

# Sonoma County Airport & Environs

## Existing Conditions Report 2011-2012



SSU Environmental Studies and  
Planning Department  
Instructor: Steven C. Orlick Ph.D.  
Telephone: (707) 664-2306

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# Sonoma County Airport and Environs Existing Conditions Report

Prepared By:

Sonoma State University  
Department of Environmental Studies and Planning  
Planning Workshop  
2011-2012

Nathan Andrews  
Michelle Astells  
Landen Coffey  
Holly Coffman  
Fiona Day-Cofer  
Ellen Hill  
Michelle Johnson  
Leslie Knoll  
Nicole Martindale  
Danielle Martinez  
Brent McDowell  
Daniel Parenti  
Alexander Powell  
Katherine Ross  
Fiorella Silva  
Benjamin Sullivan  
Ryan Whalen  
Jeff Winn

Professor Steven Orlick, Ph.D., Instructor

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Larry L. Wasem, Airport Business Center

Ben G. Stone, Executive Director of the Economic Development Board

Jo-Ann Smith, Administrative Coordinator  
Environmental Studies and Planning Department

Jason Liles, Planning Commissioner for Sonoma County

Lindsay Trant, Willamette University

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# Introduction

The community character around the Sonoma County Airport is diverse with various noteworthy features. This includes a graveyard, a golf course, timeshare accommodations, a sewer plant, an industrial center, dairy farms, chicken ranches, schools, parks, and much more. The purpose of this Existing Conditions Report (ECR) is to examine a predefined study area within Sonoma County. The goal of the Sonoma State University Planning Workshop is for students to gain a comprehensive understanding of the issues that affect the residents, users and employees in the study area. The findings from this ECR will be used in the development of a Sonoma County Airport and Environs Area Plan. This plan is to be completed in the spring of 2012.

The focus of our study area for the Fall 2011 Existing Conditions Report and the Spring 2012 Area Plan is the Charles Schulz Sonoma County Airport. The boundary of our study area is defined by Windsor River Road to the north, River Road to the south, the Russian River to the west, and U.S. Highway 101 to the east (see *Appendix C*).

There were many methods used to create this comprehensive Existing Conditions Report. It is based in part on two surveys: Public opinion, which was used to determine the diverse opinions that exist within and about the study area; and land use, which recorded data about every parcel. Additionally, this document includes reports focusing on environmental conditions, economic conditions and trends, demographics, and transportation issues.

# Chapter 1: Community Character

The Community Character chapter includes a detailed history of the Charles M. Schulz–Sonoma County Airport and its environs. This chapter mainly focuses on aircraft and railway progression and also contains information on the positive and negative visual aspects of the study area. The visual aspects are to express the existing image of community within the study area. Some elements considered in visual observations are the residential neighborhoods, agricultural lands, schools and business parks.

## 1.1 History of the Study Area

---

The study area has a long and fascinating history. In 1853, the occupants of the Windsor area were Western European immigrants who came from the east coast of the United States. The Windsor area was mainly agriculture land, and grapes were the primary crop. Windsor got its name from an early settler, Hiram Lewis, who said that the openness of the land reminded him of Windsor Castle in England. Lewis was an American rider for the Pony Express in 1860-1861.

In 1907, the Southern Pacific Railroad and Santa Fe Railroad Company built the Northwestern Pacific Railroad. It was a system connecting the coast of California from San Francisco to Humboldt County. There were four rail stops in the study area that were part of the Northwestern Pacific Railroad system: Windsor, Shiloh, Mark West and Fulton stations. The trains were used for passengers, and for the transportation of freight items such as lumber. Passenger use decreased in the 1930s due to the construction of Highway 101 in 1926. Passenger service was discontinued in the late 1950s; the boom in the housing market influenced developers to build suburban communities outside of the city centers and therefore, the common mode of transportation shifted more heavily to automobiles.

In 1989, the North Coast Railroad Authority Act was passed. It was designed to keep the Northwest Pacific Railroad in service as a viable transportation option in the Northern

California coastal area. This new legislation formed the North Coast Railroad Authority (NCRA), which gained control of the railroad. Shortly after, Windsor was incorporated as a city on July 1, 1992. Freight service was discontinued in 2001 due to safety and economic factors. The NCRA is now in the process of restoring use of the railroad line from Willits to Lombard, California, and includes the railroad tracks running through the eastern side of our study area parallel to Highway 101.

## 1.2 Airport History Overview

---

In 1941, Sonoma County bought 339 acres of land to begin runway construction. By 1942, the US Army took that land and added 826 acres to provide the extra space needed for construction. It was known as the Santa Rosa Army Airfield, and was used as a training facility during the war. After World War II ended, Sonoma County took over control of the airport in 1946. The county made it a functional airport for the people of the community and surrounding areas. It was a general aviation airport handling private and recreational planes, with some business and corporate jets. Commercial flights began in 1947 by Southwest Airways. Southwest Airways became Pacific Airlines in 1958, but kept their home base at the Sonoma County Airport.



From the 1960s to the 1980s, alterations were made to the airport such as expansion of runways, an increase in fencing, and new paved access roads. A new company bought Pacific Airlines in 1968 and the name was changed to Hughes Airwest. At the end of 1993, both United Express and American eagle discontinued service out of Sonoma County Airport as passenger numbers had decreased significantly. From 2001 to 2007, the airport did not have any regularly scheduled airline services. In 2007, Horizon Air, a subsidiary of Alaska Airlines, began service at the airport with five daily commercial flights to Los Angeles, Las Vegas, Seattle and Portland. It was announced in early 2012 that Alaska Airlines would discontinue service to Las Vegas in June 2012, and that it would begin service to San Diego instead.

The Pacific Coast Air Museum (PCAM) was founded in 1989 at the Sonoma County Airport. It is a non-profit organization dedicated to promoting the acquisition, restoration and display of historic aircraft. It also provides education programs for students and the community. The PCAM also honors heroic aviators for outstanding achievements.

In 2000, the airport's name changed from Sonoma County Airport to Charles M. Schulz–Sonoma County Airport because of the contributions made by local resident and *Peanuts* author Charles M. Schulz. Grant Laughlin, a Sonoma County local from Windsor, was the original owner of the land where the Charles M. Schulz–Sonoma County Airport is located. According to the National Postal Museum, Fred Wiseman, another local Sonoma County resident, built the first aircraft in California, and in doing so, delivered the world's first airmail. Laughlin lent Wiseman his barn on his ranch north of Fulton Road to use as their work area to construct the plane. The first flight was from Petaluma to Santa Rosa on February 17, 1911. The reason it became such a famous flight was because Wiseman had three letters in the plane with him addressed from one postman in Petaluma to another in Santa Rosa, along with several copies of the *Press Democrat*. A part of Laughlin's ranch became the Charles M. Schulz–Sonoma County Airport, and the Laughlin home is now fully restored and used as offices for the Airport Business Center on Aviation Blvd.

### 1.3 Visual Observations

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In the fall of 2011, students in the Planning Workshop class toured the study area to get a better understanding of the community character. The functionality as well as the positive and negative aspects related to the physical appearance of the area were observed. This was done to assess the difference between aspects of the community character and liabilities. Our observations found there are areas that positively contribute to the community character, and some places that detract from it.

One of the major visual aspects in the study area is the large amount of vineyard acreage to the west. Driving west on River Road, there are beautiful rows of vineyards extending over the rolling hills toward the horizon. The roads around the wineries are nicely landscaped with colorful flowers and plants. The two-lane roads on the west side of the study area are more



rural, with no sidewalks or streetlamps, contributing to the country experience. The area is identified as wine country with ubiquitous white wooden signs with the Russian River Valley Winegrowers logo directing people to nearby wineries. These vineyards offer breath-taking views along the Russian River, an aesthetically pleasing element in the study area. The Riverfront Regional Park, also surrounded by vineyards, is a large community area with trails around Lake Benoist and Lake Wilson, and several picnicking areas. The park contributes to the wine country setting and is an enjoyable place to spend an afternoon.

In addition to the beautiful agriculture land on the west side of the study area, there are sections in the east near Highway 101 that also have a strong sense of rural agricultural character. For example, the residential neighborhoods close to the Windsor High School, Windsor Golf Course and around Mitchell Lane have distinctive green signs and



decorative green lampposts with small seasonal banners. The houses in these neighborhoods are tasteful shades of brown, red, and blue. Neighborhoods in this area all have well maintained community parks with play structures and picnic tables. There are designated bike lanes on the roads in these areas, and easily accessible paths for pedestrian use that go through the neighborhood parks and landscaped areas near the railroad tracks. The one negative visual feature of these neighborhoods is the location of

a water treatment plant across from the high school. It is a distracting and unattractive feature and is a potential source of undesirable odors.

There are a number of preschools, nursery schools, and private prep schools throughout the study area, all located along Highway 101. Windsor Unified School District has three public schools in the study area: Windsor High School, Cali Calmécac Language Academy, and Windsor Creek Elementary. Windsor Unified School District is the main public school union in the area. There are few schools on the west side of the study area, where the majority of wineries and agricultural land are located. Most of the schools are found near Highway 101, where most of the residential neighborhoods are located.

The area between the railroad tracks and Highway 101 from Bell Road to Aviation Blvd. contain some negative aspects with regards to community character. There are extensive industrial uses, construction, overgrown weeds, and poor road quality. Skylane Blvd. and Airport Blvd. contain the majority of businesses; mainly office buildings with some isolated eating places and service stations by the highway exits. Most of the business buildings within these designated areas are only partially occupied. Others remain vacant and are on the market to be sold. Large, deserted parking lots are a result of these vacant business offices, creating a blacktop area of unused space. Street signs in the business area are minute, and have faded over time from sun exposure. However, some positive visual aspects on Aviation Blvd. are the two small parks, which are used by surrounding businesses as open space for their employees. The parks are visually attractive with fountains, benches, vibrant green grass and clean walking paths.





The airport, which is directly in the center of the study area, is not aesthetically pleasing as it is surrounded by chain linked fencing and “No Trespassing” signs. The main terminal building is not uniquely designed, nor does it have individual characteristics to set it apart from the other business office buildings in the area. If there was not a “Welcome to Charles M. Schulz

Sonoma County Airport” sign on the front entrance, passersby might assume it to be another typical office building because it possesses similar characteristics. Notification upon entrance to the Airport is lacking as well. Signs are on Highway 101 prior to the Airport Blvd. exit, and approximately 1 mile off the highway near the end of the road, and do not give enough notice to adequately direct drivers.

## 1.4 Conclusion

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The visual appearance of the study area consists of positive and negative features. There is a lack of consistency among the signs throughout the study area, creating a somewhat disconnected community feeling. The airport is in need of an update to attract more users and increase business. The planned expansion of the airport is projected to do this, thereby attracting more airport users. The business offices in the area do not add much to a unified vision within the area. They are mostly gray cement buildings lining the road to the airport. The more popular areas, such as the wineries and sections near the golf course, are visually well-maintained and landscaped, enhancing the image of the community. There is a higher proportion of positive aspects to the study area than negative elements.

# Chapter 2: Demographics & Public Opinion

This section outlines data collected from the 2010 U.S. Census Bureau pertaining to the Sonoma County Airport study area. The population of the area is 10,198 residents. Sonoma County's population is 483,878 people. Particular attention was given to the study area's characteristics, and comparing and contrasting them to Sonoma County's overall census information. In order to generate an area plan that meets the needs and desires of the public, it is important to understand the demographics of the study area. By identifying the characteristics present in the area, we can tailor the future plan to the needs in the study area.

To determine public opinions regarding the study area, surveys were presented to members of the community who work, use, or live within the study area. The results of these surveys reflect the overall issues and concerns of people in the area.

## 2.1 Age

---

Based on a comparison of our survey and the Sonoma County census, we found that there were some similarities and a few distinctive differences. There are eight groups divided by age classification starting from 18-24 years old to 75+ years of age. The ages of 25-34 make up 13% of Sonoma County householders, while the study area contains 14% of that same age group. Both the study area and Sonoma County have 15% of householders between the ages of 45 and 54. In Sonoma County, 6% are over the age of 75, which is very close to the 5% in the study area. The rest of the age groups in the study area differed by 3-9% from Sonoma County numbers.

## 2.2 Ethnicity and Gender

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The gender and ethnicity in the study area are generally different compared with those of Sonoma County. The percentage of census participants within the airport study area who identify themselves as Caucasian was considerably greater than that of the county

as a whole, while minority groups were typically less represented in the area. In the study area, 73% is Caucasian; 66% identifies as Caucasian in Sonoma County. Only 7% are identified as Latino, compared with 25% countywide. The “other” category includes people who identify as Black, Asian or Pacific Islander, Native American, and other races. In the study area, 18% fell into the “other” category, while in the county, only 9% were identified in this category. In terms of gender, 53% of the study area are male and 47% are female, as opposed to 49% male and 51% female countywide.

## 2.3 Housing and Employment

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In both the county and the study area, 60% of residents own their homes. In the county, 40% are renters, while in the study area, 36% of residents rent (the remaining 4% identify as “other”).

In the county, 67% of eligible workers (age 16+) make up the work force. The study area only counts community members over the age of 18. Due to this fact, the workforce is predictably larger than the county, which is at 73%. Countywide, there is a 12.4% unemployment rate, while the study area only has a 6% unemployment rate. In the study area, 4% are disabled, with a slightly higher 6% in the county.

## 2.4 Income

---

The annual household income in the study area differs greatly from that in the county. Only 3 of the 8 income ranges were similar, while the other 5 were separated between 3 and 15%. Of the people who were surveyed, 17% declined to state their annual income. The study area is represented more by the lower income households, and less represented in higher households.

## 2.5 Opinion Survey Methodology

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We conducted surveys of residents in and users of the study area. The goal of the survey was to identify the demographics of the area; the public’s awareness of and feelings related to the airport expansion; and to assess the public’s desire for goods and services (see *Appendix E for survey*).

In addition to the residential and user surveys, we also created a specific survey targeted for businesses located in the study area. This survey was intended to discover and help address the needs of the businesses in the area (see *Appendix E for survey*).

At the top of the survey we had an informed consent document to ensure the participants were aware that their answers would be confidential. We did this to ensure that we maintained the ethics of social research, and to improve the reliability of the responses.

Our survey questions included both quantitative and qualitative responses, producing continuous and categorical data. Surveyors were instructed to conduct face-to-face interviews at randomly assigned locations in the study area. Surveys were conducted at the following locations: the movie theater, two Starbucks locations, the Charles M. Schulz – Sonoma County Airport, the golf course and community center, a shopping center, and the Windsor Town Green. Surveys were conducted in groups of two and surveyors were required to obtain 18 surveys per person; 14 of which are residents of the study area and 4 users (people who utilize goods and services in the study area). We conducted the survey with a 95% confidence level, and a  $\pm 5\%$  sampling error based on a population of 10,000.

The business surveys were conducted face-to-face, similar to the residential and user surveys, as well as sent through email. We obtained a list of several businesses within our study area and planned on conducting 50 business surveys, but were only able to conduct 10. It was necessary to have an owner or manager fill out the survey due to the economic knowledge necessary to accurately answer the survey questions.

Unfortunately, many of the businesses expressed being under time constraints with their own work while others chose to not participate in the survey for the confidentiality of their business.

While we were not able to conduct the business surveys with a 95% confidence level and a  $\pm 5\%$  sampling error, the completed business surveys are being taken into consideration for the purposes of this document and Sonoma County Airport and Environs Area Plan.

## 2.6 Survey Results

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Among the people surveyed, there were slightly more males than females. Most survey respondents own their homes and have lived there for five or fewer years. The majority of the population is Caucasian and makes \$50,000 or more gross annual income. Most of the respondents were between 25 and 54, and employed full-time.

Figure 2.6.1

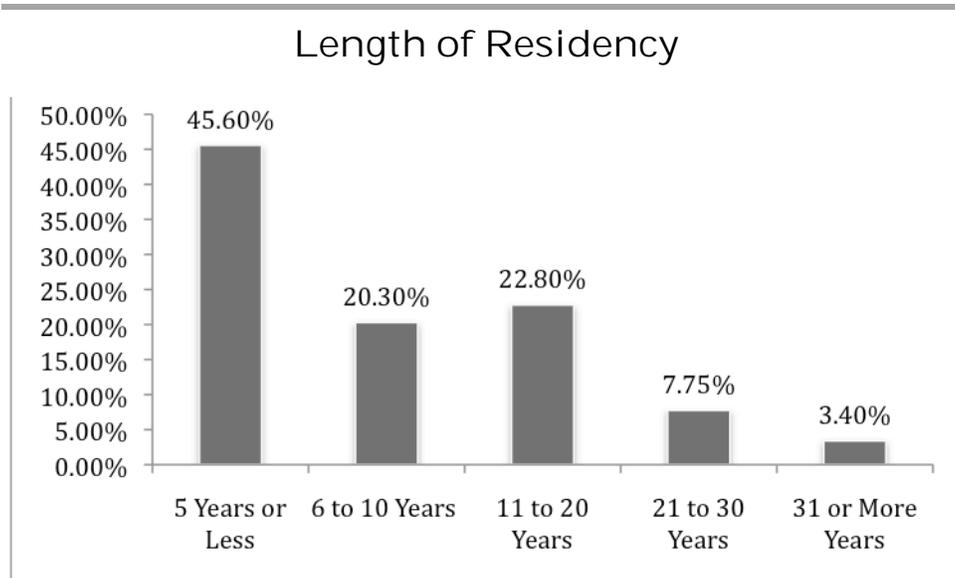


Figure 2.6.2

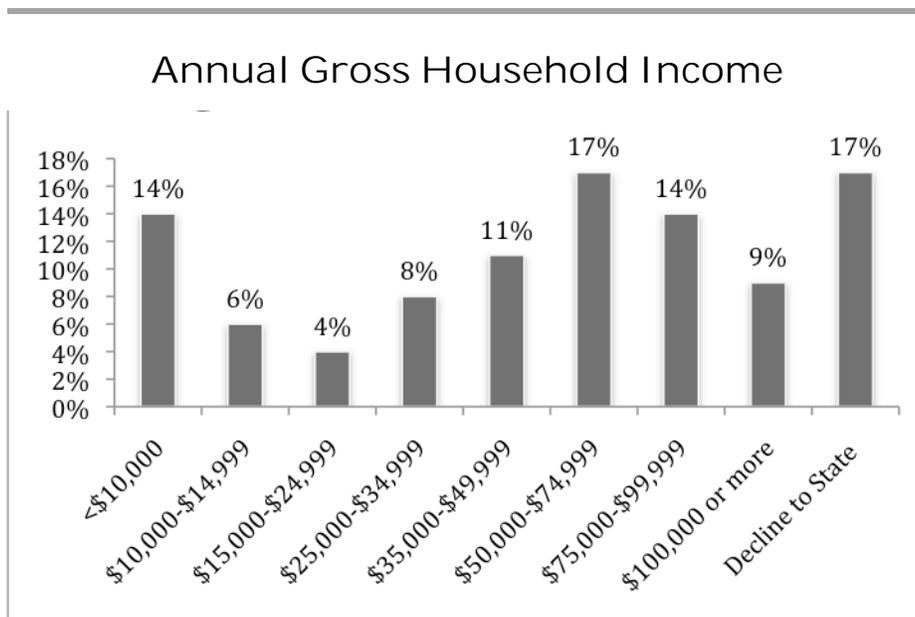


Figure 2.6.3

## Age Percentages

|       |       |       |       |       |       |       |              |
|-------|-------|-------|-------|-------|-------|-------|--------------|
| 18-24 | 25-34 | 35-44 | 45-54 | 55-59 | 60-64 | 65-74 | 85 and older |
| 19%   | 14%   | 22%   | 16%   | 12%   | 10%   | 5%    | 2%           |

We presented the participants with 7 issues affecting the study area. The survey asked the participants to rank these issues 1-7, with 1 being the most important issue and 7 being the least important. The primary concern that residents had about the study area was traffic, followed by concerns about noise and environmental pollution. Somewhat surprisingly, the least important concern was the airport expansion.

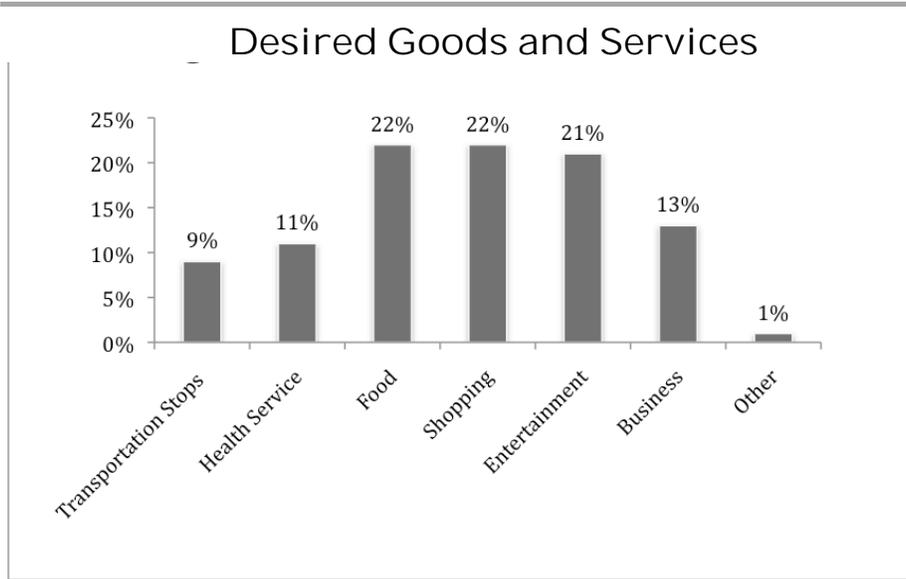
Figure 2.6.4

## Issues of Importance

|           |           |                            |             |            |                          |                      |
|-----------|-----------|----------------------------|-------------|------------|--------------------------|----------------------|
| <u>#1</u> | <u>#2</u> | <u>#3</u>                  | <u>#4</u>   | <u>#5</u>  | <u>#6</u>                | <u>#7</u>            |
| Traffic   | Noise     | Environmental<br>Pollution | Agriculture | Open Space | Public<br>Transportation | Airport<br>Expansion |

When asked what goods and services the participants would like to see in the study area, 66% responded with shopping, food, and entertainment. The other 33% would like to see more businesses, health services, and public transportation. Lastly, 1% indicated they would like to see more goods and services provided. When conducting an Existing Conditions Report with the intention of generating a proposed Area Plan, it is important to gauge what the residents and users of the area feel is lacking, and would like to see. In summary, the most important issue of concern for those surveyed was traffic, while issues relating to airport expansion were seen as insignificant.

