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Watershed Characteristics Report

Chapter 3
Cultural Setting of the Santa Clara Basin

SANTA CLARA BASIN



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Table of Contents

3.1	Summary of Santa Clara Basin Cultural History.....	3-1
3.1.1	Native Americans.....	3-2
3.1.2	Spanish and Mexican Periods.....	3-3
3.1.3	California Gold Rush Era.....	3-4
3.1.4	The Twentieth Century.....	3-5
3.1.5	Silicon Valley.....	3-5
3.2	Demographic and Cultural Inventory.....	3-13
3.2.1	Existing Community Characteristics.....	3-13
3.2.1.1	Population, Age, and Households.....	3-13
3.2.1.2	Housing.....	3-14
3.2.1.3	Work Force.....	3-14
3.2.1.4	Income.....	3-15
3.2.1.5	Spoken Languages.....	3-15
3.2.1.6	Racial Composition/Ethnicity.....	3-15
3.2.1.7	Schools.....	3-16
3.2.2	Projected Community Characteristics.....	3-16
3.2.2.1	Projected Population Growth.....	3-16
3.2.2.2	Projected Economic Growth.....	3-16
3.3	References.....	3-17

Tables

3-1	Population Statistics.....	3-13
3-2	Population Distribution by Age (1990).....	3-14
3-3	Housing Resources.....	3-14
3-4	Civilian Labor Force.....	3-14
3-5	Employment by Sector.....	3-15

Figures

3-1	Patterns of Urbanization in the South Bay 1850-1996.....	3-7
3-2	Past Distribution of Baylands and Adjacent Habitats in the South Bay (1800).....	3-9
3-3	Present Distribution of Baylands and Adjacent Habitats in the South Bay (1998).....	3-11

Chapter 3

Cultural Setting of the Santa Clara Basin

This chapter contains a summary of the cultural history of Santa Clara Basin (the Basin) and a description of current community characteristics, including statistical information on population, numbers of households, income, and ethnicity. Some information on the Basin's expected demographic and economic future is provided.

3.1 Summary of Santa Clara Basin Cultural History

At one time, the entire Basin including the area currently occupied by San Francisco Bay (the Bay) was a great river valley, with its mouth at an ocean coast as much as 25 to 30 km (15 to 18 miles) west of the present Golden Gate. By about 11,000 years ago, as sea levels rose in response to glacial melt, ocean waters began to rise, flowing through the Golden Gate and forming the San Francisco Bay estuary. By about 6,000 years ago, the Bay had assumed its historical configuration as a wide, relatively shallow estuary, ringed by extensive salt marshes.

The Basin is located at the southern end of the Bay in one of the most seismically active areas in the world. The Basin is drained by the creeks of southeastern San Mateo County, northern Santa Clara County, and southwestern Alameda County. The Bay's marshes and creeks, and the Bay itself, have played an essential role in human occupation and use of the Basin for the last 10,000 years. Due to changes in sea level over time, it is likely that the locations of many of the oldest shoreline occupation sites have been inundated, while many sites may now be further from the shore than at the time of their occupation. It is thought that Coyote Creek, which currently drains north to the Bay, has drained southward to Monterey Bay at times past. The fact that the Coyote Creek and Pajaro River drainages are separated by a low divide composed of alluvial material supports this hypothesis (Elasser 1985). These changes in course may have affected the location of human settlements along Coyote Creek.

The 19th and 20th centuries saw marked changes in the natural setting of the Bay. Between 1850 and 1880, extensive hydraulic mining in the Sierra Nevada foothills washed tremendous volumes of sediment into the Sacramento and San Joaquin Rivers and their tributaries. The sediment then washed downstream through the Sacramento-San Joaquin River Delta to the Bay. It is estimated that over a billion yards of sediment were deposited in the Bay between 1849 and 1914 as the result of mining, erosion stemming from deforestation of the Santa Cruz Mountains, and overgrazing (Louderback 1951). Diking and filling of the Bay for urban development and other uses began as early as 1850, and by 1950 as much as one-third of the Bay had been filled to create land or to be managed for salt production.

