profile.
3. Bank stabilization projects shall also incorporate bioengineering techniques and other measures to promote re-establishment of native vegetation (e.g. anchored rootwads or ballast bucket plantings in riprap). The use of hardscape such as rock riprap and floodwalls shall be minimized.
4. All debris, sediment, rubbish, vegetation, or other material removed from the channel banks, channel bottom, or sediment basins shall be disposed of at an approved upland disposal site.
5. Excess drainage from the construction site shall be routed away from riparian, stream, and freshwater marsh habitats.
6. Any riprap placed such that it will encounter water shall incorporate large woody cover (logs), other applicable bioengineering techniques, and/or vegetation planting depending on the character of the surrounding (natural) stream banks.
7. During construction, inspection of in-stream habitat and performance of sediment control devices shall occur at least once a day when there are surface waters in the channel to ensure devices are functioning properly.
8. Where erosion control blankets are placed in riparian zones, plantings of native riparian trees and shrub species shall occur in small openings in the erosion control blanket.
9. Plastic monofilament or wire mesh straw waddles or erosion control blankets shall not be used. Only erosion control materials (e.g. blankets, roles, and mats) with a minimum 2-inch square mesh made of natural coir fibers or other netting approved by CDFW shall be used.

Valley Elderberry Longhorn Beetle. The following measures apply to all activities that would entail ground-disturbing activities within 100 feet of elderberry plants[1]:

1. A minimum setback of 20 feet from the drip line of each elderberry plant shall be established between the development and all elderberry plants containing stems measuring 1 inch in diameter or greater at ground level, except where elderberry plants are established immediately along existing roads or other paved or graveled surfaces (e.g. sidewalks, bike/pedestrian paths, and facility access roads). The setback shall be fenced and flagged consistent with the general construction avoidance and minimization measures for exclusion fencing in order to prevent encroachment of equipment and materials.
2. Where elderberry plants are established adjacent to existing roads and facilities, construction avoidance fencing shall be provided to protect the trunk and main stems of the plant.
3. All contractors shall be briefed on the need to avoid damaging the elderberry plants and the possible penalties for not complying with these requirements. Work crews shall be instructed on

[1] Visual evidence of valley elderberry longhorn beetle is not always evident; for the purposes of compliance with this HCP, all elderberry plants with stems meeting this minimum size should be considered occupied habitat.

the status of the Valley Elderberry Longhorn Beetle and the need to protect its elderberry host plant.

4. Signs shall be placed every 50 feet along the edge of the buffer zone with the following information: *"This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Federal Endangered Species Act. Violators are subject to prosecution, fines, and imprisonment."* The signs shall be clearly readable from a distance of 20 feet and must be maintained for the duration of construction.

5. Routine trimming of overgrown and overhanging elderberry shrubs that may pose a human safety threat along pathways, trails, bike paths, roadways shall adhere to the following restrictions:

   a. Only branches and stems less than 1 inch in diameter may be trimmed or cut.

   b. Trimming may only occur between September 1 and March 14. Trimming is recommended from November through the first two weeks in February, when plants are dormant and have lost their leaves.

   c. Trimming shall not occur after the shrubs have leafed out (when adult valley elderberry longhorn beetles are likely to be active).

   d. Vegetation clearing within 5 feet of elderberry shrub stems shall be done by hand (e.g. pulling or clipping).

6. Following completion of construction work affecting the buffer zone, any damage done to the buffer zone shall be restored using native erosion control seed mixes and native riparian plant species, as appropriate.

7. After construction, buffer zones must continue to be protected from adverse effects of the development project. Protection measures such as fencing and signage shall be included in the project plans and are subject to the approval of city.

8. No insecticides, herbicides, fertilizers, or other chemicals that might harm the valley elderberry longhorn beetle or its host plant shall be used in the buffer areas or within 100 feet of any elderberry plant with one or more stems measuring 1 inch in diameter or greater at ground level.

9. Fire fuel breaks (disked land) may not be included within the 100-foot setback; however, vegetation in the setback may be cleared by mowing (e.g. mower, mechanical trimmers, or hand tools) to less than 2 inches in height. The mowing of grasses/ground cover in the buffer zone may occur from July through April to reduce fire hazards. No mowing shall occur within 5 feet of elderberry plant stems. Mowing must be done in a manner that avoids damaging plants (e.g. stripping away bark through careless use of mowing/trimming equipment).

10. A qualified biologist shall be retained to monitor implementation and compliance of all the above measures.

Tricolored Blackbird. The following measures are for development activities that are within 250 feet of suitable tricolored blackbird breeding habitat:

1. During the breeding season (February 1 through August 31), a qualified biologist shall conduct pre-construction surveys for all development activities in known or suitable nesting habitat areas no more than 15 days prior to scheduled work. Suitable nesting habitat includes any of the

following: (a) dense vegetation near open water; (b) emergent marsh vegetation, especially cattails and tules; (c) thickets of willow, blackberry, wild rose, or thistles; (d) silage and other grain fields such as sorghum.

