



2023

Santa Cruz County State of the Workforce

June 2023

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Executive Summary

Introduction

The Santa Cruz County Workforce Development Board engaged BW Research to develop this 2023 State of the Workforce Report. The Santa Cruz County workforce has experienced sizable changes in the wake of the pandemic. This report highlights the county's workforce, the growing and declining industries, and what that means for training and education, commute patterns, and workers' everyday lives. Additionally, the report explores the substantial increase in regional investment in infrastructure and housing and the potential impacts on the workforce responsible for executing these projects. The workforce in Santa Cruz County will continue to change, requiring continued efforts and support to ensure that workers are prepared for the changing employment landscape.

Key Findings

The most relevant workforce findings and trends from the report are outlined below. For more detailed information on each of the results below, please refer to the figure references embedded within each finding.

State of the Workforce

1

The Santa Cruz County economy is experiencing a robust recovery in the wake of the COVID-19 pandemic. Although the county experienced deeper job losses during the height of the pandemic and the subsequent recovery in 2021 was slower than state and national trends, employment growth in 2022 has surpassed that of both California and the US (Figure 1). In fact, between 2017 and 2022, the county has gained 9,100 jobs, or a 9% increase in jobs compared to four percent statewide and three percent nationally during this same time period. Nonetheless, the county's 2023 unemployment rate remains higher than statewide and national averages (Table 1), while its labor force participation rate is lower than California's (Figure 2), suggesting that the Santa Cruz job market is still recovering from the pandemic.

2

The recent jobs additions have been primarily concentrated in higher-paying industries. While overall job quality in Santa Cruz County is still lower than the statewide average (Figure 3), almost all of the employment growth observed between 2017 and 2022 can be attributed to jobs in the highest-paying tier (Figure 4). The jobs are also driven by growth in some of the highest-paying industries. Defense, Aerospace, Transportation, and Manufacturing (DATM) saw the largest proportional increase, growing by 222% during this time. This industry cluster is also the highest paying in the region, with average annual earnings of \$142,000 per year. Other industries such as Healthcare, Biotechnology and Biomedical Devices, and Logistics also added a substantial number of jobs during this time (Figure 5 and Figure 6).

3

Where people are working is also changing. Between 2017 and 2021, the share of workers who worked from home in the north sub-region nearly doubled (91% increase), while the south sub-region also saw a large increase in work from home (44%, see Figure 18). This shift likely reflects the "new normal" of work, as companies continue to offer more remote work to workers in occupations that can take advantage of the opportunity.

Living in Santa Cruz County

1

While the regional distinctions within Santa Cruz County remain the same as in previous years, the overall demographic changes occurring in the county are expected to have an impact on the workforce. The south sub-region of Santa Cruz County has a younger population with a higher percentage of Hispanic and Latino residents. According to Figure 12, 30% of individuals over 24 years old, in southern Santa Cruz County, have not completed high school or an educational equivalent.

2

Housing continues to be a central issue in Santa Cruz County. Four-in-ten residents are renters, and nearly half (45%) of renters, in Northern Santa Cruz County, spend 35% or more of their total income on housing. Furthermore, there are stark disparities on homeownership rates across racial lines, as illustrated in Figure 16. While efforts to address this issue are underway, continued attention is required, as this issue will continue to have sizable effects on the current and potential workforce for the county.

3

Much like other coastal communities, Santa Cruz County saw a decline in the number of residents between 2020 and 2021. The county's population shrank by 4,800, primarily due to 5,000 people leaving Santa Cruz County to relocate to a state outside California. While the research does not provide specific demographics of those who left the county, housing costs are likely a significant driver of those who move out. An early 2023 statewide survey found that 45% of respondents said that the cost of housing makes them, and their families seriously consider moving out of state.¹ The decrease in population also affects the size of the labor pool, as most who left were under 65 years old.

Infrastructure Workforce Needs

1

The sizable increases in investments in infrastructure and housing will drive demand for more workers in these sectors. For example, the County 2022 to 2023 budget for road repair is 223% greater than it was four years ago. Flood control projects, and recycling and solid waste projects, will each receive about \$10 million more than four years prior, amounting to a 159% and 55% increase in budget, respectively. Seven million dollars in additional funds for housing also represented a seismic shift in money flowing toward these projects. The magnitude of budgetary changes for these infrastructure and housing investments implies that the labor force for these sectors will also see a substantial increase in demand in the immediate future.

2

Failure to address workforce challenges in the transportation, water, housing, and energy sectors implies bigger problems in the future. Each sector has unique challenges to address. The recent decline in the transportation infrastructure-related workforce (Figure 20) in the county means that these projects may be delayed if workers from outside the region are not available to shore up the workforce. While the water infrastructure workforce has grown over the past five

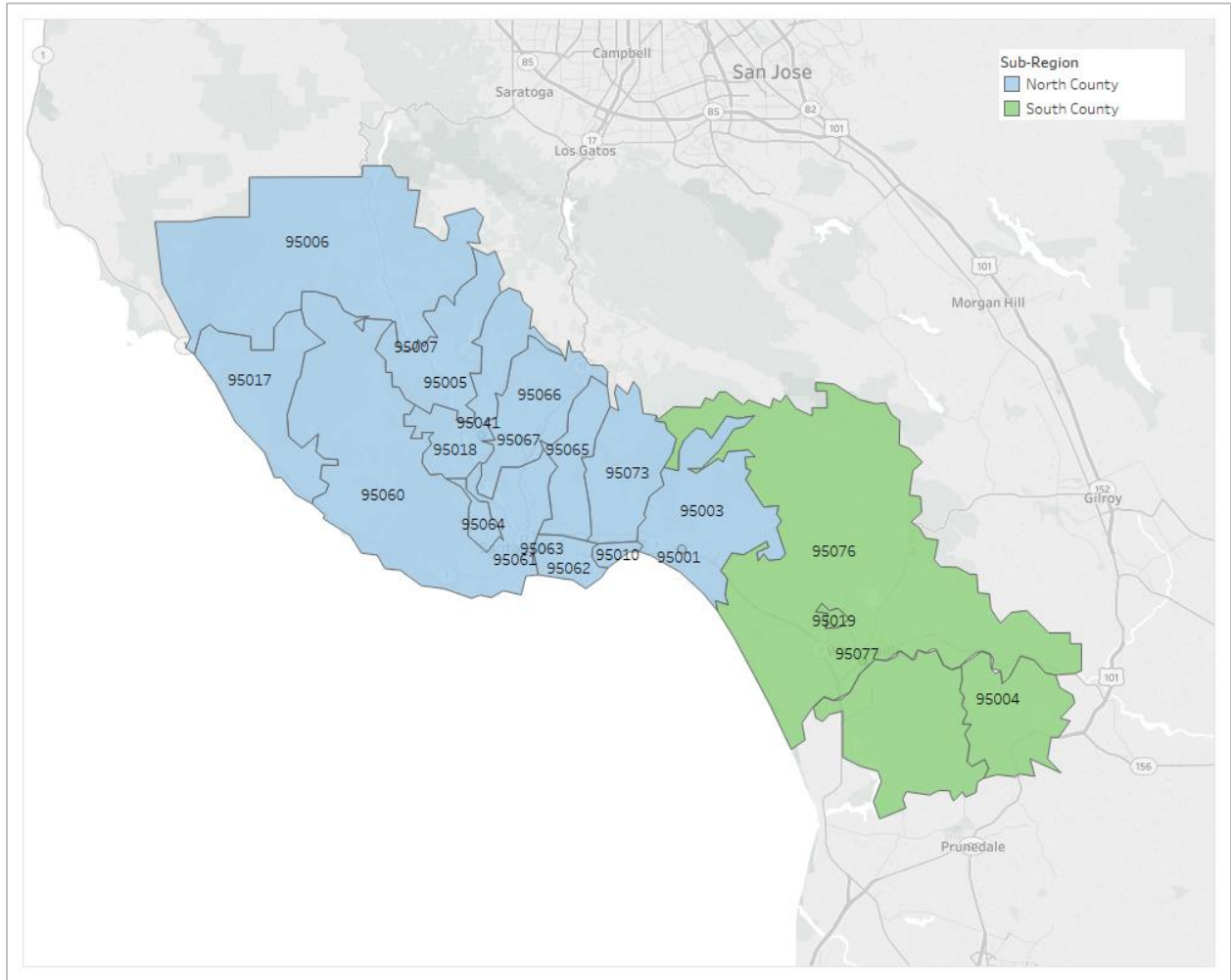
¹ "PPIC Statewide Survey: Californians and Their Government". Public Policy Institute of California. <https://www.ppic.org/publication/ppic-statewide-survey-californians-and-their-government-february-2023/>

years (Figure 21), 35% of the workforce is 55 or older, and 16% are 65 or older, meaning a significant number of retirements may be near. The residential construction workforce in the county faces a nearly identical situation to the water infrastructure workforce (Figure 22), and the county's existing energy workforce is likely to grow as the county works to meet its decarbonization goals as outlined in the [2022 Climate Action and Adaptation Plan](#). These trends mean that individually and collectively, these sectors will need to replenish and grow their labor force by tapping into younger talent and expanding the pipeline of potential workers.

3

The county currently provides a wide range of training programs; nonetheless, there is a growing need to expand the pipeline for certain types of training. Specifically, training programs that prepare workers for crucial infrastructure and housing construction roles, such as positions in construction trades, buildings, electrical, operating engineers, and construction management, are needed. Boosting the interest in infrastructure and construction-related careers and trades will require marketing and career education initiatives, as well as capacity-building support for training providers with relevant programs.

Map of Santa Cruz County



North

Aptos, Ben Lomond, Boulder Creek, Brookdale, Capitola, Davenport, Felton, Mount HERNON, Santa Cruz, Scotts Valley, Soquel

95001, 95003, 95005, 95006, 95007, 95010, 95017, 95018, 95041, 95060, 95061, 95062, 95063, 95064, 95065, 95066, 95067, 95073

South

Freedom, Watsonville

95004, 95019, 95076, 95077

Economic Profile

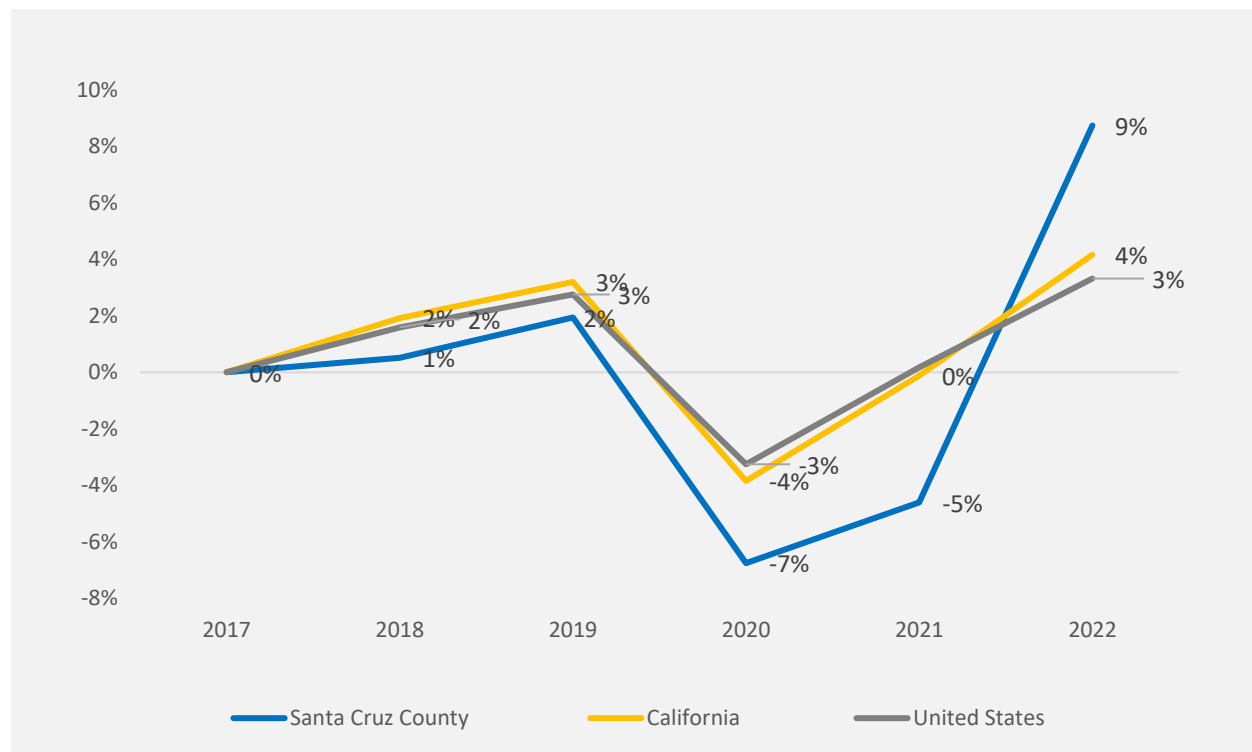
This section covers economic indicators such as total employment, labor force participation rate, industry clusters, and job quality across different tiers. An analysis of industry clusters sheds light on Santa Cruz County's competitive advantage in specific industries, categorized by those with high, middle, and low average wages. Additionally, indicators such as job quality provide a more nuanced perspective on the economic well-being of county residents, which other aggregated measures would not necessarily provide.

