CHAPTER 3 Travel Patterns

In planning for the future, an understanding of existing and projected travel patterns is necessary to determine what transportation investments are needed to meet the challenges and opportunities that face Santa Cruz County through 2040. Many factors influence the patterns of where, how much, and how we travel. The amount and distribution of traffic on highways, local roads, bicycle lanes, sidewalks, and buses can fluctuate based on population, the economy, location of jobs and services, travel choices, fuel prices, and other factors.

Population

The patterns of travel within Santa Cruz County are impacted by the number of people who live, work and visit the county. **Figure 3.1** shows the historical trend in population for Santa Cruz County since 1950 as well as the forecast for 2020 through 2040 developed by AMBAG. Currently home to more than a quarter-million people, the population is expected to increase by 12% between 2015 and 2040.

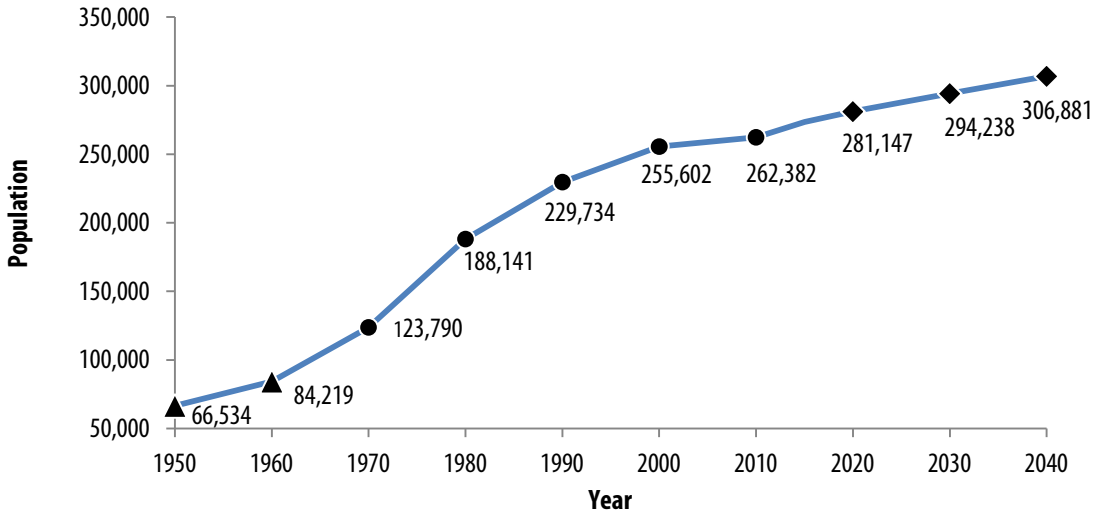


Figure 3.1 – Historical and Projected Santa Cruz County Population

Source: CA Department of Finance (▲), U.S. Census Bureau (●), AMBAG Projections (♦)

The growth rates in the five jurisdictions in Santa Cruz County have varied substantially over the last ten to twenty years (**Figure 3.2**). Growth between 2010 and 2017 has occurred primarily in the City of Santa Cruz (8.5%) and in the unincorporated areas of Santa Cruz County (**Figure 3.2).**

Jurisdiction	1990	2000	2010	2017*	% Change (2010-2017)
Capitola	10,171	10,033	9,918	10,162	2.5%
Santa Cruz	49,711	54,593	59,946	65,070	8.5%
Scotts Valley	8,667	11,385	11,580	12,163	5.0%
Watsonville	31,099	44,265	51,199	53,015	3.5%
Unincorporated	130,086	135,326	129,739	136,193	5.0%
Santa Cruz County Total	**229,734**	**255,602**	**262,382**	**276,603**	**5.42%**

Figure 3.2 – Population Data for Santa Cruz County by Jurisdiction

*Source: U.S. Census Bureau, *2017 data are estimates from Department of Finance[1]*

The location of where people live in Santa Cruz County is shown in **Figure 3.3**. This population density map illustrates how the population is clustered primarily along the coast between the City of Santa Cruz and Aptos and in Watsonville, Scotts Valley and the San Lorenzo Valley. A large percentage of people in Santa Cruz County live in urban areas, making it easier to promote shorter trips and active transportation options for reducing congestion and GHG emissions.

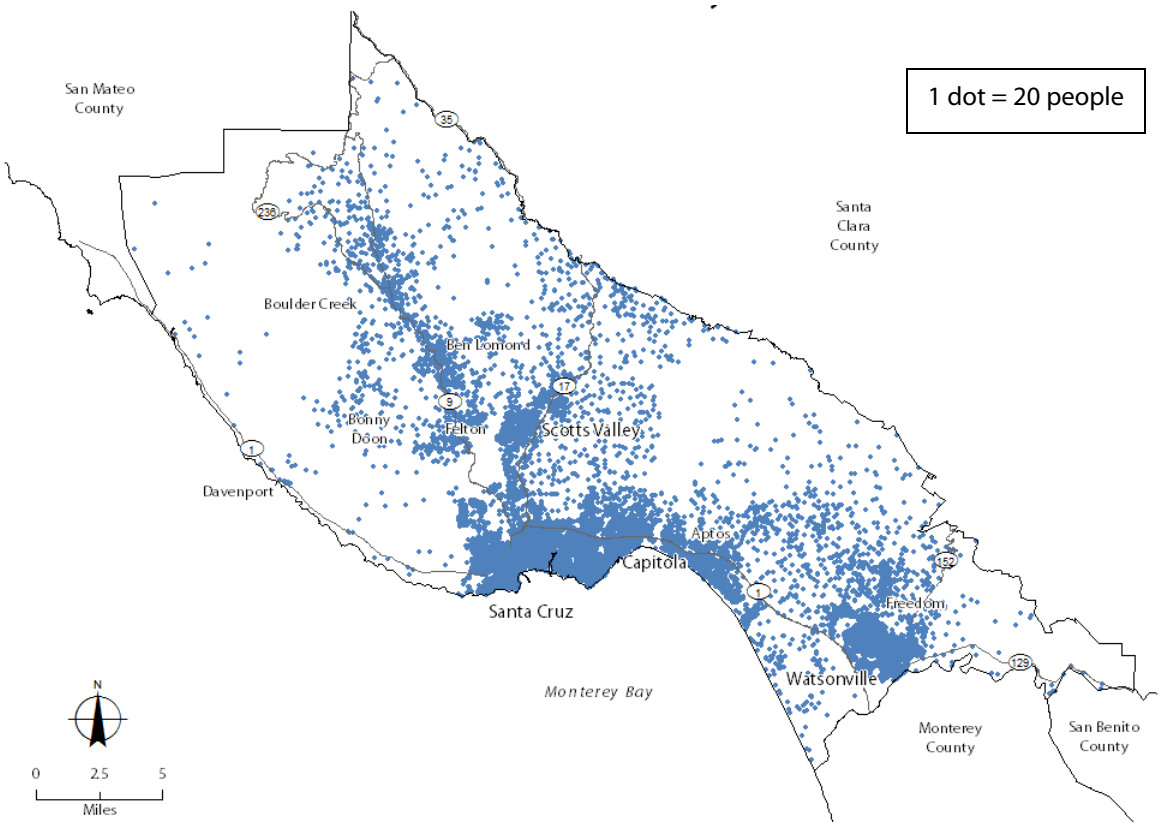


Figure 3.3 – 2010 Population Density Map

Source: U.S. Census Bureau

Employment Opportunities

Employment opportunities are another factor influencing travel patterns. Higher employment rates often means greater traffic volumes as more people are traveling to work, and vice versa, higher unemployment rates often mean less traffic volumes. The number of jobs in Santa Cruz County over the last 20 years was highest in 2000, with unemployment rates as low as 5.1%. With the economic downturn of 2007/2008, jobs dropped significantly in 2010 and unemployment rates reached 13.3% (**Figure 3.4**, **Figure 3.5**). In 2016, the unemployment rate decreased to 6.9%.[2] The City of Watsonville currently has the highest unemployment rates in the county at 8.9% (**Figure 3.5**). Between 2015 and 2040, the number of jobs is forecast to increase by 18%, higher than the increase in population of 12% over this same timeframe. The locations of existing employment centers within the county are mapped in **Figure 3.6**.

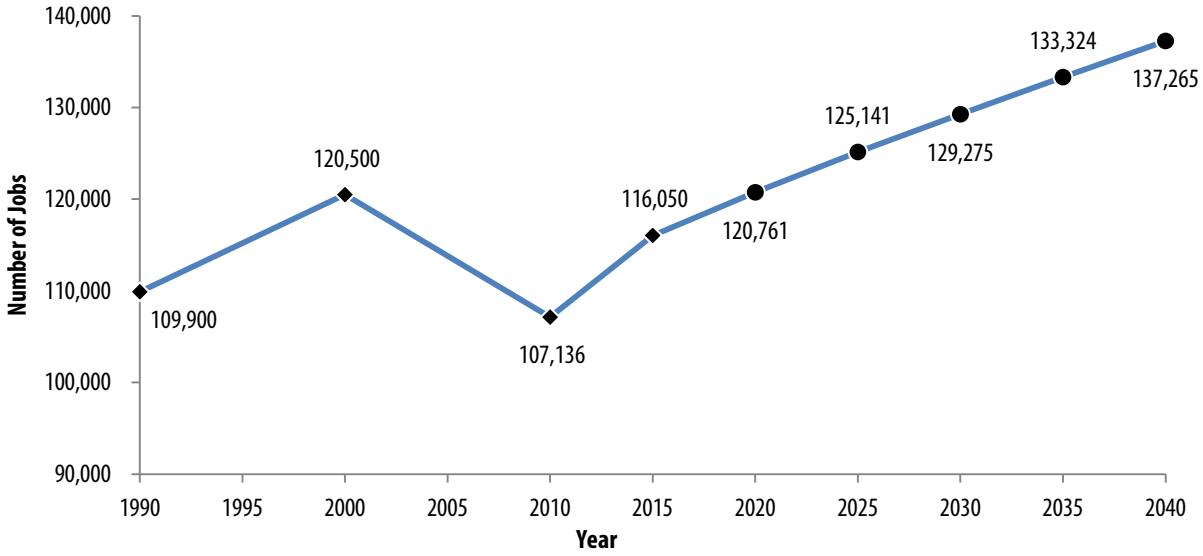


Figure 3.4 – Historical and Projected Number of Jobs in Santa Cruz County

Source: AMBAG Historical (♦), AMBAG Projections (●)