Pre-construction surveys shall be conducted for each phase of development. If ground-disturbing activities are delayed or suspended for more than 15 days following completion of the pre-construction survey, a qualified biologist shall resurvey the site and shall conduct a second follow-up survey at least five days prior to the start of construction activities.

2. A minimum 250-foot buffer shall be established between work activities and any active nests. Construction buffers may be reduced under the following conditions:

   a. A site-specific analysis prepared by a qualified biologist indicates that construction activities would not adversely affect nesting birds. The City, in consultation with CDFW, must approve the analysis in writing before construction can proceed.

   b. Nesting birds do not exhibit significant adverse reaction to construction activities (e.g. changes in behavioral patterns or reactions to noise) based on sufficient monitoring (minimum of three consecutive days following construction initiation). Construction will stop if a significant adverse reaction is observed during any of the monitoring days and will only commence again with a 250-foot buffer once behavioral patterns return to preconstruction activities.

   c. Additional monitoring shall be required any time there is a change in heavy equipment use or activity that results in greater noise levels. A change in heavy equipment use or greater noise levels that may require additional monitoring will be determined by a qualified biologist.

   d. Monitoring is continued at least once a week through the nesting cycle until the young have fledged and left the nest area.

   e. Monitoring reports are submitted to the City.

3. The qualified biologist has the authority to stop work at any time if signs of disturbance to the nesting colony are noted. If adverse effects are identified, construction activities shall cease immediately and construction shall not resume until City and CDFW are consulted to determine if construction may continue under modified restrictions or shall be suspended until nesting activity is complete.

Swainson's Hawk

The following avoidance and minimization measures are applicable to almost all development activities in the city. These measures are primarily intended for compliance with the Federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code, Sections 3503 and 3503.5, regarding protection requirements for active bird nests. Removal of known Swainson’s hawk nests may also require an incidental take permit from CDFW. While the long-term viability of protecting traditional Swainson’s hawk nest sites in urban environments is questionable, Swainson’s hawk has been documented to persist and continue to nest in urban settings for many years. Therefore, the following measures require protection of traditional nest sites in urban areas where retention of the nest tree or associated grove of trees does not create a health or safety hazard or is impracticable from a project design and cost consideration.

Nest Tree Preservation. Trees with active Swainson's hawk nests or with historically active nests (i.e. occupied within the last ten years) shall be avoided to the maximum extent practicable. Applicants proposing to remove an otherwise healthy nest tree shall provide written justification for the tree removal to the City and CDFW. Sufficient rationale for tree removal shall be primarily based on declining or poor suitability of the tree as a nesting site for Swainson's hawk and/or to meet public safety needs. The justification letter shall provide a clear analysis of the biological value of the tree to Swainson's hawk under pre-project conditions and post-project conditions (if the tree were to be avoided), and will consider the presence of alternate nest sites in the vicinity of the project site. Nest trees shall only be removed if there is a biological basis that the use of the tree is unlikely under post-project conditions. The City and CDFW will be responsible for approval of the requests to remove healthy nest trees.

Pre-Construction Nest Surveys. Between March 1 and August 31[1], a qualified biologist shall conduct pre-construction surveys to identify and subsequently avoid nesting areas for Swainson's hawk. Surveys shall be conducted within 15 days of the anticipated start of construction, and shall be designed and of sufficient intensity to document nesting within 0.25 miles (1,320 feet) of planned work activities. If a lapse in project-related construction work of 15 days or longer occurs, additional pre-construction surveys shall be required before project work may be reinitiated.

Active Nest Buffers. Construction work (including grading, earthmoving, and any operation of construction equipment) shall not occur within a 0.25-mile buffer zone around an active Swainson's hawk nest except as provided below. Construction work may commence in the buffer zone when a qualified biologist has confirmed that nesting activity is complete (e.g. Swainson's hawk young have fully fledged and are capable of flight and have left the nest, or the adults have abandoned the nest for a minimum of seven days and there is no evidence of re-nesting activity). Nest trees may be removed between September 16 and February 1 when nests are unoccupied.

The size of nest site buffer zones may be reduced only under the following conditions:

1. A site-specific analysis prepared by a qualified biologist indicates that the nesting pair under consideration are not likely to be adversely affected by construction activities[2] (e.g. the nest is located in an area where the hawks are habituated to human activity and noise levels comparable to anticipated construction work). The City and CDFW must approve this analysis before construction may begin within 0.25 miles of a nest.
2. Monitoring by a qualified biologist is conducted for a sufficient time (during all construction activities for a minimum of ten consecutive days following the initiation of construction), and the nesting pair does not exhibit adverse reactions to construction activities (e.g. changes in behavioral patterns, reactions to construction noise).
3. Monitoring is continued at least once a week through the nesting cycle at that nest. This longer-term monitoring may be reduced to a minimum of 2 hours in the morning and 2 hours in the

[1] Swainson's hawk in this region is typically incubating during June and active nests can be difficult to find. As such, June surveys may not be acceptable for determining the absence of Swainson's hawk nests.