Overall Employment

Employment in Santa Cruz County has rebounded at a rate that exceeds the state and national recovery rates. As depicted in Figure 1, the county witnessed a significant decline in jobs due to the COVID-19 pandemic. However, the number of employed individuals in the county has recovered much faster than California and the rest of the country. Although Santa Cruz County saw steeper employment losses during the height of the pandemic, the recovery in employment has been more than twice the state's rate.

Figure 1 shows that employment in Santa Cruz County is recovering from the COVID-19 pandemic faster than the state and the rest of the country.

Figure 1. Total Employment (Cumulative % Change), 2017-2022²



² California Employment Development Department (EDD). Labor Market Information, 2022.

Unemployment and Labor Force Participation

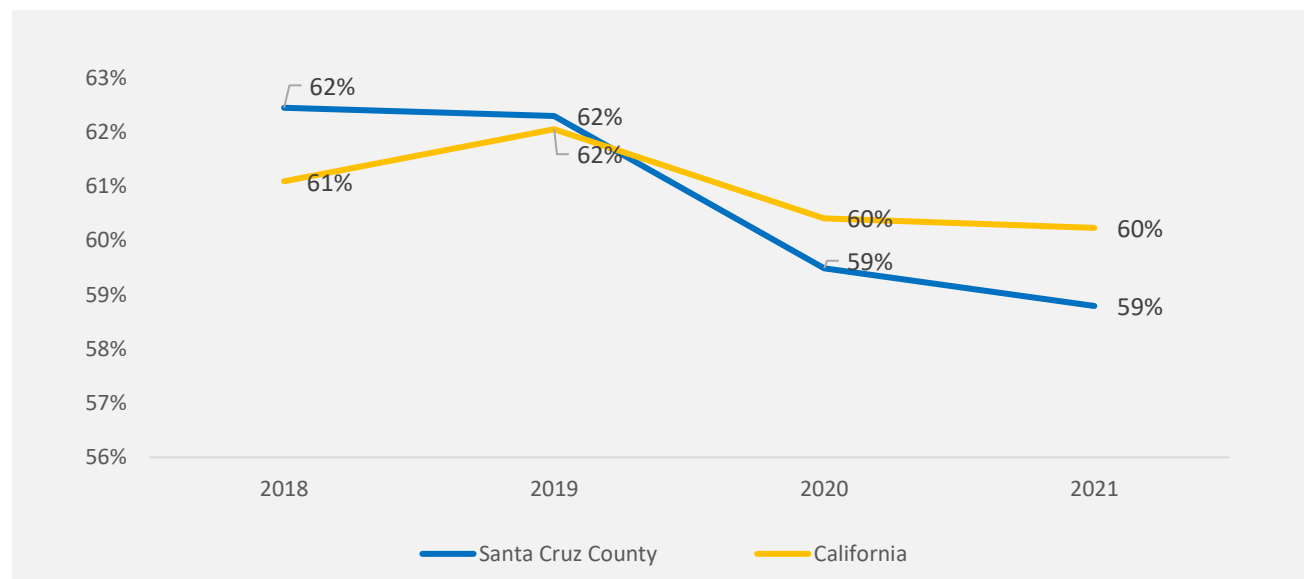
The unemployment rate in Santa Cruz County is higher than the statewide average by close to two percentage points, and three percentage points higher than the national average (Table 1). The county's labor force participation rate further suggests that the region's job market is still recovering from the pandemic, as it fell from 62% in 2019 to 59% in 2021 (Figure 2).

Table 1. Unemployment Rate (2023)³

	California	Santa Cruz County	United States
Unemployment Rate (%)	4.8%	6.7%	3.9%

Figure 2 illustrates that the county's labor force participation rate has decreased below the statewide average following the COVID-19 pandemic, and has not recovered to pre-pandemic levels.

Figure 2. Labor Force Participation Rate (2018-2021)⁴



Job Quality

Job quality serves as a crucial measure of a region's economic vitality. For instance, if a region has a large number of jobs, but a majority of those jobs pay below a sustainable wage, it indicates that workers will struggle to live and work in the region.

³ California Employment Development Department. Labor Force and Unemployment Data. 2023.

⁴ Id. 2018-2021.

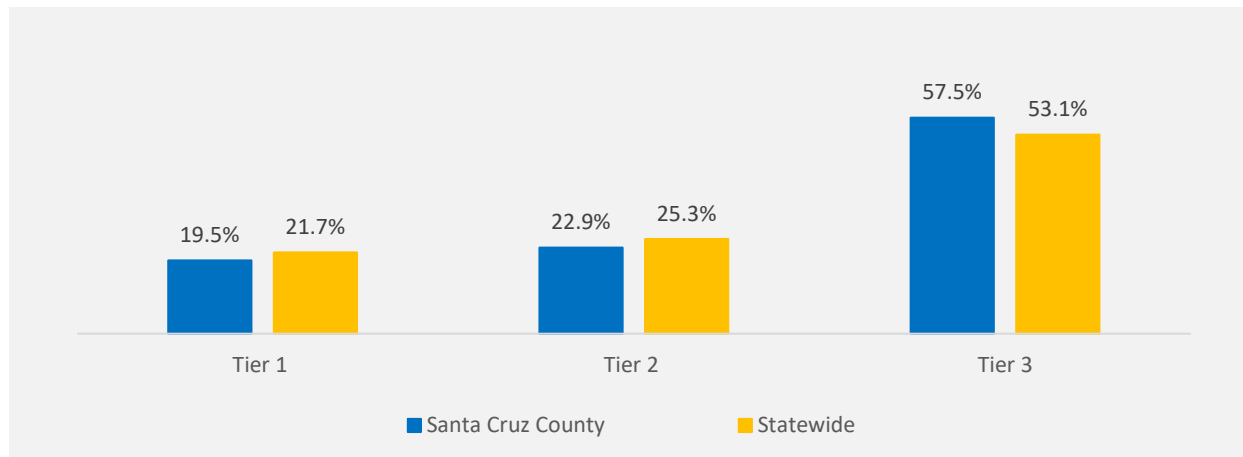
Table 2. Job Tier Description⁵

Tier 1 Occupations	Tier 2 Occupations	Tier 3 Occupations
Tier 1 occupations are typically the highest-paying and highest-skilled occupations in the economy. Such occupations include managerial positions (e.g., Sales Managers), professional positions (e.g., Lawyers), and highly skilled technology occupations, such as engineers, scientists, and computer programmers.	Tier 2 occupations are typically middle-wage and middle-skill occupations. This occupational category includes office and administrative positions (e.g., Accounting Clerks and Secretaries), manufacturing operations, and production positions (e.g., Electricians, Machinists).	Tier 3 occupations are typically the lowest-paying and lowest-skilled occupations and tend to provide the largest share of employment in the county. These occupations include food service and retail jobs, building and grounds cleaning positions, and personal care positions.

Santa Cruz County's job quality is lower than the state average. Compared to the rest of California, Santa Cruz County tends to produce a larger share of lower-skill and lower-wage Tier 3 occupations and a lower share of Tier 1 and Tier 2 jobs (Figure 3). This finding suggests that opportunities beyond service and retail positions may be limited in the county.

Figure 3 shows that Santa Cruz County has a larger share of lower-paying and lower-skilled jobs, and a smaller share of high and middle-paying jobs than the rest of California.

Figure 3. Job Composition by Tier (2021)⁶



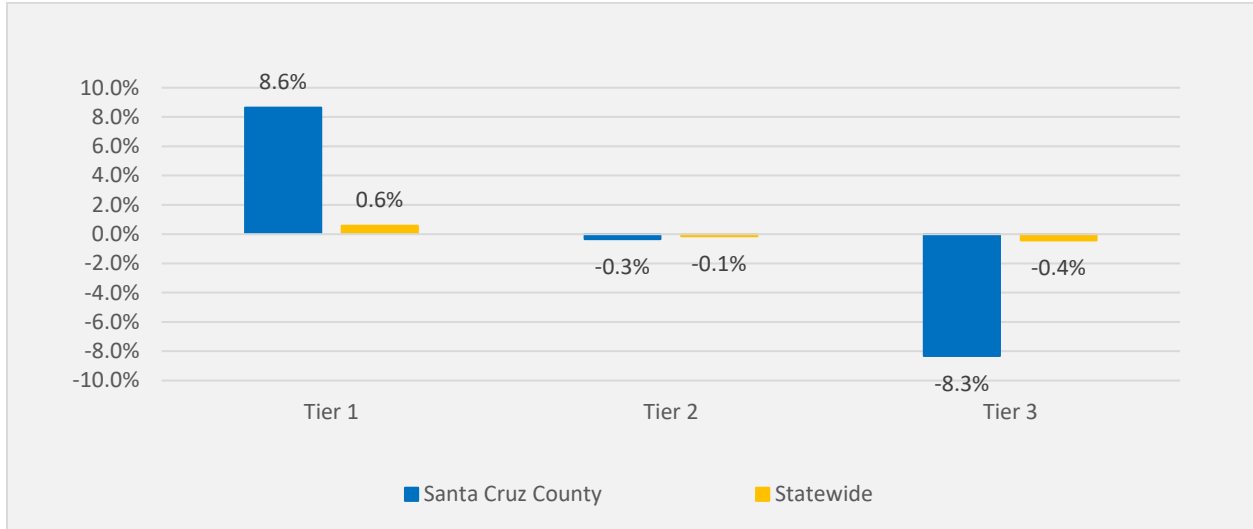
Despite overall lower job quality compared to the state averages, job quality in Santa Cruz County has improved in the past five years. Between 2017 and 2022, the share of Tier 1 jobs increased by almost nine percentage points, while the share of Tier 3 jobs has shrunk at the same rate. It is also noteworthy to mention that job composition is improving at a faster rate than state averages (Figure 4).

⁵ Tiers do not include all SOC codes, and therefore may not sum up to total county and statewide employment.

⁶ JobsEQ Q3 2022, American Community Survey 2021 5-year estimates.

Figure 4 illustrates that although the county has a relatively higher proportion of lower-skilled and lower-paying jobs than the state, the workforce composition is changing, with a decrease in the share of people working in Tier 3 jobs and an increase in people working in Tier 1 jobs.

Figure 4. Change in Job Quality (2017-2022)⁷



Industry Cluster Employment

Industry clusters are often used by economic developers and economists as a unit of analysis that allows one to determine a region's drivers of development. Clusters are closely related industries that often work together in supply chains or create value through other sources of interconnectedness, such as partnerships, business opportunities, or a shared workforce.

⁷ JobsEQ Q3 2022, American Community Survey 2021 5-year estimates.

Business Case Study

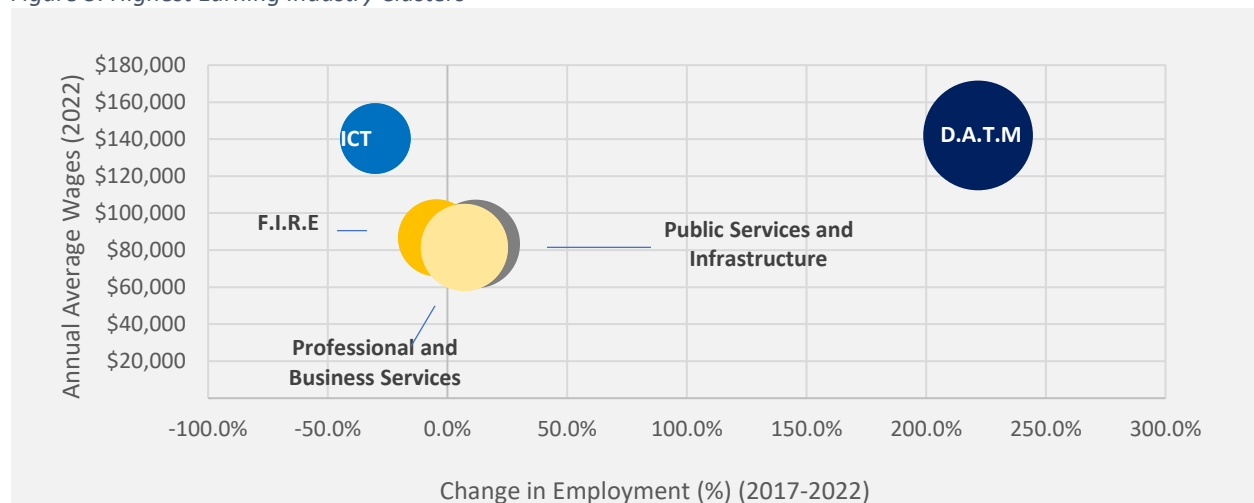
Joby Aviation

Joby Aviation, a pioneering company in electric vertical takeoff and landing aircraft, has been in operation since 2009. Throughout this time, the company has expanded both in terms of employment and reputation. Cody Cleverly, Manager of Workforce Development at Joby, said **“Santa Cruz is our home, it is an excellent place to have access to talent in the Silicon Valley while staying out, making it more affordable. It is where we came from, and we are committed to staying.”** This commitment is echoed through Joby’s decision to invest in twelve acres of land in Santa Cruz County, a decision that was taken despite the higher relative costs of operating facilities in the area. Cody highlighted some of the benefits for Joby of growing in the Santa Cruz business community, include the healthy relationship between workforce and business organizations and the proximity to institutions, like Stanford. He also indicated there is opportunity for even greater communication and coordination between the county’s education and workforce entities and the region’s business community. This collaboration aims to better prepare current and future workers for the jobs that lie ahead.