Jurisdiction	2000	2002	2004	2006	2008	2010	2012	2014	2016
	%	%	%	%	%	%	%	%	%
Capitola	2.5	3.6	3.4	3.1	4.1	10.7	9.5	7	5.5
City of Santa Cruz	4.2	6.1	5.8	4.6	6.1	11.9	10.6	7.8	6.1
Scotts Valley	2.2	3.2	3.1	2.6	3.5	12.2	10.8	8	6.3
Watsonville	11.5	16.1	15.4	12.6	16	16.8	15	11.2	8.9
Santa Cruz County	5.1	7.3	7	5.6	7.4	13.3	11.8	8.8	6.9

Figure 3.5 – Unemployment Rates by Jurisdiction within Santa Cruz County

Source: California Employment Development Department[3]

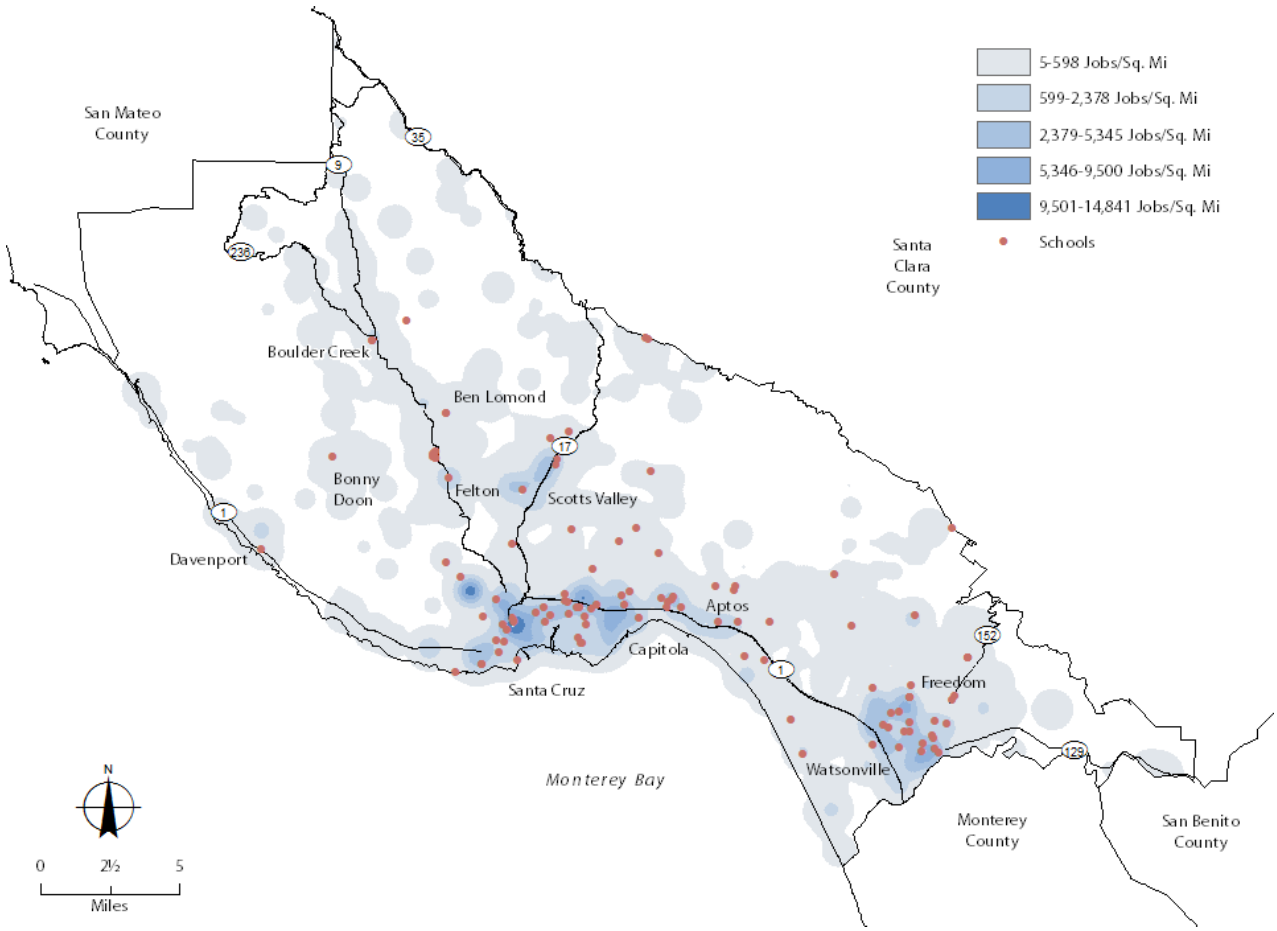


Figure 3.6 – Job Destinations in Santa Cruz County

Source: U.S Census Bureau (On the Map), Center for Economic Studies[4]

Where Are We Traveling?

Eighty percent of the population of Santa Cruz County lives in approximately 20% of the area of the county (**Figure 3.3**). Trips are made between people's homes (**Figure 3.3**) and where they work (**Figure 3.6**), go to school, shop, socialize and recreate. Many residents living in the southern portion or more remote corners of the county travel to job centers located in the central portions of the county near urban developments, such as downtown Santa Cruz. Increasing the diversity of land uses within neighborhoods to improve access to goods and services can reduce the length of trips which increases the opportunities for bicycling and walking, and makes it more convenient to reach transit stops.

The 2009 National Household Travel Survey (NHTS) analyzed the person miles of travel by trip purpose. The results show that on average, for persons 5 years or older including travelers and non-travelers, person miles of travel are divided into approximately 30% for work and school, 30% for family errands, 30% for social and recreational purposes, and the remainder for other types of travel[5]. Data on commute patterns of work trips into and out of Santa Cruz County are available from the U.S. Census Bureau, American Community Survey as discussed below.

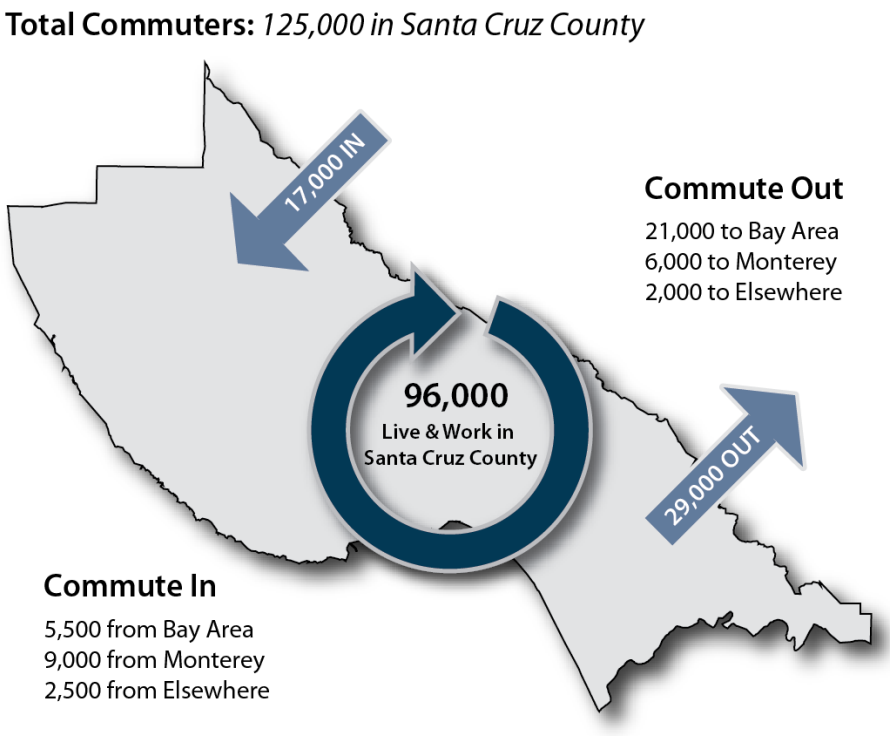


Figure 3.7 – Commute Patterns

Source: American Community Survey 5-year summary data

While the majority of work trips in Santa Cruz County are within the county boundaries (77%), about 17% of Santa Cruz County commuters travel to San Francisco Bay Area counties and about 5% to Monterey County.

Figure 3.8 shows the commute patterns between Santa Cruz, Monterey, San Benito, and Santa Clara Counties from 1980 to 2010. Bay Area commuters reside in Santa Cruz County in order to live in a coastal environment and endure the commute to take advantage of the greater diversity of jobs "over the hill."

Of the total number of people employed in our county, 15% live in other counties; 8% from Monterey and 5% from the San Francisco Bay Area. The survey data shows that between 2000 and the 2009-2013 average, there are 21% less people commuting to the Bay Area and the only significant increase in workers leaving Santa Cruz County to work elsewhere is into Monterey County. The 2009-2013 data represents the commute flows during the Great Recession of 2008-2012. When more recent data becomes available that represents commute flows between 2014 and 2018, there will likely be a greater percentage of workers commuting to the Bay Area. Regardless of timing, the majority of Santa Cruz County work trips stay within Santa Cruz County, job locations within Santa Cruz County become a significant factor impacting traffic volumes and congestion within our county borders (**Figure 3.6**).