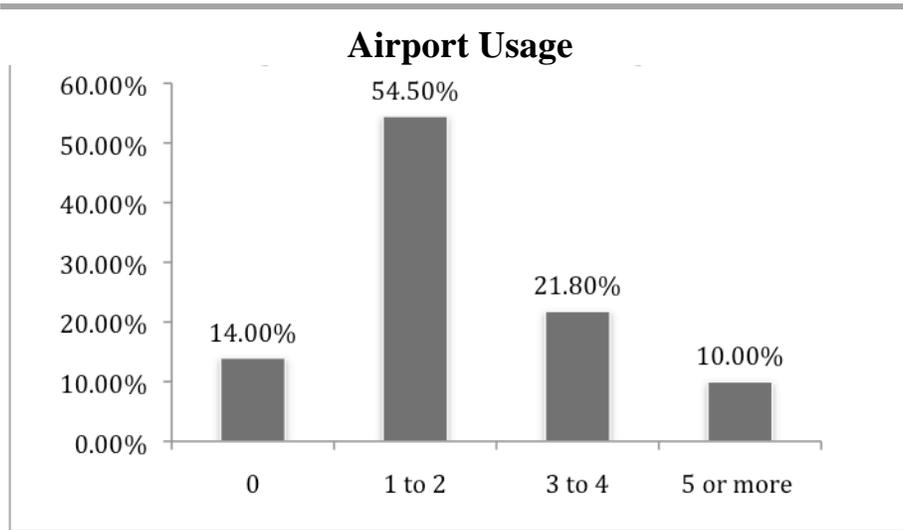
Figure 2.6.5



Survey participants were asked about the number of times per year that they use air transport. The majority of participants, 55%, use air transport 1 to 2 times per year, while 32% use the air transport 3 or more times per year.

Based upon the surveys, the most commonly used airport was the San Francisco International Airport with 26%, followed by Oakland International Airport with 18%. The Charles M. Schulz – Sonoma County Airport was the third most used at 12%. Of the respondents, 7% used a combination of the 3 airports, while 13% use only San Francisco International and Oakland International Airports.

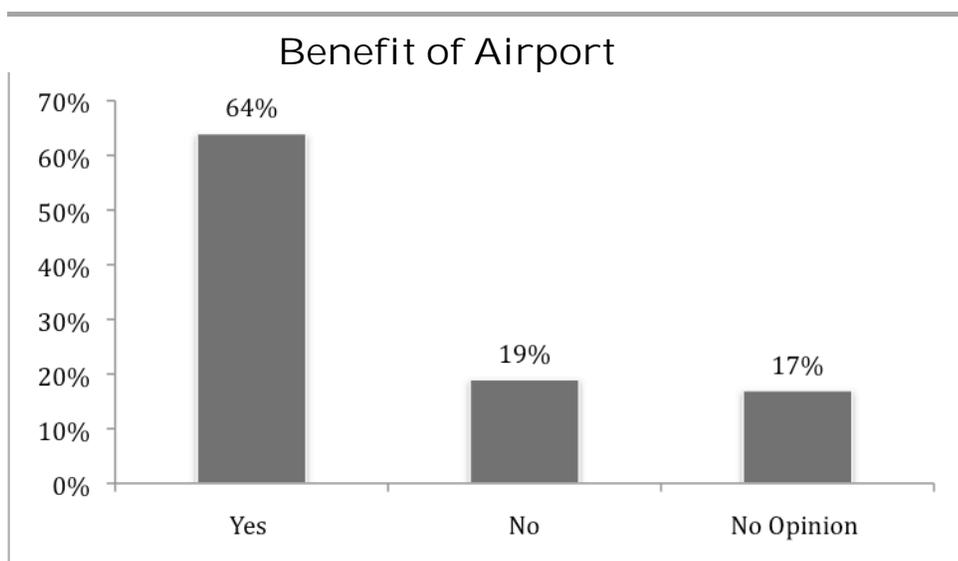
Figure 2.6.6



The participants were asked to indicate if they knew about the expansion of the Charles M. Schulz Airport. 60% said they were aware, while 40% indicated they were not.

The participants were then asked if they thought the airport expansion would be beneficial to the study area. A majority of the participants surveyed, 64%, said they felt the expansion would be beneficial, while 19% said they found no benefit from expansion.

Figure 2.6.7



Among the businesses surveyed, 7 out of 10 said they would recommend the location to other business owners and 6 out of 10 strongly agreed that they felt safe in the area. All of the businesses that were surveyed had been in their locations for a period longer than 3 years.

The business surveys indicated that 5 out of 10 businesses surveyed felt neutral about the expansion, while only 3 out of 10 strongly agreed that the business would benefit.

All of the business indicated that they both shop and eat within the study area. Entertainment and shopping were indicated as the most important new development the businesses would like to see in the study area.

## Conclusion

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The demographics of the study area help us understand whose needs and opinions we should consider as we develop our area plan. The public opinion surveys were designed to help us understand what the residents and users would like to see in the study area in the future.

## Chapter 3: Land Use

A systematic land use survey was conducted covering every parcel of land in the study area. The purpose of the survey was to determine the types of land use, their percentage of the total, and the distribution of land uses within the study area. The study area was divided into six sections, zones 1-6 (see *Appendix C*). Each individual parcel in each zone was visited and surveyed by a team of three students. We gathered information on many aspects of the parcels including: site adaptation (structure type if present); use type; number of units of the use; structural and landscaping condition; historical status (if applicable); and size. Parcels were sorted into one of seven categories: vacant with no structure, vacant with structure, residential, commercial, industrial, agricultural, and community facilities. Each parcel's function was identified according to the Standard Industrial Classification code (SIC), a U.S. Government system for classifying industries. The Land Use Survey Coding Form can be found in *Appendix D*. The survey data was then compiled and used to create an Existing Land Use Map using Geographic Information System (GIS) software (see *Appendix C*).

### 3.1 Distribution of Land Use

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The survey found the three most common land uses by parcel in the study area are residential single-family homes, commercial (majority of which are office buildings) and agricultural, typically grape vineyards (see *Figure 3.1.1*). The total number of residential parcels is 2,140 (69%), the number of commercial parcels is 325 (11%), and the number of agricultural parcels is 205 (7%). However, the total residential parcels-by-area is 3,084 acres (19%) and the commercial is 1,225 acres (8%), while agriculture is 5,713 acres (36%). Although the majority of parcels are categorized as residential, the majority of the land is agricultural. Each of the zones contained some of each land use type. However, zones one and two contain the majority of residential development in the form of subdivisions and zones two, three, and four have the most commercial, while

zone six contains the majority of agriculture. The majority of parcels classified as commercial contain office buildings, and most of those classified as industrial are warehouses.

Figure 3.1.1

| Land Use Type            | Number of Parcels | Acres    | Percentage (by parcels) | Percentage (by area) |
|--------------------------|-------------------|----------|-------------------------|----------------------|
| 1: Vacant-No Structure   | 249               | 2,313.77 | 8%*                     | 15%                  |
| 2: Vacant-With Structure | 64                | 229.15   | 2%                      | 1%                   |
| 3: Residential           | 2,140             | 3,084.73 | 69%                     | 19%                  |
| 4: Commercial            | 325               | 1,225.08 | 11%                     | 8%                   |
| 5: Industrial            | 66                | 1,526.43 | 2%                      | 10%                  |
| 6: Agricultural          | 205               | 5,713.48 | 7%                      | 36%                  |
| 7: Community Facilities  | 37                | 1,843.54 | 1%                      | 12%                  |

\*Percentages are rounded to the nearest whole number

Figure 3.1.2

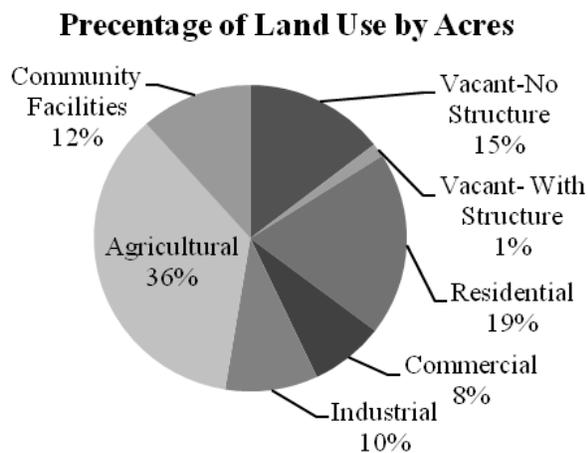
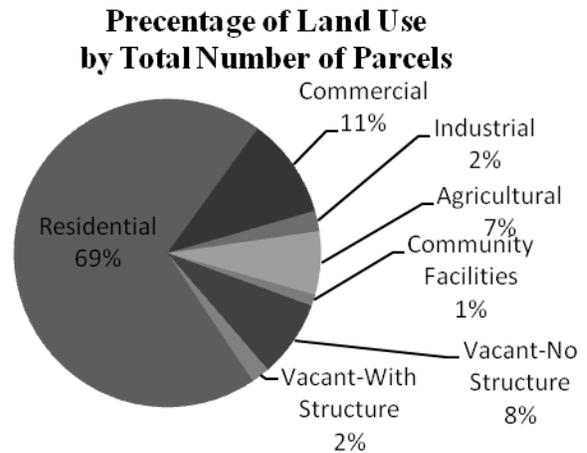


Figure 3.1.3



### 3.2 Structure and Landscape Conditions

The structure and landscape conditions of the parcels vary, depending on the area in which they are located. The newer developments show a higher level of maintenance,

while some older areas need improvements. There are a number of vacant lots, some of which are in need of landscaping maintenance. Landscaping and building structures that surround business parks are well maintained. Newer business buildings located on Aviation Boulevard are well kept and landscaped. The structure and landscape of the residential areas also vary by the area in which they are located. Newer residential developments located in more urbanized areas appear to have well-maintained landscaping. Residential structures including landscaping on parcels located in less urbanized areas, and on larger parcels, are generally older and have a wider range of upkeep needs.

### 3.3 Reuse of Vacant Structures and Vacant Lots

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The potential for reuse of vacant buildings and lots is considered thoroughly in the Airport Expansion EIR. Vacant office buildings are prevalent on Airport Boulevard. Vacant lots are also common, and some are in the process of being developed with more office buildings. There are many signs for leasing and construction companies on open space land, which indicates that there are lots of opportunities for new development. Business parks in the area would benefit from the additional flights made possible by airport expansion.

### 3.4 Open Space

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“Open space” is calculated by the combination of three land uses: vacant with no structure (2,313 acres, 15%), agricultural (5,713 acres, 36%), and community facilities (1,843 acres, 12%). The amount of open space in the study area is about 63%. The open space is distributed fairly evenly throughout the study area, with the exception of zone two (mainly consisting of residential areas), which has the least amount of open space.

### 3.5 Airport Overview & Expansion

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On Tuesday, January 24, 2012, the County of Sonoma Board of Supervisors voted 4-0 to approve the Sonoma County Airport Master Plan, and certified the associated Environmental Impact Report. This clears the way for the proposed \$84 million

expansion and improvement of the Airport. It is expected this project will attract more airlines and flights to the county owned airport. The basis for the expansion is an FAA mandate for federal flight safety standards to be met. In order for the expansion to occur, federal authorities must approve final funding for the project.

The current airport runways do not meet Federal Aviation Administration (FAA) standards because of the way they meet. The airport has two runways in an inverted "V" configuration. Federal Aviation authorities have determined this "V" configuration may cause a pilot to be confused about which runway to enter for takeoff in foggy weather. The project will "decouple" the runways into an "X" and lengthen the runways in order to meet current FAA safety requirements. The primary runway, Runway 14, is currently 5,115 feet long and 150 feet wide. It will be lengthened 885 feet, making it 6,000 feet long. The secondary runway, Runway 19, is 5,002 feet in length and 100 feet wide. It will be extended by 200 feet, making it 5,200 feet long.

The twenty-year expansion plan, expected to be completed by 2030, would also include the addition of a newly located air traffic control tower, a new passenger terminal, an air cargo facility, a fire station, new & expanded airport buffer zones, and various other improvements. The expansion will require the airport to purchase three parcels of land for runway safety and buffer zones for noise. The land has already been secured and most of the money for the expansion will come from Federal Aviation Administration grants, which are allotted based on level of airport activity.

Currently, the Charles M. Schulz–Sonoma County Airport offers five flights a day through Alaska Airlines' subsidiary Horizon Air. There are currently flights to Los Angeles, Portland, Seattle, and Las Vegas. However, in the summer of 2012, the Las Vegas route will be cancelled, while a new route to San Diego will be added. The airport is used daily by turboprops, business jets, helicopters, and gliders. CAL FIRE operates fire attack aircraft from its base at the airport. Currently, airport activity is 90,592 flights per year. After the expansion, activity is expected to rise to 173,785 flights per year. The expansion would allow up to twenty-one commercial flights per day by 2030, with hopes of Alaska Airlines and Frontier Airlines adding flights to and from the

Sonoma County Airport. The current number of aircraft based at the airport is 354. This number is expected to rise to 418 by 2030. The airport is currently negotiating with the two airline companies, but no deal has been made yet, according to airport manager Jon Stout.

Concerns about the expansion include noise, especially for the city of Windsor which is just north of the runways. With longer runways and larger aircraft, noise levels are expected to increase. While the planning commission approved the long-term expansion, they also pushed for noise level restrictions. A voluntary curfew of 11pm-6am was proposed for commercial flights by the planning commission, and they also indicated that future periodic noise monitoring would be implemented and watched. Another concern of the expansion relates to wetlands and threatened species around the airport. With the new buffer zones required, Airport Creek would have to be diverted and shortened – something that has environmentalists concerned because it could potentially affect wildlife and habitat. Part of the airport expansion plan requires realigning Airport Creek into a culvert and placing the current high-water ditch into a culvert. Trees and vegetation will be cleared or trimmed so as not to interfere with airspace.

### 3.6 Conclusion

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Overall, the study area is in relatively good physical condition with potential for improvement, and the potential to become a more robust area due to the abundance of available office space. Homes are generally well kept, and office parks neatly landscaped. A few structures are showing signs of decay from time and use. The study area has an unusual yet attractive blend of urban and rural features.

## Chapter 4: Circulation

The circulation section includes information regarding how people and goods move around the study area. There are many ways to travel, including personal automobile, carpool, public transit, bicycle and on foot. All of these are affected by the flow of traffic, road conditions, availability of bus routes, and other factors. The impacts of the airport expansion on circulation patterns are addressed in this section.

### 4.1 Public Transit

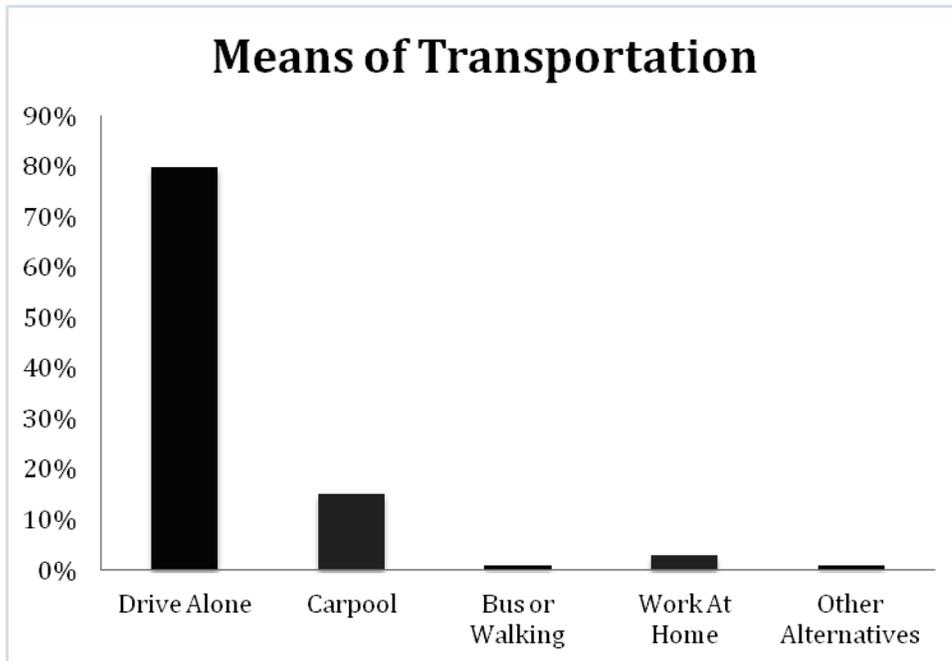
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Both Sonoma County Transit (SCT), and the Mendocino Transit Authority (MTA) provide public bus routes for the study area. Local service to Windsor is provided by the SCT route 66 Windsor shuttle, which has one stop at the northern end of the study area on Shiloh Road. Intercity routes from Sonoma County Transit include 60, which goes from Santa Rosa to Cloverdale; route 60X (express bus of regular route 60); and route 62 from Santa Rosa to Windsor. Upon request, the MTA 95 could be available, which will take you as far north as Point Arena. Pick up points for the 60, 60X, and 95 routes are at Sonoma County Airport, and the 62 route boards passengers on Airport Boulevard, just off Highway 101. A Para transit service operated by SCT is also available within the study area for those with disabilities.

In addition to bus routes provided by these two agencies, the SMART train rail service will cater to the North Bay with stops from Cloverdale in northern Sonoma County to Larkspur, near the ferry terminal. The SMART train will have a station in Windsor and there is a recent proposal for a potential SMART train stop at Airport Boulevard. However, the approval for this stop is still pending. Its approval would provide additional transfer points at a location much closer to the Sonoma County Airport. These could be used for airport passengers who desire transportation within Sonoma County. According to the U.S. Census Bureau, in 2009 only 1% of the study area

indicated public transit as their means of transportation (see Figure 4.1.1). This is likely a reflection of low demand and limited local services available in the study area.

Figure 4.1.1



## 4.2 Traffic and Intersections

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Private automobiles account for 80% of the travel within the study area. It is informative to refer to the Level of Service (LOS) that the roadways and intersections provide, which determines the effectiveness of roads and intersections. LOS is broken down into seven different classifications from LOS A to LOS F. LOS A describes free-flowing traffic, while LOS F describes a breakdown of all traffic flow, resulting in chaotic, uncoordinated movement due to insufficient road capacity (see Figure 4.2.1 and Figure 4.2.2). LOS B through D range from average flow to close to unstable flow. Most signaled intersections in the study area have levels of service found in the LOS A to LOS C range, with the exception of the Shiloh Road/Skylane Boulevard intersection that operates at LOS D during the morning peak hours. The majority of intersections in the study area that utilize stop signs become saturated during both the peak AM and peak PM hours, operating in the LOS E-F range.

Figure 4.2.1

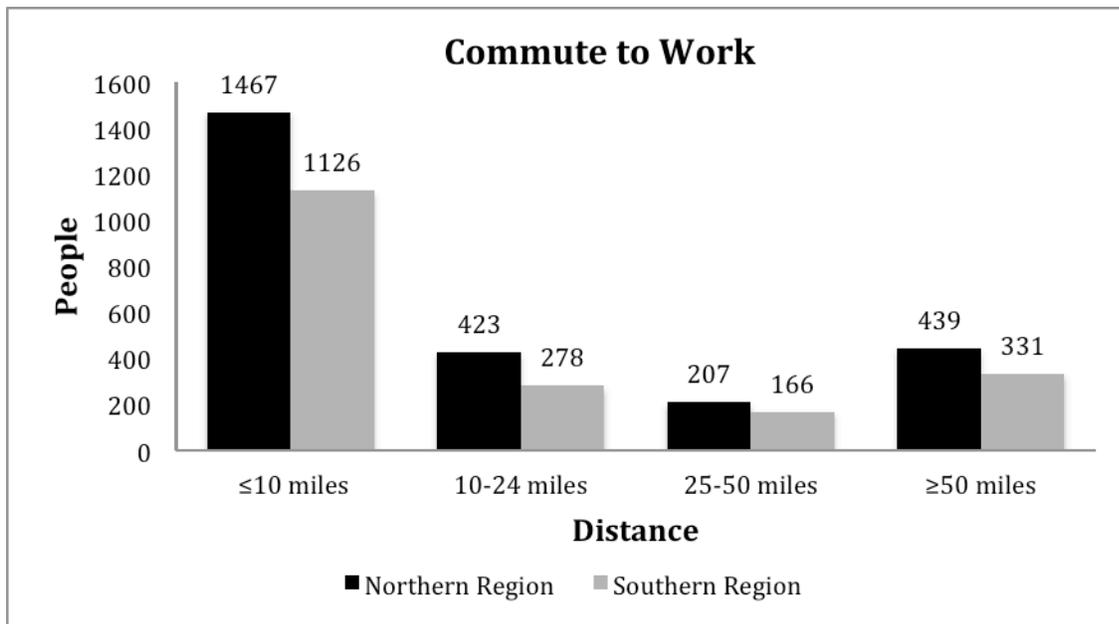
| <b>Level of Service Classifications</b> |                                |                                  |                        |
|---|--------------------------------|----------------------------------|------------------------|
| <b>LOS</b>                              | <b>Signalized intersection</b> | <b>Unsignalized Intersection</b> | <b>Character</b>       |
| A                                       | ≤10 sec                        | ≤10 sec                          | Free flow              |
| B                                       | 10-20 sec                      | 10-15 sec                        | Reasonable free flow   |
| C                                       | 20-35 sec                      | 15-25 sec                        | Stable flow            |
| D                                       | 35-55 sec                      | 25-35 sec                        | Reaching unstable flow |
| E                                       | 55-80 sec                      | 35-50 sec                        | Unstable flow          |
| F                                       | ≥80 sec                        | ≥50 sec                          | Breakdown of flow      |
| Source: Highway Capacity Manual         |                                |                                  |                        |

Figure 4.2.2

| <b>Level of Service in the Study Area</b>                                      |                     |                     |             |
|--|---------------------|---------------------|-------------|
| <b>Intersection</b>  | <b>AM Peak Hour</b> | <b>PM Peak Hour</b> | <b>Type</b> |
| Shiloh Road Corridor – Town of Windsor   |                     |                     |             |
| Shiloh Road/Skylane Boulevard  | D                   | B                   | Signal      |
| Shiloh Road/Conde Lane   | F                   | F                   | Stop Sign   |
| Shiloh Road/U.S.101 Southbound Off-Ramp  | E                   | F                   | Stop Sign   |
| Shiloh Road/U.S.101 Northbound Off-Ramp  | B                   | B                   | Signal      |
| Airport Boulevard Corridor – County of Sonoma                                  |                     |                     |             |
| Airport Boulevard/North Laughlin Road-Skylane Boulevard                        | B/D/F*              | C/F*                | Stop Sign   |
| Airport Boulevard/Brickway Boulevard   | A                   | B                   | Signal      |
| Airport Boulevard/Aviation Boulevard   | B                   | C                   | Signal      |
| Airport Boulevard/U.S. 101 Southbound Off- Ramp                                | F                   | E/C                 | Stop Sign   |
| Airport Boulevard/U.S.101 Northbound Off- Ramp to Airport Boulevard Westbound  | F                   | B                   | Yield       |
| Source: Sonoma County Airport Final EIR *Multiple turning lanes, different LOS |                     |                     |             |

Figure 4.2.3 represents the distance that residents of the study area travel to work from their homes in the northern region (Shiloh Road corridor/County of Sonoma). The people who work within 10 miles of their homes represent over half the total population. Because of this, the levels of service that intersections and roadways provide is heavily impacted during peak commute hours.