Highest Earning Clusters

Industry clusters characterized by higher earnings per job grew substantially between 2017 and 2022. Specifically, the Defense, Aerospace, and Transportation Manufacturing (D.A.T.M) cluster saw a 222% growth in employment in recent years, partly through the rise of Joby Aviation in the county. Conversely, Information and Communication Technology (ICT) and Finance, Insurance, Banking, and Real Estate (FIRE) clusters have experienced some negative growth (Figure 5).

Figure 5. Highest Earning Industry Clusters⁸

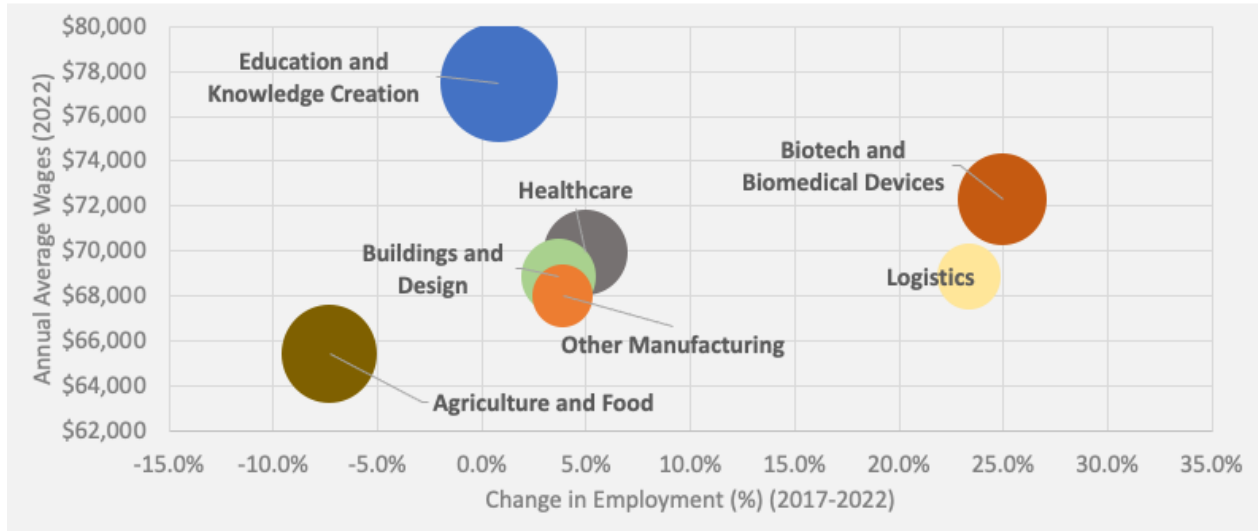


⁸ JobsEQ Q3 2022, American Community Survey 2021 5-year estimates. Bubble size represents Location Quotient for these industries. A large bubble shows an industry cluster that has an above average concentration of workers in Santa Cruz County. Change in employment (%) represents the average annual employment historical rate from 2017 Q3 to 2022 Q3.

Mid-Earning Clusters

Growth among mid-earning industry clusters has been more moderate. The Biotechnology and Biomedical Devices, as well as Logistics clusters have seen an increase of over 20% in employment between 2017 and 2022, respectively. Other mid-earning clusters, such as Healthcare (5%) and Building and Design (4%), saw a much more conservative growth in employment. In contrast, the Agriculture and Food cluster experienced negative growth in recent years (Figure 6).

Figure 6. Mid-Earning Industry Clusters⁹



⁹ *Id.*

Business Case Study

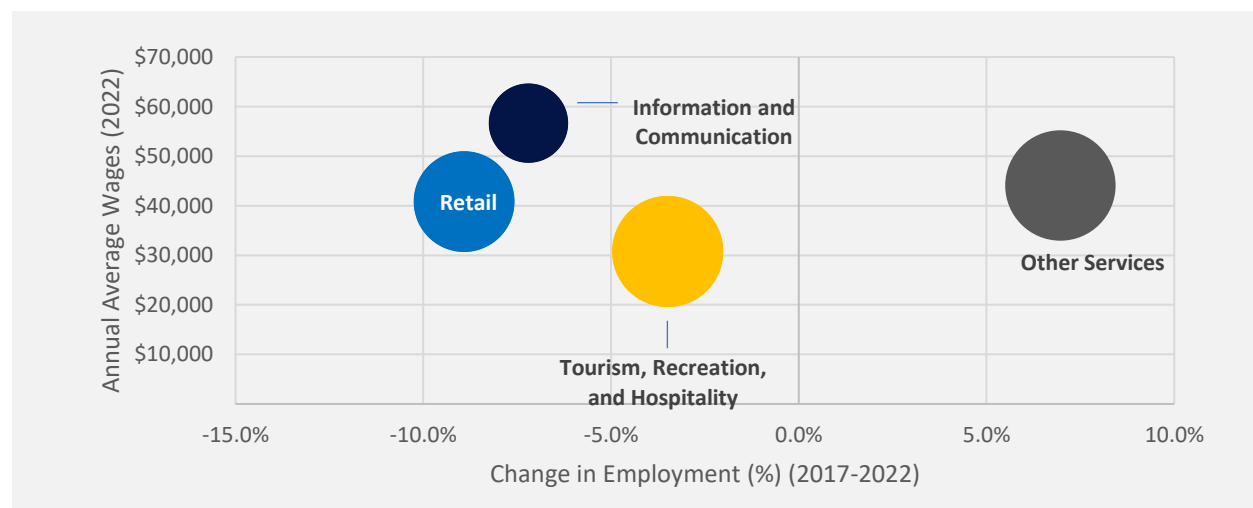
Bernards Construction

Bernards Construction, like many other construction firms in the region, is struggling to find qualified workers. At least some of the hiring difficulties are due to the higher wages offered in the surrounding Bay area. Christian Pellecchia, Project Executive at Bernards, is happy that the county has an open-shop policy for private contractors that allows them to bid for public works projects, as it tends to bring costs down and supports their ability to hire locally. **Christian has been able to get over the hurdle of hiring difficulties by taking advantage of the Associated Builders and Contractors (ABC) multi-craft pre-apprenticeship program, which is designed for private contractors and feeds directly into firms like Bernards Construction.** Christian highlighted that private construction firms offer rigorous on-the-job training, pay high wages, and teach their trainees skills at a fast pace. Christian also identified the need for greater collaboration between education and training partners, and the business community. He believes that such collaboration will increase youth awareness regarding all of the construction firm apprenticeships that are available, and in turn, bolster opportunities for growth and rebuilding in Santa Cruz County.

Lowest Earning Clusters

Between 2017 and 2022, the lowest-earning industry clusters in Santa Cruz County have experienced minimal or negative growth. The Information and Communications (-7%), Retail (-9%), and Tourism, Recreation, and Hospitality (-4%) clusters have seen negative growth in recent years. The Other Services cluster has seen a 7% growth in this period (Figure 7). Tourism, Recreation, and Hospitality, as well as Retail were two clusters that were significantly impacted by the pandemic.

Figure 7. Lowest Earning Industry Clusters¹⁰



¹⁰ *Id.*

Business Case Study

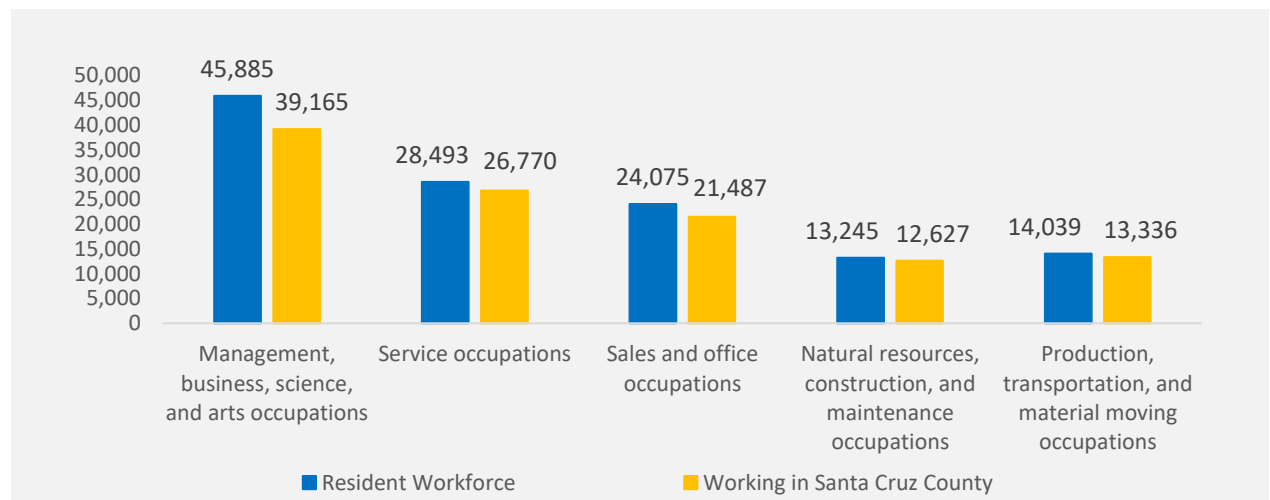
Hilton Santa Cruz/Scotts Valley

The Hilton Scotts Valley, which has been in operation since 1999, enjoys a central location, offering easy access to Silicon Valley and a short ten-minute drive to the beaches and boardwalk of Santa Cruz. This unique and beautiful resort is a valuable contributor to the Santa Cruz hospitality ecosystem. Like other hospitality businesses, the Hilton Scotts Valley has had trouble recovering from the pandemic. According to Jimmy Legg, Director of Sales and Marketing, the hotel would benefit from more corporate accounts using the hotel. Tax breaks and other incentives could help to lure businesses back into the market. Jimmy further explained that the County could help businesses like the Hilton attract more corporations to the area through zoning incentives. In addition, hiring qualified staff remains a real concern for the Hilton Scotts Valley. Jimmy explained that there are too few applicants and that they are often underqualified. He believes it is mostly due to the high cost of living in the area. The Hilton Scotts Valley has been a valuable asset to the region’s tourism economy and will continue to serve that role as it also looks to strengthen its ties to the business community.

Santa Cruz County has more resident workers than jobs available across each major occupational category, making the county a net exporter of talent (Figure 8). Management, business, science, and arts occupations is the category with the greatest number of exported jobs, with nearly 7,000 more workers in these roles that live in the county than jobs available for these roles. Overall, about one in ten (10%) residents must commute outside of Santa Cruz County for work. It should be noted that those working remotely, likely from home, for a business outside of Santa Cruz County would still be counted as someone working outside the county.

Figure 8 indicates that the county has more resident workers than current jobs, making it a net exporter of talent across each occupational category.

Figure 8. Working Residents and Jobs in Santa Cruz County (2022)¹¹



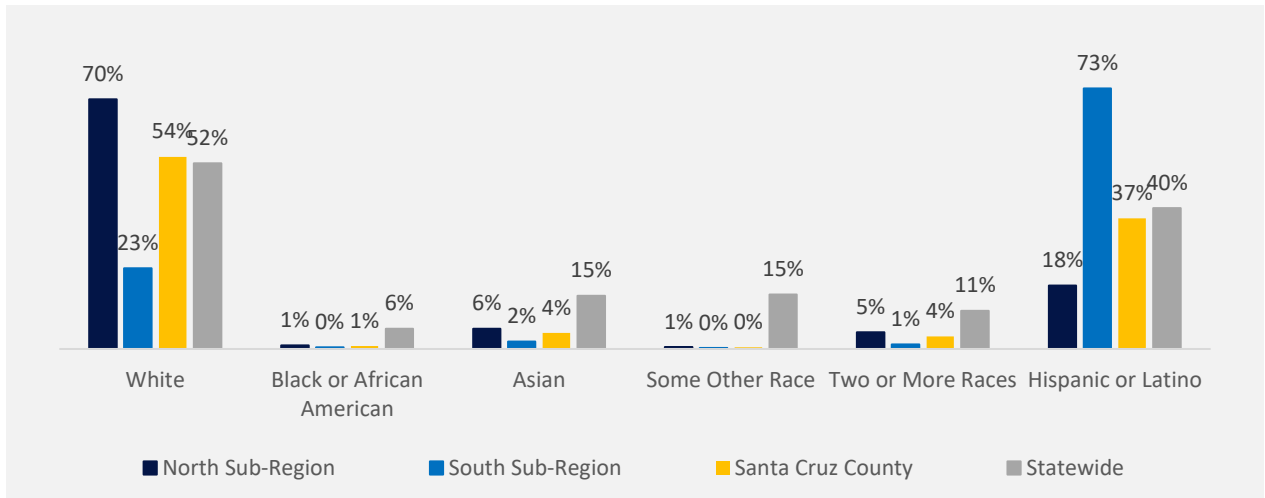
¹¹ JobsEQ Q3 2022.