County of Residence	County of Work	Total Commuters 1980*	Total Commuters 1990*	Total Commuters 2000*	Total Commuters 2009-13 (Avg)**	% Change 2000 to 2009-13	% of All Commuters 2009-13
Santa Cruz	Santa Cruz	65,000	89,628	93,084	96,296	3.45%	77.36%
Santa Cruz	Monterey		3,650	5,164	5,995	16.09%	4.82%
Santa Cruz	San Benito		322	622	659	5.95%	0.53%
Santa Cruz	Bay Area	14,662	20,596	26,243	20,790	-20.78%	16.70%
Santa Cruz	*San Mateo*	808	1,373	2,010	1,273	-36.67%	1.02%
Santa Cruz	*Santa Clara*	12,919	17,693	21,540	17,280	-19.78%	13.88%
Santa Cruz	*Alameda*	445	712	1,419	1,118	-21.21%	0.90%
Santa Cruz	Elsewhere	1,966	1,715	993	734	-26.08%	0.59%
Santa Cruz	**Total**	**81,628**	**115,911**	**126,106**	**124,474**	**-1.29%**	**100.00%**

County of Residence	County of Work	Total Commuters 1980*	Total Commuters 1990*	Total Commuters 2000*	Total Commuters 2009-13 (Avg)**	% Change 2000 to 2009-13	% of All Commuters 2009-13
Santa Cruz	Santa Cruz	65,000	89,628	93,084	96,296	3.45%	84.95%
Monterey	Santa Cruz		6,821	7,601	9,178	20.75%	8.10%
San Benito	Santa Cruz		623	714	848	18.77%	0.75%
Bay Area	Santa Cruz	1,669	4,455	4,738	5,452	15.07%	4.81%
San Mateo	Santa Cruz	133	393	214	332	55.14%	0.29%
Santa Clara	Santa Cruz	1,214	3,505	3,463	4,045	16.81%	3.57%
Alameda	Santa Cruz	100	322	462	606	31.17%	0.53%
Elsewhere	Santa Cruz	2,000	1,147	1,259	1,588	26.13%	1.40%
Total	**Santa Cruz**	**68,669**	**102,674**	**107,396**	**113,362**	**5.56%**	**100.00%**

Figure 3.8 – Commute Patterns Into and Out of Santa Cruz County

Source: Census Transportation Planning Products, Federal Highway Administration
**U.S. Census Bureau, Census long form data*
***U.S. Census Bureau, American Community Survey 5-year summary data*

High Use Routes

Highways. Daily commuters often complain about the high level of congestion on state highways. Over 50% of the miles driven in Santa Cruz County are on state highways[6]. Average annual daily traffic volumes on state highways in Santa Cruz County are shown in **Figure 3.9**.

Of the six state highways in Santa Cruz County, Highway 1 has the highest average daily traffic as it is the primary travel route in the region (**Figure 3.9**). Between the City of Santa Cruz and Aptos and sometimes further south, Highway 1 is frequently congested at peak travel times with peak periods stretched longer into the morning and evening hours. Traffic also peaks in the middle of the day as people run errands or pick up their children from school. On the most congested segments of Highway 1,

in the vicinity of the Bay Avenue/Porter Street interchange, weekday traffic volumes are 97,000 (**Figure 3.9**). High traffic volumes on Highway 1 translate into longer travel times on both Highway 1 and parallel arterial routes (i.e. Soquel Drive and Capitola Road). It is no surprise that Highway 1 has been the focal point for much of the discussion and frustration about traffic congestion in the county. The RTC assisted Caltrans when they developed a Highway 1 Corridor System Management Plan (CSMP) and several projects from the CSMP have been included in the Action Element of this RTP (**Chapter 6**).
The decrease in traffic volumes on Highway 1 (**Figure 3.9**) since 2005 is likely not due to decreased demand but due to the increased level of congestion on the highway. As the traffic flow slows during peak periods, the daily traffic volumes on the highway decrease as motorists use arterials to try to find a faster route.

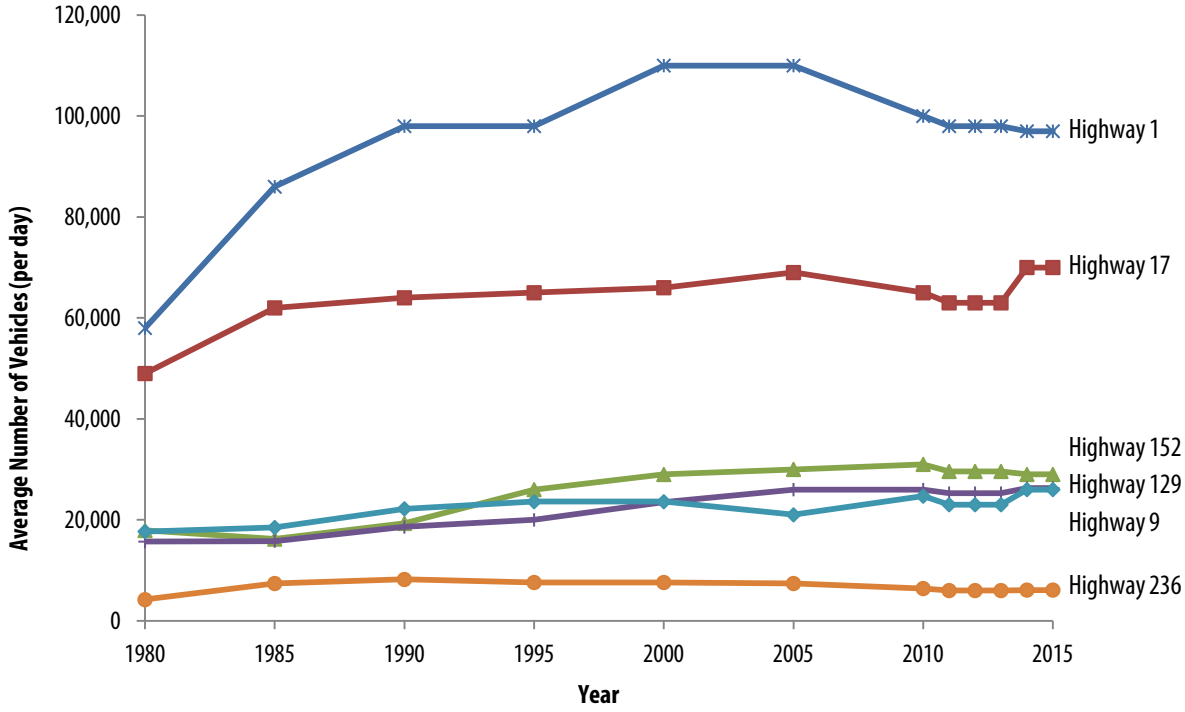


Figure 3.9 – Average Daily Traffic Volumes at Most Traveled Segments on State Highways in Santa Cruz County

Source: Caltrans Traffic Data Branch

Traffic flow on Highway 17 has increased over the last few years. Congestion on Highway 17 is primarily in the northbound direction during the morning peak and in the southbound direction during the evening peak as it serves over 20,000 commuters going "over the hill" to jobs in the Bay Area. Congestion on Highway 17 resulting from collisions on this windy, mountainous highway, with limited access points can hold up traffic for long periods of time given the challenge of accessing and clearing incidents and detouring vehicles to other roads. Highways 9, 129, 152, and 236, although not as heavily traveled as Highways 1 and 17, have also seen increasing traffic volumes since 1980 with slight leveling off since 2005 (**Figure 3.9**).

Arterials. Despite high traffic volumes on state highways in Santa Cruz County, the majority of travel occurs on the arterials, collectors and local streets and roads. **Figure 3.10** provides average daily traffic volumes for automobiles on two, four and six lane arterials in the county. The only 6 lane arterial in the

county, 41st Ave in Capitola, has the largest volume at 40,000 vehicles per day. Mission Street and Mt Herman Road, both 4 lane arterials, follow close behind with approximately 34,000 to 37,000 vehicles per day. The Soquel corridor, a 2 to 4 lane arterial that serves as an alternate route between the City of Santa Cruz and Aptos, has a traffic volume that varies between 12,000 and 31,000 vehicles per day depending on the location. Freedom Blvd, used as an alternate to Highway 1 between Watsonville and Aptos and provides primary access to the community of Corralitos, has approximately 27,000 vehicles per day. The "beach route" between the City of Santa Cruz and Capitola (Murray Street, East Cliff Drive and Portola Drive) attracts approximately 10,000 to 20,000 vehicles/day.