Figure 4.2.3



Source: 2009 US Census Bureau

Carpooling accounts for 15% of the circulation in the study area. People traveling to larger commercial and business districts to work, such as San Francisco and Oakland, participate in the most carpooling. Due to the overwhelming number of people who use automobiles as their primary transportation, Highway 101 has heavy traffic levels from weekday work commutes as well as weekend recreational travel. Highway 101 recently underwent an expansion from four to six lanes in several impacted sections to accommodate the growing traffic. Traffic flow has improved after the completion of each section.

### 4.3 Pedestrian and Bicycle Services

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Only 1% of the residents utilize the pedestrian and bicycle infrastructure to travel around the study area. It still plays a vital role to the overall circulation. Safety concerns due to high volume auto traffic and missing sections of sidewalk discourage pedestrian activity. Bike routes within the denser areas such as the Shiloh Road corridor and along Airport Boulevard are Class II, with Class III lanes along the agricultural and more rural roadways (See Figure 4.3.1 for bike lane classifications). The Town of Windsor is currently involved in a project to extend and connect existing routes that serve the airport. The improvement will allow entrance to the airport from the east via Airport Boulevard, and from the North via Skylane Boulevard using a continuous network of Class II bike routes.

Figure 4.3.1

| Bike Lane Classification |   |
|--------------------------|---|
| Class I                  | Bike paths with separate rights-of-way            |
| Class II                 | Lanes set apart on a street exclusively for bikes |
| Class III                | Bikes share roadway with vehicles (Bike Routes)   |

There are sidewalks on at least one side of the street in all the housing, business, and commercial sectors of the study area (excluding the back roads to private homes and agricultural areas), but these do not encourage walking due to the variety of land uses and distances between commercial centers. Some sections of sidewalk end abruptly, which prevents the interconnectivity of one large network. One example is the sidewalk on Airport Boulevard that ends a substantial distance from the airport, discouraging access by foot and separating the business park from the Airport itself.

### 4.4 Airport

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As a result of the recently approved airport expansion, some circulation changes will be required. First and foremost, the additional flights in and out of the airport will increase traffic and require some roadways and intersections to be modified. The Sonoma County Airport Final EIR calls for several intersections along Airport Boulevard to be converted

to signaled intersections. This will increase traffic flow and change the current LOS peak traffic times to LOS C in most areas. With higher demand for the services the area offers, access to the area will be more sought out and there will be pressure for Sonoma County Transit to add additional bus stops.

The airport expansion triggers opportunities to improve other circulation modes in the study area. In addition to the Airport's regional services, the Highway 101 expansion, projects from the Town of Windsor and SCT to improve pedestrian and bicycle facilities, and the possibility of a SMART train stop on Airport Boulevard will all make transit more connected. In the future, residents will be able to utilize public transportation for travel at both a regional and local level.

## 4.5 Conclusion

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Circulation in our study area is mostly done by private automobile and carpooling. The majority of people presently feel that it is easier for them to use their own vehicle rather than use public transportation. The proximity of Highway 101 also encourages the use of private vehicles. The demand for bus transit service could increase in the future, after the Airport expansion project is completed. With the expansion of the Airport, there will be greater demand for other modes of transportation, including the SMART train. These alternatives can help alleviate the crowded streets and busy intersections, especially at peak hours. Even with all of the options the study area has to offer, the use of the private automobile will most likely be the dominant form of transportation in the future.

# Chapter 5: Economic Conditions and Trends

This look into the economics of the study area is meant to provide a general understanding of the financial trends that affect the people and businesses located there. This chapter begins by analyzing some key industries in the area, such as wine production and tourism, and this is followed with an examination of general economic indicators such as commercial and residential real estate. Information on the labor force of the region is provided, as well as income and personal wealth. This chapter concludes with a discussion of governmental financial conditions which indicate the ability for future development.

For our look into the financial statistics of the study area, we used data from a variety of sources. Since the boundaries of our study area are not defined within the jurisdiction of one municipality, we estimate figures for the area based on data for all of Sonoma County and data for the Town of Windsor. While we believe our study area is unique compared with Windsor or Sonoma County as a whole, we use the data as an indication of the people who work in the study area and who primarily live in the county. In some cases, we were able to find data at the block group level that fit almost precisely to our study area. To visualize the correlation between the block groups and our study area see Appendix C.

## 5.1 Wine

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Our study area is heavily devoted to wine production, and much of the land is covered with vineyards. The entire study area is within the Russian River Valley American Viticulture Area. The Russian River Valley Winegrowers represent the wineries and growers in the region.

While the wine market has been hit hard in recent years due to the economic recession, wine sales in Sonoma County saw a rise of five percent in sales over the previous year.

This was due to several factors including, but not limited to, overall wine consumption in America growing by two percent during the same time interval.

Wine production in Sonoma County was hurt by weather in 2010, which saw a significant decrease in rain and reduced grape production. The Russian River Valley's dry spell was mitigated since only nine percent of its wine growing area is devoted to zinfandel, while the majority is Chardonnay and other "cool climate" grapes. This offers a competitive advantage for this area compared to its neighboring association, the Winegrowers of Dry Creek in Healdsburg who favor zinfandel grapes. Wine production is further threatened by state regulation calling for 15% less water use from the Russian River, which will mainly affect winegrowers extracting water to protect their grapes from late spring frost events.

Although a drop in grape yields usually leads to an increase in price, Sonoma County wine prices dropped eight percent. However, the majority of wine growth expenditures over the past year have been for wine under \$25 a bottle. This change in preference to more inexpensive goods during economic recessions is common, and has had a slowing trend over the past year. This is bittersweet news for Sonoma wineries that have historically had lower prices compared to their neighbor, Napa County. The shift to more inexpensive wines is bitter because less expensive wines have a lower profit margin, and when the economy does recover, Sonoma may risk the perception that their wines are inferior.

## 5.2 Tourism

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Sonoma County is experiencing modest tourism growth after hitting lows in 2009. While there was growth in passengers at the Charles M. Schulz airport—1.5% growth from 2009-10—San Francisco International saw growth of 4.7% during the same period. However, hotel occupancy is up six percent in 2010 from the previous year, the highest growth in the entire state. This difference indicates that the majority of occupancy is coming from those in the region within driving distance who go on overnight trips or short weekend getaways. Similarly, leisure and hospitality payrolls are starting to

increase at a rate greater than the national or state average, indicating that Sonoma County is growing in the high-end and specialty tourism sectors. While this area has been a favorite location for Bay Area company retreats with large attendance, the increase in high-end tourism will act as a catalyst in this sector of the tourism market when the economy recovers.

Destination spending within the county was down seven percent from 2008-09 from \$1.38 billion to \$1.28 billion. This is a serious drop, but not as serious as similar tourism based counties such as Napa and Santa Barbara. However, destination spending in Sonoma County is only \$2,541.90 per county resident, while Santa Barbara and Napa Counties are \$3,294.70 and \$7,190.60 per capita respectively.

The biggest threat to Sonoma County tourism is rising oil prices. This discourages people in nearby regions from visiting Sonoma County wineries and staying at local hotels. Opportunities for increasing tourism in the county are eco-tourism, bicycling, and international tourism.

### 5.3 Manufacturing

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Sonoma County has experienced a large drop in the percent of manufacturing employment in the last several decades. This is mainly due to permanent structural issues within the economy, resulting from cheaper labor abroad and international trade. This decrease in blue-collar workers in the County is compounded by the decrease of activity in construction of residential and commercial buildings, the most common blue-collar job in California. The study area initially was planned for a larger presence of manufacturing businesses. However, due to high costs of living, land, and labor this has become near impossible to implement anywhere in Sonoma County.

Manufacturing is crucial to any local economy, especially to Sonoma County which has large market demand for locally produced products. Manufacturing is a historically stable industry enabling the County to weather recessions better, and diversifies the region's employment in case of a particular collapse of one sector. For manufacturing to

work in Sonoma County there needs to be a multi-modal effort from private businesses and the County to invest in better technology and facilities to establish Sonoma as a regional manufacturing center for high end products. If this is successful, then the County will experience an increase in the multiplier effect to other industries and higher wages with a simultaneous drop in unemployment.

## 5.4 Employment

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Sonoma County's unemployment rate rose in the past year, though it remains lower than California's unemployment rate. It is estimated that 31% of Sonoma County residents work less than full-time and 30% did not work, compared to 28% and 32% in California, respectively. The percent of population that was employed full-time is similar in both the state and Sonoma County, at 40% and 39%.

Windsor's seasonally unadjusted unemployment rate of 9.2% in June 2010 was below Sonoma County's rate over the same quarter. The seasonally unadjusted unemployment rate for Sonoma County was 10.5% for June 2010, up considerably from 2008 when second quarter (Q2) unemployment was 5.2%. Although Windsor's current unemployment rate is up considerably from 2008, when second quarter unemployment registered 4.5%, recent figures suggest it may have peaked. While Sonoma County's Q2 2010 unemployment rate is below California's (12.1%), it is above the national level (9.5%). Windsor's unemployment rate has remained below state and national levels.

In March of 2010, total employment in the Town of Windsor was slightly higher than its lowest level in 10 years. With 11,200 residents with jobs, employment in Windsor is down 10.3% from its decade high of 12,490 in October 2007. The Sonoma County Economic Development Board (EDB) has predicted that Sonoma County's unemployment rate would peak in mid-2010, but then start to improve. This could be a positive sign for Windsor's employment profile, which has largely mirrored that of Sonoma County over the past decade.

Total nonfarm employment in Sonoma County was 175,200 in June of 2010. Total seasonally unadjusted employment has decreased 12.3% from June of 2007 (199,800). Sonoma County has lost 23,000 jobs since the employment peak in Q4 2007 (198,270). The construction industry had the largest discrepancy between Sonoma County (8%) and California (5.9%).

Many Sonoma County residents work locally. In 2009, 83.4% worked within the county, slightly higher than the California average of 82.8%. This is consistent with the number of residents who lived and worked in Sonoma County in 2006. These trends are significant to note as Sonoma County slowly moves out of the current recession.

## 5.5 Commercial Vacancy Rates

---

The office vacancy rate in Windsor increased in the first quarter of 2010 to 16.3%, from a low of 12.4% in Q3 2007, a negative sign for business growth in the city. At the same time, Sonoma County vacancy rates decreased in the second successive quarter after growing for nine consecutive quarters. For comparison, the office vacancy rate registers 23.8% countywide.

Windsor's industrial vacancy rate jumped from 5.1% in Q2 2008 to 15% in Q1 2010, in line with the county average of 15.6%. The retail vacancy rate of Windsor, which decreased slightly to 5.2% for Q1 2010, is below the county average of 9% over the same quarter. Windsor's residential vacancy rate, which has increased 3.1 percentage points over the last decade, remains below the county average. Five-year expectations project Windsor's rate to remain around 4.5%, much smaller than the 8.9% county average.

Commercial vacancy rates in Sonoma County have suffered an average of 4.9% increase from Q1 2008. Recent figures suggest these rates have peaked and that Sonoma County is poised for long-term recovery. Office rent has fallen considerably over the past two years, a sign of the distressed nature of the commercial property market, but also an indicator of the improved affordability for new and expanding businesses. Sonoma County's cost of doing business is not only below the U.S. average, but it is the only Bay

Area metro area to have below-average costs. Thus, Sonoma County is competitive in business costs nationwide and within the Bay Area.

Building permits, which reflect trends in construction activity, are at a decade low. The value of residential permits in Sonoma County has decreased roughly \$477,140,000 (77.4%) since 2005. The value of Building Permits in Windsor for 2009 was \$1,463,200 compared to Sonoma County's \$143,777,000. Both residential and non-residential construction is down considerably from their respective highs in 2005 and 2002.

One of the major reasons firms choose not to locate in Sonoma County is the price of land. In figure 5.5.1, office rental rates between Santa Rosa, Petaluma, and our study area are similar, indicating an indifference fiscally to locate in any of those places. The study area does have higher costs than Rohnert Park, which is mainly due to the departure from Rohnert Park of some major firms, lowering overall demand for office space. Marin County has substantially higher rent costs because it is closer to San Francisco, as well as to the education hubs of Berkeley, Silicon Valley, and Stanford. Solano County is included in the table because they are considered a prime location for manufacturing in the Bay Area since rent for industrial spaces is lowest there.

Figure 5.5.1

| <b>Region</b>     | <b>Office Rental Rates (price/sq ft)</b> | <b>Industrial Rental Rates (price/sq ft)</b> |
|-------------------|--|--|
| Petaluma          | \$1.21-\$1.50                            | \$.65-\$1.00                                 |
| Rohnert Park      | \$.55-\$1.11                             | \$.55-\$.6                                   |
| Santa Rosa        | \$.94-\$1.62                             | \$.58-\$1.00                                 |
| <b>Study Area</b> | <b>\$.96-\$1.80</b>                      | <b>\$.58-\$.75</b>                           |
| South Marin       | \$3.25-\$3.75                            | n/a  |
| San Rafael/Novato | \$1.75-\$3.25                            | n.a  |
| Solano County     | \$1.10-\$1.60                            | \$.45-\$.65                                  |

*Market Data, Keegan & Coppin*

## 5.6 Consumer Spending & Taxable Sales

After 8 years of strong growth, 2006 saw Windsor's taxable sales decrease. Across much of Sonoma County, taxable sales have been falling. The positive trend of Sonoma County's total taxable sales ended in 2007. Since 2007, sales decreased 7.3% in

Windsor compared to a countywide average drop of 6.5% and an overall average decline of 6.3% in California.

Compared to the national average, Windsor and Sonoma County residents spend more per capita on housing, computers, education, and food away from home.

## 5.7 Individual Wealth

In 2010, the median household income of Sonoma County was slightly higher than the median household income of California, but lower than in Windsor (see Figure 5.7.1). The greatest difference in income in these three areas is the \$100,000-\$149,999 category, where three percent more Windsor workers earn this amount than Sonoma County workers and almost four percent more than all of California.

**Figure 5.7.1**

| Income                 | California |            | Sonoma County |            | Windsor |            |
|------------------------|------------|------------|---------------|------------|---------|------------|
|                        | Percent    | Cumulative | Percent       | Cumulative | Percent | Cumulative |
| Less than \$10,000     | 5.5%       | 5.5%       | 4.5%          | 4.5%       | 1.7%    | 1.7%       |
| \$10,000 to \$14,999   | 5.2%       | 10.70%     | 4.5%          | 9.00%      | 3.4%    | 5.10%      |
| \$15,000 to \$24,999   | 9.7%       | 20.40%     | 9.5%          | 18.50%     | 6.9%    | 12.00%     |
| \$25,000 to \$34,999   | 9.1%       | 29.50%     | 9.0%          | 27.50%     | 8.0%    | 20.00%     |
| \$35,000 to \$49,999   | 12.7%      | 42.20%     | 13.5%         | 41.00%     | 12.8%   | 32.80%     |
| \$50,000 to \$74,999   | 17.6%      | 59.80%     | 18.2%         | 59.20%     | 20.3%   | 53.10%     |
| \$75,000 to \$99,999   | 12.5%      | 72.30%     | 13.4%         | 72.60%     | 16.2%   | 69.30%     |
| \$100,000 to \$149,999 | 14.8%      | 87.10%     | 15.7%         | 88.30%     | 18.6%   | 87.90%     |
| \$150,000 to \$199,999 | 6.3%       | 93.40%     | 6.2%          | 94.50%     | 6.9%    | 94.80%     |
| \$200,000 or more      | 6.3%       | 99.70%     | 5.5%          | 100.00%    | 5.2%    | 100.00%    |
| Total                  | 100%       |            | 100%          |            | 100%    |            |

**Median Household Income**

**\$ 60,016.00**

**\$ 61,837.00**

**\$ 71,964.00**

Poverty rates in Sonoma County and Windsor are lower than in California as a whole.

Sonoma County has approximately eight percent of individuals living under the poverty line. While the rate is 5.1 percent in Windsor, it is nearly one-half and one-third of the

state average respectively. Sonoma County residents with a bachelor's degree have a 4.5 percent unemployment rate, indicating an inefficiency of available work for the entire range of educated workforce.

A major concern of individuals when totaling net wealth is home value, especially since the real estate downturn in 2008. Moody's Analytics predicts that the housing slump will bottom sometime during 2011, but we have yet to see improvement in home values. In 2010, the median home value for an owner occupied home in Windsor was \$406,700.

| Figure 5.7.2                |                    |
|-----------------------------|--------------------|
| Block Groups                | Median Home Values |
| Tract 1527.02 Block Group 1 | \$ 789,500.00      |
| Tract 1527.02 Block Group 2 | \$ 541,900.00      |
| Tract 1538.01 Block Group 1 | \$ 1,000,001.00    |
| Tract 1538.01 Block Group 2 | \$ 584,900.00      |
| Tract 1538.03 Block Group 5 | \$ 135,800.00      |
| 5yr ACS 2005-2009           |                    |

This is below Sonoma County's median value of \$458,500, but slightly above the state average of \$405,800. This discrepancy, despite the higher wages in Windsor, may be due to new home values falling more dramatically than

homes in older neighborhoods, a common characteristic of the recent recession. Since most of the homes in Windsor have been built in the past 20 years—and even more recently for homes within our study area boundaries—they have felt the downturn of the housing market more intensely.

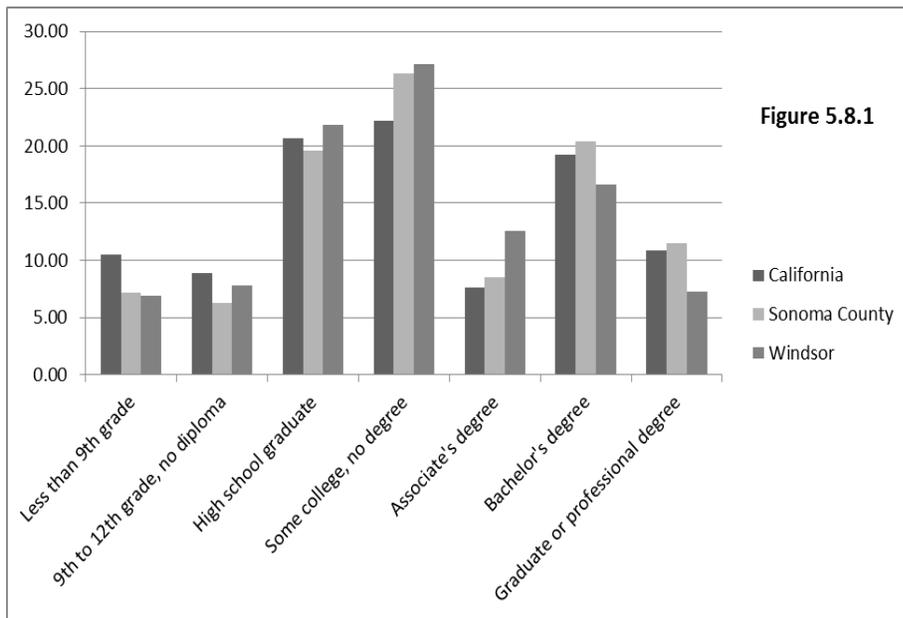
While this 2010 median value from the American Community Survey Census is discouraging when considering the drop in price from the real estate peak in 2007, Windsor, Sonoma County, and California have all seen the price of their homes double since the 2000 census when the median value of an owner occupied home was \$257,100, \$265,200, and \$198,900 respectively.

By contrast, our study area exhibits higher than average home values as seen in figure 5.7.2., the median value of owner occupied homes. This may be due to larger parcel sizes, which often have land for livestock and vineyards. The vacancy rate of homes in these census blocks has been on the rise since the market collapse. In 2010, it was 4.2% and 12.2% for Census tracts 1527.02 and 1538.01 respectively. Vacant houses not only lower average home prices of the community they reside in, they also bring costs for

services such as fire and police which must combat higher fire and crime occurrences in high vacancy areas.

## 5.8 Education

One of the most important factors to businesses when they are considering a new location is the available workforce. When considering the workforce, firms like to move to business clusters that are made of industries similar to themselves. This provides them the ability to hire employees with skill sets applicable to their labor needs. Simultaneously, if a location decision is not based within a cluster, firms often look to the education levels of the local residents. High technology firms need a higher proportion of their labor with bachelor’s degrees or higher. This is, however, a double edged sword, as firms that need low skilled labor won’t move to locations with a higher educated workforce because hiring those employees would mean higher wages as well as



higher rents. Figure 5.8.1 is from the 2010 3-year American Community Survey of educational attainment levels. It shows that Sonoma County as a whole fares well against the rest of California in bachelor’s degree or higher, while

Windsor appears to be pulling down that average. While this might depict Sonoma County as a prime market for technology firms, if these numbers are compared to Bay Area education levels from the Association of Bay Area Governments over the nine Bay Area counties, the result is that in 2000 the Bay Area had about a 20 percent higher proportion of the population with a Bachelor’s Degree. This is an understatement when

considering the labor markets in specific clusters in the Bay Area like San Francisco, Silicon Valley, or Berkeley that boost higher education attainment to almost 50 percent.

Figure 5.8.2 is the education level of employees within the census block groups that make up our study area. One of the inequalities between this figure and 5.8.1 is the greater percentage of workers in the study area who have a bachelor’s degree or higher when compared with the available labor force in Sonoma County. This essentially means that our study area employs a higher-educated workforce, and in order to thrive requires the continued availability of highly educated workers. Firms within the study area might find it beneficial to move to other locations within the Bay Area in order to find better-qualified workforces.

Figure 5.8.2

| Jobs by Educational Attainment | 2009  |         |                     |
|--------------------------------|-------|---------|---------------------|
|                                | Total | Percent | Percent w/o No data |
| Less than High School          | 1,055 | 11.70%  | 14.83%              |
| High School or equivalent      | 1,590 | 17.70%  | 22.35%              |
| Some college or Associate      | 2,181 | 24.20%  | 30.65%              |
| Bachelor's degree or advanced  | 2,289 | 25.40%  | 32.17%              |
| No data                        | 1,887 | 21.00%  | n/a                 |
| Total                          | 9,002 | 100.00% | 100.00%             |

*LEHD On the Map, Census Bureau*

Finally, note that Sonoma County has higher educational levels than Windsor, but lower income levels. This could possibly be an indicator of the social dynamics in Windsor households, where families have one income provider, and the other adult does not need higher education and stays at home. If this is the case, then income returns to education in Sonoma County are lower than in Windsor.