Another episode of marked changes in the natural setting began in the early part of this century. The water resources of the valley were first tapped by the Spanish, but large-scale exploitation of

the artesian wells and groundwater of the valley began in the 1860s when farmers began to switch from dry farmed wheat to water-intensive fruit crops (Rickman 1981). Drawdown of the region's groundwater table for intensive agriculture resulted in rapid land subsidence particularly near the mouths of creeks draining into the Bay. By 1933, the valley had subsided an average of 10 feet as a result of groundwater overdraft. In an effort to slow land subsidence, six reservoirs were built in the 1930s for water conservation and aquifer recharge.¹

Land subsidence altered the slope of the Basin's streams and their elevation relative to sea level, destabilizing streambanks, increasing the incursion of tidal waters and increasing the frequency of flooding of the low-lying areas (Water District 1978). As a result, the rate of sediment deposition in the lower reaches of the Basin's streams also increased. One marked effect of this episode is that historical features and prehistoric archaeological deposits were very rapidly buried under thick layers of sediment. It is not uncommon for archaeological sites to be discovered beneath recent deposits of 10 to 20 feet of sediment. This phenomenon is particularly apparent in the lower watersheds of the Guadalupe River and Coyote Creek, areas that were foci of both historical and prehistoric occupation.

3.1.1 Native Americans

Human occupation of the Basin is evident as early as 10,000 years ago (cf. Moratto 1984). However, little is known about this period. When the Spanish arrived in the San Francisco Bay region, the Basin was inhabited by Native Americans of the Puichon, Tamien, and Alson Ohlone (or Costanoan) tribelets. The Ohlone are thought to have entered the region about 1,500 years ago, probably displacing populations already present. Numerous politically autonomous Ohlone tribelets or groups were present in the San Francisco Bay Area (the Bay Area), distributed in village groups of 20 to 200 individuals, which were loosely allied along family lines with the other groups in their tribelet. The Ohlone were hunter-gatherers, utilizing both semipermanent villages and more specialized seasonal camps, and a wide range of hunting and foraging strategies. In the Basin, Ohlone settlements tended to cluster along creeks (particularly perennial streams) and along the margins of the marshes. Populations were small and fairly widely dispersed. Archaeologically, occupation sites most often appear as "shell middens," organically rich deposits of earth and shell that often include human remains as well as cultural features.

The resources of the Bay and its marshes were essential to most Ohlone groups. In addition to acorns gleaned from the oak groves of the hills and bayside plain, primary foods included fish and shellfish, waterfowl, and a wide range of plant foods, as well as large and small game. Agriculture was not practiced, but a wide variety of plant foods were collected. Plant materials were used skillfully and extensively, not only for food, but also for shelter, clothing, twine and nets, boats, and finely made basketry. A wide variety of shell ornaments were manufactured, and bone and ground and chipped stone tools are common archaeologically. Minerals such as cinnabar, a mercury ore used for pigment, and salt from the marshes were also mined. Although material culture was relatively simple, the Ohlone were enmeshed in an extensive trade network.

¹ Groundwater overdraft and land subsidence continued into the late 1960s when they were halted by better management of the groundwater basin. See Chapter 8 for a description of water management in the Basin.

Chapter 3 – Cultural Setting of the Santa Clara Basin

For example, obsidian from distant sources in the Sierra Nevada and eastern California, as well as from closer sources near Santa Rosa, is fairly common at the Basin archaeological sites. The reader is referred to Milliken (1991) or Levy (1978) for a concise summary of Ohlone ethnography. A popular account is presented by Margolin (1978).

The entry of the Spanish into the Bay Area in 1769 and the missionization process that followed were highly disruptive to Ohlone culture. Introduced diseases devastated local native populations. Although it had been the intent of the Spanish to return Ohlones to the land after they had acquired farming and ranching skills and been converted to Catholicism, in fact only a handful of Ohlone individuals ever received land grants from the Spanish or Mexican governments. Instead, most mission survivors, deprived of their ancestral skills and land, found marginal subsistence as laborers on Mexican ranchos or on the fringes of towns. Nonetheless, many Ohlone retained their cultural identity. A significant cultural revival has occurred in the past few decades. Ohlone representatives are active participants in most local prehistoric archaeological projects.