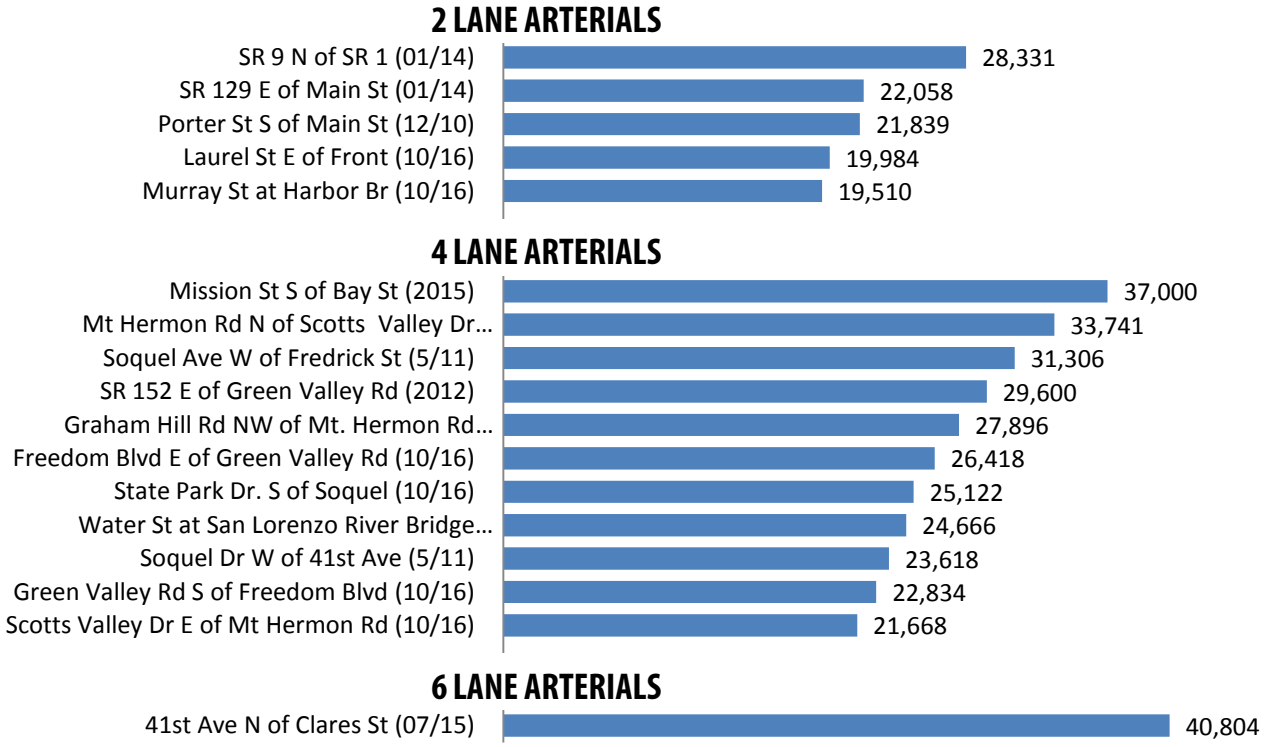


Figure 3.10 – Local ADT: Average Daily Traffic Volumes on Selected Local Roadways

Source: Santa Cruz County Regional Transportation Commission, Caltrans Traffic Data Branch

Transit. Santa Cruz METRO operates transit service on 26 fixed-route bus lines and provides over 5 million trips per year. METRO primarily serves Santa Cruz County but also operates regional service to San Jose. Numerous routes experience heavy ridership including routes serving the UCSC campus (Routes 10, 15, 16, 19), routes to San Lorenzo Valley (Route 35/35A), mainline routes between Santa Cruz and Watsonville (Routes 71, 69A and 69W, and 91), and the Highway 17 Express. **Figure 3.11** shows overall average ridership by route data for METRO transit service during the school year (although it does not distinguish where on the route passengers boarded or disembarked). UCSC boardings (approximately 10,000 riders per weekday) comprise approximately 50% of the ridership when school is

in session. As a result, these routes tend to be the most frequent and have the longest running spans of service in the system. Route 71, 69A and 69W between Watsonville and Santa Cruz have approximately 3,500 boardings per weekday, Route 35/35A between Santa Cruz and San Lorenzo Valley has approximately 1,000 boardings per weekday and the Highway 17 Express has approximately 900 boardings per weekday.

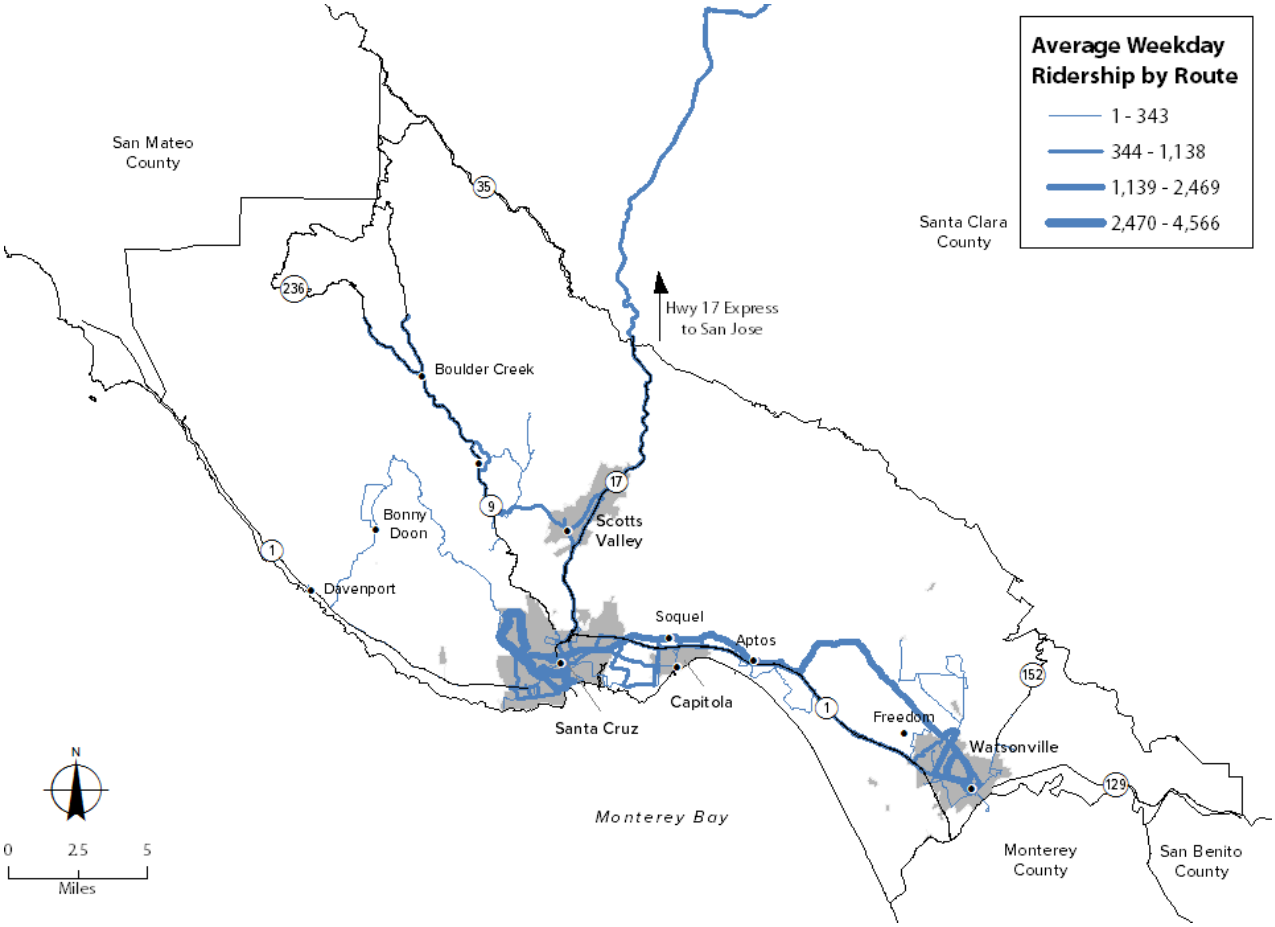


Figure 3.11 – METRO Weekday School Year Average Ridership by Route

Source: Santa Cruz Metropolitan Transit District, FY2017

The annual ridership for the system was at a high in 2008 at 6 million and has decreased to approximately 5 million over the last few years (**Figure 3.12**). As a result of the changing economic conditions that reduced revenue, METRO reduced service in 2010 and 2011 and again in 2016, in addition to raising fares. The level of transit service (number, frequency, and areas covered by buses), fuel prices, unemployment rates, traffic congestion, and accessibility of transit stops for pedestrians can influence ridership levels. Ridership decreased after the service reduction in September, 2016 but severe weather conditions in January and February of 2017 may have also affected annual ridership for this service year.

An on-board survey of METRO passengers was conducted between June 3 and 5, 2013. When survey participants were asked the purpose of their trip, the most common reason reported was travel to or from work (39%), followed by travel to or from a college or university (24%), personal business (16%), shopping (11 %), K-12 schools (8%), recreation/social (6%), medical (5%), and trips to or from an airport (0.5%). Responses for "other" accounted for 5% of the total.

Consistent with the Americans with Disabilities Act of 1990 (ADA), Santa Cruz METRO also operates paratransit service (METRO ParaCruz) for people that are unable to use the fixed route bus system due to disabilities. ParaCruz serves destinations within Santa Cruz County that are within three-quarter (¾) miles of an operating bus route. ParaCruz has provided greater than 90,000 rides per year over the last few years, however annual ridership also decreased (to 75,000) in 2016 due to service cuts. Many ParaCruz riders travel to locations that provide medical care.

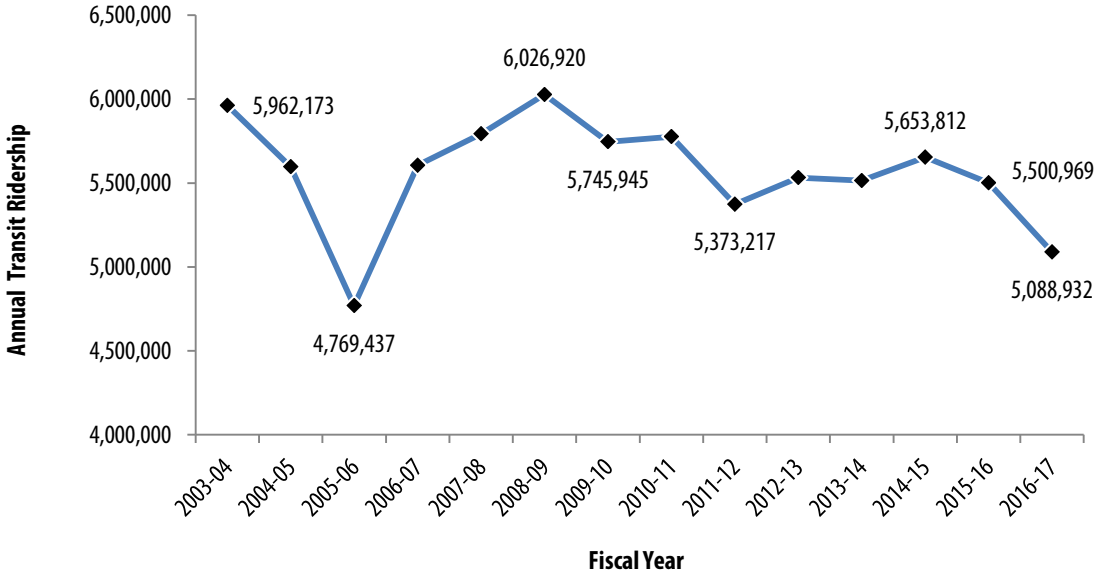


Figure 3.12 – Total Transit Ridership for Santa Cruz County Fixed Route Service

Source: Santa Cruz Metropolitan Transit District. [Note: Levels dropped in FY05/06 as no service was provided in October 2005 due to a labor strike. In Fall 2016, Service was reduced due to budget constraints.

