

2021 North County Indicators



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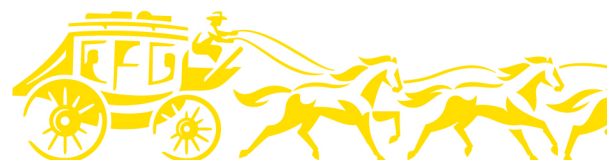
Our community rises when leaders step up

Your vision and commitment to lead the way is an inspiration to all. We value the time and talent you bring to making our community a better place to live, work, and prosper.

Let's join together in honoring the San Diego North Economic Development Council.

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Table of Contents

INDICATOR SECTIONS

17

PEOPLE

A Changing Population.
Healthcare.
Workforce & Income.



26

ECONOMY

Overall Employment.
Industry Clusters &
Job Quality. Economic
Distress.



43

EDUCATION

Educational
Attainment.
Performance and
Completions.
Disadvantaged
Populations.



37

INNOVATION

Innovation Funding.
Startups and
Entrepreneurialism.
Research and
Development. Patents.



48

PLACE

Housing.
Transportation.
Commercial
Real Estate.



6	Introduction
7	A Pandemic Analysis
8	Acknowledgments
9	State of North County
12	How Does North County Recover & Rebuild from the Pandemic?
16	San Diego's North County Region
55	Appendix A: Research Methodology
56	Appendix B: North County Cities and Zip Codes
57	Appendix C: Industry Cluster Definitions



Introduction

The North County Indicators (NCI) are designed to provide a quantitative assessment of San Diego's North County and spark a more informed conversation about the region's future. This is the eighth iteration of the NCI. The 2021 North County Indicators includes 46 indicators and complimentary data sets. The indicators are split into five categories - **people, economy, innovation, education, and place**, that are meant to provide a holistic measure of North County's economic eco-system.

In January of 2021, San Diego's North County (North County) had 1.2 million residents and just over 483,000 jobs. As a region, North County has a larger population than metropolitan areas like Salt Lake City or Tucson, and more jobs than Honolulu or Albuquerque. If North County were a state within the United States, it would be the 42nd largest state by population or employment.



A Pandemic Analysis

NCI 2021 provides a snapshot of the region at a critical time—an examination of the region’s economy after the coronavirus impacted San Diego’s North County, but before a comprehensive recovery has taken place. This eighth edition of the NCI will serve as a starting point for analyzing the North County economy as it begins to recover from the COVID-19 pandemic. The indicators in the report were compiled in March and April of 2021 and attempt to reflect North County’s economy through the end of 2020, near the time COVID-19 was having some of its worst impacts on the region. It is also worth noting, that not all of the indicators are updated with local data that reflects the impact of the pandemic. We expect over the next 12 months to gain a deeper understanding of how the pandemic has impacted all of the North County Indicators.



Acknowledgments

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State of North County

Through the beginning of 2021, North County, like many regions across the country and the world, faced economic upheaval. The COVID-19 pandemic changed how we did business, where we worked from, and who we connected with, both in terms of customers and partners along the supply chain. The region also faced a paradox, as the labor market grew looser, employers in several industries indicated more difficulty finding qualified applicants. We will continue to learn more about the impact the COVID-19 pandemic has had on the North County economy over the next 12 months, but some of the lessons have already started to become clear.

North County's Industry Clusters faced different realities in the Pandemic

North County's most prolific high concentration industry clusters including Tourism, Hospitality & Recreation, Information & Communication Technologies (ICT) and Biotechnology & Biomedical Devices, experienced a very different 2020. North County's high wage, innovative industries like ICT and Biotechnology & Biomedical Devices increased employment anywhere from two to three percent, while at the other end of the spectrum, Tourism, Hospitality, & Recreation lost almost one in every five employees from the end of the third quarter in 2019 to the end of the third quarter in 2020. Other large industry cluster employers in North County like Healthcare and Building & Design saw a small decline in employment between zero and two percent. For more information on North County's industry clusters, please see pages 28 – 31.

Investment in North County's Innovative Businesses continued to grow despite a tough economic landscape

While 2020 was a challenging year for most businesses and the economic environment in general, North County businesses looking for innovation funding¹ saw a considerable increase in local investment. In total, over \$2.3 billion was raised as innovation funding for North County businesses, including early-stage seed funding to post-IPO issuances. The increased innovation funding for North County's businesses

¹ Innovation Funding for this study includes both early-stage seed funding as well as later stage B & C funding.

coincides with another strong year for North County's inventors as they continue to produce a relatively large share of the nation's patents. For more information on North County's innovation economy, please see pages 36 – 41.