### 5.9 Employment Fields

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The Sonoma County Airport study area is known throughout the county as having higher skilled, technology based businesses. Figure 5.9.1, from the U.S. Census Bureau,

shows the range of jobs for the block groups that comprise our study area. The data allow us to compare employment by field from 2009 and 2002, a wider span and a comparison of two recession periods in America. Between these two time periods, we see dramatic percentage drops in manufacturing, wholesale trade, and education services. While manufacturing might be a symptom of national trends, wholesale trade and education services represent lack of competitive advantage and local economic distress. There were positive gains in retail trade, health care and social assistance within our study area. Increased retail trade is likely due to increased tourism in Sonoma County, resulting in a higher demand for sales associates in retail. If related to tourism then this would be a form of traded goods, which represents an export Sonoma County produces and increasing per capita wealth. Otherwise, the rise is just a result of resident consumption growth, which does not increase local wealth since most of the profits are exported elsewhere.

Figure 5.9.1

Jobs by NAICS Industry Sector

|  | <b>2009</b>  |                | <b>2002</b>  |                | <b>Change</b> |
|--|--------------|----------------|--------------|----------------|---------------|
|  | <b>Total</b> | <b>Percent</b> | <b>Total</b> | <b>Percent</b> |               |
| Agriculture, Forestry, Fishing and Hunting                 | 483          | 5.4%           | 505          | 6.2%           | -0.8%         |
| Mining, Quarrying, and Oil and Gas Extraction              | 15           | 0.2%           | 19           | 0.2%           | 0.0%          |
| Utilities  | 48           | 0.5%           | 35           | 0.4%           | 0.1%          |
| Construction   | 1,337        | 14.9%          | 973          | 11.9%          | 3.0%          |
| Manufacturing  | 2,128        | 23.6%          | 2,551        | 31.3%          | -7.7%         |
| Wholesale Trade  | 404          | 4.5%           | 723          | 8.9%           | -4.4%         |
| Retail Trade   | 729          | 8.1%           | 317          | 3.9%           | 4.2%          |
| Transportation and Warehousing                             | 124          | 1.4%           | 289          | 3.5%           | -2.1%         |
| Information  | 100          | 1.1%           | 243          | 3.0%           | -1.9%         |
| Finance and Insurance                                      | 230          | 2.6%           | 117          | 1.4%           | 1.2%          |
| Real Estate and Rental and Leasing                         | 112          | 1.2%           | 53           | 0.6%           | 0.6%          |
| Professional, Scientific, and Technical Services           | 536          | 6.0%           | 451          | 5.5%           | 0.5%          |
| Management of Companies and Enterprises                    | 74           | 0.8%           | 126          | 1.5%           | -0.7%         |
| Administration & Support, Waste Management and Remediation | 243          | 2.7%           | 213          | 2.6%           | 0.1%          |
| Educational Services                                       | 668          | 7.4%           | 908          | 11.1%          | -3.7%         |
| Health Care and Social Assistance                          | 733          | 8.1%           | 259          | 3.2%           | 4.9%          |
| Arts, Entertainment, and Recreation                        | 134          | 1.5%           | 105          | 1.3%           | 0.2%          |
| Accommodation and Food Services                            | 367          | 4.1%           | 97           | 1.2%           | 2.9%          |
| Other Services (excluding Public Administration)           | 321          | 3.6%           | 155          | 1.9%           | 1.7%          |
| Public Administration                                      | 216          | 2.4%           | 15           | 0.2%           | 2.2%          |

There are a total of 9,002 jobs within the census block groups in the study area, and a total of 2,536 employed persons who reside in the same area. This indicates a very high job to house ratio, especially compared to the county job/housing balance of 1.01 in 2010 (ABAG). This indicates our study area as a job cluster with an imbalance of houses to jobs, requiring employees to drive further to work. Of the 2,536 employed residents of the study area, only 314 actually work within the same boundaries, a meager 12.4 percent. The jobs are mainly located along Airport Boulevard. A job density index map is in Appendix C at the end of this document.

## 5.10 Government Policy Overview

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In discussion with business owners in our study area, we found four primary reasons why businesses choose not to locate in our study area: high rent, roads & transportation, airport limitation, and workforce. Land rents are of concern because there are cheaper alternatives to building new developments in our study area when considering all the factors in the process: permit fees, impact fees, and price per square foot for industrial uses. Many firms can reduce their costs by locating in Solano County, especially for manufacturing industries. Transportation limitations are cited in relation to traffic on Highway 101. This is a concern for our study area because all commute trips must take place on the highway, and only 3.5% of people employed in our study area also live within it.

The airport can act as a draw to our study area for many businesses. However, the limited destinations of Seattle, Portland, Los Angeles, and Las Vegas leave many businesses a bit too isolated. Finally, employers seeking skilled labor choose to locate in higher educated regions of the Bay Area, which limits the county as an innovation and entrepreneur hub.

All four of these categories are affected in some way by the tools at local government's disposal. In order to understand these tools, we will analyze the current economic conditions of Windsor and Sonoma County, as well as the programs and plans they utilize to encourage economic growth.

## 5.11 Sonoma County Budget Summary

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Sonoma County's 2011-2012 total budget is \$1.2 billion. The largest sources of income are intergovernmental revenues (37%), taxes (24%), use of fund balance (13%), and charges for services (10%).

The 2011-2012 Property Tax income in Sonoma County was \$655 million. Of this, \$317.7 million (48%) went to schools, \$190.9 million went to county expenditures, \$51.9 (8%) million went to Redevelopment Agencies, cities received \$58.4 million (9%) and special districts received \$40.1 million (6%).

| Figure 5.11.1                                |         |
|--|---------|
| Sonoma County                                |         |
| Expenditures                                 | Percent |
| Development Services                         | 35.00%  |
| Health & Human Services                      | 25.00%  |
| Administrative & Fiscal Services             | 13.00%  |
| Justice Services                             | 17.00%  |
| Capital Projects                             | 3.00%   |
| Other County Services                        | 7.00%   |
| <i>Sonoma County 2011-2012 Fiscal Budget</i> |         |

Figure 5.11.1 depicts how funds are allocated through the county. It is evident that most are structured funds that have little room for adjustment, and deal with the daily needs of the county's residents. The three percent in capital projects represents the best opportunity for diverse administration of funds. This fund will be discussed later.

## 5.12 Windsor Budget Summary

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The following tables outline the annual revenue and expenditures for the Town of Windsor for fiscal year 2011-2012. Windsor currently employs 130 people for various governmental activities. It has budgeted to cut four positions for the 2011-2012 fiscal year to help cover the difference between expenditures and revenue.

| Figure 5.12.1                           |                         |
|---|-------------------------|
| <b>Windsor Revenue</b>                  | <b>Total</b>            |
| Property Tax                            | \$ 66,221,000.00        |
| Sales Tax                               | \$ 4,409,700.00         |
| Other Tax                               | \$ 9,238,500.00         |
| Licenses, Permits & Fees                | \$ 1,263,900.00         |
| Investment Earnings                     | \$ 168,400.00           |
| Rental Income                           | \$ 86,800.00            |
| Motor Vehicle-in-lieu                   | \$ 200,200.00           |
| Intergovernmental                       | \$ 69,200.00            |
| Charges for Services                    | \$ 1,159,200.00         |
| Other Revenue                           | \$ 56,700.00            |
| Transfers-In                            | \$ 195,545.00           |
| <b>Total</b>                            | <b>\$ 23,470,245.00</b> |
| Windsor 2011-2012 & 12-13 Fiscal Budget |                         |

| Figure 5.12.2                           |                         |
|---|-------------------------|
| <b>Windsor Expenditures</b>             | <b>Total</b>            |
| Town Council                            | \$ 87,575.00            |
| Town Manager                            | \$ 362,299.00           |
| Town Attorney                           | \$ -                    |
| Non-Departmental                        | \$ 2,997,532.00         |
| Administrative Services                 | \$ 1,237,642.00         |
| Police                                  | \$ 11,650,921.00        |
| Planning                                | \$ 1,118,471.00         |
| Building                                | \$ 810,697.00           |
| Engineering                             | \$ 1,578,864.00         |
| Community Services                      | \$ 2,352,534.00         |
| Senior Center                           | \$ 341,889.00           |
| Facilities                              | \$ 746,841.00           |
| Animal Control                          | \$ 465,000.00           |
| <b>Total</b>                            | <b>\$ 23,750,265.00</b> |
| Windsor 2011-2012 & 12-13 Fiscal Budget |                         |

## 5.13 Capital Project Plans

The Capital Project Plan requires the County Administrator to recommend to the Board of Supervisors a long-term capital project program (CPP) including project priorities, costs, and methods of financing. The planned five year budget for the Capital Project Plan totals over \$617 million worth of projects broken into four sections: (1) General Government, (2) Transportation and Public Works, (3) Regional Parks, and (4) the Water Agency.

A large portion of the transportation budget of the CPP is the Airport Division project of \$49.2 million. It includes plans for a runway extension, new terminal, fire and rescue building and air traffic control tower.

Regional Parks will receive over \$40 million which will be divided between: regional trails (\$15 million), river and coastal access parks (\$4.8 million), community and regional parks (\$4.7 million), and regional open space parks and preserves (\$8.4 million). These funds are a great opportunity for our study area as a regional trail that

connects to the Russian River would greatly benefit the study area. However, this section has been greatly impacted from the economic downturn and will continue to dwindle until new housing development projects increase.

Windsor's Capital Improvement Program plan is divided into six different categories including: (1) Drainage Projects, (2) Economic Development Projects & Programs, (3) Parks and Facilities Projects, (4) Transportation Projects, (5) Water Projects, and (6) Water Reclamation Projects. The most important government project within the study area for the city of Windsor is the improvement of Shiloh Road from Highway 101 to Skylane Boulevard.

## 5.14 Economic Development Programs

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Sonoma County's Economic Development Board is currently a staff of three full time employees with a half-million dollar budget. The EDB's mission is creating programs to help business grow as well as providing the necessary tools to start a company here. Some of these programs are (1) Innovation Action Council, (2) Enterprise Appreciation Program, (3) Business Climate Survey and Action Plan, (4) Business Crime Prevention, (5) Business Environmental Alliance, (6) The Recycling Market Development Zone Program, (7) Sonoma Green Business Program, (8) Workforce Investment Board, and (9) Small Business Startup and Expansion program. The EDB also markets local businesses through numerous programs including Restaurant Week, Sonoma County Film Program, and the Sonoma County Tourism Bureau.

## 5.15 Conclusion

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Our examination of the economics of the study area reveals that it serves as a job center for the county, employing over three times more people in the workforce than live in the same area. This agglomeration of firms in an unincorporated part of the county is attributed to the location of the airport, and many of the businesses that locate here utilize the airport for regular business.

Recently, the general fund budget as well as the capital improvement plan budget have suffered due to the housing market crash. This has reciprocated to the private sector resulting in higher than desired unemployment, as well as vacancy rates for both commercial and retail locations. Fortunately, our study area serves as a beacon of hope for the county since it employs such a high proportion of the county given its residential size and also has lower vacancy rates than other Sonoma County cities.

Similarly, recent events have shown improvements in the general economics of the Airport environs. Last year, weather has favored Russian River Valley grapes as opposed to surrounding regions, supporting future wine exports and tourism estimates. The past year has also witnessed increases in tourism spending indicating a paradigm shift into higher-end tourism in Sonoma County, promising news to help the county compete with more esteemed wine regions regarded as “higher end” destinations. This segment increase in tourism should also aid in the county’s deficiency in destination spending.

While education levels are at a comfortable level in Sonoma, there is a lower presence of post undergraduate education, which hinders innovative and high earning businesses from originating in the region. This, coupled with the county’s expensive development standards, places job growth and business development on a tight rope between below average paying jobs and above average positions. While the county remains in a careful balance, we have indicated some comparative advantages that exist and provide opportunity for growth in the future.

## Chapter 6: Environmental Conditions

This chapter focuses on important environmental resources. It is broken down into categories which include: hydrology and water quality, air quality, biological resources, agricultural resources, topography, and geology. The study area lies within the Santa Rosa Plain, and exhibits distinct geological features found within the Coastal Range. One such distinctive feature is groundwater movement and recharge due to the unique fault lines that exist in the area, the Russian River Watershed, and aquifers. The Santa Rosa Plain contains federal and state endangered animal species, as well as endemic, special-status, and endangered plant species. The Plain provides agricultural land for vineyards, irrigated vegetable crops, and livestock. Santa Rosa Junior College's Shone Farm provides an outdoor educational laboratory for students on its 365 acres of diversified agricultural land within the study area. The study area offers outdoor recreational opportunities such as various parks as well as travel via the Charles M. Schulz–Sonoma County Airport.

### 6.1 Topography

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The study area is located in central Sonoma County, approximately six miles northwest of Santa Rosa and sixteen miles inland from the Pacific Ocean. The boundary of our study area is defined by Windsor River Road to the north, River Road to the south, the Russian River to the west and Highway 101 to the east. The study area lies in a broad, flat valley at an elevation of approximately 125 feet above sea level. The study area has two mountain ranges near its borders: the Mayacamas Mountains approximately five miles east of the Airport, and the Sonoma Mountains approximately three miles southeast of the Airport. The slope of the land in our study area does not exceed a 15 percent slope grade. The Charles M. Schulz–Sonoma County Airport has been graded in a manner that has created a flat uniform topography, which is required for airport infrastructure and for safe airport operation.

## 6.2 Geologic Assessment

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The study area lies on top of the Coast Range geologic region of California, which is characterized by valleys, mountain ranges, and ridges that run parallel to the fault lines that cut through the North Bay. The ridges are steep and wooded; the valleys are broad and flat. The study area is situated on top of the Franciscan Complex. The Franciscan Complex is a natural disorganized mix of rocks, deposited in seawater at many depths and in widely separated parts of the ocean, along with generous slices of the basalt ocean floor. The Franciscan Complex is primarily composed of cherts, greywacke sandstones, mafic volcanic rocks, shales, limestones, and high-pressure metamorphic rock. The second major rock group is the sedimentary rocks. These rocks are formed from the products of erosion from older rock materials. As weathering progresses, erosional products wash down slope and become deposited as gravel, sand, and clay in adjacent valleys or on the bottom of the sea. In time, because of burial and compaction, clay turns to shale, sand to sandstone, and gravel to conglomerate.

By knowing what types of soils are within our study area, we can then assess what type of land use would be appropriate. Most of the soils that are found within our study area are perfect soil matches for growing grapes, hops, prunes, or pears. The vineyards that are already in place have adequate soils for healthy grapes (*see Appendix F for the soil profile*).

The Airport lies in a broad flat region of the study area. Most of the immediate surroundings are rural or agricultural with many vineyards and small wineries. Much of the ground near the airport has been graded to help prevent flooding. Since the soils near the Airport are made mostly of clay, the soil does not drain well. Clay soils have a small particle size which tends to compact and does not allow for easy drainage.

## 6.3 Seismic Hazards

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There are two potentially active faults near our study area and the Sonoma County Airport. The Healdsburg-Rodgers Creek Fault is approximately three miles east of the Airport, and

the Mayacamas fault is approximately five miles east of the Airport. The area is subject to possible severe ground shaking if an earthquake was to happen, and this could potentially harm residences and businesses due to infrastructure damage. The possible level of shaking is calculated to be between very strong to very violent. If such an event were to occur, there could be widespread damage including building damage and collapse (see *Appendix C*).

## 6.4 Hydrology

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The study area is in the Santa Rosa Plain groundwater basin and contains approximately six miles of the Russian River Watershed. The entire Russian River Watershed encompasses 1,485 square miles and includes the urban areas of Santa Rosa, Rohnert Park, Cotati, Sebastopol, Windsor, Healdsburg and Cloverdale. The Russian River Watershed is the water supply for the residents in our study area. Water supply in the Santa Rosa Plain is met by a combination of surface water delivery from the Russian River and groundwater from wells and aquifers.

## 6.5 Municipal Water

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The Sonoma County Water Agency has six collector wells along the Russian River. There are three near Wohler Bridge, and three near Mirabel Park. Each of these wells is capable of producing between 15 and 20 million gallons of water per day. The Russian River supplies drinking water for over 600,000 people in the North Bay. Groundwater is extracted by each collector well from the alluvial aquifer adjacent to and beneath the Russian River. The river water is naturally filtered as it moves through the riverbed sediment to the collector wells.

## 6.6 Water Quality

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National Marine Fisheries Services Biological Opinion concluded that current summer minimum instream flows in the upper Russian River and Dry Creek are too high for optimal juvenile steelhead habitat. Without modifications to the instream flow requirements, the current high summertime flows will continue to jeopardize the recovery of Coho Salmon and

Steelhead in the Russian River and its tributaries. National Marine Fisheries Services also determined that the conversion of the tidally influenced Russian River estuary into a closed freshwater lagoon during the summer months would provide improved habitat for rearing juvenile steelhead.

The Sonoma County Water Agency, the North Coast Water Quality Control Board, the USGS, the National Marine Fisheries Services, and the Division of Water Rights have created a Monitoring Plan for the Russian River including a Temporary Urgency Change to reduce summertime flow. This monitoring is to address the federal and state Endangered Species Act for Steelhead, Coho Salmon, and Chinook salmon. The Monitoring Plan will help track the potential effects on federal and state Endangered Species; water quality associated with reduced flows in the mainstem Russian River; and extended closure of the estuary during the dry season to form a summer lagoon at the mouth of the river. Mainstream and estuary monitoring will include continuous hourly monitoring of temperature, dissolved oxygen, and pH, from Ukiah to Jenner. The estuary will be monitored hourly to observe salinity concentration, and up and downstream migration of the salt-water layer associated with tidal exchange, and extended sandbar closures.

The Syar Alexander Valley Instream Mining Project is within our study area. It has the potential for destruction of endangered species habitats, erosion of downstream residences, and decreasing water quality in the Russian River Watershed (see *Appendix C*).

On January 6, 2011 Russian Riverkeeper and the Redwood Empire Chapter of Trout Unlimited filed a Verified Petition for Writ of Mandate and Complaint for Declaratory and Injunctive Relief against the Sonoma County Board of Supervisors and Syar Industries Inc. in Sonoma County Superior Court. The County approved the Syar Project on December 7, 2010 to mine up to 350,000 tons of gravel from a 6.5 mile stretch of the Russian River in the lower Alexander Valley every summer for 15 years. This lawsuit challenges the Syar Project and the Sonoma County Aggregate Resources Management (ARM) Plan amendments made in 2010, to approve the Syar Mining Project. In 1994 in an effort to prevent further erosion and stem the decline of salmon and steelhead in the Russian River the County adopted an ARM Plan that placed restrictions on instream gravel mining. The lawsuit challenges the

County's decision under the California Environmental Quality Act (CEQA), and the Environmental Impact Report (EIR) certified by the County, and claims the EIR fails to analyze adequately the project's significant environmental effects and adequate mitigation measures. This litigation is still pending.

## 6.7 Groundwater

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Much of Sonoma County is made up of bedrock, which does not contain much groundwater. In the Santa Rosa Plain, however, thick sedimentary layers and volcanic rocks overlie this bedrock and are capable of storing and yielding large quantities of groundwater. The Santa Rosa Plain Groundwater Basin provides rural, residential, and local water supplies for agricultural land uses and base flow to streams and surface water bodies. There are over 12,000 permitted water wells in the basin. These wells provide water for a variety of uses, including urban and rural areas, agricultural irrigation, and commercial and industrial uses.

The four main geologic units which form the primary aquifers in the Santa Rosa Plain are sedimentary deposits of the Alluvium and Glen Ellen Formation, the Wilson Grove Formation, the Petaluma Formation, and the Sonoma Volcanics. These geologic units are shown on the map of Sonoma County Water Agency Geologic for the Santa Rosa Plain (see *Appendix C*).

In California, there is no statewide process for regulating or permitting groundwater usage. The water belongs to the state, but property owners have a right to use the water beneath their land with the stipulation that they put the water to reasonable and beneficial uses and do not waste it. According to the General Plan, the Sonoma County Airport area is in a major groundwater recharge basin (see *Appendix C*). The Monitoring Plan for the Russian River will establish a baseline for tracking groundwater movement within the Santa Rosa Plain.

## 6.8 Flood Hazards

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The Airport, Ordinance, Redwood, and Mark West Creeks are the major creeks that surround the Sonoma County Airport. The Airport Vicinity Tributary and Watershed map identifies these creeks. The FEMA Flood Plain map emphasizes these creeks as areas around the airport that are prone to flooding (see *Appendix C*). The Airport Expansion could increase runoff into connecting surface waters because of increased impervious surfaces associated with runway lengthening.

## 6.9 Air Quality

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There are current air quality standards that apply to our study area as set by two regional boards, the Northern Sonoma County Air Pollution Control District (NSCAPCD), and the Bay Area Air Quality Management District (BAAQMD). The Clean Air Act (CAA) and the Environmental Protection Agency (EPA) have set national air quality standards for six air pollutants: ozone, carbon monoxide, nitrogen dioxide, particulate matter, sulfur dioxide, and lead. These six pollutants have been determined to be potentially harmful to human health and welfare.

Our study area does not currently meet the federal or state eight-hour standard for healthy levels of ozone or the 24-hour standard for particulate matter. In 2009, an inventory was taken, and produced results showing that the main polluter in the area was caused by aircraft engines. The BAAQMD also has thresholds of significance with regard to air quality levels, and the study area has not exceeded those standards. There is currently no evidence of short-term increases in pollution.

The Airport Expansion is projected to result in an incremental long-term increase in total greenhouse gas emissions. The increase is due to additional taxi-time and the increase in aircraft operations that would occur as a result of the Airport Project. The BAAQMD threshold for green house gas emission increases (CO<sub>2</sub>) is 1,100 metric tons per year and the

annual net impact of the Airport Project in the year 2030 would be 1,147 metric tons per year.

The County of Sonoma General Services Department developed a Climate Protection Action Plan and made a goal to voluntarily reduce greenhouse gas emissions 25% below 1990 levels by the year 2015. However, the Climate Action Plan does not specifically discuss operations at the airport.

## 6.10 Noise

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The Airport Expansion will result in changes to three types of noise: construction-related noise, aircraft-related noise, and traffic-related noise. The Airport Expansion will create significant, temporary noise impacts to the nearest residents due to haul routes associated with construction. Some of the construction activity will occur at night because the runways must be closed when work is occurring in the runway safety area. The Airport Expansion will also increase traffic due to the increased number of flights.