Workforce Profile

Demographics

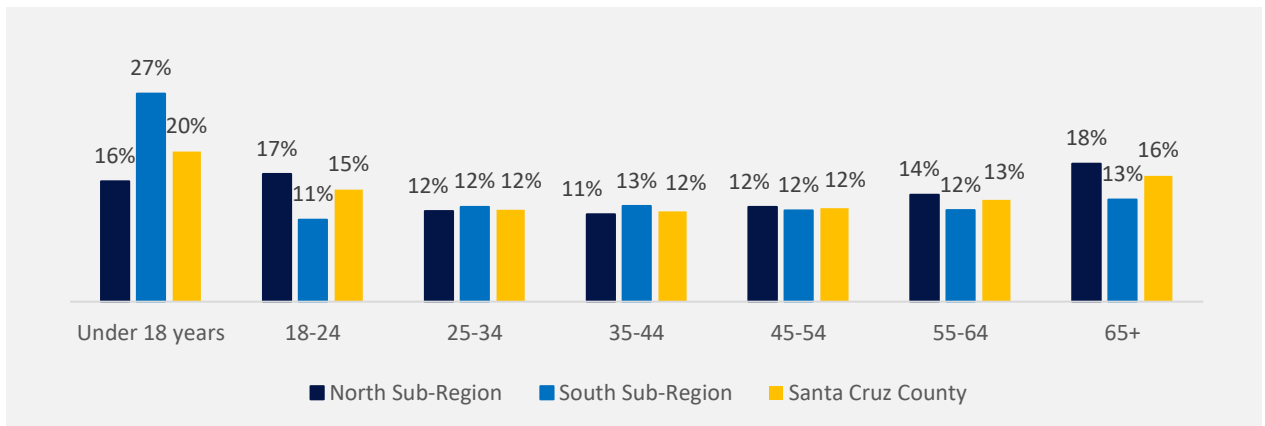
Santa Cruz County has a larger share of White residents compared to the statewide average, especially in its Northern sub-region, where 70% of the population is White (non-Hispanic). In contrast, the Southern sub-region has a larger share of Hispanic or Latino residents (73%) (Figure 9).

Figure 9. Race and Ethnicity of Santa Cruz County (2021)¹²



The Northern sub-region has a notably higher proportion of older residents than the Southern sub-region. While 32% of the Northern population is aged 55 years or older, over a quarter of the Southern population is under 18 years old. This starkly contrasts age composition across Santa Cruz County, suggesting that while one region’s population is exiting the workforce, another region’s population is entering schooling and working age (Figure 10).

Figure 10. Age Composition (2021)¹³



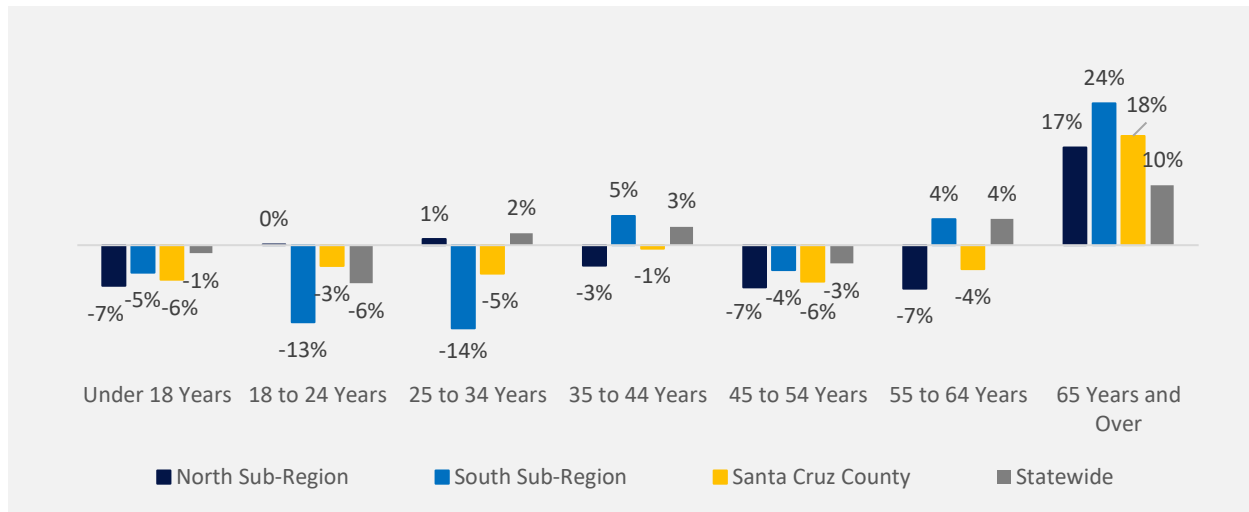
¹² United States Census Bureau. American Community Survey 5-Year Estimates (2017-2021).

¹³ *Id.*

Santa Cruz County's population growth has mostly been driven by its share of residents aged 65 years and older. It is important to acknowledge that while the Southern sub-region generally has a younger population compared to the Northern sub-region, it has experienced significant growth in its older age group (Figure 11).

Figure 11 illustrates that the county's population growth is mainly driven by its oldest share of residents.

Figure 11. Population Growth by Age Group (2017-2021)¹⁴

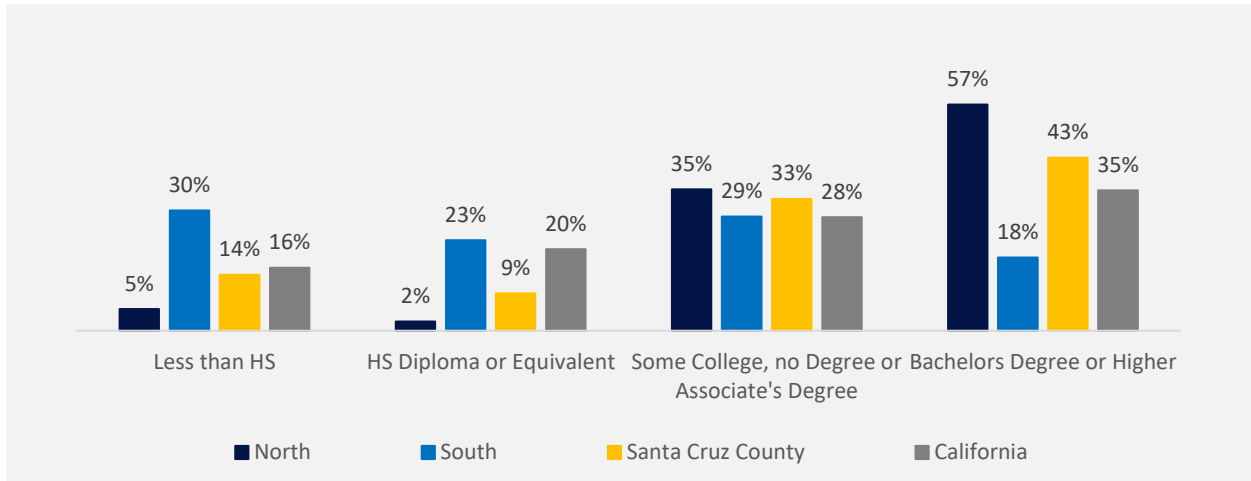


Santa Cruz County boasts higher educational attainment levels compared to the statewide average, although there is a sharp contrast between the Northern and Southern sub-regions (Figure 12). As shown, the Northern sub-region tends to drive the county's educational attainment rate up, with over 57% of its population aged 25 years and older having a bachelor's degree or higher. Conversely, three out of ten in the Southern sub-region population aged 25 years and older have less than a high school diploma or equivalent.

Figure 12 illustrates that although the county has a greater educational attainment rate than the rest of the state, it is mainly driven by its Northern sub-region residents.

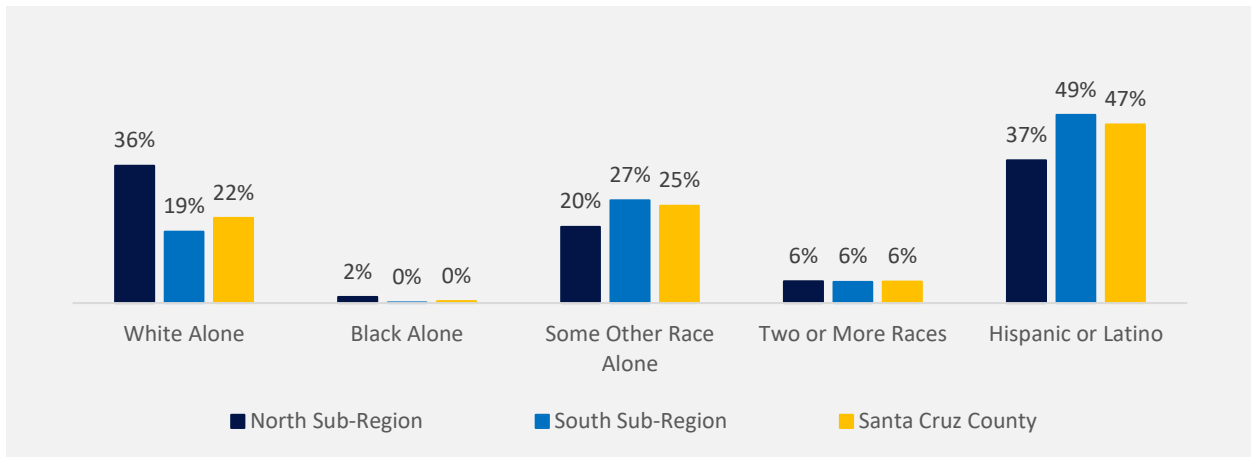
¹⁴ *Id.*

Figure 12. Educational Attainment (Population Ages 25+) (2021)¹⁵



By examining the racial and ethnic composition of individuals aged 25 years and older, it becomes evident that Hispanic or Latino residents are more likely to stop their education at a high school diploma or equivalent than their White counterparts. Figure 13 shows that Hispanic or Latino residents with less than a high school diploma are thirty percentage points higher than the proportion of White individuals with similar educational attainment rates in the Southern sub-region.

Figure 13. Less than a High School Diploma (or Equivalent) by Race and Ethnicity (Population Ages 25+) (2021)¹⁶



Housing Costs, Transportation, & Net Migration

Housing

About 60% of Santa Cruz County residents own their homes. Among the remaining 40% who are renters, 45% spend 35% or more of their total income on housing. Comparatively, about three out of ten homeowners with a mortgage spend 35% or more of their income on housing. Spending on housing is distributed similarly across the

¹⁵ *Id.*

¹⁶ *Id.*

sub-regions, although the share of homeowners that spend 35% of their income on housing is slightly higher in the Northern sub-region (Figure 14 and Figure 15).

Figure 14 indicates that Northern sub-region homeowners and renters are more likely to spend 35% or more of their income on housing costs than resident from the Southern sub-region of the county.