Even in the Pandemic, Housing Costs and Availability remain a challenge in North County

Unlike a hundred years ago, when food costs were typically the largest drain on income for a household, today housing has replaced food as the most significant financial challenge for residents. While this is true nationally, it is particularly true in North County, where almost half of the region's renters spend over 35 percent of their gross household income on rent. In certain zip codes in North County, almost three-quarters of renters are spending over 35 percent of their total income on housing costs. As the regional economy recovers from the pandemic and more workers return to work from home, the cost and availability of housing in North County will likely only become more challenging, as any small increases in housing supply have not kept up with demand. For more information on North County's housing market, please see pages 47 – 51.

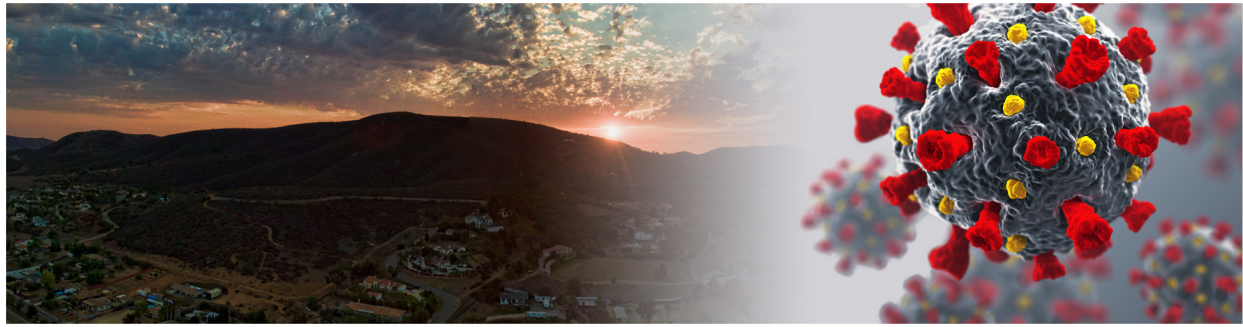
Household Incomes were rising in North County Before COVID-19

This year's NCI illustrates one of the challenges of regional and local economic analyses; data related to business and employment is updated regularly, monthly in some cases, while data on residents and households, is typically only updated every year and in some cases only every ten years (US Census). The data for 2021 NCI related to industry employment and job quality is updated through 2020, or at least most of 2020, while data on households and residents in North County largely reflects the region at the end of 2019, before COVID-19 had a significant impact on the region. The data on median household incomes in North County showed the region continually growing faster than the rest of San Diego County and California, with a 2019 measure that was higher than any comparable County except for Santa Clara. It will be important to track the resident data in North County over the next 12 months as we start to see more robust measures of household finances after the pandemic.

A Shrinking Workforce

While the pandemic has impacted many parts of North County's economy, some of the region's foundational challenges have been growing for a long time. From 2015 to

2019, the population of North County has continued to grow faster than California as a whole, and at about the same rate as the rest of San Diego County. However, growth is not occurring evenly, almost 100 percent of that growth is occurring among individuals 55 and older, and particularly 65 and older, while the overall numbers of residents 18 to 54 has declined in North County both as a proportion of the population and even in total numbers, over that same time-period. As North County recovers from the pandemic, it will need to grow and attract a skilled and committed workforce that is typically found among adults aged 18 to 54 years old. For more information on North County's people, please see pages 17 – 25.



How Does North County Recover & Rebuild from the Pandemic?

North County, like regions across the country and the world, is wrestling with how to move from a quarantined economy to one that can recover and ultimately support the high quality of life and economic opportunity that the region is known for. The following issues, ideas, and considerations for North County are meant to provide a more informed conversation about planning and strengthening North County's economy.

It should be noted that some of the issues and ideas were initially identified in last year's NCI (2020) and have been revisited and updated for 2021.

1

Learning & Adapting in a Volatile Landscape

COVID-19 has been a once-in-a-generation challenge that has already had a sizable impact on most aspects of the economy and the quality of life in North County. The lessons that come out of the pandemic are still being learned even though they are a key determinant in shaping the speed and direction of our recovery. Some of the lessons that are being examined include:

- **The importance of the innovation economy** - As a region, North County should continue to lean into science, innovation, and the ability to research and develop novel solutions quickly and effectively. Data from this year's NCI shows investors are increasing their financial commitment to North County's innovative business community as funding increases for the region's business community (see figure 22). North County's inventors continued to produce over 2,500 patents in 2020 (see figure 27). This evidence indicates that North County's innovation economy is well-positioned to grow quickly in the recovery, as it appears to have largely weathered the challenges of the pandemic. Regional leadership from industry, education, and government should continue to learn how the region's innovation economy is evolving and how they can continue to support the growth and minimize the obstacles facing these emerging businesses and entrepreneurs.