[2] Construction period nest buffers are more likely to be approved later in the nesting cycle, when the likelihood of nest abandonment is less (e.g. after the young have hatched).

afternoon during construction activities; however, additional and more frequent monitoring may be required if any adverse reactions are noted.

4. Weekly monitoring reports shall be submitted to the City and CDFW during construction and monitoring activities.

If adverse effects are identified, construction activities shall cease immediately and construction shall not be resumed until the qualified biologist, in consultation with the City and CDFW, has determined that construction may continue under modified restrictions or that nesting activity is complete.

Post-Construction Occupied Nest Avoidance. If a nest tree becomes occupied by Swainson's hawk during ongoing construction activities, construction activities shall not occur within 500 feet of the nest, except where monitoring consistent with the criteria above documents that adverse effects will not occur.

Burrowing Owl

The following avoidance and minimization measures are applicable to almost all development activities in the City. These measures are primarily intended for compliance with the Federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code, Sections 3503 and 3503.5, regarding protection requirements for active bird nests.

Pre-Construction Surveys. Between February 1 and August 31, a qualified biologist shall conduct pre-construction surveys in known or suitable habitat areas to identify and subsequently avoid nesting areas for burrowing owls. An initial pre-construction survey shall be conducted within 14 days of the anticipated start of construction, followed by a second survey within 24 hours of the start of construction. All surveys shall follow standard CDFW protocols. If a lapse in project-related construction work of 14 days or longer occurs during the nesting season, an additional pre-construction survey shall be required within 24 hours before project work may be reinitiated.

Vegetation Management. If burrowing owls or suitable nesting habitat are identified on site during the initial pre-application surveys, applicants shall allow vegetation to grow over the entire project site (except for required fuel breaks) to a height of 36 inches or more above the ground, unless impracticable due to surrounding or adjacent land uses. The increased vegetation height, if in place by the beginning of the nesting season (e.g. retention of previous year's growth or planting during the previous winter), will discourage burrowing owl use of the site.

Construction Buffers and Exclusion. The following measures shall be implemented for new construction activities within 160 to 250 feet of an active nest or burrow (depending on the season):

1. During the non-breeding season (September 1 through January 31), a circular exclusion zone with a radius of 160 feet shall be established around occupied burrows.
2. If a buffer cannot be established during the non-breeding season, burrowing owls shall be evicted from the entire construction area using passive relocation techniques. The Applicant shall prepare an Exclusion Plan for review and approval by the City and CDFW. This plan shall addresses the following minimum requirements:

a. Protocols to confirm that the burrow(s) is unoccupied by burrowing owls and other species prior to destruction. Protocols shall include:

   1) one-way doors in place a minimum of 48 hours prior to burrow excavation;

   2) twice daily monitoring to confirm evidence that owls have been excluded from the burrow; and

   3) scoping of the burrows to confirm absence.

b. Procedures for how the burrow(s) will be excavated. Excavation using hand tools with refilling to prevent reoccupation is preferable whenever possible; this may include using piping to stabilize the burrow to prevent collapsing until the entire burrow has been excavated and it can be determined that no owls reside inside the burrow.

c. Removal of other potential owl burrow surrogates or refugia on site.

d. Monitoring of the site to evaluate success and, if needed, to implement remedial measures to prevent subsequent owl use to avoid take.

e. Measures to make the site inhospitable to burrowing owls and fossorial mammals (e.g. by allowing vegetation to grow tall, heavy disking, or immediate and continuous grading) until activity is complete.

f. Reports describing the exclusion activities shall be submitted to the City and CDFW.

3. During the breeding season (February 1 through August 31), a qualified biologist shall establish a circular exclusion zone with a radius of 250 feet around each occupied burrow. No construction-related activity (e.g. site grading, staking, surveying, or any use of construction equipment) shall occur in the exclusion zone during the breeding season. Once the breeding season is over, passive relocation may proceed as described in Condition 2 above.

5. Construction buffer widths may be reduced from the 250-foot wide breeding season buffers and 160-foot wide non-breeding season buffers in accordance with the following requirements:

   a. A site-specific analysis prepared by a qualified biologist indicates that the nesting pair(s) or wintering owl(s) would not be adversely affected by construction activities. The City and CDFW must approve this analysis in writing before construction can proceed.

   b. Monitoring by a qualified biologist is conducted for a sufficient time (during all construction activities for a minimum of ten consecutive days following the initiation of construction), the nesting pair does not exhibit adverse reactions to construction activities (e.g. changes in behavioral patterns or reactions to noise), and the burrows are not in danger of collapse due to equipment traffic.

   c. Monitoring is continued at least once a week through the nesting/wintering cycle at that site, and no change in behavior by the owls is observed. This longer-term monitoring may be reduced to a minimum of 2 hours in the morning and 2 hours in the afternoon during construction activities; however, additional and more frequent monitoring may be required if any adverse reactions are noted.

   d. Monitoring reports are submitted to City and CDFW.

If adverse effects are identified, construction activities shall cease immediately, and construction shall not be resumed until the qualified biologist, in consultation with the City and CDFW, has determined that construction may continue under modified restrictions or that nesting activity is complete.