How Much Are We Traveling?

The California Household Travel Survey collected in 2010-2012 estimated that on average each person in California takes 3.6 trips per day.[7] The purpose of these trips is primarily to go to work, school, shop, and socialize/recreate. According to the five year summary of the American Communities Survey from 2011-2015, the average travel time for traveling to work in Santa Cruz County was 26 minutes.[8] This time is an 8% decrease in travel time to work compared to data collected in 2000. A decrease in average travel time to work can be indicative of either a reduction in congestion, workers living closer to where they work, or choosing a less congested time to travel.

Vehicle Miles Traveled

A common measurement for how much travel is occurring in a region is the number of "vehicle miles traveled" (VMT). One vehicle (regardless of the number of passengers) traveling one mile constitutes one "vehicle mile". Vehicle miles traveled can be estimated on a daily per capita basis or daily for the whole region. The number of vehicle miles traveled is used in calculating greenhouse gas emissions (GHG) from transportation.

SB 375 requirements for the AMBAG region, require GHG per capita to be reduced by a minimum of 1% by 2020 and 6% by 2035 relative to 2005 levels. Much effort on this 2040 RTP and the 2040 AMBAG Metropolitan Transportation Plan –Sustainable Communities Strategy has been focused on prioritizing projects that will reduce GHG emissions primarily through a reduction in VMT. The AMBAG regional travel demand model estimates the amount of VMT based on population and traffic counts throughout the region. See Chapter 7 for a more detailed discussion on historical and projected vehicle miles traveled for Santa Cruz County.

Visitors

Santa Cruz County is a popular tourist destination that attracts many visitors to its scenic beaches, many county and state parks, and popular events such as the Santa Cruz County Fair, Capitola Art and Wine Festival, Wharf to Wharf running race, and Watsonville's Airshow. The number of tourists to Santa Cruz County, especially in the summer and on weekends, contributes significantly to the number of cars on our roadways. The Santa Cruz Conference and Visitors Council estimates that there are approximately 3 million tourists per year to Santa Cruz County. The Boardwalk in the City of Santa Cruz attracts a large percentage of these visitors. The University of California Santa Cruz, with a population of 17,000 students, also brings numerous visitors especially during spring graduation and when the new school year begins in the fall. Daily traffic volumes on Highway 17 at Laurel Curve on a weekend in the summer are about 80,000 vehicles per day, higher than typical weekday commutes. Highway 1 traffic volumes on summer weekends, in the vicinity of Soquel Avenue interchange, average approximately 95,000 vehicles per day, similar volumes to typical weekday commutes.

Goods Movement

Another source of traffic volumes on our roadways is goods movement. Nearly all commodities sold in stores or used in local manufacturing in Santa Cruz County arrive on roads by truck. Similarly, most products that are produced in Santa Cruz County are shipped out by truck. The top freight dependent industries by gross regional product from studies performed in 2009 are retail trade ($835 million), agriculture ($491m), construction ($420m), and manufacturing ($534m).[9] The 2016 Crop Report for Santa Cruz County shows that the agricultural gross regional product has increased to $637 million, up from $491 million in 2009. When looking at freight volumes, sand and gravel products are the largest commodity group in the county at 35% of the total, or 9.2 million tons. Agricultural goods are the second largest commodity by volume, estimated at 2.5 million

tons in 2007. [10] Trucks are the preferred mode for time-sensitive agricultural products, including fresh produce and other agricultural commodities.[11] There are many refrigeration (coolers) and packing facilities for agricultural products in and around Watsonville, which has substantial freight traffic for farm products. Granite Rock operates a quarry in Santa Cruz and ships large quantities of sand by truck. Logging products are shipped in the county, but no up to date data on volume is currently available. The majority (59%) of the commodities based on weight flow outbound from Santa Cruz County, with internal flows at 1.5% and shipments inbound to Santa Cruz County from other counties at 39.5%.[12]

The primary truck route for the Central Coast region is Highway 101. The key routes that connect Santa Cruz County with the rest of the Central Coast region's freight network are Highways 1, 17, and 129. Truck traffic contributes to congestion during rush hours. Highway 129 truck traffic can be as high as 12% of overall traffic or 2,384 trucks daily. On Highways 1, 17, and 152 truck traffic ranges from 3 to 4% of overall traffic with a high on Highway 1 of 3,760 trucks daily (**Figure 3.13**). Truck volumes on Highways 129 and 152 have been increasing over the last decade, likely due to increased goods movement from agriculture in the Watsonville area. The demand for more goods into our county will likely increase as population continues to grow. Even small numbers of trucks relative to overall traffic can create traffic jams on some roads, especially in mountainous areas where the differences in speed between trucks and cars are even greater.

Santa Cruz County Highway	2015 Daily Truck Volume*	% of Total Traffic Volume
Highway 1	3760	3.4%
Highway 9	1820	6.2%
Highway 17	1720	2.7%
Highway 129	2384	11.8%
Highway 152	952	3.5%

* Truck volumes are from locations with highest counts on highway.

Figure 3.13 – 2015 Daily Truck Volumes on Highways in Santa Cruz County

Source: Caltrans Traffic Data Branch

As the majority of goods shipped into and out of the county are carried by trucks, congestion is a key challenge for freight-dependent industries. It is important that these industries are able to thrive in the region as they are critical in terms of jobs and contribution to the regional economy. Local and regional governments can continue to help the goods movement industries thrive by supporting freight and transportation projects that improve the efficiency of goods movement to major destinations and intermodal facilities. This includes maintenance of key roadways, improved travel time reliability on highways and arterials, improving safety on key routes and increasing options for shipping freight by rail.

Although in 2012 Santa Cruz County relied on trucks for 77% of the County's total freight volume, the Santa Cruz Branch Rail Line is also used for freight service. Commodities shipped by rail in 2012 accounted for about 4.9% of the County's freight by weight and 2.4% by value.[13] Prior to the closure of the Cemex cement plant in 2009, cement and coal were shipped by rail to and from the cement plant in Davenport each year. Currently, the rail line is used for freight service from Watsonville south connecting to the Union Pacific main line in Pajaro. Upward pricing pressure on the trucking industry due to rising fuel costs, congestion, additional wear and tear on roads caused by trucks, as well as safety and environmental concerns, have prompted the region's freight and transportation stakeholders to look for alternatives for transporting goods. The rail system is one of the main options available. The 2013 California State Rail Plan stresses the importance of short line railroads, including the Santa Cruz Branch Line, Santa Maria-Valley Rail, and Monterey Bay Railway Company, and the potential for rail freight to integrate with other freight modes and with passenger rail, lowering energy use and pollution, maintaining global competitiveness, and aiding in developing livable and vibrant communities.[14]

Photo Credit: Howard Cohen

Prioritizing traffic flow improvement projects on Highways 1, 17 and 129, the main routes that connect to Highway 101, as well as freight rail service that connects to the rest of California and beyond will provide the greatest benefit to goods movement in Santa Cruz County.

Air freight in 2012 accounted for negligible tonnage, but 3% of freight value in Santa Cruz County, since this mode tends to reflect the time-sensitive or higher value, but lower weight shipments made by air.[15] One example is the flower industry that often ships via air cargo due to time-sensitivity. The Watsonville Airport serves many growers; however, the primary cargo airports for Santa Cruz County are Monterey, San Jose and San Francisco.

AMBAG completed the U.S. 101 Central Coast California Freight study in 2016 to identify short-term and long-term strategies to improve freight mobility and transportation operations along US 101 from San Benito County through Santa Barbara County. The US 101 corridor supports the economic vitality of the Central Coast area as a major goods movement corridor. The report recommends upgrading the rail on the Santa Cruz Branch Line to Federal Rail Administration Class 2 rail, allowing freight train speeds of up to 25 mph on sections in Santa Cruz County in order to improve freight connectivity to other regions in California and nationwide.[16]

How Are We Getting Around?

The California Household Travel Survey that was conducted between 2010 and 2012 indicates that the mode share for transit, bike and walk trips throughout California approximately doubled from survey results taken in 2000, with a decline of auto trips by 10% (**Figure 3.14**). In 2011-2012, automobile trips accounted for 77% of all trips throughout California, approximately 18% of all trips were non-motorized and 4% of reported trips were made by public transit (**Figure 3.14**). The mode share for all trips in Santa Cruz County collected by the 2011-2012 CHTS is presented in **Figure 3.15**. This data shows an increase in the bike mode share but less walk and transit mode share in Santa Cruz County compared to statewide. National studies show that nearly 70% of the millennial population (ages 18-34) is using multiple travel options several times or more per week.[17] This flexible concept of mobility, combined with a well-designed multi-modal transportation network, could set a new direction for transportation.