- **The new world of work** - In the last twelve months, the world of work has changed more than it has the 10 years preceding it. Remote work increased substantially, the need for office and workspace is evolving, and jobs that could be automated are increasingly doing so. Data from this year's NCI shows that office space in North County is growing and still in demand even through the pandemic (see figure 33). Higher-paid (Tier 1) workers in North County saw a minimal decline in employment from COVID-19, while lower-paid (Tier 3) workers saw a much larger decline in employment. These initial business and employment response trends to the pandemic indicate that there will likely be more changes in the composition of business and office space in relation to where people live and work as well as the need to train and upskill unemployed workers that transition from a declining industry to an emerging one.

2

Reassessing Manufacturing and the Global Supply Chain

The changing global landscape for trade combined with the pandemic have driven those in manufacturing to reevaluate the costs and benefits of narrow global supply chains. Businesses and the regions that support them are not only reexamining their international suppliers, but they also want to better understand how they might respond to reliability, tax, and quality control concerns that could require a larger portion of their supply chain to be produced locally or on a more distributed basis. This disruption to the supply chain could provide economic and employment opportunities for firms and individuals that could potentially support these manufacturers and their changing supplier relationships.

The reevaluation of the global supply chain will be particularly important for North County, as the region has a high concentration of manufacturing employment. Approximately 10 percent of all employment in North County is classified under manufacturing, compared to only five percent county-wide. In California as a whole, manufacturing represents about seven percent of all employment.

North County's largest manufacturing segments by employment are:

- Navigational, measuring, electromedical and control instrument manufacturing (~9,300 North County jobs)
- Aerospace products and parts manufacturing (~7,300 North County jobs)
- Pharmaceutical and medicine manufacturing (~3,800 North County jobs)
- Communications equipment manufacturing (~3,400 North County jobs)

- Medical equipment and supplies manufacturing (~3,400 North County jobs)

These five industry segments within manufacturing represent approximately half of all manufacturing employment in North County. These segments are also largely connected to complex, highly integrated supply chains, as much of the work in the region is not actually assembling and producing products but engaged in research, development, and design.

2021 provides an opportunity to start more in-depth conversations with leading companies engaged in manufacturing to fully understand their procurement processes and to identify key upstream industries that can be targeted for economic development assistance. For example, better understanding of upstream supply chains for unmanned aerial vehicles from General Atomics Aviation and Northrop can, in turn, inform economic development efforts designed to bring suppliers closer to those leading companies. These efforts will work to increase resilience across supply chains and create additional employment opportunities for North County residents.

3

Infrastructure & Economic Resilience in North County

The last twelve months of the pandemic, April of 2020 to April of 2021, have shown North County to be a resilient region in the face of the COVID-19 pandemic. While the pandemic is not finished and not all is known about its impacts on residents within the region, most economic indicators illustrate some losses and downturns in North County; however, they also show a region that looks to recover quickly and move forward. The following discussion provides a framework for evaluating regional economic resilience and a preliminary assessment of how North County has fared and how it could better prepare itself in the future.

Regional economic resilience is a way of thinking about a region's ability to both a) resist a "shock event" (such as an economic recession, pandemic, or natural disaster) and to b) recover from such an event. Whether we are examining the macroeconomic shocks associated with September 11, 2001, the great recession of 2008 and 2009, and now COVID-19, these economic shocks occur regularly, and more localized shocks like the North County fires of 2017, only add to the need for evaluating and strengthening regional economic resilience. This section breaks down regional resilience into three primary categories:

- 1) **Industry cluster diversification and connectivity to larger markets.** A region's diversity in industry clusters and economic activity plays a foundational role in a region's ability to resist macroeconomic downturns and to recover more quickly in the event of one. ***This continues to be a strength of the North County economy,*** as demonstrated by the continued employment growth

during a pandemic in high-paying, export-oriented industry clusters, including Information & Communication Technologies (ICT) and Biotechnology & Biomedical Devices. These industry clusters serve a broad range of customers and provide a diverse source of income for North County. For more information on North County's industry cluster diversity, see pages 28-31.

- 2) **Economic agility and entrepreneurship.** The ability to create new businesses, products, or services, or to change a business dramatically in response to a disruption in the economic landscape is a valuable component in recovering quickly from an economic downturn. *Limited data from this year's NCI shows this to be a strength of region as investment funding flowed to regional businesses and inventors continued to produce patents.* However, a more robust assessment of entrepreneurship and business births and deaths should be completed to better understand how small and emerging businesses have been impacted by the pandemic.
- 3) **Regional infrastructure and preparedness for disasters, pandemics, and other disturbances.** Regional, national, or global shocks will often test one or more aspects of a region's infrastructure and planning. The COVID-19 pandemic tested North County's healthcare system and by most accounts, *it passed with flying colors.* In the future, economic shocks will likely test the infrastructure related to energy, water, bandwidth/communications, and transportation systems, as well as healthcare. As the nation looks to reinvest in infrastructure, North County should assess its strengths and needs in each of these infrastructure components and be able to effectively communicate the findings of that assessment to those that could potentially fund those opportunities.