Figure 14. Share of Income Residents Spend on Housing in North Sub-Region (2021)¹⁷

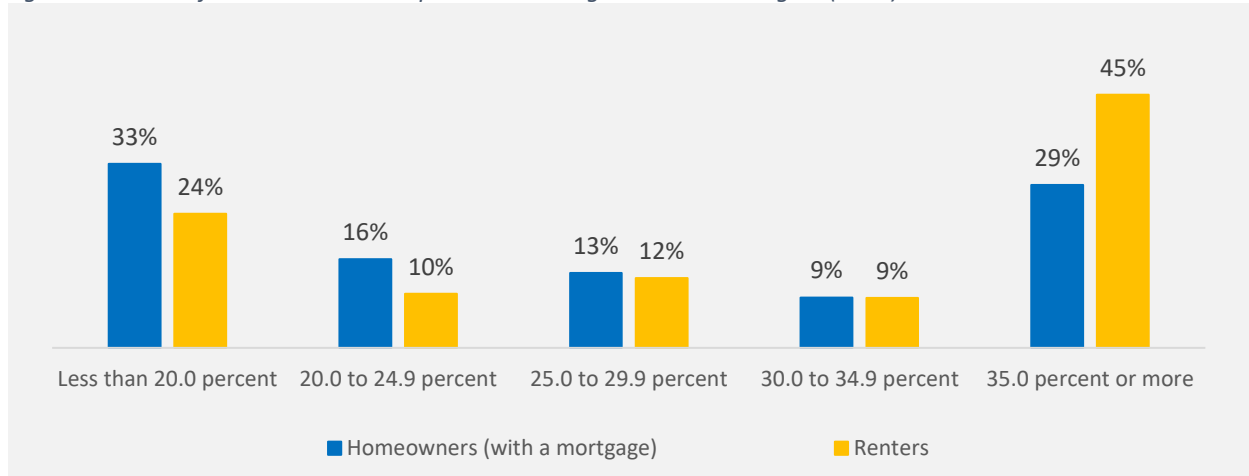
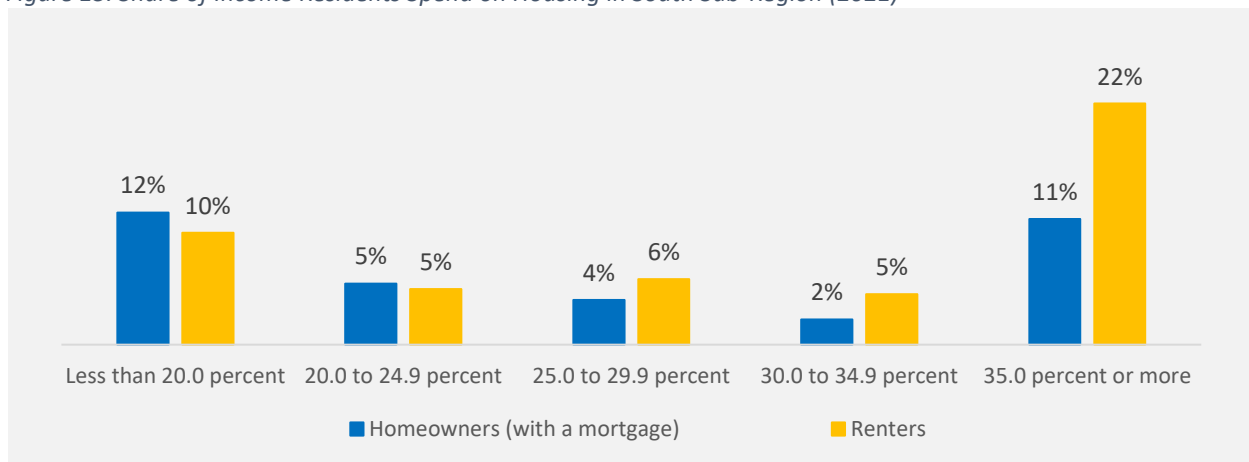


Figure 15. Share of Income Residents Spend on Housing in South Sub-Region (2021)¹⁸

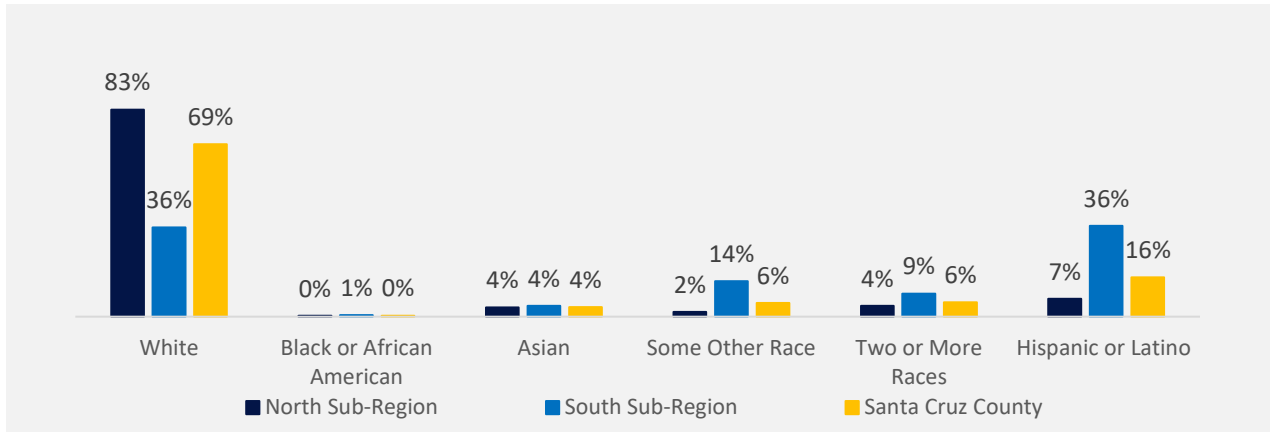


Another measure of equity and economic mobility in the county is homeownership rates based on race and ethnicity. Overall, a higher percentage of White Santa Cruz County residents (69%) own their homes compared to other racial or ethnic groups. In comparison, only 16% of county residents identifying as Hispanic or Latino owned their homes in 2021 (Figure 16). Given the higher housing cost burden for renters across the county, Figure 16 indicates that individuals from communities of color are more likely to face challenges with high housing costs, further reinforcing socio-economic disparities.

¹⁷ *Id.*

¹⁸ *Id.*

Figure 16. Share of Homeownership by Race and Ethnicity (2021)¹⁹

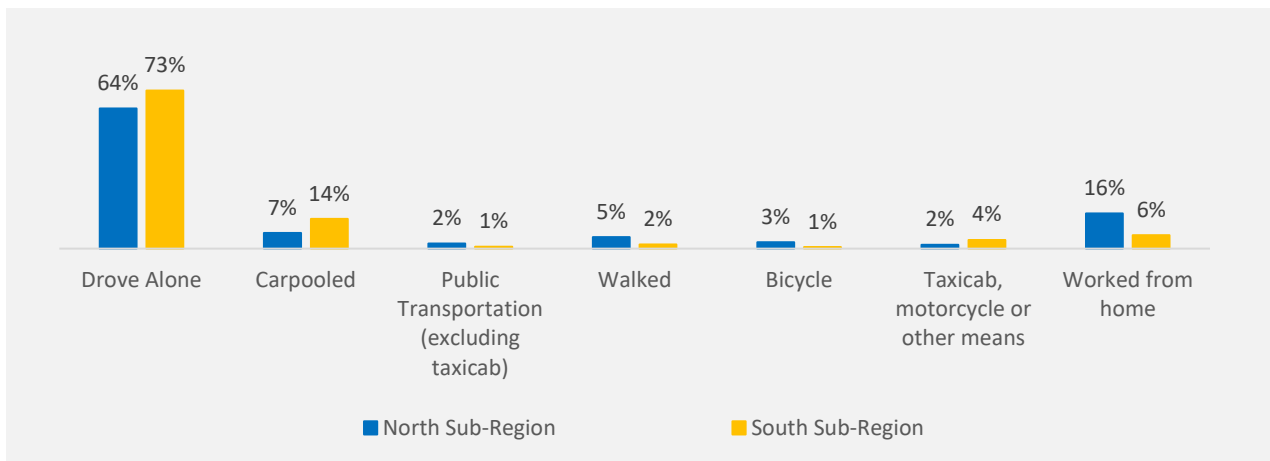


Transportation

Driving alone is the preferred means of transportation in Santa Cruz County. However, residents in the Northern sub-region show a higher propensity for utilizing public transit, walking, biking, or working from home. In comparison, Southern sub-region residents are more likely to carpool or use a taxicab, motorcycle, or other means of transportation to get to work (Figure 17).

Figure 17 indicates that county residents prefer driving alone as their typical means of transportation to work, which can be an issue for a region suffering from climate-related shocks.

Figure 17. Typical Means of Transportation to Work (2021)²⁰



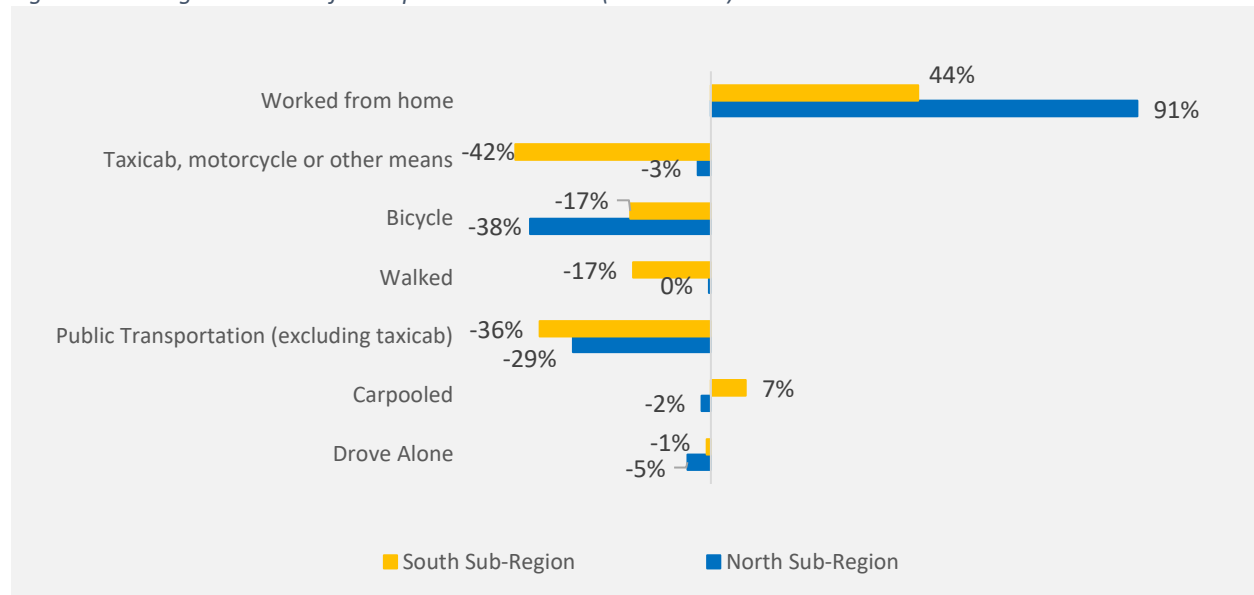
In recent years, Santa Cruz County residents have become more likely to work from home and less likely to use any other means of transportation to work, with the exception of the Southern sub-region residents, who are now more likely to carpool.

¹⁹ *Id.*

²⁰ *Id.*

Figure 18 illustrates that residents in both subregions have become more likely to work from home in recent years, although Southern sub-region residents have also become more likely to carpool.

Figure 18. Change in Means of Transportation to Work (2017-2021)²¹



Net Migration

The pandemic has had a profound impact on where people work and where they choose to live. California made national headlines for seeing nearly 277,000 people leave the state between 2020 and 2021. Santa Cruz County was not immune to this statewide trend, though the population within the county has been declining for several years. The decrease between 2020 and 2021 was the most drastic, as about 5,000 people left the county, resulting in a net reduction in population of 4,800 (Figure 19).²² A recent survey of California residents revealed that housing costs play a significant role in the decision to leave the state, and 45% of participants noted that they had seriously considered moving because of housing costs.²³ Data also suggests that while lower-income and less-educated workers are leaving the state at higher rates, those with higher incomes and higher levels of education are also increasingly more likely to leave the state.²⁴ While County Supervisors and the City Councils have been working on remedying the housing situation, it is crucial to support these solutions to ensure a healthy workforce in Santa Cruz County.

Figure 19 illustrates a continuing trend of people moving out of Santa Cruz in recent years, which has been attributed to high housing costs and the increasing ability for people to work from home.