Mode	2000 Mode Share	2010-2012 Mode Share
Auto	86.7%	76.9%
Transit	2.2%	4.4%
Walk	8.4%	16.6%
Bike	0.8%	1.5%

Figure 3.14 – Mode Share for All Trips in California

Source: California Household Travel Survey

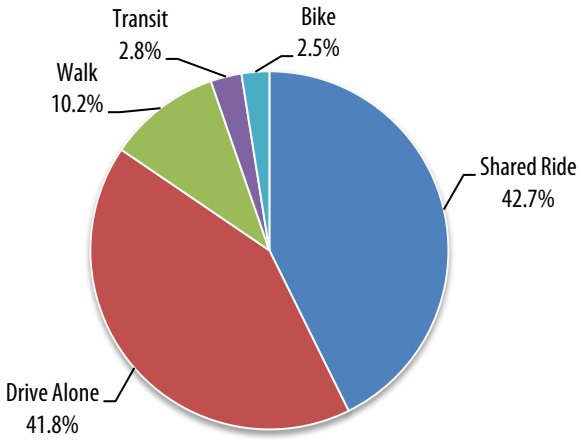


Figure 3.15 – Mode Share for All Trips in Santa Cruz County

Source: 2011-2012 California Household Travel Survey

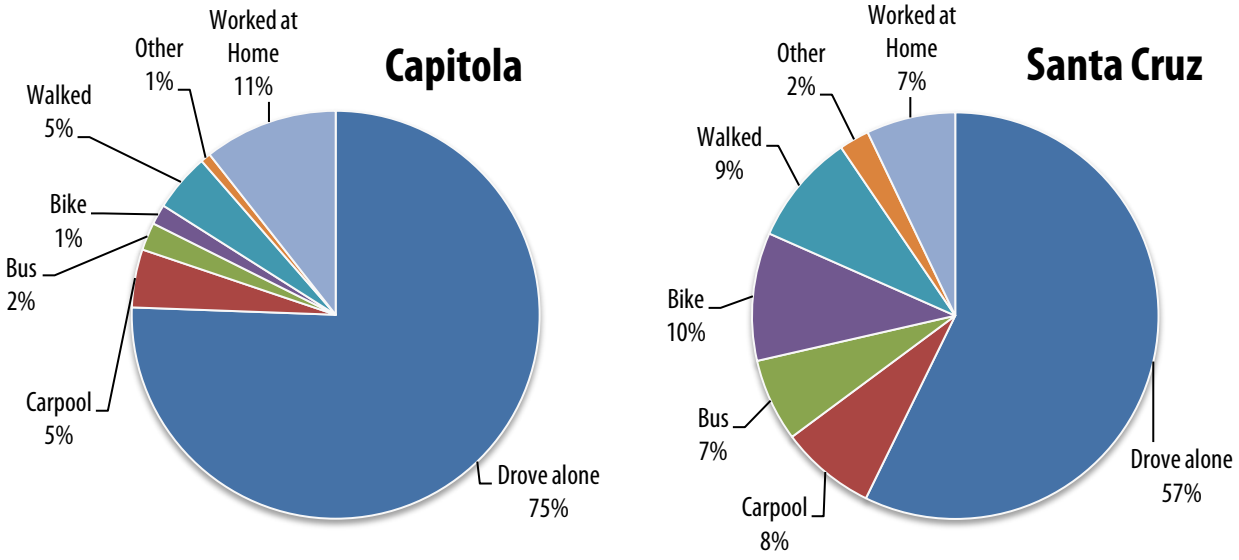
While the above mode split data are representative of all trips, the American Community Survey (ACS) provides a comparison of the ways Santa Cruz County residents get to work (**Figure 3.16**). The convenience of driving alone still attracts the majority of people and the percent of people driving by themselves to work has not changed significantly since 2000 (**Figure 3.16**). Even though the majority of work trips are made by people driving an automobile, people also travel to work by transit, carpool, vanpool, bicycle, and by foot. The chance to get some exercise, be productive while carpooling or taking transit, concerns about the environment and/or the opportunity to save some money are all stated reasons to consider alternatives to driving alone. There has been an increase in the number of people biking to work and working from home but the number of people carpooling to work in Santa Cruz County has declined since 2000. The difference between reported results for travel by mode for all trips in Santa Cruz County and only work trips in Santa Cruz County may be explained by an increase in active transportation trips for non-work purposes such as shopping, social, and recreation trips. Non-work trips may be shorter and more readily amenable to a shift from auto to biking and walking. Higher gasoline prices, a weak economy and changing generational preferences may also result in less driving according to a 2013 study by the U.S. Public Interest Research Group and Frontier Group[18].

Mode to Work	CTPP2000		2011-2015 ACS	
	Number	Percent	Number	Percent
Total Workers	126,105	100.0	128,145	100.0
Drove alone	87,690	69.5	89,590	69.9
2-person Carpool	13,205	10.5	9,083	7.1
3-or-more-person Carpool	4,705	3.7	2,896	2.3
Public Transportation	4,105	3.3	3,717	2.9
Bike	2,585	2.0	4,812	3.8
Walked	5,600	4.4	4,996	3.9
Taxi, Motorcycle and Other means	1,470	1.2	3,655	2.9
Worked at Home	6,745	5.3	9,396	7.3

Figure 3.16 – Mode Share for Work Trips in Santa Cruz County

Source: U.S. Census Bureau, American Community Survey

The 2011-2015 American Community Survey (5-year estimate) indicates that there is a significant difference between the way residents of the four cities in Santa Cruz County travel to work (**Figure 3.17**). Residents of Watsonville used carpooling more often than the other cities as an alternative to driving alone whereas residents of the City of Santa Cruz used a mix of different transportation alternatives. City of Santa Cruz has the least number of drive alone trips likely due to the land use that includes proximity of jobs to housing, high bus use by UCSC students, extensive bicycle lane network, and other transportation infrastructure that is in place. Capitola and Scotts Valley have the greatest number of residents working from home but also the greatest percentage of drive alone trips. This mode share data shows people's travel preferences are influenced by the type of land use and transportation facilities that are available in their community. This information is valuable for assessing how the number of trips driving alone could be reduced further in each of the cities.



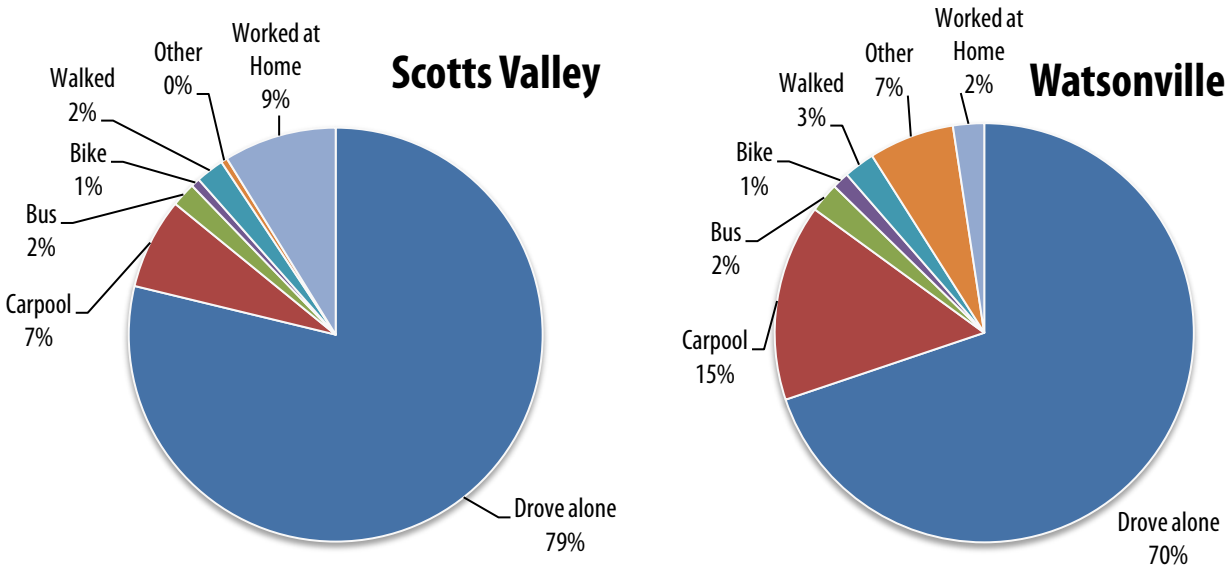


Figure 3.17 – Mode Share for Work Trips by City of Residence

Source: 2011-2015 American Community Survey

Bicycle Use

Bicycle count surveys have been conducted at approximately 40 locations countywide by the Community Traffic Safety Coalition during peak travel periods (4:00 pm to 6:00 pm) since 2003. Results of these counts show the greatest number of bicyclists in the City of Santa Cruz and mid-County including Capitola. Based on the data collected at these locations, there was a decrease in bicycle ridership in Santa Cruz County in 2014 through 2016. (**Figure 3.18**).

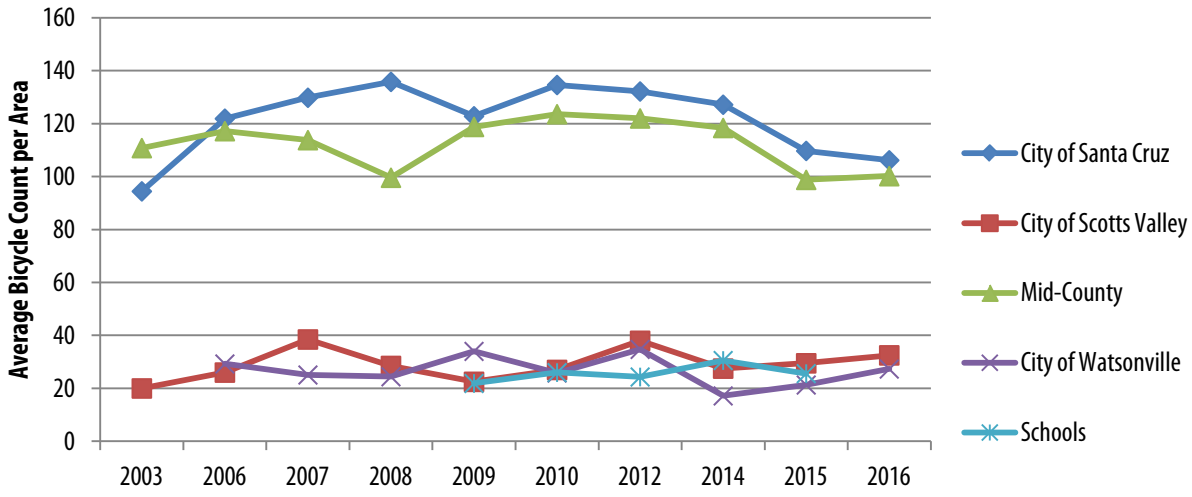


Figure 3.18 – Countywide Bicycle Counts from 2003-2016

[Note: Counts were taken for 2 hours at all locations except schools where counts were taken for 1 hour.]
Source: Data collected by Community Traffic Safety Coalition

School Trips

Due to safety concerns and urban sprawl, most parents drive their children to school. According to the Surface Transportation Policy Project, two-thirds of the country's children walked or biked to school 30 years ago; now, less than 10% do so. This phenomenon has led to a sharp increase in short-distance trips made by car, evidenced by the traffic surrounding elementary and secondary schools at the beginning and end of the school day. By some estimates, 20 to 25% of rush-hour traffic on local roads and streets can be attributed to school commutes. Travel to the University of California and community college campuses also impact peak period traffic.