3.1.2 Spanish and Mexican Periods

The earliest land-based explorations of the Basin took place in the late 1760s. At this time, Spanish explorers made their way north from Monterey in search of sites at which missions could be established. Traffic through the area increased markedly with the establishment of the Spanish mission and presidio at San Francisco in 1776. Mission Santa Clara was established on the west bank of the Guadalupe River in 1777, close to a perennial source of water. The secular Pueblo San Jose de Guadalupe was established upstream later that year as a support community to provide food for the military garrisons in the area. Santa Clara Valley, or Llano de los Robles (literally, “Plain of the Oaks”) as it was then known, was the best place in the Bay Area to grow food and was roughly equidistant between the Presidios of Monterey and San Francisco (Jacobsen 1984). The mission was subsequently moved several times after it was destroyed by earthquakes and winter flooding. Small-scale farming and cattle grazing took place throughout the Basin during this period and many highly successful nonnative plant species were introduced. In 1797, Mission San Jose was established in what was to become the city of Fremont. By this time, native villages were virtually depopulated, and settlement was concentrated at the missions, their outposts, and the small pueblo of San Jose (which had a population of only 171 in 1800) (Brack et al. 1991).

With Mexican independence from Spain in the early 1820s, and secularization of the missions in 1834, a larger stream of settlers began to flow into Santa Clara in quest of land for new ranchos. Mexican independence also opened California to foreign trade (formerly banned by the Spanish government) with the result that many more outsiders began to look toward California as a source of land and wealth. The land was quickly parceled out to Mexican grantees, who claimed vast holdings to enable them to run cattle on land that was only poorly watered. Ports were established on the Guadalupe River as well as in the East Bay to provide for shipment of tallow, hides, and other ranch products. However, many of the Mexican grantees had to struggle to hold their lands, as rival claimants and squatters flowed into the territory. The United States looked

toward this territory for westward expansion and, in 1848, over 529,000 square miles (including all of Alta California) was ceded to the U.S. by the Treaty of Guadalupe Hildago, which ended the Mexican War (Brack et al. 1991).

3.1.3 California Gold Rush Era

The discovery of gold in 1848 rapidly accelerated the influx of population to the region. Although much of the vast immigration of the period between 1848 and 1854 was focused on the gold fields of the Sierra foothills, entrepreneurs – after a brief depopulation of the area with the end of the first rush – were quick to recognize the opportunity to profit from the burgeoning population. The gold seekers and their suppliers in the booming city of San Francisco (earlier called Yerba Buena) needed to be fed, and the vast, accessible, fertile lands of the Basin became very attractive. Ship landings spurred the growth of farming and commerce throughout the Basin. Alviso, on the Bay, became a major port. Just south of Coyote Hills on one of the largest and deepest sloughs in the East Bay an old landing was used so much by the Russians trading with Mission San Jose that it was called the Russian Landing (later renamed Beard's, Mayhew's, and Jarvis Landing for subsequent owners and captains). Origin Mowry sailed up a slough south of Beard's Landing, took up a ranch, built a road through the tules, and established Mowry's Landing (later Larkin's Landing). Captain Calvin Valpey established Warm Springs Landing on the Mud Slough branch of Coyote Creek and M.W. Dixon built Dixon's Landing to the south near the county line. The earthquake of 1868 destroyed one of the warehouses and 5,000 sacks of grain sank into the slough (Holmes 1992).

During the 1850s, a great influx of agriculturists took place in the region. Commercial farms on a substantial scale were established for the first time. In contrast to the focus on cattle during the 1830s and 40s, over the next few decades farms began to specialize in the production of field crops – barley, hay and wheat. Flour and grist mills made important contributions to the local economy. The commerce of the region was sent by boat from Alviso and the other East Bay landings to San Francisco. The latter half of the 19th century saw the development of mining and logging industries. The New Almaden mines, on the west side of the valley, were the major source of the enormous amount of mercury used in the extraction of gold from ore in the Sierra Nevada. The mines were an important part of the valley economy in the second half of the 19th century (Hoover et al. 1990). Logging occurred in the upper reaches of the Basin, particularly on upper San Francisquito Creek. Logs were shipped out from ports on the Bay, including the Port of Redwood City. Scow schooners sailed up to wharves at Cooley's Landing at the Ravenswood port or Wilson's Landing (originally Clarke's) on Mayfield Slough near its juncture with San Francisquito Creek and loaded hides, lumber, grain, hay, oyster shells, and produce such as strawberries to deliver to San Francisco. Rail lines were established, connecting San Jose with San Francisco and the East Bay and points east by the 1860s. Small farm communities grew up on the bayside plain, and farming developed as the region's primary industry. The invention of the refrigerated railroad car in the 1880s led to increased emphasis on the profitable (but perishable) fruit tree crops, and by the mid-1880s lands on which grains had formerly been grown were being planted in orchards. James Lick, an early benefactor to the State of

California, grew hay for the livery stables in San Francisco and then tended fruit orchards from 1850 to 1875.