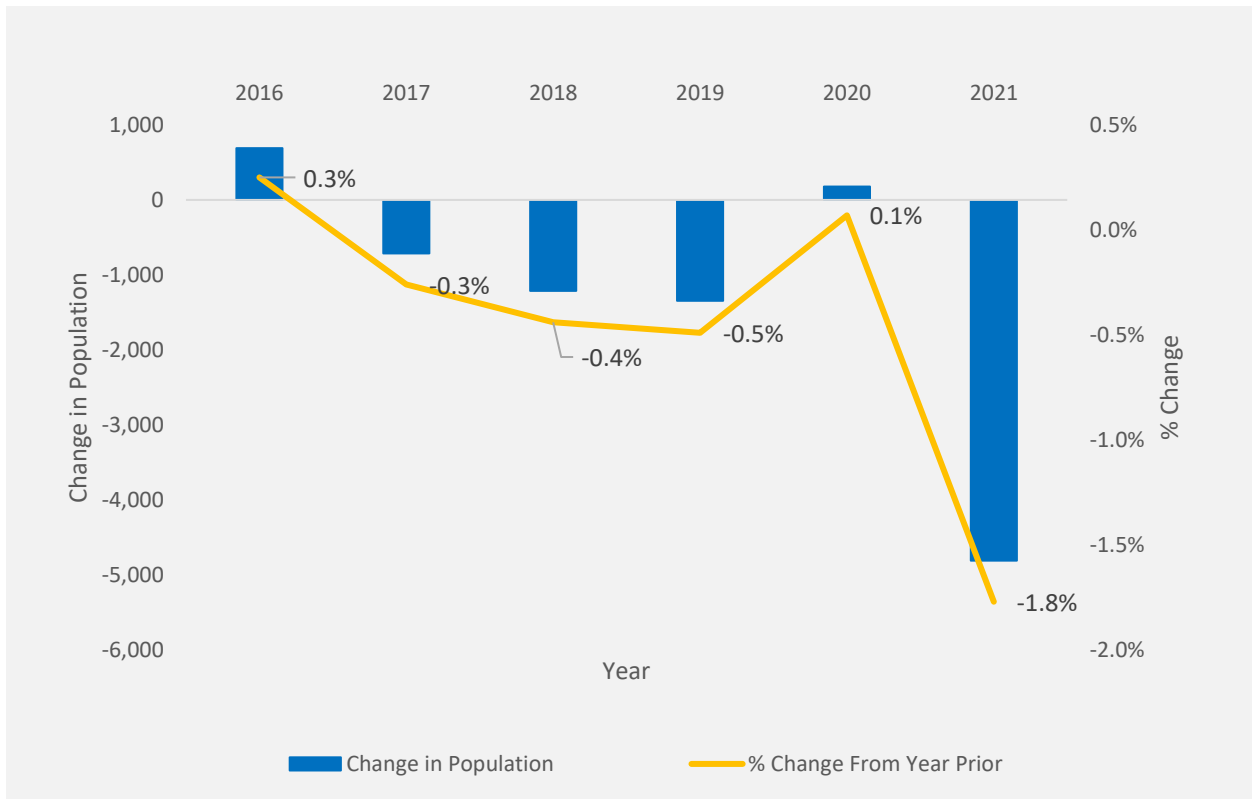
²¹ *Id.*

²² Net immigration from other countries and a positive birth rate account for the difference.

²³ "PPIC Statewide Survey: Californians and Their Government". Public Policy Institute of California. <https://www.ppic.org/publication/ppic-statewide-survey-californians-and-their-government-february-2023/>

²⁴ "Who's Leaving California—and Who's Moving In?". Public Policy Institute of California. <https://www.ppic.org/blog/whos-leaving-california-and-whos-moving-in/>

Figure 19. Net Migration Flows (2016-2021)²⁵



²⁵ California Department of Finance. <https://dof.ca.gov/forecasting/demographics/estimates/estimates-e2-2010-2021/>

Infrastructure Industry Deep Dives

The passage of the Infrastructure Investment and Jobs Act (IIJA), the Inflation Reduction Act (IRA), and the US CHIPS and Science Act will inject billions of dollars into the US economy geared towards building out infrastructure, promoting domestic manufacturing and supply chains, and driving research and development. This influx of funds presents a significant opportunity for Santa Cruz County to improve its transportation infrastructure, water infrastructure, climate change resilience, and housing stock.

This section of the report focuses on the opportunities these revitalization efforts present in the county. Jobs in infrastructure are often well-paying and are accessible to workers with all levels of education. However, fully capitalizing on the opportunities presented by these development projects will require strategic workforce planning. It is crucial to ensure that Santa Cruz County residents are adequately trained and prepared to take advantage of the employment opportunities that arise from these initiatives.

Infrastructure Projects Overview

The County of Santa Cruz has made significant investments in road repair and improvement projects, allocating over \$119 million from its FY 2022-23 adjusted budget. These funds are directed towards more than 180 distinct projects, including repairing storm damage, enhancing traffic control, replacing bridges, and implementing other improvements. This represents a substantial 223% increase in spending on road repairs and improvements. Furthermore, the county has also directed funds towards infrastructure projects focused on sanitation, such as sewer rehabilitation projects, and capital projects, such as the Boulder Creek Branch Library. Finally, an additional \$7 million in funds is earmarked for increasing housing.

Table 3 gives an overview of the county's budget, outlining the allocation of funds for different types of infrastructure and community involvement projects between FY 2018-2019 and FY 2022-23.

Table 3. Santa Cruz County Budget Broken Down by Community Involvement and Infrastructure Projects, 2022-2023²⁶

Type		2018-19 Actual	2019-20 Actual	2020-21 Actual	2022-23 Adjusted Budget	% Growth (2018- 2022)
Transportation	Road Repair and Improvements	\$36,919,399	\$33,964,285	\$64,548,289	\$119,131,450	223%
	Public Works Administration	\$40,032,092	\$42,990,233	\$43,568,564	\$62,687,425	57%
Administrative Services	County Service Area Administration	\$1,437,794	\$1,659,747	\$2,324,213	\$9,175,833	538%
	Real Property and Capital Projects	\$343,964	\$257,131	\$125,519	\$272,751	-21%
Special Services	Recycling and Solid Waste	\$16,903,647	\$17,516,348	\$16,432,486	\$26,254,760	55%
	Flood Control	\$5,771,479	\$5,628,982	\$6,009,989	\$14,946,870	159%
	Freedom Sanitation	\$817,308	-\$21,771	\$8,271,667	\$3,963,477	385%
	Small Sanitation Districts	\$1,217,410	\$953,068	\$1,082,597	\$1,090,016	-10%
	Davenport Sanitation	\$559,676	\$819,166	\$1,108,832	\$772,628	38%
	Construction Inspection	\$4,475	\$265,362	\$84,538	\$275,000	6,045%
Community Planning	Permit Center	\$5,910,217	\$6,539,827	\$6,400,777	\$8,379,747	42%
	Planning Administration	\$3,114,414	\$2,875,211	\$3,090,833	\$3,012,393	-3%
	Land Use Policy	\$2,499,182	\$1,387,787	\$1,479,161	\$4,073,872	63%
	Recovery Permit Center	\$0	\$0	\$1,219,004	\$3,281,378	
	Housing	\$961,509	\$937,967	\$2,138,452	\$902,796	-6%
	Code Compliance	\$821,253	\$867,606	\$913,204	\$854,600	4%
Housing Funds	Low and Moderate Income Housing Asset Funds	\$1,109,023	\$4,105,514	\$4,923,463	\$2,133,359	92%
	State and Federal Grants	\$2,528,644	\$744,345	\$719,960	\$5,542,144	119%
	Local Housing Funds	\$24,380	\$47,176	\$43,338	\$3,246,764	13,217%
Total	\$120,975,866	\$121,537,984	\$164,484,886	\$269,997,263	123%	

Current Infrastructure Workforce

The substantial investment in infrastructure and housing improvements is expected to generate a significant number of jobs throughout the county, potentially ranging from hundreds to thousands. The increase in demand for workers may be so great that it puts a significant strain on the existing workforce and training pipelines. This section of the report discusses the current state of relevant labor pools to identify which areas may need support to keep up with the anticipated demand.

Transportation Workforce

Santa Cruz County's transportation workforce, including Highway, Street, and Bridge Construction, as well as Other Heavy and Civil Engineering Construction jobs, has steadily decreased in recent years, with a 13% decrease in employment between 2016 and 2021 (Figure 20). This downward trend is concerning, particularly in light of the substantial increase in demand of over 200% in the near future. Further alarming is that almost one-quarter of the overall Transportation workforce is 55 years and older (23%) and may be looking to retire soon (Table 4). These factors underscore the need to prioritize efforts in bolstering the transportation workforce in the county.

Figure 20 shows a decrease in employment, from 2016, within the transportation workforce, a critical issue to consider, with demand expected to increase by more than 200%.

Figure 20. Transportation Workforce Overall Employment (2016-2021)²⁷

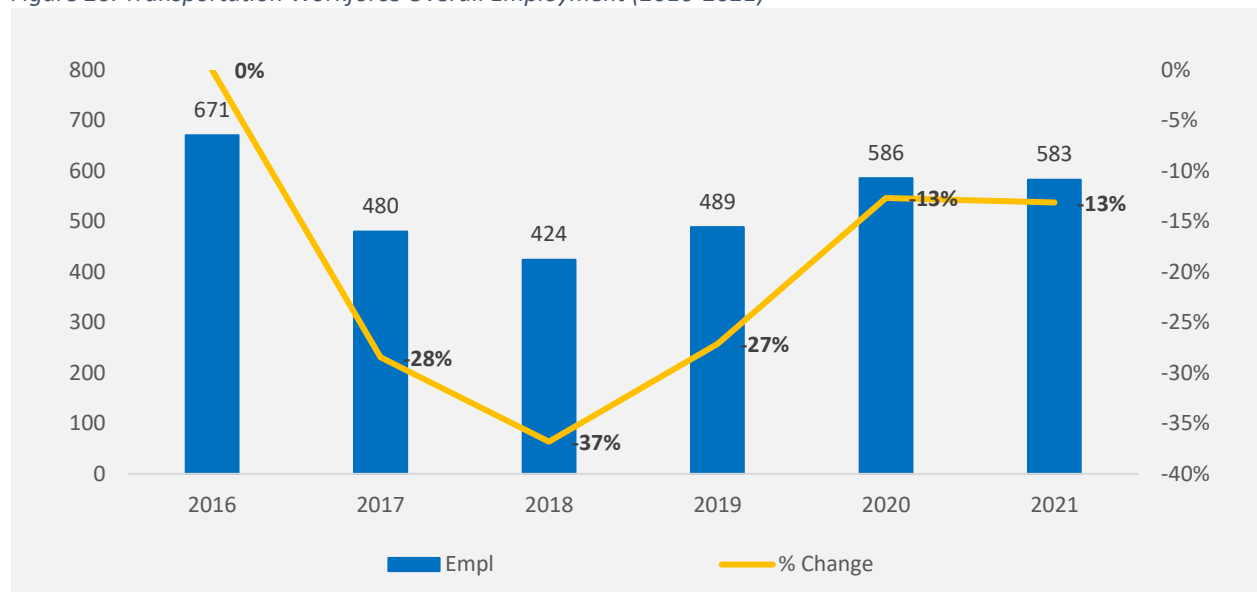


Table 4. Transportation Workforce Overall Employment by Age Range (2021)²⁸

Age Group	14-24	25-34	35-44	45-54	55-64	65+
Employment (%)	5%	21%	26%	25%	18%	5%

²⁷ JobsEQ, 2016-2021.

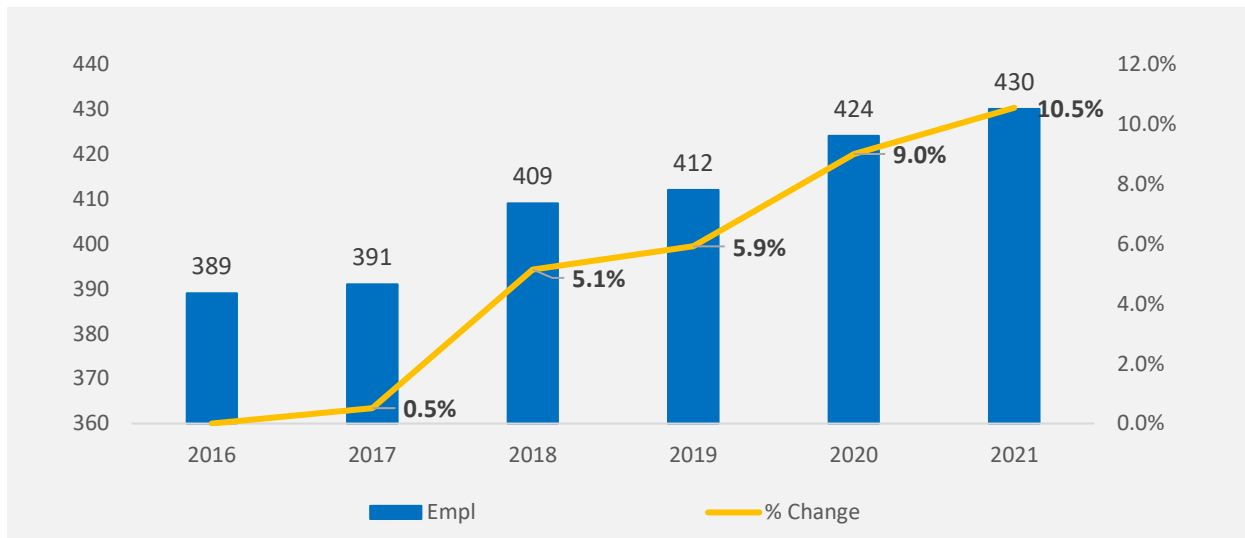
²⁸ JobsEQ, 2021 Q3.

Water Infrastructure Workforce

The county's water infrastructure workforce, which includes jobs in Water Supply and Irrigation Systems, Water and Sewer Line and Related Structures Construction, and Sewage Treatment Facilities, has been steadily increasing in recent years, growing by 10% since 2016 (Figure 21). While the recent growth of this workforce is promising, it is important to note that approximately 35% of the Water workforce is over 55 years old, 16% of which are 65 or older (Table 5). This means retirements are likely on the horizon, and drawing in new workers is essential.