Less Trips

Not only are people changing how they get around, there are also a number of reasons why people are traveling less altogether. Technological advances, including laptop computers, remote connectivity, wireless networks, cell phones and other mobile devices have made it possible for individuals to work in locations other than traditional worksites. The American Communities Survey from 2011-2015 estimated that 7.3% of employees residing in Santa Cruz County work at home, either part or all of the time, up from 5.3% in 2000 (**Figure 3.16**). Avoiding traffic congestion, gas prices, and/or environmental concerns can also be motivators to decide to shop closer to home or plan ahead by linking a few errands together that are close by to avoid extra trips.

Transportation Equity

Investments in transportation determine the choices that are available for how we travel. Low-income people, people with disabilities, seniors, youth and minorities can often be disproportionately limited by the transportation choices available to them. The cost of car ownership or inability to drive, underinvestment in public transportation, and a lack of pedestrian and bicycle-accessible thoroughfares can isolate transportation disadvantaged people from jobs, services and medical care.

Within the county, there is substantial variation in age and income. **Figure 3.19** shows the areas in Santa Cruz County with the greatest populations of transportation disadvantaged people due to race and income. **Figure 3.20** shows the distribution of youth and senior populations in Santa Cruz County. Nearly one-third of Santa Cruz County residents—notably children, the elderly and disabled, and low-income individuals and families who cannot afford a car—do not drive a personal vehicle (**Figure 3.21**). For people who do not drive a personal vehicle, access to convenient transit service and safe routes to walk or ride a bike are a life line.

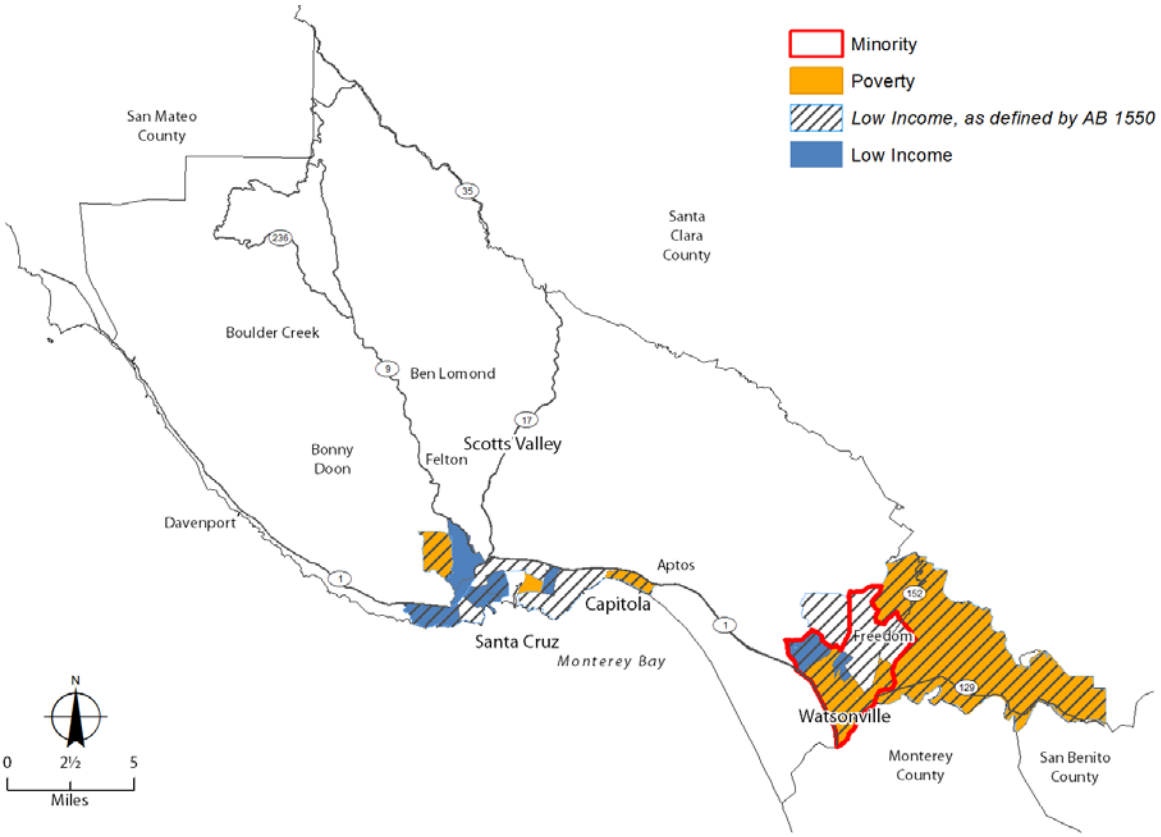


Figure 3.19 – Minority, Low Income and Poverty Areas in Santa Cruz County

Note: These areas meet the regional definition of Disadvantaged Community or DAC, which includes areas with higher concentrations of residents that are low or very low income and minority-based. Minority areas are defined as census tracts where greater than 65% of the total population is non-white; low income areas are defined as census tracts where greater than 65% of households are low income or where incomes are at or below the low income threshold designated by the California Department of Housing and Community Development's income limits under AB1550; and poverty areas are defined as census tracts where greater than 20% of households are categorized as poverty.
Source: U.S. Census Bureau, AMBAG; Assembly Bill 1550