3.1.4 The Twentieth Century

In the first three decades of the 20th century, Santa Clara Valley became the leading fruit-producing area in California. Most fruit farms were small and the development of the fruit industry supported a larger number of small family farms. A small orchard could produce a good living for a single family. Hay production and row crops still took up a substantial part of the land, but fruit production was more lucrative. Fruit drying and packing, and later canning, became important industries. After the disastrous earthquake and fire of 1906 virtually destroyed San Francisco, many businesses relocated southward to make new starts, and the size of the small farm communities of the area increased.

Beginning in the 1920s, the wide availability and popularity of automobiles contributed significantly to the increased suburban growth and development of the highway network in the Basin. Native American trails were the foundation of the Basin's highways and included the current routes of U.S. Highway 101, State Highway 17, Interstate 580 (Altamont Pass) and State Highway 152 (Pacheco Pass). Most of the state highways were built by the mid-1940s. The first restricted-access roads, or freeways, were built in the Basin in the 1950s and extended into and through the cities in the 1960s. The regional population grew slowly and steadily, based primarily on the agricultural industry. Gradually the small farm communities became small urban and industrial centers. San Jose, geographically well positioned for access to both the urban and the agricultural centers of California, flourished.

The establishment of Moffett Field in Mountain View in the early 1930s marked a significant step in the industrialization of the area. The establishment of this major naval air base acted as a catalyst in the region for the development of major aviation and related industries on the cutting edge of the era's technology, initiating a pattern that has continued into the present. New industries were drawn to the area by the military development. World War II and the ensuing cold war era of high military spending by the federal government encouraged this rapid expansion, which brought with it an expanded work force and related service population.

The diking off and filling of lands along the shoreline of the Bay, begun in the 19th century, accelerated in the 20th as the economy of the region grew. Land settlement made it necessary to raise levees to exclude tidal waters and sedimentation of channels caused the demise of the port at Alviso. Some of the diked-off lands were developed as salt ponds and several sewage treatment plants and sanitary landfills were built on land that was formerly open water or wetlands.

3.1.5 Silicon Valley

This burgeoning high technology industrial growth set a long-term trend for the region. Engineers at Stanford University, who had already begun research relevant to the fledgling

Chapter 3 – Cultural Setting of the Santa Clara Basin

electronics industry, contributed to the establishment of the first electronics firms. “Silicon Valley” had been born. War-related aerospace and electronics enterprises began to cluster in the Palo Alto area. By the 1960s, the electronics industry had taken root, and the valley became one of the fastest growing urban areas in the country (Saxenian 1981).

As Palo Alto’s industrial land filled up, the electronics and the new semiconductor industry began to move south, first to the adjacent towns of Sunnyvale and Mountain View, then into Santa Clara and Cupertino. These cities began to develop high-tech industrial parks, which spurred further growth. Residential land was rezoned for industrial use. By 1970, the northern part of the valley became the industrial belt, while the southern valley became a focus for residential and support development (Saxenian 1981).

As industry grew in the Santa Clara Valley region, population and demand for residential development, service industries, and transportation network correspondingly increased. With this growth, the agricultural industry began a decline, and more and more land was converted from agricultural to residential and multiple urban uses. This trend increased as agriculture became less and less lucrative in comparison with the competing land uses. By the 1980s, agriculture had been pushed to the margins of the Basin, except for a few remnant in-holdings.

Settlement patterns based on income were a feature of the Basin’s early urban development. The electronics industry employs large numbers of both highly paid professionals and less skilled production workers. The more affluent gravitated toward the foothill and southern San Mateo County cities while the production workers made their homes in San Jose, Campbell, Milpitas, and southern Alameda County (Saxenian 1981).

In recent years, a number of factors have constrained economic development in the region including the high cost of housing, a labor shortage due to lack of affordable housing, traffic congestion, and regional opposition to urban sprawl. As a consequence, some communities have adopted urban growth boundaries and policies that encourage the provision of affordable housing. New industrial areas have been built in developed areas in northern San Jose and in Fremont and Newark, rather than on the fringes of the metropolitan area. And increased emphasis is being given to improving mass transit as a way of reducing traffic congestion and air and water pollution.