Figure 21 illustrates that the county's water infrastructure workforce is growing, which is promising, considering current and future public works projects.

Figure 21. Water Workforce Overall Employment (2016-2021)²⁹



²⁹ JobsEQ, 2016-2021.

Table 5. Water Workforce Overall Employment by Age Range (2021)³⁰

Age Group	14-24	25-34	35-44	45-54	55-64	65+
Employment (%)	2%	16%	23%	25%	19%	16%

Organization Case Study

City of Santa Cruz Water Department

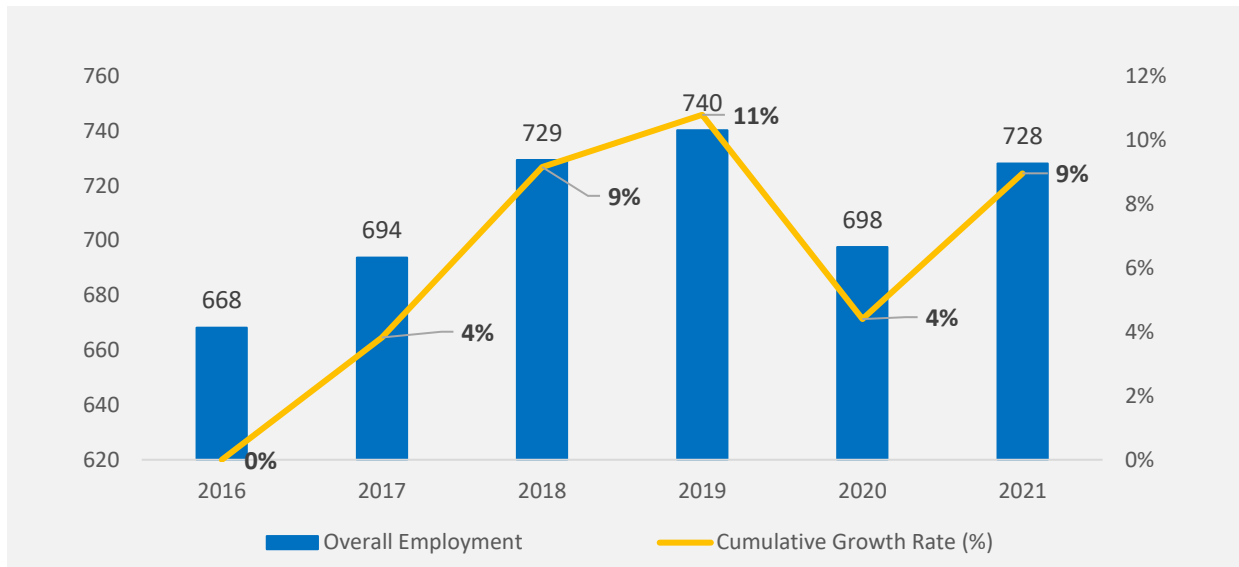
The City of Santa Cruz is undertaking an ambitious reinvestment in public works and infrastructure, with over \$650 million in reinvestments in the water system alone. Fortunately, the water department is seeing this as an opportunity to further invest in community benefits and develop sustainable building trades jobs. **Rosemary Menard, Director of the City's Water Department, has explained that "there is a smaller pool of workers in that skill set and we are looking to grow that so that those workers are paid living wages. It is part of DEI efforts to make these projects fit for high road jobs". To do so, the department has partnered with other entities such as adult education centers that create career apprenticeship programs in Santa Cruz and provide opportunities for people of all backgrounds to explore these well-paying careers.** From Rosemary's experience, people that have participated in these apprenticeship programs tend to work with unions and non-unionized businesses or are placed in further training programs within the county's community college. As the City is currently working on rebuilding through its Climate Action Plan, Rosemary has emphasized the need to find enough workers, especially as those employment opportunities are designed to be high-quality, high-wage jobs.

Residential Construction Workforce

The residential construction workforce in Santa Cruz County, encompassing New Single Family Home Construction, New Multi-Family Home Construction, and New Housing For-Sale Builders, has been steadily increasing in recent years, growing by 9% since 2016 (Figure 22). While the industry is recuperating from COVID-19 related job losses, it is important to note that over one-quarter (26%) of this workforce is over the age of 55, with about one in ten workers aged over 65 years old, and therefore close to exiting the workforce (Table 6).

Figure 22 illustrates that the county's residential construction workforce is recuperating from COVID-19 pandemic related job losses, and almost at pre-pandemic employment levels.

³⁰ JobsEQ, 2021 Q3

Figure 22. Residential Construction Workforce Overall Employment (2016-2021)³¹Table 6. Residential Workforce Overall Employment by Age Range (2021)³²

Age Group	14-24	25-34	35-44	45-54	55-64	65+
Employment (%)	10%	19%	25%	20%	16%	11%

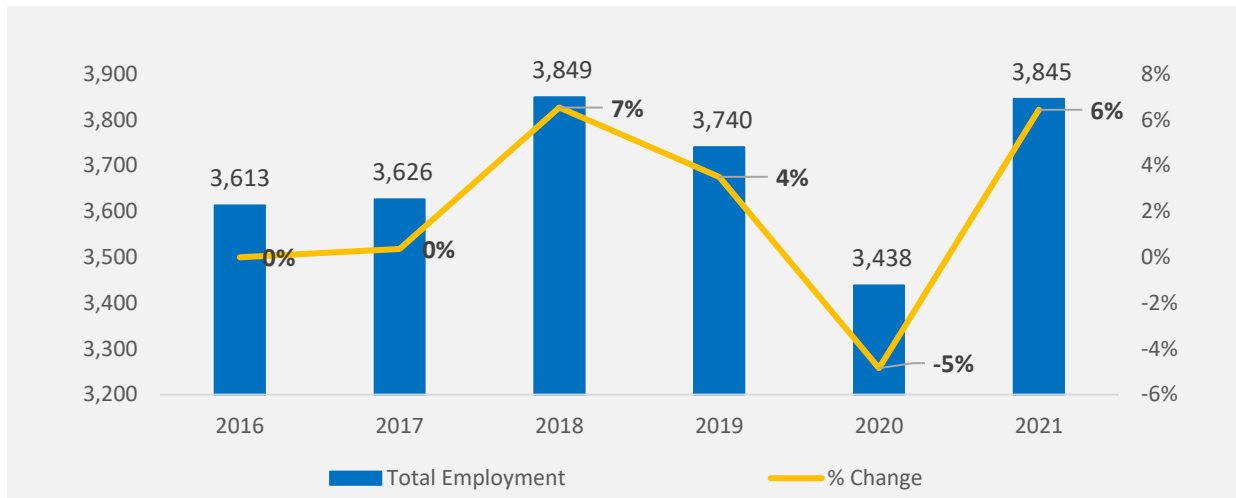
Energy Workforce

Santa Cruz County's energy workforce, which includes jobs in electric power generation, transmission, distribution and storage, fuels, energy efficiency, and motor vehicles, has had at least 3,600 workers between 2016 and 2019. Although COVID-19 impacted the industry with an 8% decrease in overall employment, Santa Cruz County's energy workforce has recouped the number of jobs lost during the pandemic, with a 12% increase between 2020 and 2021 (Figure 23). This workforce will play a vital role in helping the county, state, and country meet their decarbonization goals outlined in the 2022 Climate Action and Adaptation Plan, which will drive demand for these workers in the coming years. This means more Electricians will be needed to upgrade electrical panels, install EV charging stations, and electrify homes. In addition, HVAC Technicians will be needed to install new electric and efficient appliances, and Insulation Workers will be needed to seal building envelopes to support more energy-efficient homes.

Figure 23 shows that the county's energy infrastructure workforce has also recouped jobs lost during the pandemic, which is a positive development, as this workforce will play a growing role in supporting the county's decarbonization goals.

³¹ JobsEQ, 2016-2021.

³² JobsEQ, 2021 Q3

Figure 23. Energy Workforce Overall Employment (2016-2021)³³

Organization Case Study

City of Santa Cruz Climate Action Plan

The City of Santa Cruz recently completed and is beginning to implement its 2022 Climate Action Plan. The plan addresses infrastructure, with work on flood control and energy projects, EV charging, building electrification, microgrids, renewable energy, open spaces, green infrastructure, living shoreline, and other utilities as they relate to vulnerabilities on the coastline. **The plan also models future workforce development needs, and projects that the highest emission-reduction activities will be in building and transportation. The plan also looks to create a steady talent pipeline, from pre-apprenticeships to full-time well-paying employment. New employment pathways are being developed at UC Santa Cruz combining new technologies with the jobs that will move the City of Santa Cruz to a decarbonized economy.** According to Tiffany Wise-West, the City's Sustainability and Climate Action Manager, this is a **massive undertaking that will require getting over several hurdles. Securing funding for studies, design, and construction poses a significant hurdle, as do supply chain constraints, bandwidth challenges, and regulatory uncertainty.** Nevertheless, the Climate Action Plan is a well-orchestrated strategy that creates avenues of development for high-road jobs, as well as bolstering the City's overall economic vitality.

³³ U.S. Department of Energy, United States Energy and Employment Report, 2022.

Infrastructure Workforce Training Inventory

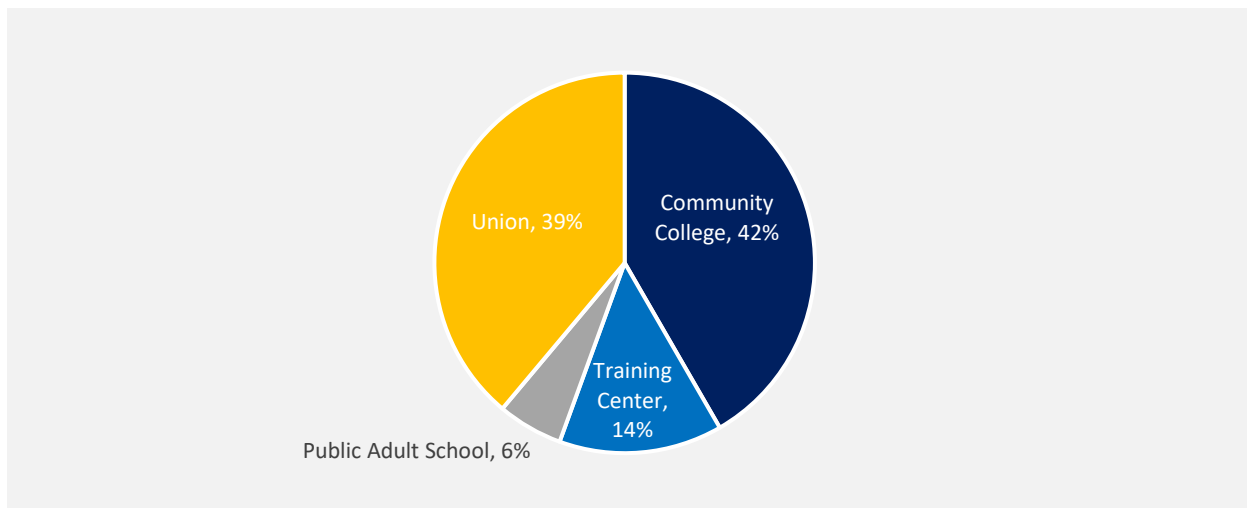
Santa Cruz County is ramping up infrastructure and housing efforts, as evidenced by the county's budget for FY 2022-23 (Table 3). In addition to assessing the current workforce, it is essential to evaluate the county's training landscape to determine whether it can meet the anticipated increase in infrastructure-related jobs and identify any potential bottlenecks in the talent pipeline.

Another valuable element of infrastructure, housing, and energy careers is that most jobs do not require a four-year diploma but offer entry into high-road career opportunities. The trainings listed in this inventory offer entry points into many of these careers. Promoting the availability of these jobs and ensuring that these training opportunities are accessible to interested job seekers may help simultaneously guarantee that there is a sufficient workforce to complete these projects while also offering accessible high-paying career opportunities to the 57% of county residents without a bachelor's degree, including the 30% of residents in the Southern sub-region who do not have a high school diploma.

Cabrillo College (42%) and local union chapters (39%) offer the largest shares of vocational training relevant to infrastructure and residential construction in Santa Cruz County. Public training centers account for 14% of available training, while public adult schools provide six percent of the overall training (Figure 24). Appendix A provides a detailed breakdown of the training opportunities available, categorized by providers, industry focus, training focus, occupational outcomes, and whether apprenticeships are offered (Appendix A: Training Inventory).

Figure 24 shows that community colleges and unions offer the largest shares of vocational training relevant to infrastructure and residential construction work.