Sonoma County has adopted land use and noise compatibility policies to address existing and potential noise impacts on noise sensitive uses. These include residences, schools, hospitals, nursing homes, churches, libraries, long-term medical or mental care facilities, office building interiors, and other like uses deemed noise sensitive by the local jurisdiction.

The Noise Element includes a policy that relates to airport and transportation noise on public roadways. It specifies to avoid noise sensitive land use development in noise impacted areas unless effective measures are included to reduce noise levels. Exterior noise levels due to traffic on public roadways, railroads and airports must be between 60 decibels (dB) or a maximum level up to 65 dB. Interior noise levels cannot exceed 45 dB with windows and doors closed. Noise levels of 65 dB are Conditionally Acceptable for most noise sensitive land uses. This means new construction or development should only be undertaken after detailed analysis of the noise reduction requirements are

made, and needed noise insulation features are included in the design. Conventional construction, but with closed systems, or air conditioning, will normally meet the 45 dB interior noise level maximum for a noise-sensitive land use.

The methods used for describing existing noise conditions and forecasting future noise environments rely extensively on computer modeling. The noise environment is commonly depicted in terms of lines of equal noise levels, or noise contours. It is shown for our study area in the Community Noise Equivalency Level (CNEL).

A common noise descriptor used in Integrated Noise Modeling (INM) to establish CNEL Contours is Day-Night Average Sound Level (DNL). DNL represents the accumulated noise level over 24 hours with a penalty of 10 dB given to operations taking place at night between 10pm and 7am. DNL is often displayed in noise contours. Each contour line represents a constant level of DNL, such as 75, 70, 65 dB etc. Airports and the FAA use these DNL contours to determine where there is need for noise mitigation. INM can also help evaluate the noise impact from new flight procedures, new runways, runway extensions, or airport zoning.

The 55, 60, 65, 70, and 75 dB CNEL noise contours for 2009, 2015, and 2030 were produced to address the Sonoma County General Plan and Comprehensive Airport Land Use Plan which identifies the size of the respective CNEL contours in 5 dB increments. CNEL Contour comparisons for 2009, 2015, and 2030 are depicted on maps found in Appendix C.

The noise levels along public roads in the vicinity of the Airport were computed using the Highway Noise Model published by the Federal Highway Administration. The FHWA Model uses traffic volume, vehicle mix, vehicle speed, and roadway geometry to compute the equivalent noise level.

Figure 6.10.1 shows traffic noise levels 100 feet from the roadway centerline that are present for existing (2009) conditions. Figure 6.10.2 represents the traffic noise levels in 2030 without the Airport Expansion, and Figure 6.10.3 presents the traffic noise levels in 2030 with the Airport Expansion.

Figure 6.10.1 2009 Traffic Noise Level

| Roadway Segments           | L <sub>dn</sub><br>at 100 Feet /a/ | Distance To L <sub>dn</sub> Contour (feet) /a/ |                    |                    |
|----------------------------|------------------------------------|--|--------------------|--------------------|
|                            |                                    | 70 L <sub>dn</sub>                             | 65 L <sub>dn</sub> | 60 L <sub>dn</sub> |
| <b>Shiloh Road</b>         |                                    |  |                    |                    |
| West of Skylane Boulevard  | 60.5                               | RW   | 50                 | 108                |
| East of Skylane Boulevard  | 63.3                               | 36   | 77                 | 166                |
| West of Conde Lane         | 63.4                               | 36   | 78                 | 168                |
| East of Conde Lane         | 64.0                               | 40   | 85                 | 184                |
| West of U.S. 101           | 64.4                               | 43   | 92                 | 198                |
| East of U.S. 101           | 63.7                               | 38   | 82                 | 176                |
| <b>Airport Boulevard</b>   |                                    |  |                    |                    |
| West of Skylane Boulevard  | 55.5                               | RW   | RW                 | 51                 |
| East of Skylane Boulevard  | 60.8                               | RW   | 52                 | 113                |
| West of Brickway Boulevard | 61.7                               | 28   | 60                 | 129                |
| East of Brickway Boulevard | 62.3                               | 31   | 66                 | 142                |
| West of Aviation Boulevard | 63.1                               | 35   | 75                 | 161                |
| East of Aviation Boulevard | 65.4                               | 49   | 107                | 229                |
| West of U.S. 101           | 65.4                               | 49   | 107                | 229                |
| East of U.S. 101           | 61.8                               | 28   | 61                 | 131                |
| <b>Golf Course</b>         |                                    |  |                    |                    |
| North of Shiloh Road       | 56.9                               | RW   | 29                 | 63                 |
| <b>Skylane Boulevard</b>   |                                    |  |                    |                    |
| South of Shiloh Road       | 60.7                               | RW   | 52                 | 111                |
| North of Airport Boulevard | 60.5                               | RW   | 50                 | 108                |
| <b>North Laughlin Road</b> |                                    |  |                    |                    |
| South of Airport Boulevard | 58.6                               | RW   | 37                 | 81                 |
| <b>Laughlin Road</b>       |                                    |  |                    |                    |
| North of River Road        | 58.0                               | RW   | 34                 | 74                 |
| <b>Woolsey Road</b>        |                                    |  |                    |                    |
| South of River Road        | 49.8                               | RW   | RW                 | RW                 |
| <b>Slusser Road</b>        |                                    |  |                    |                    |
| North of River Road        | 57.2                               | RW   | 30                 | 65                 |
| <b>Aviation Boulevard</b>  |                                    |  |                    |                    |
| North of Airport Boulevard | 61.4                               | 27   | 58                 | 125                |
| South of Airport Boulevard | 58.9                               | RW   | 39                 | 84                 |
| <b>Brickway Boulevard</b>  |                                    |  |                    |                    |
| North of Airport Boulevard | 56.4                               | RW   | 27                 | 58                 |
| South of Airport Boulevard | 54.7                               | RW   | RW                 | 44                 |
| <b>Conde Lane</b>          |                                    |  |                    |                    |
| North of Shiloh Road       | 56.5                               | RW   | 27                 | 59                 |
| <b>River Road</b>          |                                    |  |                    |                    |
| West of Slusser Road       | 60.9                               | RW   | 53                 | 115                |
| East of Slusser Road       | 61.0                               | RW   | 54                 | 116                |
| West of Laughlin Road      | 61.6                               | 28   | 60                 | 128                |
| East of Laughlin Road      | 62.4                               | 31   | 67                 | 144                |

RW = Within the roadway right of way /a/ From roadway centerline.

SOURCE: MGA/L&B, 2011  
 PREPARED BY: MGA/L&B, 2011

Figure 6.10.2 Traffic Noise Levels in 2030 Without Project

| Roadway Segments           | L <sub>dn</sub><br>at 100 Feet /a/ | Distance To L <sub>dn</sub> Contour (feet) /a/ |                    |                    |
|----------------------------|------------------------------------|--|--------------------|--------------------|
|                            |                                    | 70 L <sub>dn</sub>                             | 65 L <sub>dn</sub> | 60 L <sub>dn</sub> |
| <b>Shiloh Road</b>         |                                    |  |                    |                    |
| West of Skylane Boulevard  | 61.2                               | 26   | 56                 | 120                |
| East of Skylane Boulevard  | 64.2                               | 41   | 89                 | 192                |
| West of Conde Lane         | 64.2                               | 41   | 89                 | 192                |
| East of Conde Lane         | 65.1                               | 47   | 101                | 219                |
| West of U.S. 101           | 65.4                               | 50   | 107                | 230                |
| East of U.S. 101           | 64.8                               | 45   | 97                 | 209                |
| <b>Airport Boulevard</b>   |                                    |  |                    |                    |
| West of Skylane Boulevard  | 60.1                               | RW   | 47                 | 101                |
| East of Skylane Boulevard  | 62.6                               | 32   | 69                 | 149                |
| West of Brickway Boulevard | 63.2                               | 35   | 76                 | 163                |
| East of Brickway Boulevard | 63.6                               | 38   | 81                 | 174                |
| West of Aviation Boulevard | 64.0                               | 40   | 85                 | 183                |
| East of Aviation Boulevard | 66.1                               | 55   | 118                | 254                |
| West of U.S. 101           | 66.1                               | 55   | 118                | 254                |
| East of U.S. 101           | 64.8                               | 45   | 97                 | 210                |
| <b>Golf Course</b>         |                                    |  |                    |                    |
| North of Shiloh Road       | 59.3                               | RW   | 42                 | 90                 |
| <b>Skylane Boulevard</b>   |                                    |  |                    |                    |
| South of Shiloh Road       | 62.2                               | 30   | 65                 | 140                |
| North of Airport Boulevard | 62.0                               | 29   | 63                 | 136                |
| <b>North Laughlin Road</b> |                                    |  |                    |                    |
| South of Airport Boulevard | 57.9                               | RW   | 34                 | 72                 |
| <b>Laughlin Road</b>       |                                    |  |                    |                    |
| North of River Road        | 59.7                               | RW   | 44                 | 95                 |
| <b>Woolsey Road</b>        |                                    |  |                    |                    |
| South of River Road        | 50.4                               | RW   | RW                 | RW                 |
| <b>Slusser Road</b>        |                                    |  |                    |                    |
| North of River Road        | 57.5                               | RW   | 32                 | 68                 |
| <b>Aviation Boulevard</b>  |                                    |  |                    |                    |
| North of Airport Boulevard | 61.9                               | 29   | 62                 | 134                |
| South of Airport Boulevard | 59.2                               | RW   | 41                 | 88                 |
| <b>Brickway Boulevard</b>  |                                    |  |                    |                    |
| North of Airport Boulevard | 57.1                               | RW   | 30                 | 64                 |
| South of Airport Boulevard | 58.5                               | RW   | 37                 | 79                 |
| <b>Conde Lane</b>          |                                    |  |                    |                    |
| North of Shiloh Road       | 58.9                               | RW   | 39                 | 85                 |
| <b>River Road</b>          |                                    |  |                    |                    |
| West of Slusser Road       | 61.2                               | 26   | 56                 | 121                |
| East of Slusser Road       | 61.4                               | 27   | 57                 | 124                |
| West of Laughlin Road      | 62.1                               | 30   | 64                 | 138                |
| East of Laughlin Road      | 62.9                               | 34   | 72                 | 156                |

RW = Within the roadway right of way      /a/      From roadway centerline.

SOURCE: MGA/L&B, 2011

Figure 6.10.3 Traffic Noise Levels in 2030 with Project

| Roadway Segments           | L <sub>dn</sub><br>at 100 Feet /a/ | Distance To L <sub>dn</sub> Contour (feet) /a/ |                    |                    |
|----------------------------|------------------------------------|--|--------------------|--------------------|
|                            |                                    | 70 L <sub>dn</sub>                             | 65 L <sub>dn</sub> | 60 L <sub>dn</sub> |
| <b>Shiloh Road</b>         |                                    |  |                    |                    |
| West of Skylane Boulevard  | 61.2                               | 26   | 56                 | 121                |
| East of Skylane Boulevard  | 64.3                               | 42   | 90                 | 194                |
| West of Conde Lane         | 64.3                               | 42   | 90                 | 194                |
| East of Conde Lane         | 65.1                               | 47   | 102                | 220                |
| West of U.S. 101           | 65.5                               | 50   | 108                | 232                |
| East of U.S. 101           | 64.8                               | 45   | 97                 | 210                |
| <b>Airport Boulevard</b>   |                                    |  |                    |                    |
| West of Skylane Boulevard  | 61.5                               | 27   | 59                 | 126                |
| East of Skylane Boulevard  | 63.3                               | 36   | 77                 | 166                |
| West of Brickway Boulevard | 63.8                               | 39   | 83                 | 180                |
| East of Brickway Boulevard | 64.1                               | 41   | 88                 | 189                |
| West of Aviation Boulevard | 64.4                               | 43   | 92                 | 197                |
| East of Aviation Boulevard | 66.4                               | 57   | 123                | 266                |
| West of U.S. 101           | 66.4                               | 57   | 123                | 266                |
| East of U.S. 101           | 64.9                               | 46   | 98                 | 211                |
| <b>Golf Course</b>         |                                    |  |                    |                    |
| North of Shiloh Road       | 59.4                               | RW   | 42                 | 91                 |
| <b>Skylane Boulevard</b>   |                                    |  |                    |                    |
| South of Shiloh Road       | 62.4                               | 31   | 67                 | 144                |
| North of Airport Boulevard | 62.2                               | 30   | 65                 | 141                |
| <b>North Laughlin Road</b> |                                    |  |                    |                    |
| South of Airport Boulevard | 58.3                               | RW   | 36                 | 77                 |
| <b>Laughlin Road</b>       |                                    |  |                    |                    |
| North of River Road        | 60.0                               | RW   | 46                 | 100                |
| <b>Woolsey Road</b>        |                                    |  |                    |                    |
| South of River Road        | 50.4                               | RW   | RW                 | RW                 |
| <b>Slusser Road</b>        |                                    |  |                    |                    |
| North of River Road        | 57.5                               | RW   | 32                 | 68                 |
| <b>Aviation Boulevard</b>  |                                    |  |                    |                    |
| North of Airport Boulevard | 61.9                               | 29   | 62                 | 134                |
| South of Airport Boulevard | 59.2                               | RW   | 41                 | 88                 |
| <b>Brickway Boulevard</b>  |                                    |  |                    |                    |
| North of Airport Boulevard | 57.1                               | RW   | 30                 | 64                 |
| South of Airport Boulevard | 58.7                               | RW   | 38                 | 82                 |
| <b>Conde Lane</b>          |                                    |  |                    |                    |
| North of Shiloh Road       | 59.0                               | RW   | 40                 | 85                 |
| <b>River Road</b>          |                                    |  |                    |                    |
| West of Slusser Road       | 61.3                               | 26   | 57                 | 122                |
| East of Slusser Road       | 61.4                               | 27   | 58                 | 124                |
| West of Laughlin Road      | 62.1                               | 30   | 64                 | 139                |
| East of Laughlin Road      | 62.9                               | 34   | 73                 | 157                |

RW = Within the roadway right of way /a/ From roadway centerline.

SOURCE: MGA/L&B, 2011

## 6.11 Biological Resources

The existing biological resources found within the study area include vegetation types and associated habitats such as: non-native grassland, open pastures, seasonal wetlands, the Russian River Watershed, streams, ponds, freshwater marshes, willow scrubs and

woodlands, riparian woodlands, and oak woodlands. Most of the rural residential parcels contain ornamental landscaping, such as pines and apple trees, as well as cultivated lands such as vineyards.

The Santa Rosa Plain is home to vernal pools, seasonal wetlands, and associated grassland habitat. The area supports several federally protected species, including a unique genetic variation of the California Tiger Salamander (CTS), Burke's Goldfields, Sonoma sunshine, Sebastopol meadowfoam, and many-flowered navarretia which are federal and state-listed Endangered Species. The Sonoma County Airport site contains two populations of papoose tarplant, a California Rare Plant. The Russian River Watershed contains federal and state Endangered Species of steelhead trout, Coho salmon, and Chinook salmon.

The Airport Expansion will result in the loss of 4.4 acres of vernal pools and other seasonal wetlands that are suitable habitat for Burke's Goldfields, Sebastopol meadowfoam, and Sonoma sunshine. Seasonal wetlands found within our study area are described as vernal pools, ditches, drainages and depressions with wetland vegetation. There are seven ponds in the area that cover about 10.3 acres. There are also several freshwater marshes providing habitat to numerous wildlife species such as the Pacific Tree Frog, western pond turtle, and others.

In 2005, the Santa Rosa Plain Conservation Strategy Team, made up of representatives of state and federal agencies which included the U.S. Fish & Wildlife Service (USFWS), California Department of Fish & Game (CDFG), U.S. Environmental Protection Agency, and U.S. Army Corps of Engineers (Corps), and other interested agricultural, environmental, and private landowner stakeholders developed a Conservation Strategy. The Conservation Strategy sets forth a long-term program to offset adverse environmental effects of future development on the Santa Rosa Plain, with the objective of conserving protected species and contributing to their recovery. In doing so, the Conservation Strategy seeks to mitigate harm to protected species in a manner that minimizes interference with the rights of public and private property owners.

The biological resources in the area include common plant and animal species, federal and state-listed endangered species, and special-status plant and animal species as designated by the U.S Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG), as well as water as designated by the U.S Army Corps of Engineers and the Regional Water Quality Control Board (RWQCB).

## 6.12 Agriculture

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There are currently vineyards, irrigated vegetable crops, and livestock grazing land within the study area. Most of the undeveloped land is vegetated by non-native grasses. There are binding contracts to protect both open space and farmland within Sonoma County under the Williamson Act, the Sonoma County Right-to-Farm Ordinance, and the Sonoma County Agricultural Preserve and Open Space District (see *Appendix C*).

The Sonoma County Uniform Rules for Agriculture Preserves and Farmland Security Zones Draft, as of December 10, 2011, establishes 3 types of Williamson Act contracts for land to be preserved under the Agricultural Preserve Program. Contracts are a minimum of ten years. There is an automatic renewal at the end of every year, but a notice of non-renewal can be filed which will terminate the contract at the end of the ten years.

There are both Type I and II contracts in the study area. Type I contracts are for Qualified Prime Agricultural Land located within an established agricultural preserve. Prime Agricultural Land is land devoted to agricultural use where a minimum of 50% is maintained for commercial production of an agricultural commodity. On parcels less than 40 acres, a minimum of 50% of land use must be devoted to a combination of qualifying open space and agricultural use with ten acres of agriculture. Type II contracts are for qualified non-prime agricultural land located within an established agricultural preserve. Non-Prime Agricultural Land is land that is agricultural land that is not prime agricultural land. It is usually land used for grazing, hay production, rotation crops or dry farming and it must be at least 40 acres in size, contiguous with each other, and be under common ownership.

The Sonoma County right-to-farm ordinance, which requires a record of a declaration acknowledging the right to farm in zoned areas that are within 300 feet of certain development areas helps to ensure that development approval of neighboring property located on or adjacent to agricultural land does not cause inconsistencies or nuisance. This can include discomfort that can arise from noise, odors, fumes, dust, smoke, insects, or operation of machinery during any time of the day.

## 6.13 Conclusion

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This chapter has described the existing environmental conditions within the study area. The unique features of the study area are all associated with the Russian River Watershed. These geologic and hydraulic features provide the diverse agricultural land that supports vineyards, vegetable crops, and livestock. The study area also includes endangered animal and plant species. All of these environmental features influence, depend on, and impact each other, and will provide the possibilities and constraints that will guide development of a plan for the Sonoma County Airport and Environs study area.

## Conclusion

This Existing Conditions Report covers a wide array of topics, with facts and analysis coming from many different sources. We trust it will be useful to elected officials, residents, business owners, and anyone else who wants to better understand the area they live, work, and play in. We have learned a great deal about both the study area, and the methods used to gather information for planning.

The dominant theme over the last few years has been the struggling economy. We found the study area surrounding the Sonoma County Airport is not immune to this.

Unemployment and high commercial vacancy rates continue to be worrisome. There is little continuity in building design along Airport Blvd., and the region relies heavily on personal cars for transportation. However, the study area also has valuable and unique assets: a strong diversity of businesses, solid infrastructure, fertile agricultural land, and an educated labor pool. Businesses are eagerly anticipating the additional commercial flights at the airport, as well as eventual SMART train service. Finally, the area's best feature may be its best-kept secret: the Russian River. It is a vital source of water, industry, and recreation.

We look forward to drawing from this document as we begin the preparation of the Sonoma County Airport and Environs Area Plan in the Spring of 2012.

— The SSU Planning Workshop Senior Class

# Appendix A: Section References

## Chapter 1: Community Character

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## Appendix B: Glossary

Affordable Housing – Housing which costs no more than 30 percent of a low or very low income household's gross monthly income.

Aquifer – An aquifer is a saturated zone of sediment or rock with high enough permeability to transmit groundwater, and yielding economically significant quantities of water to wells and springs.

Arterial – A class of street serving major traffic movement which is not designated as a highway.

Bedroom Community – Primarily residential urban communities, from which most residents commute to work.

California State Endangered – Animal or plant is in serious danger of becoming extinct throughout all, or a significant portion, of their range due to one or more causes, including loss of habitat, over-exploitation, competition or disease.

California State Rare – Animal or plant, although not presently threatened with extinction, is in such small numbers throughout their range that they may become endangered if their present environment worsens.

California State Threatened – Animal or plant, although not presently threatened with extinction, is likely to become endangered in the foreseeable future without special protection and management efforts.

CEQA – The California Environmental Quality Act. Legislation signed by then California governor Ronald Reagan in 1970 requiring that certain projects be subject to an environmental review process. Stereotypically viewed as too-often pitting developers against environmentalists.

Clean Air Act – The law that defines Environmental Protection Agency's responsibilities for protecting and improving the nation's air quality and the stratospheric ozone layer.

Coastal Range – A geological region of California, which is characterized by valleys and various mountain ranges that are parallel to fault lines.

Confidence Level – A term that specifies how confident you can be that a given sample size is adequate. Normally, a 95% confidence level is appropriate. It means that 95 times out of a hundred, your sample size will produce results within a limited range.

Conservation – The management of natural resources to prevent waste, depletion, destruction, or neglect.

Community Character – The feeling that a community portrays to those who visit it. Can range from the cultural aspects of a community to the architecture that is chosen.

Community Noise Equivalent Level (CNEL) – A noise measurement system introduced by the state of California in the early 1970s. CNEL is a single number that is calculated from a weighted average of sound levels gathered throughout a 24-hour period. Penalties are added for noise, which occurs during the evening and late at night.

Community Plan – A guiding vision adopted by elected officials outlining long-term land use policies and goals for specific geographic areas.

Declaratory Relief – Asks the court to define the legal relationship between the parties and their rights with respect to the matter before the court.

Density – As generally used in the land use element, the term refers to the number of dwelling units per acre or the number of acres per residential dwelling unit.

Destination Spending – The total amount spent by visitors in Sonoma County, including all spending for accommodations, wine activities, retail, and other tourism related purchases.

Employment Profile – The overall makeup of employment for a given area.

Endemic – The ecological state of being unique to a defined geographic location.

Federal Emergency Management Agency – FEMA coordinates the response to disasters that occur in the United States that overwhelm the resources of local and state authorities. The governor of the state in which the disaster occurs must declare a state of emergency and formally request assistance from the president.

Federal Endangered Species – The US Endangered Species Act (ESA) is Federal legislation that conserves the ecosystems upon which endangered and threatened species depend. The ESA protects plant and animal species, and is jointly administered by the US Fish & Wildlife Service and NOAA Fisheries. Its aim is twofold: to provide protection for species that are in danger of extinction, and to conserve the habitats on which those species depend.