San Diego's North County Region



NORTH COUNTY'S CITIES

Carlsbad
Del Mar
Encinitas
Escondido
Oceanside
Poway
San Marcos
Solana Beach
Vista
San Diego* (partial)

NORTH COUNTY'S UNINCORPORATED AREAS

Bonsall
Borrego Springs
Camp Pendleton
Cardiff by the Sea
Fallbrook
Julian
Palomar Mountain
Ramona
Rancho Santa Fe
Valley Center

* = Zip codes 92127, 92129, 92128, 92130



People

The people that live and work in a region are the critical ingredient for any long-run economic health and vitality. The indicators in this section help us understand how the population in North County is evolving and the role that people play in driving regional economic advantages, challenges, and opportunities. Please note that most demographic data is through 2019, due to the availability of population statistics from the American Community Survey.

SECTION 1: A CHANGING POPULATION

San Diego's North County population reached 1.2 million in 2019 and continued to grow in 2020. This represents about 35% of San Diego County's total population and is just over 3% of California's residents. North County's population is larger than that of Westchester County in New York, Montgomery County in Maryland, and Contra Costa County in California. If it was its own city, North County would be the 10th largest in the nation.

Between 2014 and 2019, North County's population grew by nearly 4%, equating to an additional 41,000 people. This rate of growth is similar to that seen in broader San Diego County, slightly faster than the statewide average, and comparable to the growth seen in the United States overall. This population growth rate is considerably greater than that in neighboring Orange County (2%) and Los Angeles County (1%) over the same time period.

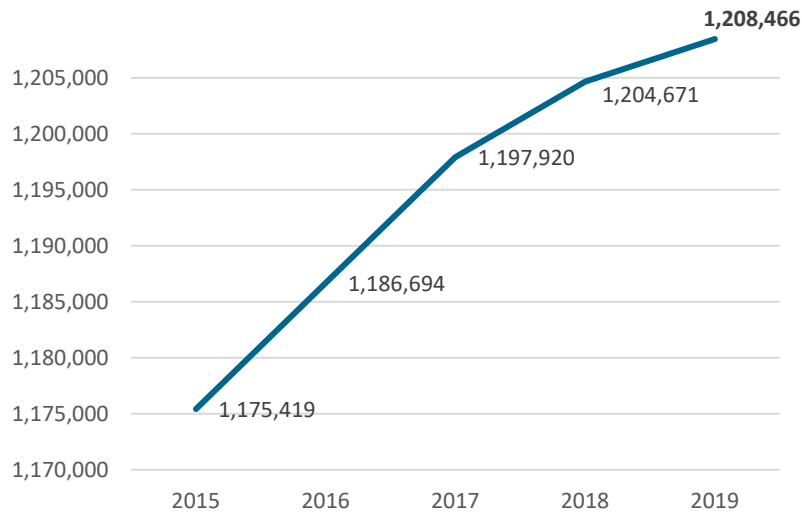
North County's population continues to grow considerably older. The population aged 65 and older increased by 25% between 2014-2019—a rate nearly three times faster than any other age cohort. This trend seems likely to continue, as those ages 45 to 64 make up 26% of the current population.

While a fifth (21%) of North County's population is foreign-born, this proportion is lower than that of San Diego County, other surrounding counties, and California. North County also has a lower proportion of those who speak a language other than English (though many also speak English) than San Diego County and California overall.

WHY DO THESE INDICATORS MATTER?