Figure 3-1 shows the pattern of urbanization for the South Bay from the middle of the last century to the late 1990s. Figures 3-2 and 3-3 show how the margins of the South Bay have changed over time (between 1800 and 1998) as a result of human settlement and use.

Figure 3-1 (front)

Figure 3-1 (back)

Figure 3-2 (front)

Figure 3-2 (back)

Figure 3-3 (front)

Figure 3-3 (back)

3.2 Demographic and Cultural Inventory

The boundaries of the Basin do not coincide with county boundaries. Most of the Basin (86 percent) lies within Santa Clara County but about 9 percent of the Basin is in Alameda County and 5 percent is in San Mateo County. Because most statistics are kept on a countywide basis, it is difficult to separately compile data for the Basin. In the discussion that follows, data from Santa Clara County are used as a surrogate for the Basin as a whole, unless otherwise indicated. It should be noted, however, that significant portions of southern and western Santa Clara County do not lie within the Basin. Because these areas are lightly populated relative to the portions of the county within the Basin, they probably do not greatly affect the statistical data described below.

3.2.1 Existing Community Characteristics

3.2.1.1 Population, Age, and Households

Santa Clara County is the most populous county in the Bay Area and accounts for about one fourth of the Bay Area's total population. According to the Association of Bay Area Governments (ABAG), the total population of Santa Clara County is estimated to reach 1.74 million by year 2000, having grown by about 16 percent since 1990 (see Table 3-1). San Jose is the largest incorporated city in the county and accounts for more than half of the county population. The other most populous communities in the Basin are Sunnyvale, Santa Clara, Mountain View, Fremont, and Newark. The population of the Basin as a whole is estimated to be about 1.9 million in year 2000.

Statistic	1990	2000
Total population of Santa Clara County	1,500,000	1,740,000
Number of households	522,040	565,730
Average household size	2.81	3.01

According to the 1990 census, a total of 522,040 households existed in the county. ABAG estimates that this number will reach 565,730 by year 2000. The average household size is also projected to increase from 2.81 in 1990 to 3.01 by 2000.

Based on the 1990 census, seniors over 65 represent about 9 percent of the county population. Children under 5 represent 9 percent. Approximately 16 percent of the county population is school-aged (see Table 3-2).

Table 3-2 Population Distribution by Age (1990)	
5 years and under	8.9%
6-18 years	16.5%
19-24 years	9.9%
25-44 years	37%
45-64 years	18.4%
65 years and over	8.7%

3.2.1.2 Housing

Of the 581,532 housing units in Santa Clara County in January 1999, approximately 64 percent are single-family housing units (see Table 3-3). Multiple-family housing units represent 32 percent and mobile homes make up about 4 percent of the housing stock in the county. The vacancy rate in the county is 3.9 percent.

Table 3-3 Housing Resources		
Total housing units	573,593	100%
Single-family units	368,188	64%
Multiple-family units	184,787	28%
Mobile homes	20,618	4%
Owner occupied	307,354	59%
Renter occupied	212,826	41%

3.2.1.3 Work Force

Based on 1998 data, Santa Clara County civilian labor force is composed of an average of 962,700 people (see Table 3-4). As of January 1999, the civilian labor force numbered 963,900, with an unemployment rate of 3.7 percent.

Table 3-4 Civilian Labor Force		
Statistic	1998	1999
Total work force	962,700	963,900
Persons employed	931,700	928,236
Persons unemployed	31,000	35,664
Unemployment rate	3.2%	3.7%

Farming accounts for about 4 percent of all employment (see Table 3-5). Of nonfarming sectors, the leading sectors in terms of employment are service industries (32 percent), manufacturing (27 percent), and trade (19 percent). Other sectors including finance, insurance and real estate, government, construction, transportation, communications, and utilities together account for about 22 percent of the county nonfarm employment (EDD 1999).