Firm – The members of a business organization who own or operate one or more business establishments.

Fiscal year – Any yearly period without regard to the calendar year at the end of which a firm, government, etc. determines its financial condition.

Household – A housing unit occupied by all people residing there who collectively stay in the same living quarters. Separate living quarters are those in which the occupants live and eat separately from any other persons in the building.

Inferior Good – Any product that decreases in demand when consumer income rises and whose demand increases when consumer income decreases.

Infrastructure – Public roadways, utilities, and other improvements that facilitate society. Generally refers to physical improvements as opposed to social services.

Injunctive Relief – A form of request made to the court to cause a certain activity to cease.

Land Use – The human use of land involving the management and modification of natural environment or wilderness into built environment. Sometimes the subject of heated debates.

Level Of Service (LOS) – This is a term that rates the levels of traffic in a given roadway or intersection during a given time period. The levels range from LOS A (good) to LOS F (bad).

Long Range – Planning with a time span or horizon of more than five years.

Master Plan – A general plan or program for achieving an objective. The Sonoma County Airport Master Plan was approved by the Board of Supervisors in January 2012.

Median Household Income – This is the value lying at the midpoint of all household incomes in sequential order in a given jurisdiction.

Mobility – The ease with which desired destinations can be reached.

Open Space District – Is a Special District formed by a vote of the citizens of Sonoma County in 1990. The voters chose to form the District to acquire and preserve agricultural and open space lands as a legacy for future generations.

Para Transit – Transportation specifically for those who are handicapped or disabled in any way. Referring to public transportation and bus systems in general.

Parcel – A defined piece of real estate, usually resulting from the division of a large area of land.

Project – A plan or proposal for a large construction project or any undertaking involving alteration to the environment. Projects may be subject to CEQA requirements.

Recession – A period of temporary economic decline during which trade and industrial activity are reduced, generally identified by a fall in GDP for consecutive fiscal quarters.

Riparian – Relating to or located on the bank of a natural watercourse (such as a river), or of a lake or tidewater.

Santa Rosa Plain – The Santa Rosa Plain extends west of Santa Rosa, north of Cotati, south of Windsor and is bordered by the Laguna de Santa Rosa and Sebastopol on the west side.

Seasonally Unadjusted Unemployment Rate – Unemployment statistic that doesn't account for seasonal cyclical changes in unemployment rate.

Sense of Place – Characteristic feeling that is held within a given area, it is often related to the sense of character that comes with a community.

Standard Industrial Classification Code (SIC Code) – Standardized method of classifying business & industrial activity. It represents principle segments of an economy with a numerical code.

Sonoma County Airport EIR – An extensive report that details the potential environmental damages and/or issues that could result from the expansion of the Sonoma County Airport. Draft and Final versions.

Sonoma County Transit – Publically run system of bus networks that spans Sonoma County.

Sustainability – That which meets our current needs without compromising the ability of future generations to meet their needs.

Vernal Pool – Also called vernal ponds or ephemeral pools, are seasonal pools of water. They are usually devoid of fish, and thus allow the safe development of natal amphibian and insect species, which are sometimes endangered.

Visual Appearance – The visual aspect of an area, a building's aesthetic value.

Williamson Act – A California law that provides property tax relief to owners of farmland in exchange for a ten-year agreement that the land will not be developed.

Writ of Mandate – A court order to a government agency, including another court, to follow the law by correcting its prior actions or ceasing illegal acts.

# Appendix C: Featured Maps

# Regional Map



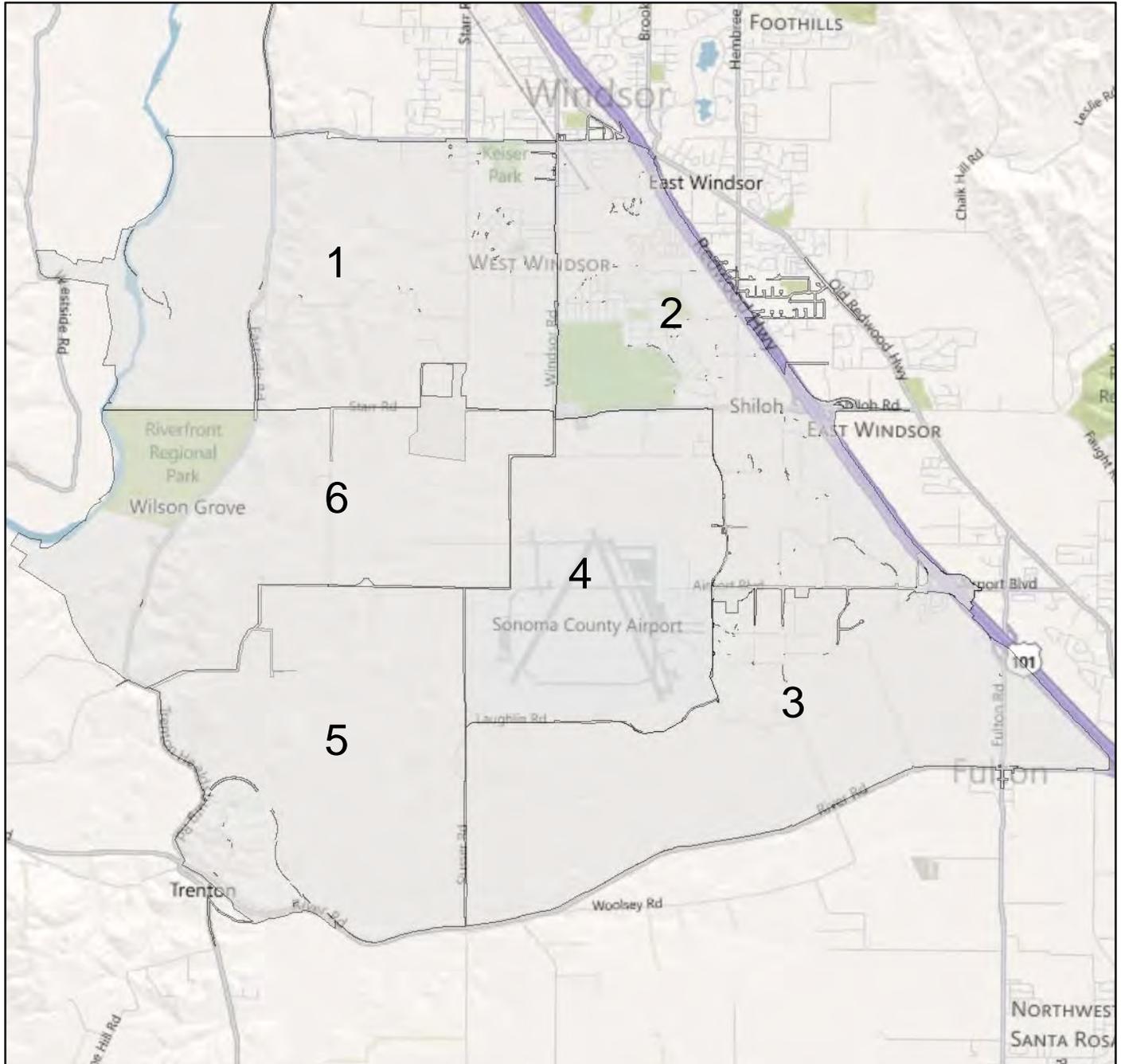
## Existing Conditions Report 2011-2012

### Legend

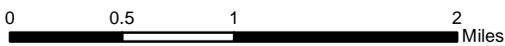
-  Study Area Boundary
-  City Limits



# Study Area With Study Zones



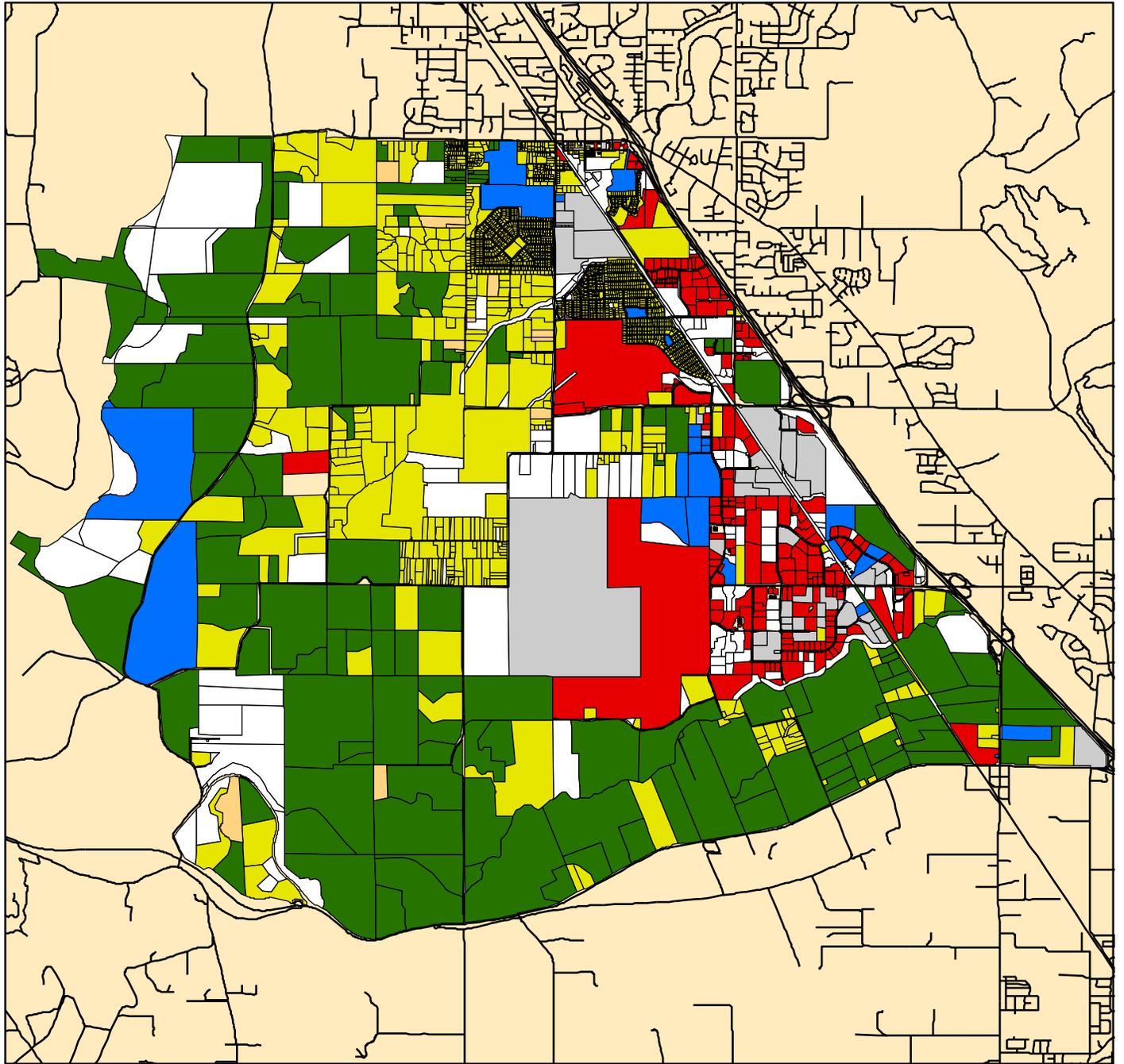
-  Zone 1
-  Zone 2
-  Zone 3
-  Zone 4
-  Zone 5
-  Zone 6



## Existing Conditions Report 2011-2012

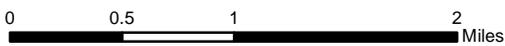


# Existing Land Use

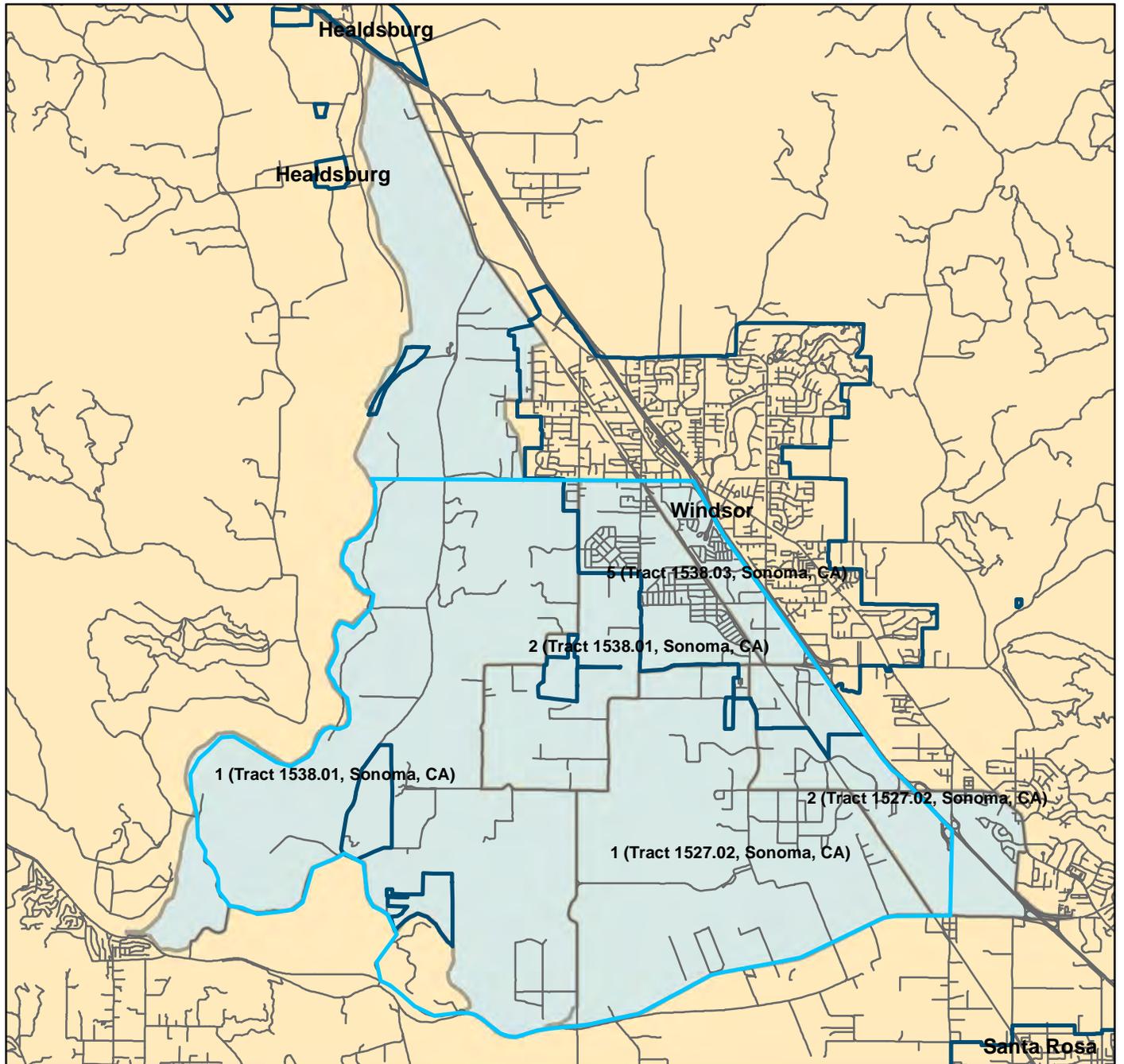


- |   |  |
|---|--|
|  Vacant (No Structure)   |  Industrial           |
|  Vacant (With Structure) |  Agricultural         |
|  Residential             |  Community facilities |
|  Commercial              |  Roads                |

## Existing Conditions Report 2011-2012



# Census Block Groups



## Legend

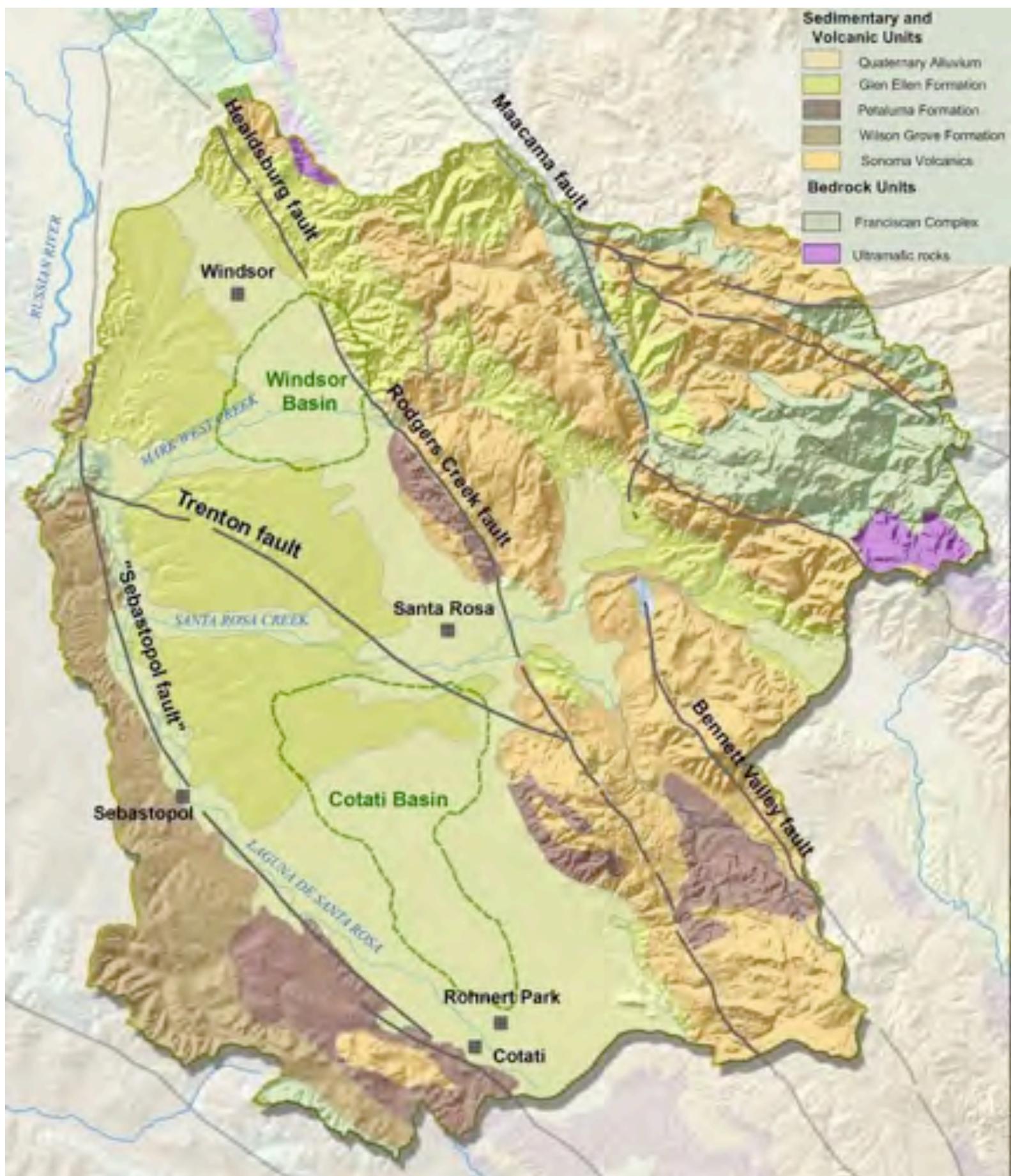
-  Study Area Boundaries
-  City Limits
-  Streets
-  Block Groups