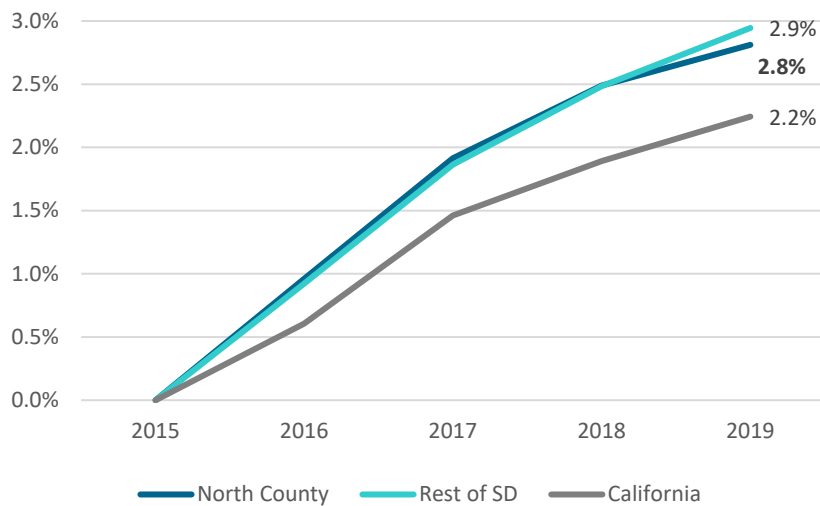
Analyzing North County's changing population allows us to better understand the driving forces of changes that will ripple throughout North County. Population demographics provide insights into supply and demand for healthcare, education, local restaurants and shops, training, childcare, and recreation.

Figure 1. North County's Population (2015-2019)²



North County's resident population has increased by just over 33,000 people from 2015 through 2019.

Figure 2. North County's Changing Population (2015-2019)³

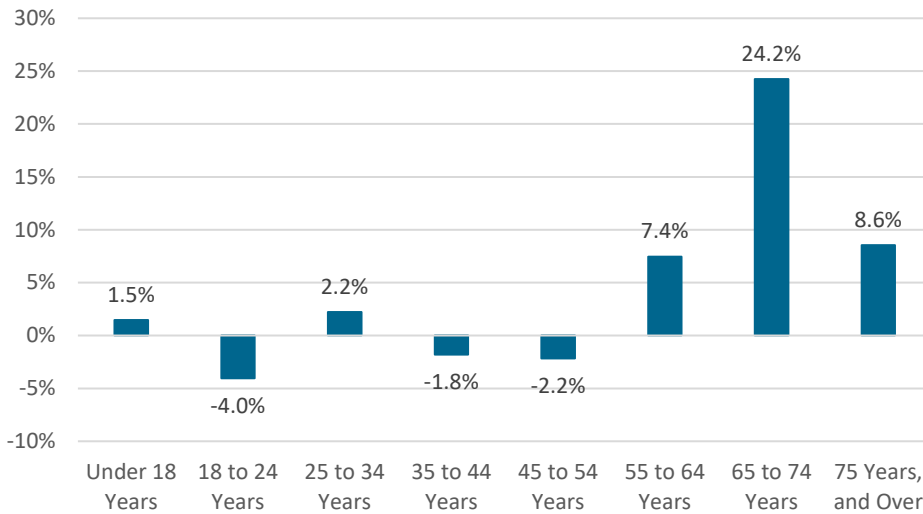


North County's population has been growing faster than California's over the last five years.

² U.S. Census Bureau, American Community Survey, 5-year estimates, 2019

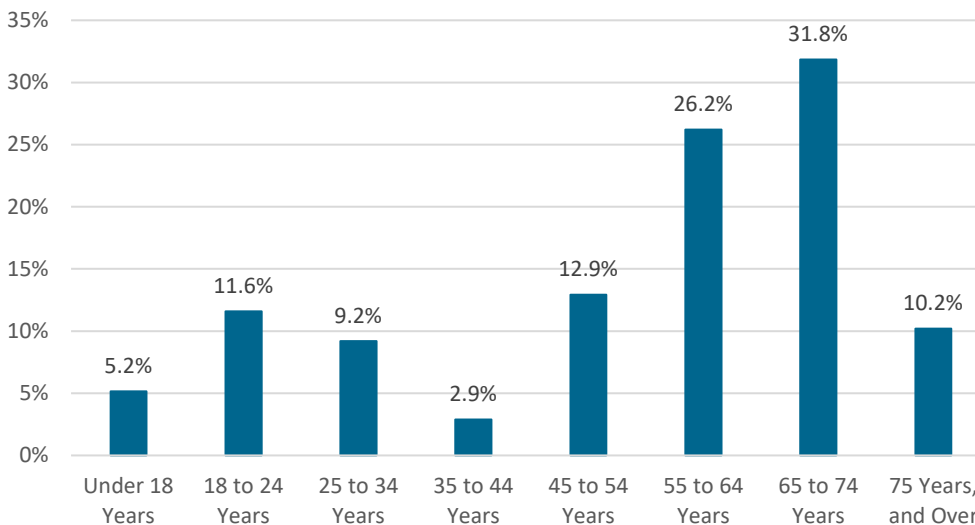
³ U.S. Census Bureau, American Community Survey, 5-year estimates, 2019

Figure 3. North County's Changing Overall Population by Age (2015-2019)⁴



All of the population growth in North County, from 2015 to 2019, was driven by residents 55 years and older.