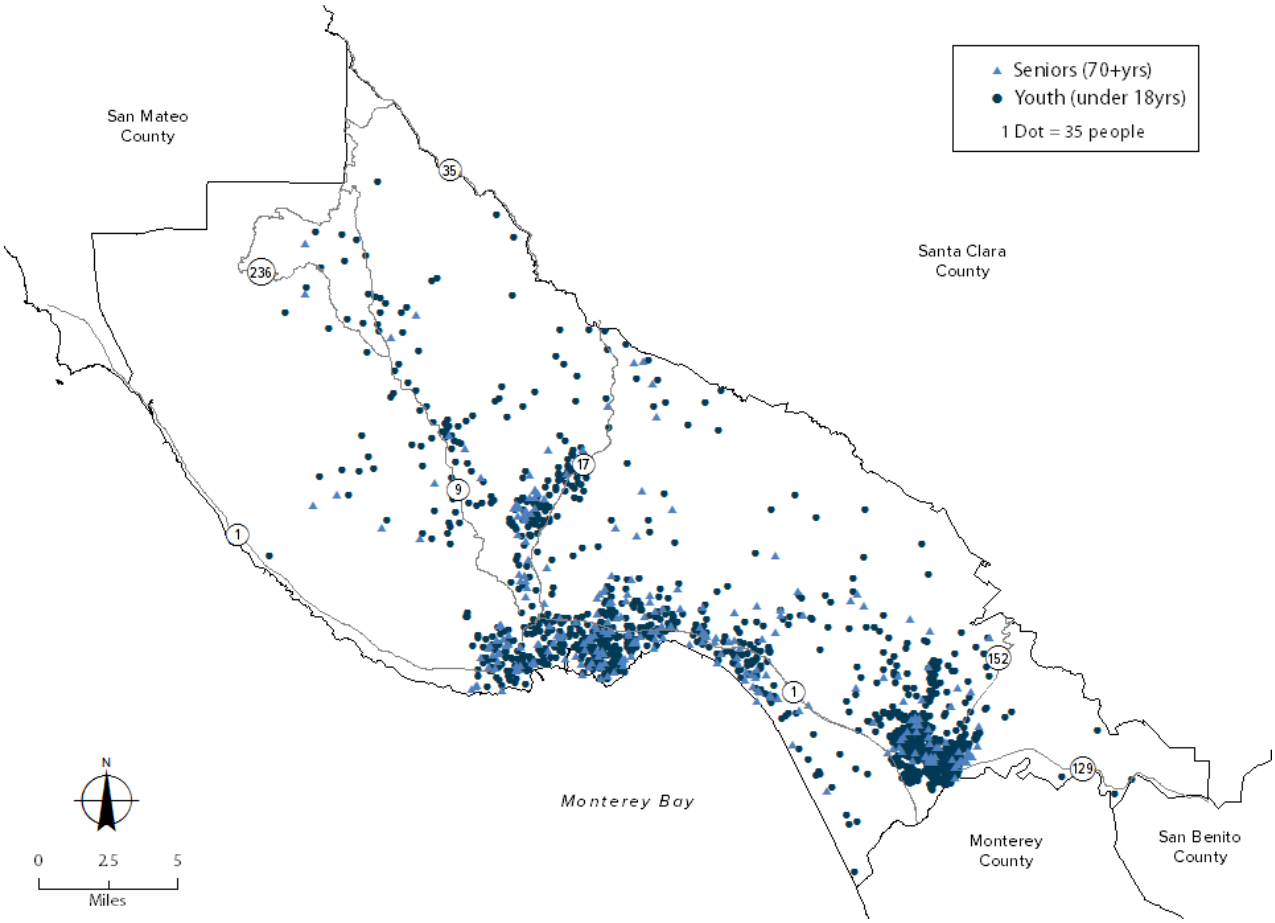


Figure 3.20 – Distribution of Senior and Youth Populations in Santa Cruz County

Source: U.S. Census Bureau, 2010 Census

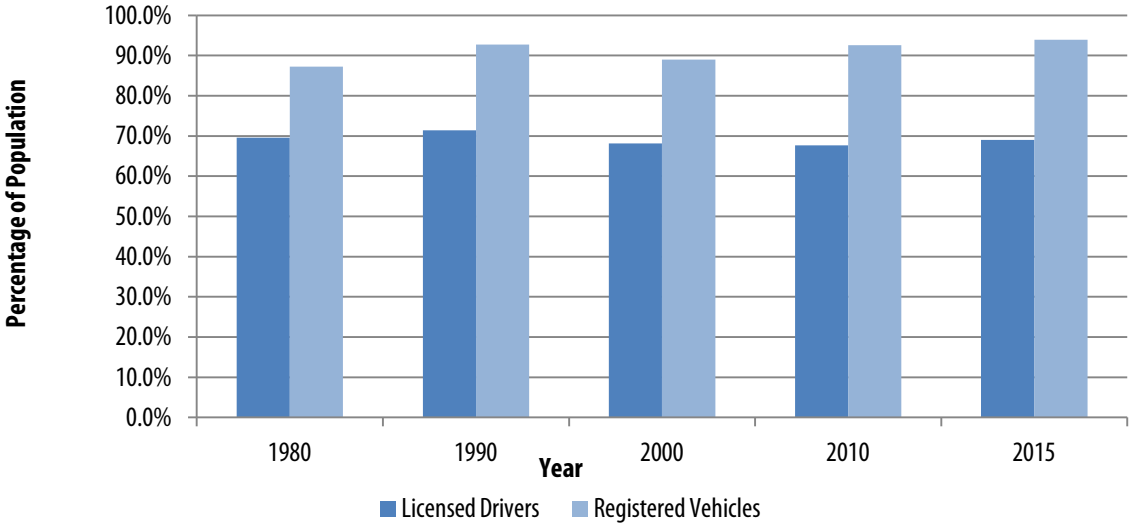


Figure 3.21 – Historical Trends in Licensed Drivers and Registered Vehicles in Santa Cruz County

Source: Department of Motor Vehicles and Census

Variations in growth rates between age groups are distinct in Santa Cruz County. While the Association of Monterey Bay Area Governments (AMBAG) currently projects a total population increase of 12% between 2015 and 2040, there is only a0.3% increase in the population under 70 and those 70 and older are expected to grow by 138% through 2040 (**Figure 3.22**). Seniors age 70 and over make up about 8.6% of the population today and will make up about 18% of the population by 2040. This demographic shift will impact both the economy and local transportation needs of our community.

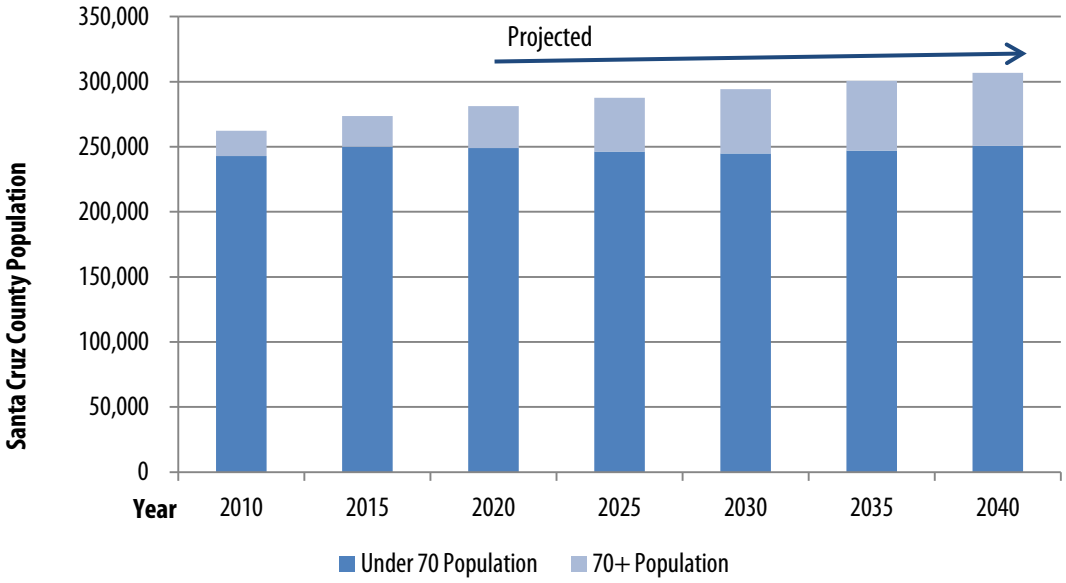


Figure 3.22 – Population Projections for Seniors Age 70 and Over

Source: AMBAG

As a result of this projected growth in the senior population, Santa Cruz County could potentially experience a greater demand for mobility of aging and disabled adults. Expecting to continue driving well into their later years, many older adults will not anticipate life without a car. Furthermore, it has been well documented that many older adults will retire in or migrate to low density suburban areas, characterized by single family homes, that are poorly served by public transit or lack adequate pedestrian facilities. Older adults no longer able to drive could face severe mobility deficiencies such as isolation, lack of access to social or medical needs, and increased risk of accidents. Survey results taken at five senior dining centers in Santa Cruz County indicate that the majority of respondents (43%) drive themselves as their primary form of transportation.[19] Next to driving, the most common means of transportation is bus use at 16 percent, followed by getting a ride with friends/family and walking. While the automobile was the most common means of transportation among respondents, approximately 41 percent of respondents reported using the bus at least once in the past month.

According to the American Community Survey 2011-2015 5 year summary, over 9% of the total population in Santa Cruz County has one or more disabilities. Of this population, 63% are seniors (defined as persons over the age of 65 years). This is particularly important considering that the number of seniors, age 70 or greater, residing in the county is expected to grow significantly by 2035 as the "Baby Boomer" population ages and seniors are living longer (**Figure 3.22**). This projected increase in the senior population could increase the number of individuals with disabilities in Santa Cruz County.

Providing for the needs of transportation disadvantaged individuals due to age, income, race, disability or limited English proficiency is a crucial part of the 2040 RTP. According to the Surface Transportation Policy Project's *Beyond Gridlock* report (2000), unless we provide more alternative transportation facilities and services, "the next generations of California parents may well see their time spent behind the wheel continue to rise as they play chauffeur to both their kids and their own parents."

Notes for Chapter 3

[1] State of California, Department of Finance, "E-1 Population Estimates for Cities, Counties, and the State—January 1, 2016 and 2017," Sacramento, California (May 2017), http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-1/.

[2] "Industry Employment & Labor Force - by Month," California Employment Development Department, Labor Market Information Division (LMI), http://www.labormarketinfo.edd.ca.gov/data/employment-by-industry.html

[3] "Unemployment Rates (Labor Force)," State of California, Employment Development Department, accessed October 2017, http://www.labormarketinfo.edd.ca.gov/cgi/dataanalysis/labForceReport.asp?menuchoice=LABFORCE

[4] "OnTheMap, Area Profile Analysis in 2015 by All Jobs" U.S. Census Bureau, Center for Economic Studies, accessed October 2017, http://onthemap.ces.census.gov.

[5] A. Santos, N. McGuckin, H.Y. Nakamoto, D. Gray, and S. Liss, "Summary of Travel Trends, 2009 National Household Travel Survey," U.S. Department of Transportation, Federal Highway Administration (June 2011), http://nhts.ornl.gov/2009/pub/stt.pdf.

[6] California Department of Transportation, Highway Performance Monitoring System, "2015 California Public Roads Data", http://dot.ca.gov/hq/tsip/hpms/datalibrary.php

[7] NuStats Research Solutions, "2010-2012 California Household Travel Survey Final Report, Version 1.0," California Department of Transportation (2013), http://www.dot.ca.gov/hq/tsip/otfa/tab/documents/chts_finalreport/FinalReport.pdf.

[8] "American Community Survey 2011-2015," U.S. Census, http://www.census.gov/acs.

[9] "Santa Cruz County 2016 Crop Report," County of Santa Cruz, Office of the Agricultural Commissioner, http://ucanr.org/sites/Farm_Management/files/132235.pdf.

[10] "US 101 Central Coast California Freight Study Final Report", Association of Monterey Bay Area Governments (2016). http://ambag.org/programs/freight/1_Finished_Final_AMBAG_US101CCCFrtStudy_FinalReportCombined_REV.pdf

[11] Cambridge Systematics, "Central Coast California Commercial Flows Study," Association of Monterey Bay Area Governments (2012).

[12] See note 11 above.

[13] See note 11 above

[14] See note 11 above

[15] See note 11 above.

[16] See note 11 above

[17] "Millennials and Mobility: Understanding the Millennial Mindset," American Public Transportation Association (2013), http://www.apta.com/resources/reportsandpublications/Documents/APTA-Millennials-and-Mobility.pdf.

[18] Tony Dutzik and Phineas Baxandall, "A New Direction: Our Changing Relationship with Driving and the Implications for America's Future," U.S. PIRG Education Fund, and Frontier Group (Spring 2013), http://www.uspirg.org/sites/pirg/files/reports/A%20New%20Direction%20vUS.pdf.

[19] Karena Pushnik and David Pape, "A Bus Use Survey Of Aging and Disabled Adults Living In Santa Cruz County," Santa Cruz County Regional Transportation Commission (January 2013).