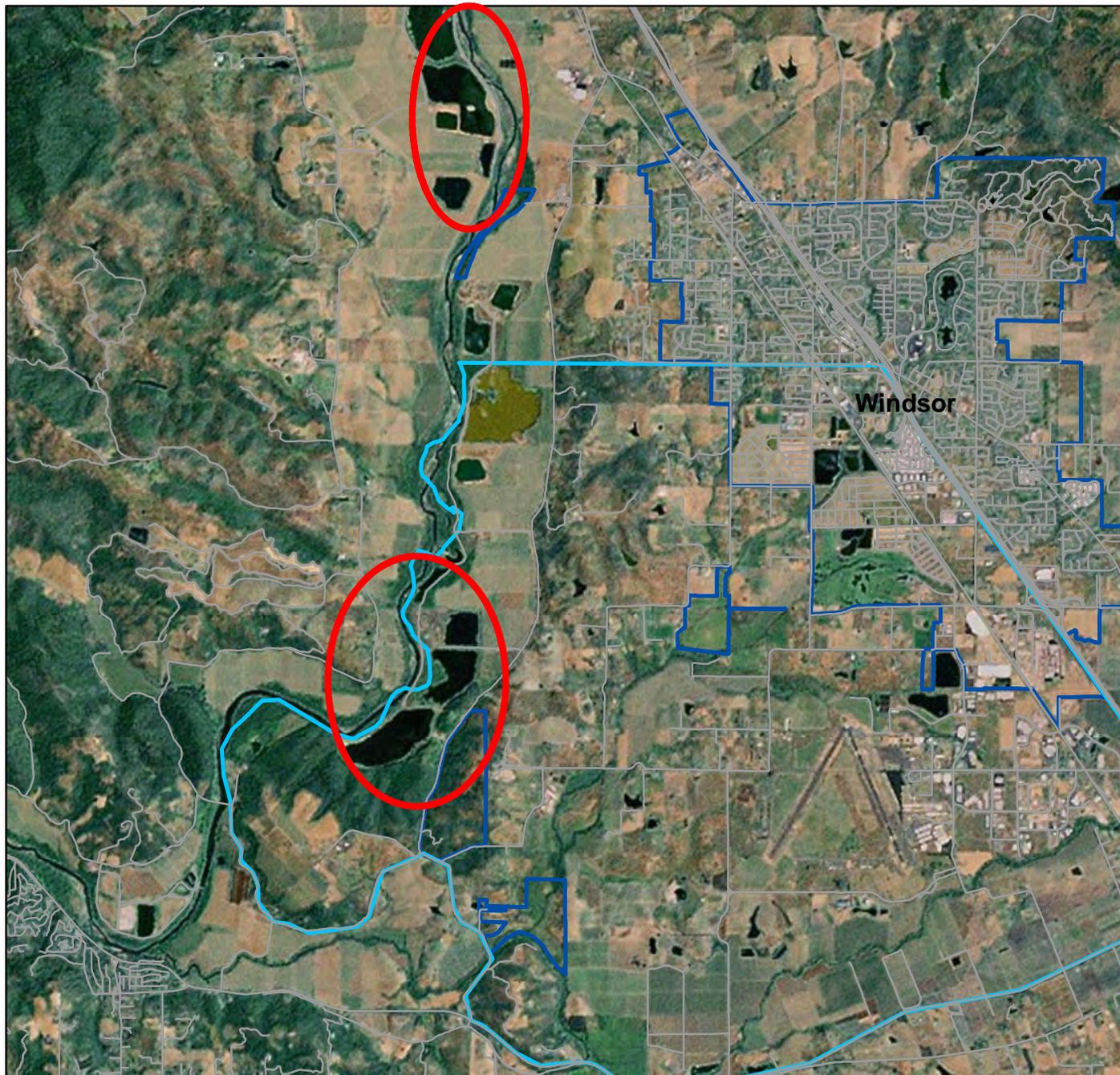
## Existing Conditions Report 2011-2012





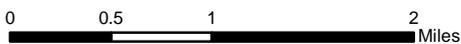


# Russian River Pitmines



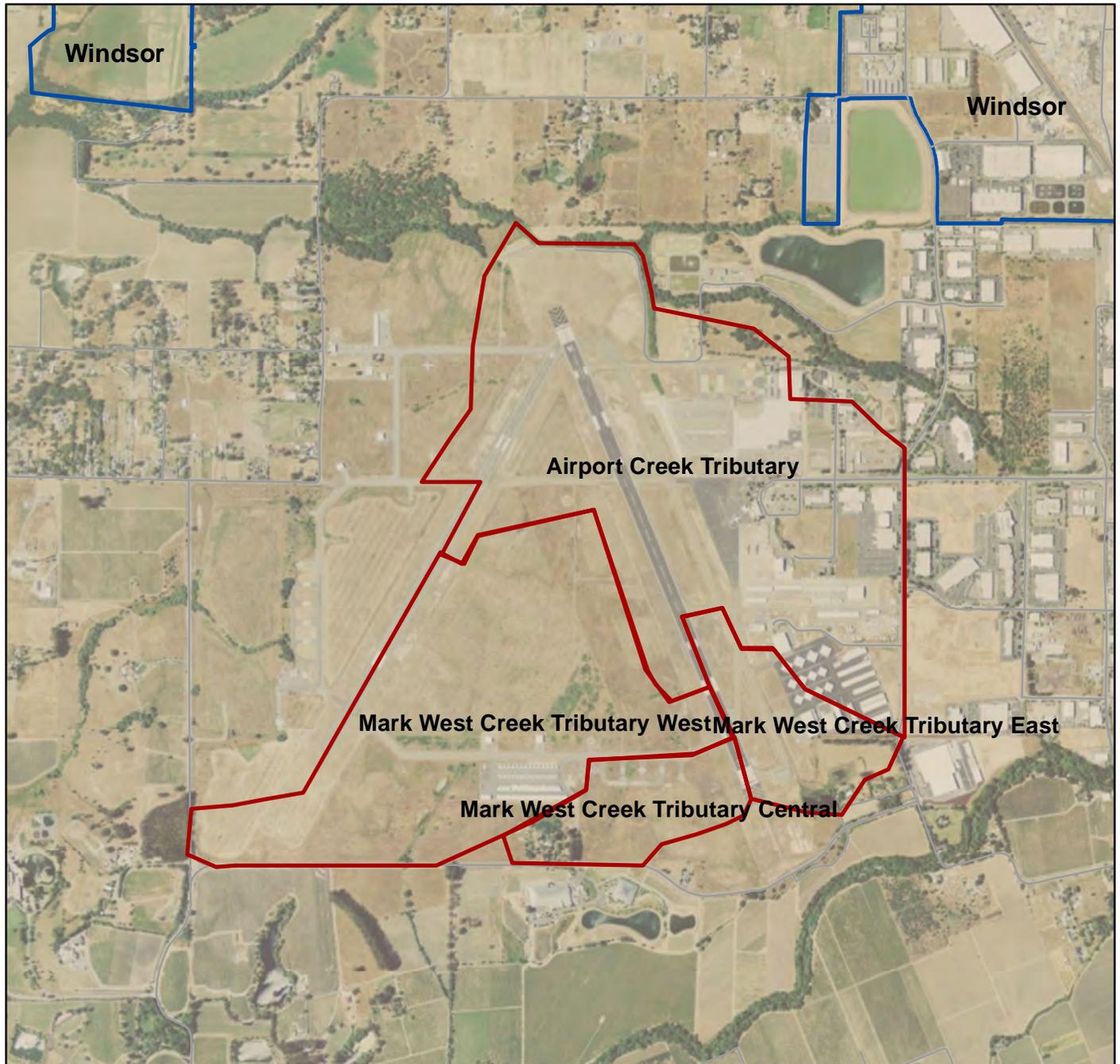
-  Study Area
-  City Limits

Aerial shows the Middle Reach of the Russian River below Healdsburg and the extent of Open Pitmines. The three southern pits are in the study area, and include Riverfront Regional park which contain two former gravel



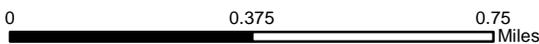
Existing Conditions  
Report 2011-2012

# Airport Vicinity Tributary and Watershed Map



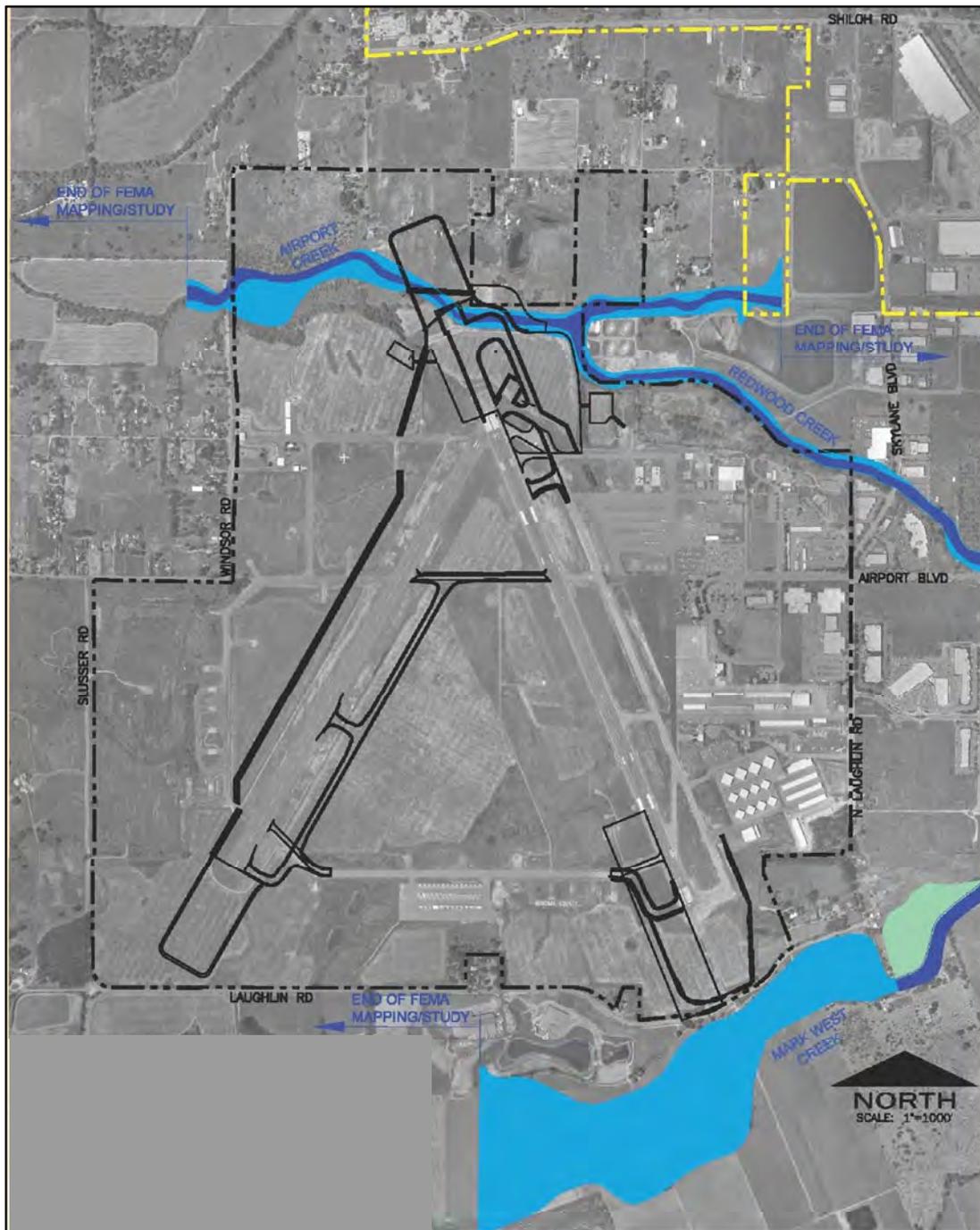
-  Watersheds
-  Study Area
-  City Limits

Existing Conditions  
Report 2011-2012





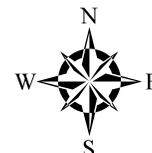
# FEMA Floodplain of Sonoma County Airport



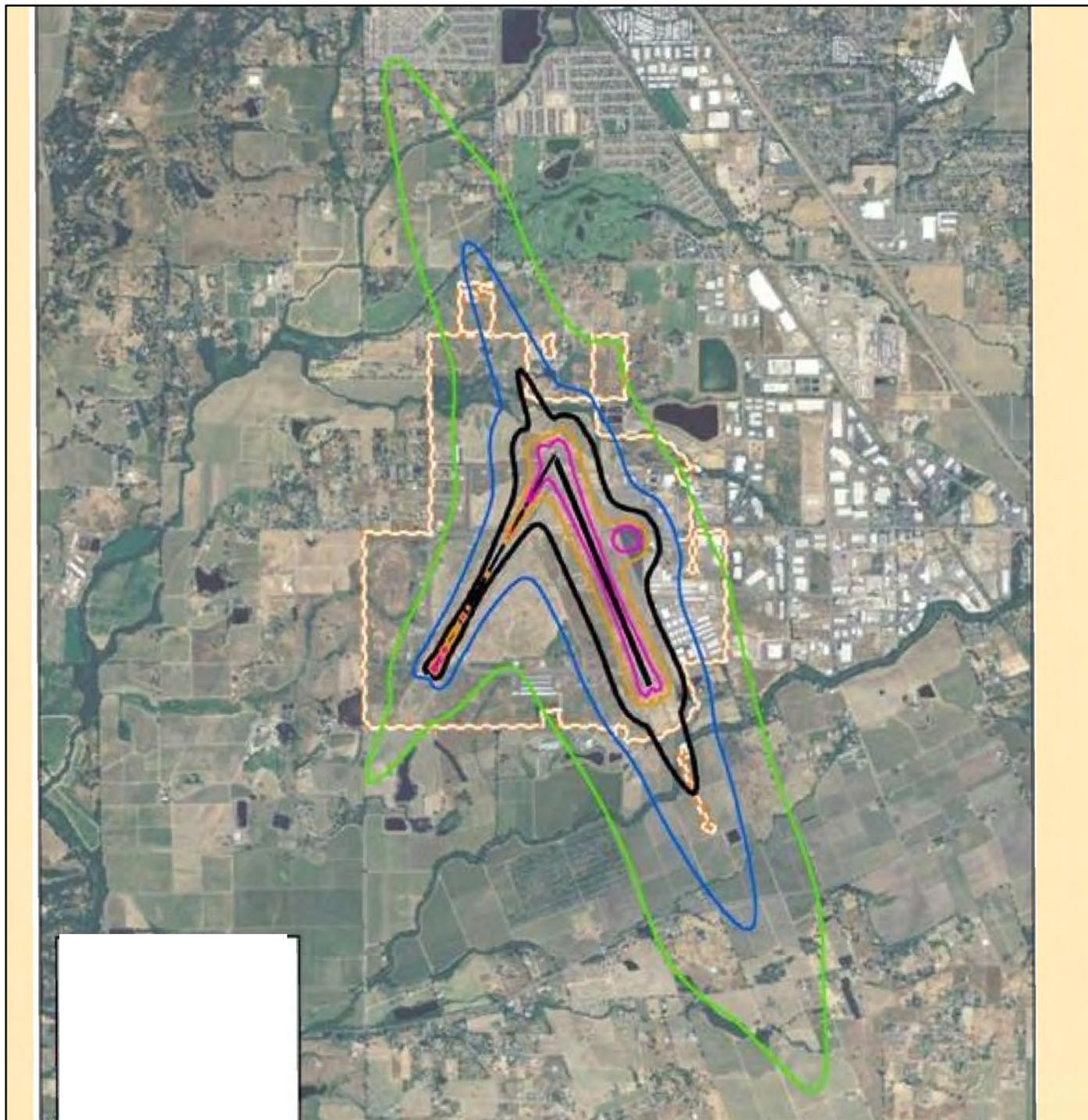
-  - Areas subject to inundation by 1-percent annual chance Shallow Flooding
-  - Floodway
-  - Areas subject to inundation by the 1-percent annual chance flood event determined by detailed methods

0 0.3 0.6 Miles

## Existing Conditions Report 2011-2012



# 2009 CNEL Contours



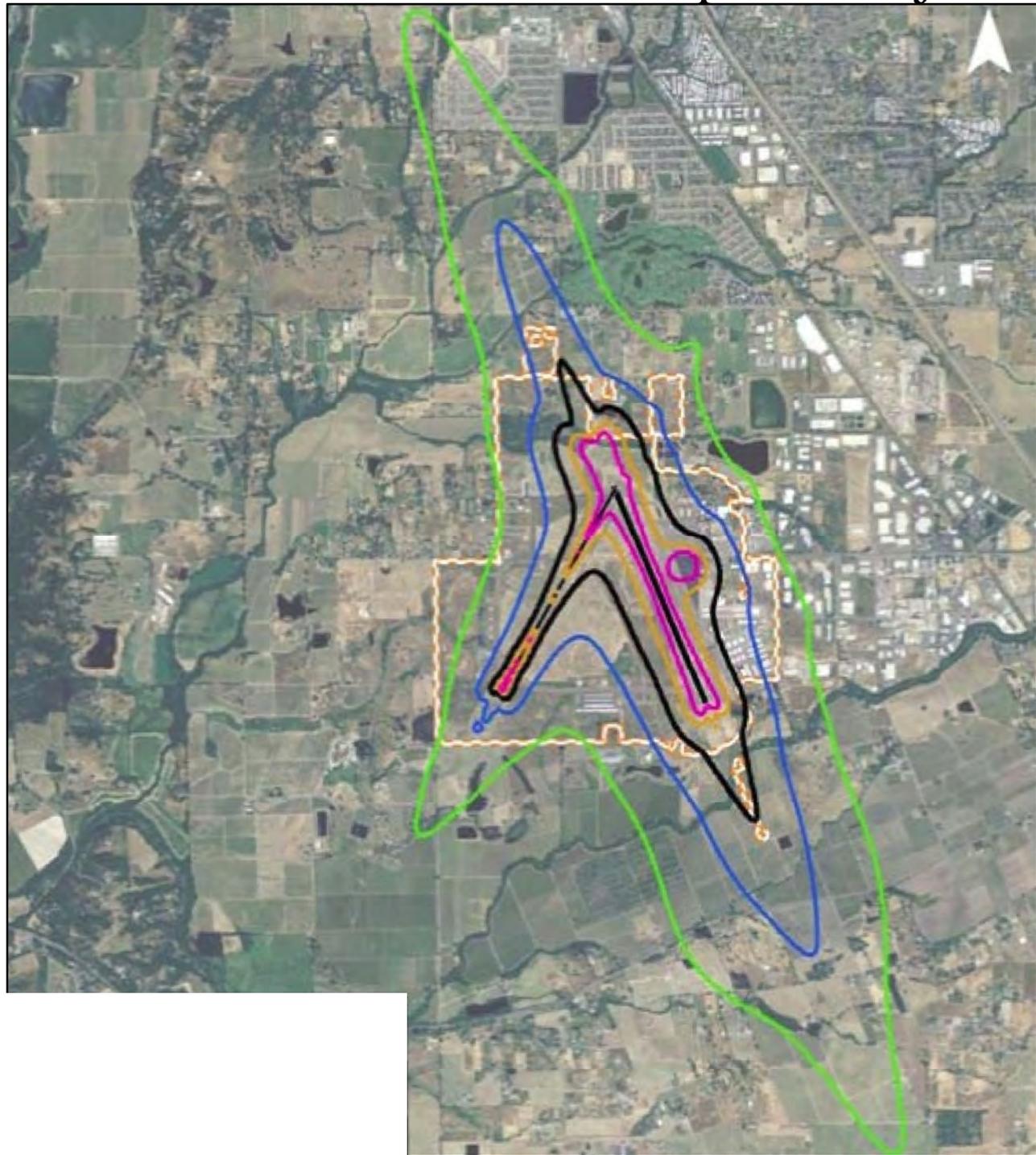
-  CNEL 55
-  CNEL 60
-  CNEL 65
-  CNEL 70
-  CNEL 74

0 0.45 0.9 Miles

Existing Conditions  
Report 2011-2012



# 2015 CNEL Contours with Proposed Project



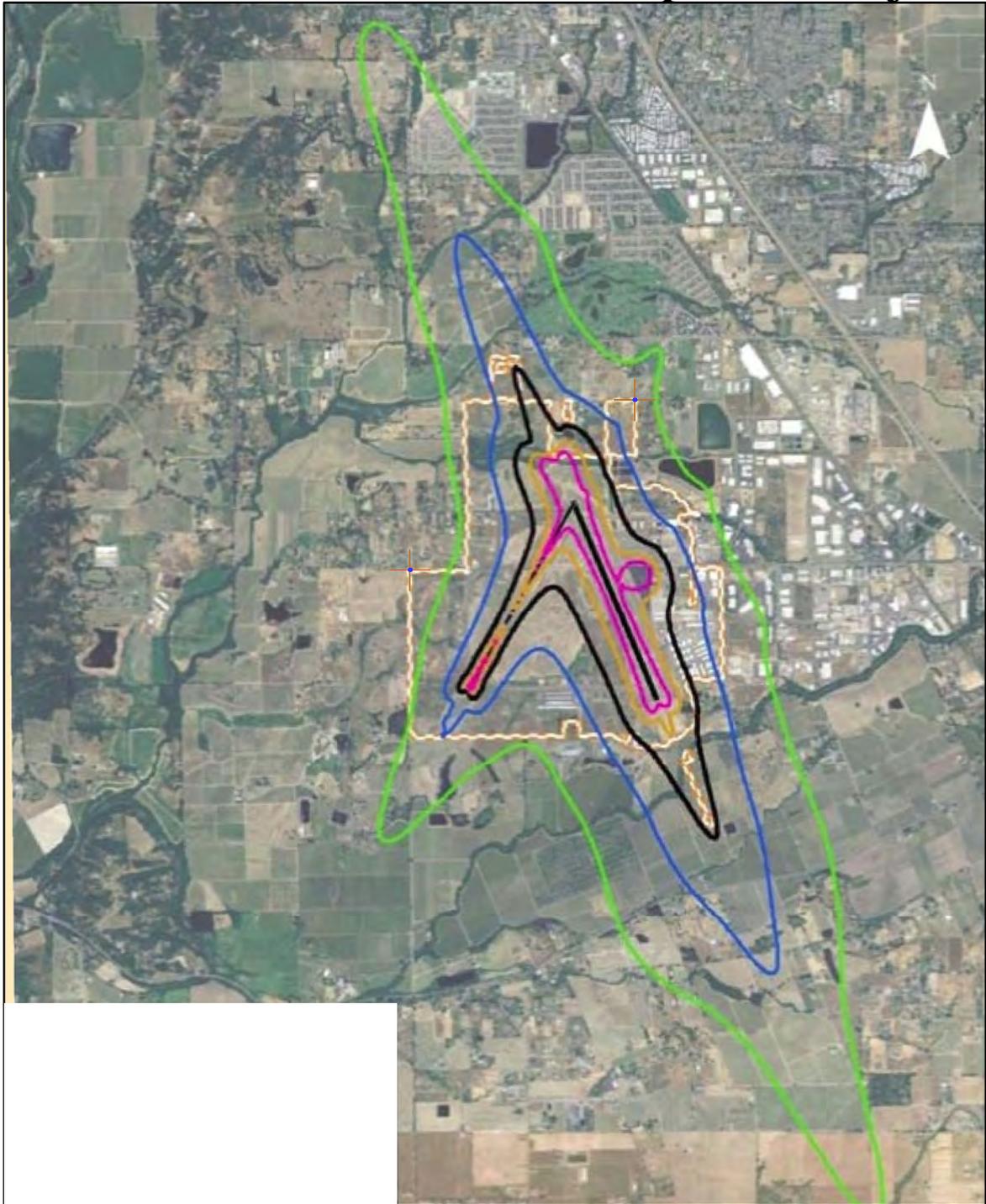
-  CNEL 55
-  CNEL 60
-  CNEL 65
-  CNEL 70
-  CNEL 75