Figure 4. North County's Changing Hispanic or Latino Population by Age (2015-2019)



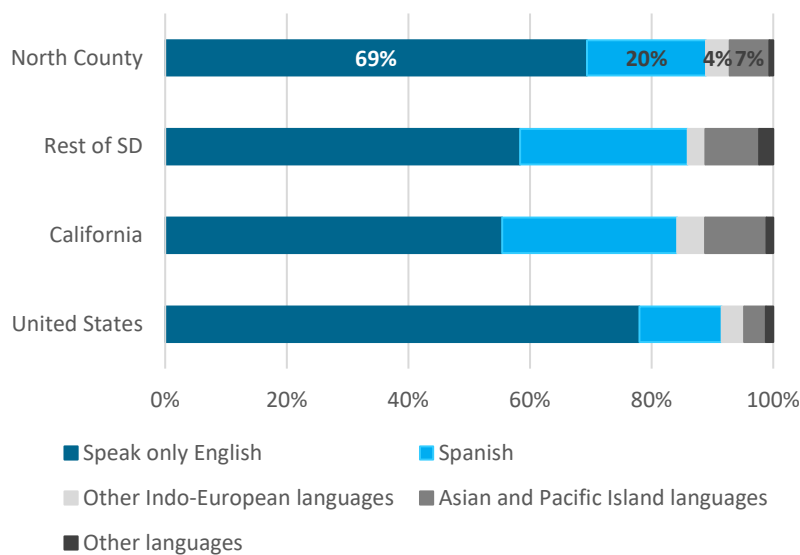
According to Kauffman Indicators of Entrepreneurship report, in 2018, immigrants were nearly twice as likely to be entrepreneurs and accounted for 30% of the nation's new entrepreneurs.

⁴ U.S. Census Bureau, American Community Survey, 5-year estimates, 2019

Table 1. Foreign-Born Population Comparison (2019)⁵

United States	North County	Rest of San Diego County	San Diego County	California	Orange County	Los Angeles County	Santa Clara County
13.6%	21.1%	24.7%	23.4%	26.8%	30.1%	34.0%	39.2%

Figure 5. Languages Spoken Comparison (5 years and older) (2019)⁶



North County has a larger proportion of those who speak only English than the rest of San Diego County and the state, though the proportion is still smaller than the national average.

As a whole, North County has a lower percentage of residents who reported speaking English less than “very well” than California and other comparable regions in the state.

Table 2. Speak English Less than Very Well Comparison (5 year and older) (2019)⁷

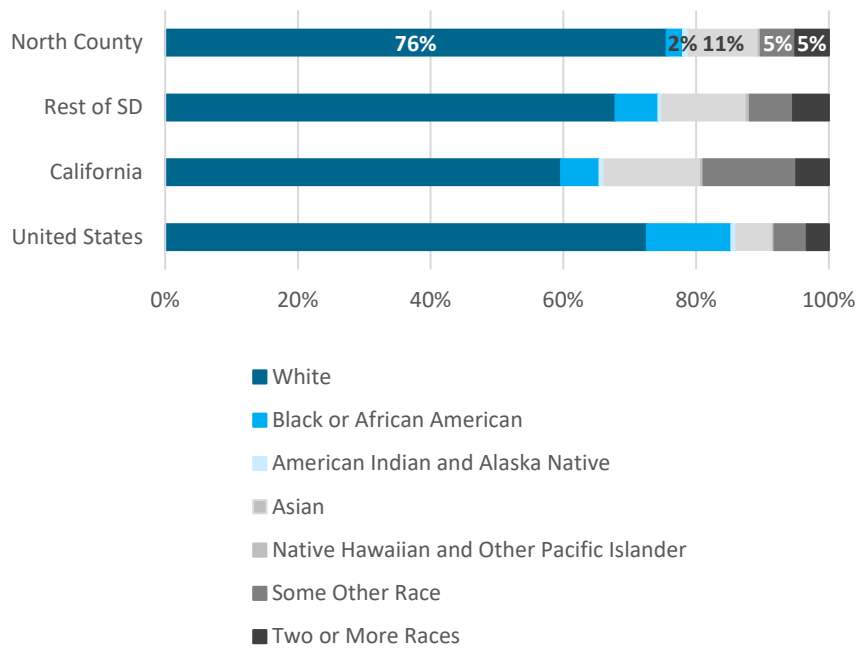
United States	North County	Rest of San Diego County	San Diego County	California	Orange County	Santa Clara County	Los Angeles County
8.4%	10.9%	15.4%	13.7%	17.8%	19.2%	20.2%	23.6%