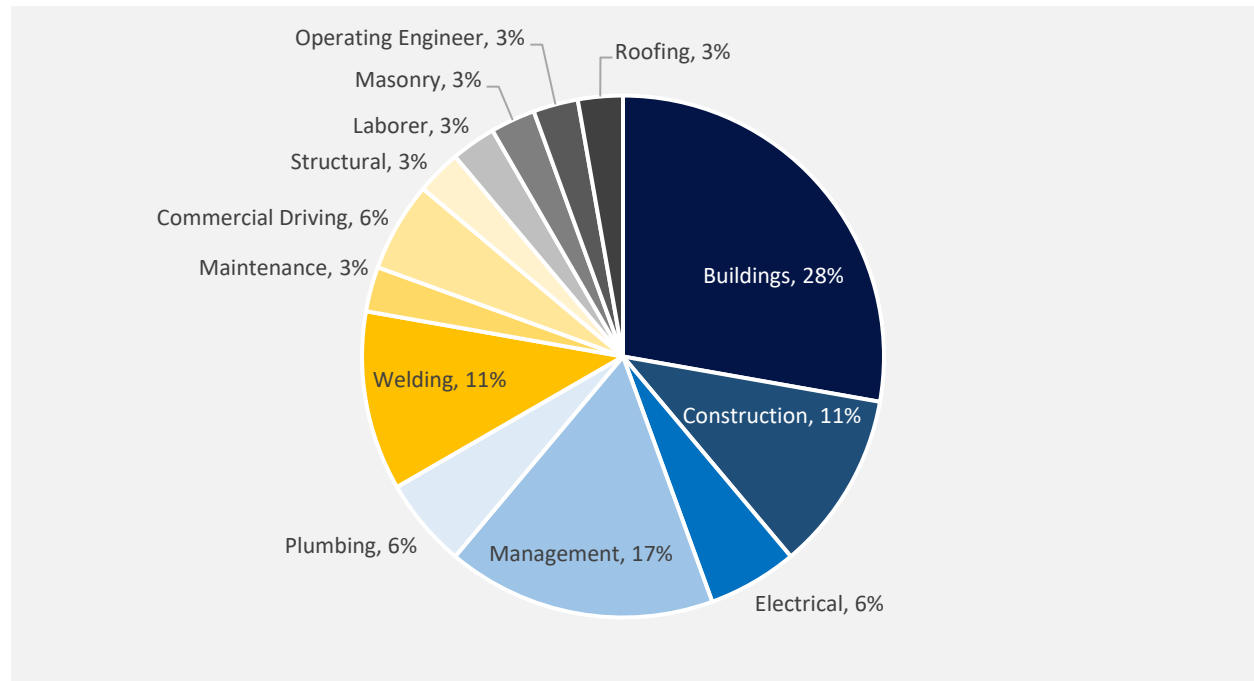
Figure 24. Training Provider Type for Infrastructure Related Work



Apprenticeships make up around 40% of the 36 programs available across the county. In the training inventory, apprenticeships are exclusively offered through local union chapters, providing on-the-job training with fair compensation. The expectation is that apprentices will secure full-time positions upon completion. Although private companies may also offer apprenticeships, tracking data for these programs has not been available.

Santa Cruz County offers training programs that prepare individuals for a range of occupations. Out of the 36 programs offered, buildings (28%), construction management (17%), construction (11%), welding (11%), electrical work (6%), and plumbing (6%) are the most offered categories of programs. Other training programs include masonry, maintenance, commercial driving, roofing, laborer skills, and operating engineer apprenticeships, and are offered less frequently, as each local trade union offers its own apprenticeship (Figure 25). At the same time, the county has a large array of relevant training programs. A deeper investigation of the anticipated demand and supply of workers for infrastructure and housing programs is necessary to determine whether training providers should expand their capacity, and if so, what additional resources they would require to do so.

Figure 25. Building Trades Training Resources by Occupational Focus



Out of the 36 available programs, eighteen programs (50%) enhance employability as they are apprenticeships offered by unions. These programs provide on-the-job training and lead to full-time employment, but do not offer a certification. About 36% of programs result in a certificate from providers such as community colleges and public adult schools. About 8% of programs offer an associate degree, and 6% provide a professional license (Table 7).

Table 7. Training Resources by Educational Outcome

Degree/Outcome	Frequencies	%
Increased Employability	18	50%
Certificate	13	36%
Associate Degree	3	8%
License	2	6%

Executive Interviews Summary & Findings

The following section provides a qualitative synthesis of findings derived from interviews conducted with representatives from the business community and key infrastructure stakeholders. The primary objective of these interviews was to understand the county's overall business climate and the needs, challenges, and opportunities surrounding the infrastructure workforce.

Current Business Climate

Santa Cruz County has largely recovered from the COVID-19 pandemic. However, the cost of living, a severe housing crisis, and traffic circulation make competing with neighboring regions such as the Bay area and Monterey County difficult. Stakeholders have argued that infrastructure projects aimed at improving traffic, developing the rail system, and new policies making it easier to build housing and expanding zoning rigs should alleviate costs and improve the business climate.

"There is a severe housing crisis with insanely high prices and a lack of housing units (...) for businesses if they can relocate somewhere with more affordable housing they will."

"Getting around here is difficult (...) the two areas that will make a difference will be improving highway I and II (...), the region developing its rail and trail system will alleviate traffic concerns. North-to-South corridors will make a positive difference in the community."

"Last year, the board adopted a policy to (...) make it easier to build housing, expanding zoning rings to expand density and increase housing in certain areas."

Business owners are committed to Santa Cruz County, although they believe there is a lack of synergy across organizations and a lack of funding and incentives available to support the business community. Business owners argued that grant funding for training reimbursement, broader tax incentives, and support for increasing their footprint and hiring would allow them to invest in the county even further. They have further argued that creating synergies with the Chamber of Commerce and other similar organizations would create a more robust business community in the county.

"Santa Cruz is our home (...) it is where we came from and where we are committed to stay."

"The more Santa Cruz County can support start-ups and small businesses, the more they will be able to invest and stay in the county."

"Monterey County provided grant-funding to make it more feasible to increase footprint and hiring (...) we have not been able to identify such funding in Santa Cruz."

"We have great relationships with the Chamber of Commerce that help serve a community role (...) Santa Cruz County could make efforts to further bolster those organizations, which would be more beneficial for us."

Talent and Hiring

Business-owners continue to struggle to find qualified applicants for skilled and unskilled work due to the high costs of living and lower wages offered than in neighboring regions. While some businesses have been able to mitigate this issue by offering remote work options, businesses that require in-person work, particularly in the hospitality, tourism, and food services sectors, are experiencing difficulties in finding suitable candidates.

"Our company is open to remote work for some positions (...) having the ability to engender a remote workforce has enabled our growth in Santa Cruz."

"Being based in California makes it difficult for hires to relocate because of the cost of living (...) we have remedied the challenge by having remote positions and recruiting in-person positions out of the Silicon Valley."

"Santa Cruz is an excellent place to have access to talent in the Silicon Valley while staying out, it is more affordable."

"The proximity to Stanford has proven very beneficial."

"Hospitality does not pay what tech does, and cost of living and housing prevent many qualified folks from living here."

Climate Resilience

The Santa Cruz County region is susceptible to climate disasters, including wildfires, storms, mudslides, coastal damage, tsunamis, and earthquakes. Despite having a comprehensive climate action plan, the county primarily allocates its dedicated funds towards reactive measures rather than outward-looking climate resilience. County stakeholders have highlighted the difficulty of transitioning from reactive to proactive action in such a challenging environment.

"Our climate action plan is very good but challenging (...) we are almost at ground zero for climate disasters driven by climate change."

"Some infrastructure hardening, wildfire preparation, and other activities did not fund the way we would like because there is always a catastrophe to put out."

"This year has been hard with land movements and leaks that result in emergency repair. Climate resilience and adaptation are being built in all development projects."

Infrastructure Projects and Workforce

Although the county will need a large workforce to sustain future infrastructure projects, there is a scarcity of skilled workers in building trades within the county. Most local businesses in this sector are privately owned and struggle to replace aging workers with young and skilled apprentices.

"We are looking to grow the pool of workers in the community in that skill set, so that whomever you work for pays a living wage (...) it is part of equity efforts to make these projects fit for high road jobs."

"Unions have no need for any supplemental trainings, they need more projects. They are engaged on Cap 2030, but their work is more expensive, which is why they are not getting the work."

"Tradespeople know of the large infrastructure projects pipeline (...), contractors are looking for apprentices (...), skilled tradespeople are getting older, and they need to replace that workforce with younger people."

"The pipeline is dwindling."

Workforce development groups are partnering with adult education centers and other partners to create career apprenticeship programs and provide opportunities to people ready to explore careers in building trades.

Participating entities have noted that graduates will have the choice to work with labor unions and non-unionized shops once they create pathways or can be placed in further training programs through community colleges. However, there is an ongoing challenge in building the capacity of these partners to meet the growing demand.

The City of Santa Cruz is investing in infrastructure projects as a part of its climate action plan. The City estimates that buildings, transportation, and active transportation projects will generate over 2,000 jobs. In addition, the City is actively engaged in discussions with universities and community colleges to establish a pipeline from pre-apprenticeship programs to employment, ensuring a sustainable workforce for upcoming infrastructure work.

"We are looking to create a pipeline from pre-apprenticeships to jobs, and new pathways are underway with UCSC for a tech pipeline to green jobs, but it is only a proposal for now and will not take off unless funded."

Appendix A: Training Inventory

The data source for this training inventory is taken from the California Eligible Training Provider List (ETPL) and union websites.

Org Name	Provider Type	Program Name	Apprenticeship	Training Focus	Industry Focus	Educational Outcome
Cabrillo College	Community College	Building Inspection and Construction Codes	N	Buildings	Construction	A.S.
		Building Inspection and Construction Codes	N	Buildings	Construction	Certificate
		Building Performance Energy Management Skills	N	Buildings	Construction	Certificate
		Construction Basic Skills	N	Construction	Construction	Certificate
		Construction Building Inspection and Codes Skills	N	Buildings	Construction	Certificate
		Construction Electrical Inspection and Code Skills	N	Electrical	Construction	Certificate
		Construction Management	N	Management	Construction	A.S.
		Construction Management	N	Management	Construction	Certificate
		Construction Plumbing/Mechanical Inspection	N	Plumbing	Construction	Certificate
		Construction Project Management Skills	N	Management	Construction	Certificate
		Energy Management	N	Management	Construction	A.S.
		Energy Management	N	Management	Construction	Certificate
		Solar Derived Energy Management	N	Management	Construction	Certificate
		Advanced Welding Skills	N	Welding	Manufacturing	Certificate
Basic Welding Skills	N	Welding	Manufacturing	Certificate		
Center for Employment Training	Training Center	Facility Maintenance Technician	N	Maintenance	Operations	Increased Employability
		Green Building Construction	N	Buildings	Construction	Increased Employability
		Welding Fabrication	N	Welding	Manufacturing	Increased Employability

MTS Training Academy	Training Center	Class A Training	N	Commercial Driving	Transportation	License
Santa Cruz Office of Education	Public Adult School	Building Trades Pre-Apprenticeship	N	Buildings	Construction	Certificate
Truck Driver Institute	Training Center	Class A Training	N	Commercial Driving	Transportation	License
WASC Adult Education	Public Adult School	Building Trades Pre-Apprenticeship	N	Buildings	Construction	Increased Employability
Boiler-makers, Local 549	Union	Boilermakers Apprenticeship	Y	Welding	Manufacturing	Increased Employability
Bricklayers, Local 3	Union	Tile industry joint apprenticeship	Y	Construction	Construction	Increased Employability
Glaziers, Local 1621	Union	Glazier Apprenticeship Program	Y	Buildings	Construction	Increased Employability
Heat & Frost Insulators & Allied Workers, Local 16	Union	Insulator Apprenticeship	Y	Buildings	Construction	Increased Employability
IBEW, Local 234	Union	Electrical Apprenticeship	Y	Electrical	Construction	Increased Employability
Ironworkers, Local 155	Union	Ironworking Apprenticeship	Y	Structural	Construction	Increased Employability
Laborers International Union of North America, Local 270	Union	Laborer Apprenticeship	Y	Laborer	Construction	Increased Employability
OP & CMIA, Local 300	Union	Cement Mason and Plasterer Apprenticeship	Y	Masonry	Construction	Increased Employability
Operating Engineers, Local 3	Union	Operating Engineer Apprenticeship	Y	Operating Engineers	Manufacturing	Increased Employability
Painters and Drywall Finishers, Local 272	Union	Painters Apprenticeship	Y	Buildings	Construction	Increased Employability
Plumbers and Steamfitters, Local 62	Union	Plumbing Apprenticeship	Y	Plumbing	Construction	Increased Employability
Roofers & Waterproofers, Local 95	Union	Roofer Apprenticeship	Y	Roofing/Waterproofing	Roofing/Waterproofing	Increased Employability
Sheet Metal Workers, Local 104	Union	Sheet Metal Apprenticeship	Y	Construction	Construction	Increased Employability
Sprinkler Fitters, Local 669	Union	Sheet Metal Apprenticeship	Y	Construction	Construction	Increased Employability