Farming	38,556	4%
Manufacturing	265,100	27.5%
Service	306,200	31.8%
Trade	184,300	19%
Other	212,058	22%

3.2.1.4 Income

The U.S Census Bureau compiles statistics on median household income and ABAG estimates mean income. The census records show that median income in Santa Clara County in 1995 was \$53,400. ABAG data show that the mean household income in Santa Clara County in 1990 was \$70,262 and was estimated to rise to \$88,700 by 2005. This increase is due to a number of factors including rising wages, a growing percentage of middle-aged high-income wage earners, more workers per household, and a decreasing percentage of entry-level, low-wage workers. Income disparities exist between communities within Santa Clara County - mean household incomes range from a low of \$57,831 to a high of \$215,293 in 1990 (ABAG 1997).

3.2.1.5 Spoken Languages

English is the predominant spoken language in the Basin. Based on data on the number of children enrolled in the Limited-English-Proficiency Program at Santa Clara public schools, the top five primary languages, other than English, spoken in homes in the county are Spanish, Vietnamese, Tagalog, Cantonese, and Laotian. Other languages include Khmer, Punjabi, Korean, Russian, Mien, Mandarin, Farsi, Arabic, Hmong, and Armenian, listed in declining order of use.

3.2.1.6 Racial Composition/Ethnicity

The 1990 census reports the racial composition of the county as 70.3 percent Caucasian, 15.9 percent Asian/Pacific Islander, 3.8 percent African-American, 0.6 percent Native American, and 9.4 percent other races. Asian/Pacific Islanders are comprised predominantly of Chinese, followed by Filipinos, Vietnamese, Japanese, and Asian Indians. According to ABAG projections, Asian/Pacific Islanders are expected to make up 25 percent of the county population by 2005. Based on California Department of Finance (1999) projections they will account for 33 percent of the county population by 2015 (San Jose Mercury News 1999). Hispanics, a

multiracial group, made up about 21 percent of the county population in 1990 and are also expected to account for approximately 33 percent of the population by 2015. Currently, non-Hispanic Caucasians make up approximately 49 percent of the county population (San Jose Mercury News 1999).

3.2.1.7 Schools

Santa Clara County has 33 school districts. The districts operate over 330 public schools including 227 elementary schools, 60 middle schools, 46 high schools, and 5 adult schools. The county is also home to three universities and a number of community colleges.

3.2.2 Projected Community Characteristics

3.2.2.1 Projected Population Growth

Growth in the county's population is expected to continue, but at slower rates than in the past. By the year 2010, county population should reach an estimated 1.864 million people, and by 2020 it is expected to reach 1.9 million. That means that during the 2000-2020 period, Santa Clara County will see a population increase of about 190,900 persons (11 percent growth) and 85,310 new households (15 percent growth). Annual growth rates between 2000 and 2010 will average less than 20,000 new persons per year. This moderate growth will be associated with moderate employment growth and housing development (ABAG 1997).

Most of the growth is expected to occur in San Jose and to a somewhat lesser extent in south county. North and west county areas are expected to see relatively little growth. San Jose will be the single fastest growing city in the entire Bay Area and will account for 64 percent of the growth in county households between 2000 and 2010 and 56 percent of the household growth between 2010 and 2020. Sunnyvale, Gilroy, Morgan Hill, and Santa Clara are the other cities in the county that are expected to experience growth in the number of households between 2000 and 2020 (ABAG 1997).

Some of the other demographic changes expected to occur in the near term (by 2005) include an increase in the size of the average household, increase in the percentage of population more than 64 years of age, an increase in Hispanic population, an increase in the Asian/Pacific Islander population, and a corresponding decline in the percentage of Caucasians.

3.2.2.2 Projected Economic Growth

High technology jobs drive the county's economy, and will continue to fuel most of the county's employment growth in future years. The regional economy is expected to grow and diversify in the coming years. During the 2000 to 2010 period, the county is expected to add 128,000 jobs, growing an average of 1.2 percent annually. An estimated 65,200 (about 51 percent) of the new jobs will be in the manufacturing sector. The county will also see strong growth in the service sector (ABAG 1997).

Between 2010 and 2020, the county will add 89,400 new jobs. About 40 percent of that increase will be in manufacturing and 38 percent in service jobs. Manufacturing job growth will occur primarily in San Jose, Sunnyvale, and Milpitas. Most of the new service jobs will be added in San Jose, Santa Clara, and Morgan Hill. Overall, job growth in Santa Clara County will outpace new employed residents by 55,000. This gap is the largest projected between the number of new residents and jobs in any county in the Bay Area (ABAG 1997).

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Chapter 3 – Cultural Setting of the Santa Clara Basin

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