⁵ U.S. Census Bureau, American Community Survey, 5-year estimates, 2019

⁶ U.S. Census Bureau, American Community Survey, 5-year estimates, 2019

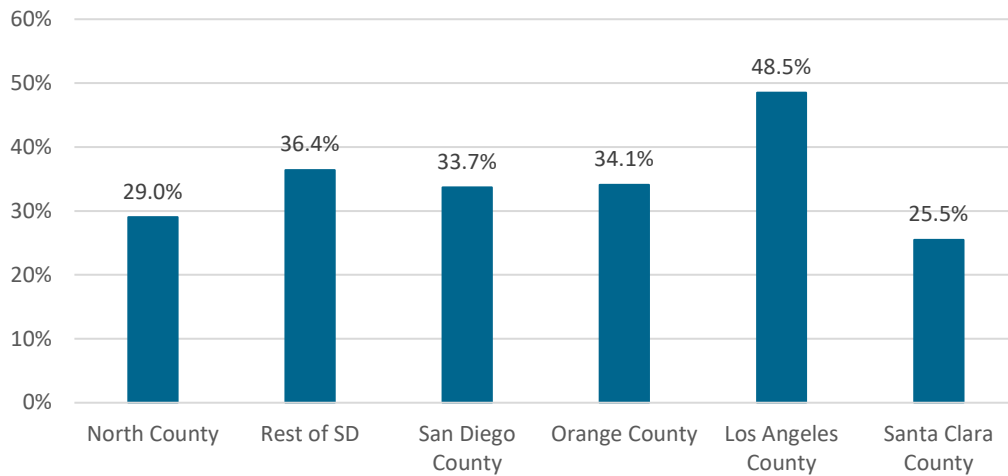
⁷ U.S. Census Bureau, American Community Survey, 5-year estimates, 2019

Figure 6. Race Comparison (2019)⁸



North County has a greater proportion of White individuals than the county, state, and national average.

Figure 7. Hispanic Population (2019)⁹



⁸ U.S. Census Bureau, American Community Survey, 5-year estimates, 2019

⁹ U.S. Census Bureau, American Community Survey, 5-year estimates, 2019.

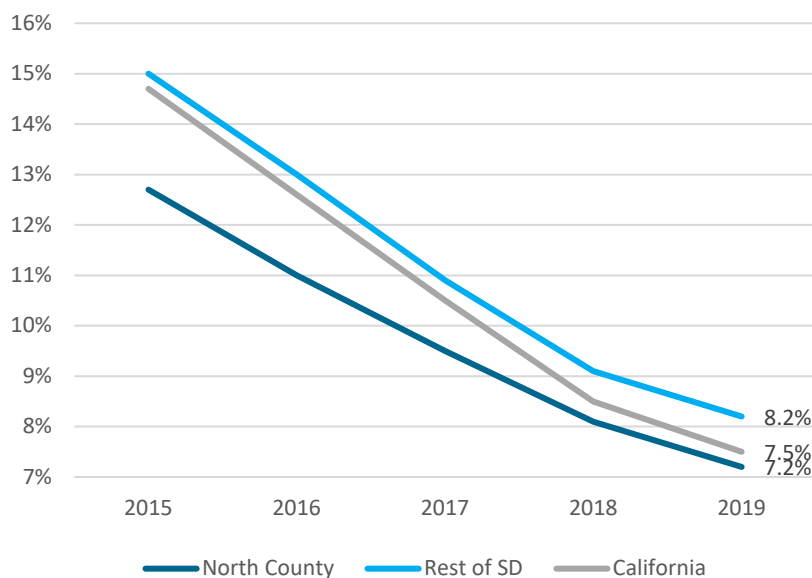
SECTION 2: HEALTHCARE

Fewer than one in 13 (7%) North County residents do not have access to insured healthcare. North County's population with healthcare insurance is slightly above the averages for San Diego County and the United States, though lower than the state average.

WHY DO THESE INDICATORS MATTER?

Access to insured healthcare remains a challenge for many households across the U.S. Tracking healthcare coverage is important because a lack of coverage may substantially strain the household budgets and savings and decreases the region's overall economic resilience. Additionally, high rates of uninsured patients could negatively impact healthcare providers in North County, lowering their capacity to make the investments in infrastructure, new technologies, and expanding facilities and staff to aid the aging population.

Figure 8. Healthcare Uninsured Rate in North County (2015-2019)¹⁰



Healthcare insured rates vary greatly by educational attainment. Nearly three in ten North County residents without a high school diploma lack health insurance. The number of those without health insurance decreases to 13% among those who have obtained only a high school diploma.

¹⁰ U.S. Census Bureau, American Community Survey, 5-year estimates, 2019.