0 0.45 0.9 Miles

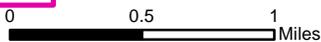
Existing Conditions  
Report 2011-2012



# 2030 CNEL Contours with Proposed Project



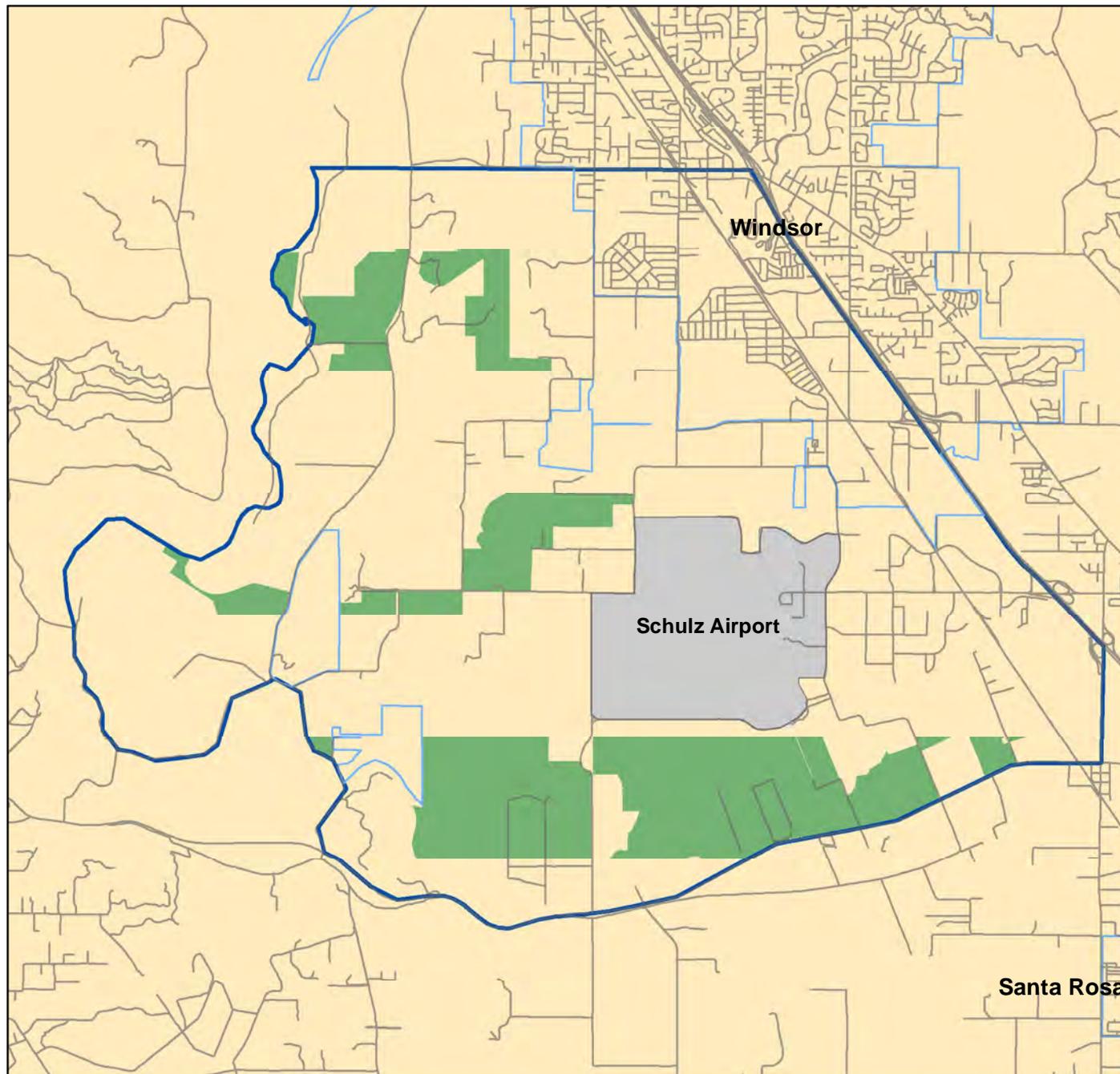
-  CNEL 55
-  CNEL 60
-  CNEL 65
-  CNEL 70
-  CNEL 75



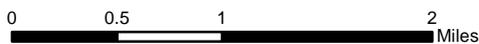
Existing Conditions  
Report 2011-2012



# Williamson Act Land



- Streets
- City Limits
- zone limits
- Schulz Airport
- Study Area Boundaries
- Williamson Act Land



## Existing Conditions Report 2011-2012



# Appendix D: Land Use Survey Coding Form



# Appendix E: Public Opinion Surveys

## Residential/Users Survey

### 1. Age:

- a. 18- 24      b. 25- 34      c. 34-44      d. 45-54      e. 55-59  
f. 60-64      g. 65-74      h. 75-84      i. 85 and older

### 2. Sex:

- a. Male   b. Female

### 3. Job Status:

- a. Full time      b. Part time      c. Unemployed      d. Retired  
e. Disabled      f. Other

### 4. Income Range (Annual Gross Income)?

- a. < \$10,000      b. \$10,000 - \$14,999      c. \$15,000 - \$24,999  
d. \$25,000 - \$34,999      e. \$35,000 - \$49,999      f. \$50,000 - \$74,999  
g. \$75,000 - \$99,999      h. \$100,000 or more      i. Decline to state

### 5. Ethnicity:

- a. White  
b. Black or African American  
c. Native American or Native Alaskan  
d. Asian  
e. Hawaiian Native or Pacific Islander  
f. Other \_\_\_\_\_

### 6. Relationship to the Study Area (circle all that apply):

- a. Live in the study area  
b. Work in the study area  
c. User of the study area  
d. No relationship to the study area  
e. Other \_\_\_\_\_

### 7. Do you rent or own your current residence?

- a. Rent                      b. Own  
c. Other: \_\_\_\_\_

### 8. How long have you resided in your current residence? \_\_\_\_\_

**9. Number of people per residence?** \_\_\_\_\_# of adults \_\_\_\_\_# of children (<18)

**10. What aspect of the study area do you value the most? (Please Circle One)**

- a. Airport
- b. Theater
- c. Wineries
- d. Golf Course
- e. Residential Area
- f. Riverfront Regional Park
- g. Geographic Location
- h. Other: \_\_\_\_\_

**11. What do you feel are the most important issues in the study area? (list 1-7, 1 being most important and 7 least important; please use each ranking only ONCE)**

- a. \_\_\_\_\_ Traffic
- b. \_\_\_\_\_ Open Space
- c. \_\_\_\_\_ Noise
- d. \_\_\_\_\_ Agriculture
- e. \_\_\_\_\_ Public Transportation
- f. \_\_\_\_\_ Environmental Pollution
- g. \_\_\_\_\_ Airport Expansion

**12. What goods and services would you like to see more of in the study area? (circle all that apply)**

- a. Shopping
- b. Food
- c. Entertainment
- d. Business
- e. Health Services
- f. Transportation Stops
- g. Other \_\_\_\_\_

**13. Which airport do you fly out of?**

- a. Charles M. Schulz Sonoma County Airport
- b. Healdsburg Municipal Airport
- c. Oakland International Airport
- d. San Francisco International Airport
- e. None of the above/ Other: \_\_\_\_\_
- f. Do not use airports

**14. How many times a year do you use an airport?**

- a. 0
- b. 1-2
- c. 3-4
- d. 5+

**15. Are you aware of the proposed expansion of the Charles M. Schulz Sonoma County Airport?**

- a. Yes
- b. No

**16. Do you feel the expansion of the Charles M. Schulz Sonoma County Airport would benefit the designated study area?**

- a. Yes
- b. No
- c. No Opinion

## Residential/Users Survey (with Results)

### 1. Age:

- a. 18- 24 18.9%
- b. 25- 34 14%
- c. 34-44 21.9%
- d. 45-54 15.8%
- e. 55-59 12.3%
- f. 60-64 10.1%
- g. 65-74 5.3%
- h. 75-84 3%
- i. 85 and older 1.8%

### 2. Sex:

- a. Male 53%
- b. Female 47%

### 3. Job Status:

- a. Full time 57%
- b. Part time 16%
- c. Unemployed 5%
- d. Retired 17%
- e. Disabled 2%
- f. Other 3%

### 4. Income Range (Annual Gross Income)?

- a. < \$10,000 14%
- b. \$10,000 - \$14,999 6%
- c. \$15,000 - \$24,999 4%
- d. \$25,000 - \$34,999 8%
- e. \$35,000 - \$49,999 11%
- f. \$50,000 - \$74,999 17%
- g. \$75,000 - \$99,999 14%
- h. \$100,000 or more 9%
- i. Decline to state 17%

### 5. Ethnicity:

- a. White 75%
- b. Black or African American 6%
- c. Native American or Native Alaskan 1%
- d. Asian 4%
- e. Hawaiian Native or Pacific Islander 1%
- f. Other/Latino 13%

### 6. Relationship to the Study Area (circle all that apply):

- a. Live in the study area 64%
- b. Work in the study area 22%
- c. User of the study area 27%
- d. No relationship to the study area 3%
- e. Other 1%

Some respondents selected more than one relationship, percentages indicate what percentage of surveys each appeared on.

### 7. Do you rent or own your current residence?

- a. Rent 60%
- b. Own 36%
- c. Other: 4%

**8. How long have you resided in your current residence? Average 9.35 years**

**9. Number of people per residence? 2.1 # of adults 0.7 # of children (<18)**

**10. What aspect of the study area do you value the most? (Please Circle One)**

- a. Airport 22%   b. Theater 18.5%   c. Wineries 14%   d. Golf Course 5%  
e. Residential Area 18.5%   f. Riverfront Regional Park 9%  
g. Geographic Location 8%   h. Other: 4%

**11. What do you feel are the most important issues in the study area? (list 1-7, 1 being most important and 7 least important; please use each ranking only ONCE)**

- a. 1 Traffic  
b. 5 Open Space  
c. 2 Noise  
d. 4 Agriculture  
e. 6 Public Transportation  
f. 3 Environmental Pollution  
g. 7 Airport Expansion

**12. What goods and services would you like to see more of in the study area? (circle all that apply)**

- a. Shopping 22%   b. Food 22%   c. Entertainment 21%   d. Business 13%  
e. Health Services 11%   f. Transportation Stops 9%   g. Other 1%

**13. Which airport do you fly out of?**

- a. Charles M. Schulz Sonoma County Airport 27%  
b. Healdsburg Municipal Airport 1%  
c. Oakland International Airport 41%  
d. San Francisco International Airport 51%  
e. None of the above/ Other: 5%  
f. Do not use airports 13%

Some respondents selected more than one airport, percentages indicate what percentage of surveys each airport appeared on.

**14. How many times a year do you use an airport?**

- a. 0 13%  
b. 1-2 54%  
c. 3-4 22%  
d. 5+ 11%

**15. Are you aware of the proposed expansion of the Charles M. Schulz Sonoma County Airport?**

a. Yes 60%

b. No 40%

**16. Do you feel the expansion of the Charles M. Schulz Sonoma County Airport would benefit the designated study area?**

a. Yes 63%

b. No 19%

c. No Opinion 18%

## Business Survey

*Thank you for participating in our survey. Your responses will be helpful in exploring a research question for our course. There is no need to write your name or identify yourself anywhere on this survey. The data from this survey will be used for the purpose of our class and will only be discussed in the context of our class and final presentation. This survey will take approximately 3 minutes to complete.*

*Please do not discuss with anyone else – either present or via telephone – the questions or your answers while taking this survey. We are interested in individual responses and not a group opinion.*

*Your participation is voluntary and you may opt out at any time during the survey. By returning this survey to the researchers, you are granting us consent to use the results in our analysis. If you have any further questions please contact any of the researchers at [SSUWorkshop@gmail.com](mailto:SSUWorkshop@gmail.com).*

*If you have any concerns about this survey, please feel free to contact Steve Orlick at [steve.orlick@sonoma.edu](mailto:steve.orlick@sonoma.edu).*

*Please use only the pen you have been provided. When you are finished filling out your form please return it to the person who gave it to you. When turning in your survey please place it text side down so as to ensure your responses will not be identifiable.*

***Again, please do not put your name anywhere on this survey. Thank you for your time.***

### 1. Age:

- a. 18- 24      b. 25- 34      c. 34-44      d. 45-54      e. 55-59      f. 60-64  
g. 65-74      h. 75-84      i. 85 and older

### 2. Sex:

- a. Male      b. Female

### 3. Job Status:

- a. Full time      b. Part time      c. Unemployed      d. Retired  
e. Disabled      f. Self Employed

### 4. Ethnicity:

- a. White  
b. Black or African American  
c. Native American or Native Alaskan  
d. Asian  
e. Hawaiian Native or Pacific Islander  
f. Other \_\_\_\_\_

**5. Which business category best defines your company? (Please circle one; if “other” is chosen, please specify in the line provided.)**

- |                   |                         |                 |
|-------------------|-------------------------|-----------------|
| a. Administration | b. Legal                | c. Construction |
| d. Mechanical     | e. Education            | f. Technical    |
| g. Financial      | h. Public Services      | i. Health       |
| j. Wine Maker     | k. Agriculture/ Farming |                 |
| l. Other:         |                         |                 |

**6. How long has this business been at this location? (Please indicate one number that is your best estimate; please do not indicate a range of numbers): \_\_\_\_\_**

**7. How many employees are at this branch/location/facility? \_\_\_\_\_**

**8. Do you expect to increase employment over the next 12 months?**

- a. Yes                      b. No

**9. What percentage group has your company grown over the last 12 months in revenue?**

- |                  |               |                  |
|------------------|---------------|------------------|
| a. less than -5% | b. -5% to -2% | c. -1% to 2%     |
| d. 3% to 6%      | e. 7% to 10%  | f. more than 10% |

**10. The majority of your business is conducted within...**

- |                  |                 |                  |
|------------------|-----------------|------------------|
| a. Santa Rosa    | b. Windsor      | c. Sonoma County |
| d. Bay Area      | e. CA           | f. US            |
| g. International | h. other: _____ |                  |

**11. What new development would you like to see in our study area? (Please Circle One)**

- |             |                         |                  |                    |
|-------------|-------------------------|------------------|--------------------|
| a. Shopping | b. Food                 | c. Entertainment | d. Health Services |
| e. Business | f. Transportation Stops |                  |                    |

**12. Do you feel there would be a benefit to having a SMART train station in close proximity to your business? (Please Circle One)**

- a. Strongly agree    b. Somewhat Agree    c. Neutral    d. Disagree    e. Strongly disagree



## Business Survey (with Results)

*Thank you for participating in our survey. Your responses will be helpful in exploring a research question for our course. There is no need to write your name or identify yourself anywhere on this survey. The data from this survey will be used for the purpose of our class and will only be discussed in the context of our class and final presentation. This survey will take approximately 3 minutes to complete.*

*Please do not discuss with anyone else – either present or via telephone – the questions or your answers while taking this survey. We are interested in individual responses and not a group opinion.*

*Your participation is voluntary and you may opt out at any time during the survey. By returning this survey to the researchers, you are granting us consent to use the results in our analysis. If you have any further questions please contact any of the researchers at SSUWorkshop@gmail.com.*

*If you have any concerns about this survey, please feel free to contact Steve Orlick at steve.orlick@sonoma.edu.*

*Please use only the pen you have been provided. When you are finished filling out your form please return it to the person who gave it to you. When turning in your survey please place it text side down so as to ensure your responses will not be identifiable.*

***Again, please do not put your name anywhere on this survey. Thank you for your time.***

### 1. Age:

a. 18- 24 0% b. 25- 34 20% c. 34-44 40% d. 45-54 30% e. 55-59 10%  
f. 60-64 0% g. 65-74 0% h. 75-84 0% i. 85 and older 0%

### 2. Sex:

a. Male 60% b. Female 40%

### 3. Job Status:

a. Full time 70% b. Part time 20% c. Unemployed 0% d. Retired 0%  
e. Disabled 0% f. Self Employed 10%

### 4. Ethnicity:

a. White 70%  
b. Black or African American 0%  
c. Native American or Native Alaskan 0%  
d. Asian 0%  
e. Hawaiian Native or Pacific Islander 0%  
f. Other \_\_\_\_\_ 30%

**5. Which business category best defines your company? (Please circle one; if “other” is chosen, please specify in the line provided.)**

- |                   |     |                         |     |                 |     |
|-------------------|-----|-------------------------|-----|-----------------|-----|
| a. Administration | 10% | b. Legal                | 20% | c. Construction | 0%  |
| d. Mechanical     | 10% | e. Education            | 0%  | f. Technical    | 0%  |
| g. Financial      | 20% | h. Public Services      | 10% | i. Health       | 0%  |
| j. Wine Maker     | 0%  | k. Agriculture/ Farming | 0%  | l. Other:       | 30% |

**6. How long has this business been at this location? (Please indicate one number that is your best estimate; please do not indicate a range of numbers):**

Number of years varied among businesses.

**7. How many employees are at this branch/location/facility?**

Number of employees varied among businesses.

**8. Do you expect to increase employment over the next 12 months?**

- |        |     |       |     |
|--------|-----|-------|-----|
| a. Yes | 30% | b. No | 70% |
|--------|-----|-------|-----|

**9. What percentage group has your company grown over the last 12 months in revenue?**

- |                  |     |               |     |                  |     |
|------------------|-----|---------------|-----|------------------|-----|
| a. less than -5% | 30% | b. -5% to -2% | 20% | c. -1% to 2%     | 50% |
| d. 3% to 6%      | 0%  | e. 7% to 10%  | 0%  | f. more than 10% | 0%  |

**10. The majority of your business is conducted within...**

- |                  |     |            |     |                  |     |
|------------------|-----|------------|-----|------------------|-----|
| a. Santa Rosa    | 30% | b. Windsor | 30% | c. Sonoma County | 20% |
| d. Bay Area      | 0%  | e. CA      | 0%  | f. US            | 20% |
| g. International | 0%  | h. other:  | 0%  | _____            |     |

**11. What new development would you like to see in our study area? (Please Circle One)**

- |             |     |                         |     |                  |     |                    |     |
|-------------|-----|-------------------------|-----|------------------|-----|--------------------|-----|
| a. Shopping | 30% | b. Food                 |     | c. Entertainment | 30% | d. Health Services | 20% |
| e. Business | 10% | f. Transportation Stops | 10% |                  |     |                    |     |

**12. Do you feel there would be a benefit to having a SMART train station in close proximity to your business? (Please Circle One)**

- |                      |     |                   |     |            |     |             |    |
|----------------------|-----|-------------------|-----|------------|-----|-------------|----|
| a. Strongly agree    | 30% | b. Somewhat Agree | 40% | c. Neutral | 30% | d. Disagree | 0% |
| e. Strongly disagree | 0%  |                   |     |            |     |             |    |

**13. Would your business benefit from expanding the airport and having additional flights? (Please Circle One)**

- a. Strongly agree 30%    b. Somewhat Agree 20%    c. Neutral 50%  
d. Disagree 0%    e. Strongly disagree 0%

**14. What zip code do you currently live in? Zip codes varied among businesses.**

**15. Would you recommend the location of this business complex to another business owner?**

- a. Yes 70%    b. No 30%

**16. In the past month, how often have you shopped within our study area?**

- a. 1-3 Times a week 40%  
b. 4-6 Times a week 30%  
c. Daily 20%  
d. Multiple times per day 0%  
e. I do not shop within the study area 10%

**17. In the past month, how often do you go out to eat within our study area?**

- a. 1-3 Times a week 60%  
b. 4-6 Times a week 20%  
c. Daily 10%  
d. Multiple times per day 0%  
e. I do not go out to eat within the study area 10%

**18. Do you generally feel safe in this area?**

- a. Strongly agree 60%    b. Somewhat Agree 10%    c. Neutral 20%    d. Disagree 0%  
e. Strongly disagree 0%

## Appendix F: Soil Profile of the Study Area

AeA: Alluvial Land, Clayey. Lays within sand and gravel deposits, mainly found along river and stream channels. General agricultural uses: prunes, pears, vineyards, row crops, as well as pasture.

AgD: Arbuckle Gravelly Sandy Loam. There is medium runoff due to composition of soil. Generally used for dry land pasture and production of hay. Small acreage capable for producing quality vineyards.

AgE: Arbuckle Gravelly Sandy Loam. Higher sand and gravel content than any other Arbuckle series. Available water capacity is 5 to 6 inches, runoff is medium to rapid, and hazard of erosion is moderate to high. Used mainly for dry land pasture.

CfA: Clear Lake Clay. Temporary ponding on surface of soils it is very difficult to build on due to water ponding at surface. Main use of soil is for production of oat rich hay and oat hay.

CrA: Cortina Very Gravelly Sandy Loam. The soil is subject to frequent deposition and removal resulting from overflow of adjacent rivers and creeks. Some of this soil can be used for vineyards and or chards when irrigation water is plentiful. However it is mostly used for dry land and pasture.

FaE: Felta Very Gravelly Loam. This type of soil generally sits on a steeper slope; roughly 50 to 60 percent of the soil is gravel by volume. The runoff is medium to rapid; the erosion hazard is medium to high. This soil is used mainly for grazing.

FaF: Felta Very Gravelly Loam. This soil type is mostly gravel, 50 to 60 percent stones and gravel within the soil profile. Because of the dryness and steep slopes that this soil type sits on, the soil produces very little perennial grasses. The runoff from this

soil type is rapid, with a high hazard for erosion. This specific soil type is used mainly for raising oak trees for wood.

GdE: Goldridge Fine Sandy Loam. The surface layer of this soil type is less than 16 inches thick in most places, slopes are moderately steep. The runoff from this soil type is medium to rapid, the hazard for erosion is moderate to high. This soil type is used mainly for timber and apple orchards.

GdF2: Goldridge Fine Sandy Loam. Surface layer is 10 to 20 inches thick; a common issue with this soil type is accelerated erosion and gulling. The runoff of this soil type is extremely rapid, and the hazard of erosion is high. The main uses for this specific soil type are for timber production of both redwoods and Douglas fir trees.

GuF: Gullied land. Gently sloping rounded hills that have been severely damaged by gulling, which is caused by severe overgrazing by livestock. This has resulted in an increase in runoff as well as aggregated cutting of the gullies.

HtA: Huichica Loam. High ph scale for the soils that are within the profile of Hta. Soils included are HtC, HuB, and HwB.

HtC: Huichica Loam. There is clay found in this specific soil type, it is generally located close to the surface. Runoff is slow to medium, and the hazard for erosion is slight to moderate. This soil type is used mainly for prune orchards, grapes and pastures.

HtD: Huichica Loam. 15 percent by volume may be water washed gravel from nearby stream and river channels. Runoff for this specific soil type is medium, and the hazard for erosion is moderate. This soil is typically used for pasture. Some of the soils can be used for growing grapes and prunes, however only if mixed with a more porous material.

HuB: Huichica Loam. This soil is subject to ponding, with 0 to 5 percent slopes. Plants on this soil type will generate slower but will stay green longer as they have much more moisture within their root system. Any runoff water is ponded, and the hazard for erosion is none to slight. This soil is somewhat poorly drained. This soil is mainly used of growing grapes and prunes and for dry land and irrigated pasture.

HvC: Huichica Loam. This soil is generally shallow with 0 to 9 percent slopes. The runoff for this soil type is slow to medium, and the hazard of erosion is slight to moderate. The available water capacity is about 2 to 3.5 inches. The common uses for this soil type are for growing grapes and prunes.

HwB: Huichica Loam. This soil is either ponded or shallow with 0 to 5 percent slopes. Subject to ponding due to the high levels of clay found within the soil. Runoff water is ponded, and the hazard of erosion is none to slight. This soil is somewhat poorly drained. The main use for this soil is typically pasture, a few fields can be used for growing grapes or prunes.

RnA: Riverwash. Consists of very recent depositions of gravel, sand, and silt alluvium along major streams and their tributaries. Gravel bars make up the majority of these areas. Riverwash provides gravel for commercial production, construction, and road fill.

SkD: Spreckels Loam. The runoff of this soil type is medium, and the hazard of erosion is moderate. The available water capacity is 3 to 9 inches. This soil is used for dry land and irrigated pasture.

SkF: Spreckles Loam. The runoff from this specific soil type is rapid, and the hazard of erosion is high. The available water capacity is 4.5 to 7.5 inches. This soil is limited in its usefulness for grazing, as a wildlife habitat, and for watershed purposes.