Figure 9. Healthcare Insured Rate by Educational Attainment

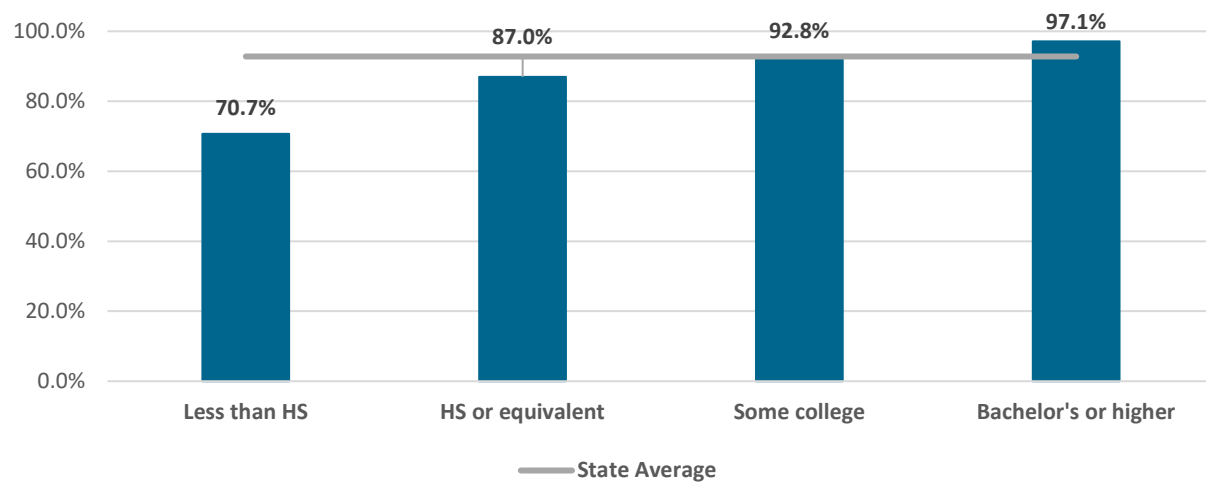


Table 3. Healthcare Uninsured Rate Comparison (2019)¹¹

Los Angeles County	United States	Rest of San Diego County	San Diego County	Orange County	California	North County	Santa Clara County
9.6%	8.8%	8.2%	7.8%	7.6%	7.5%	7.2%	4.3%

SECTION 3: WORKFORCE & INCOME

There are nearly 90,000 workers who leave North County to go to work. More than 90 percent of these workers are in higher-paying management, business, science, and art Occupations (Figure 12).

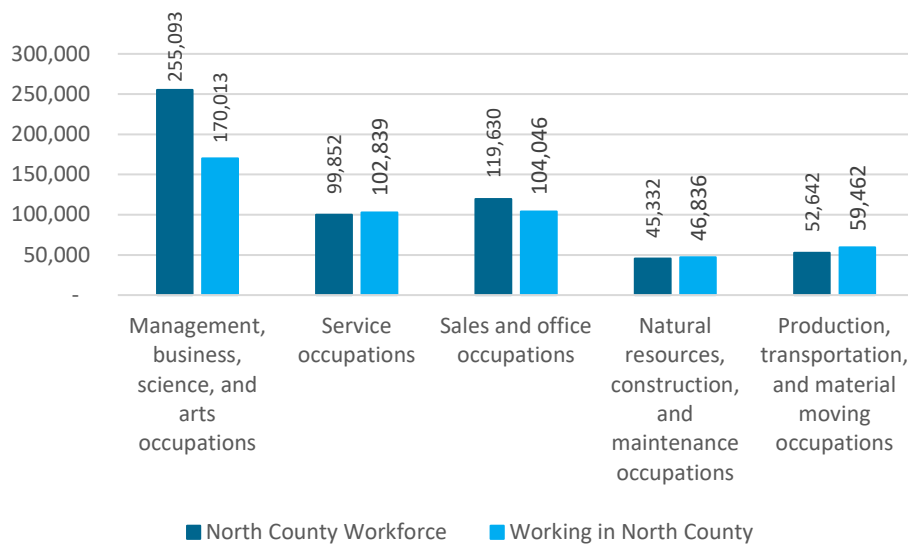
Please note the data for this chart is likely to be impacted by the pandemic as many workers may be working from home, while still showing that they are employed outside the region, and the North County workforce data is taken from the end of 2019, while the working in North County data was taken in 2020. We expect the large disparity between the management, business, science and art occupations to return to a smaller differential in the 2022 indicators.

WHY DO THESE INDICATORS MATTER?

Because North County is surrounded by other hubs of employment (including the City of San Diego and Orange County), it is important to consider the net flow of workers in and out of North County and the types of occupations workers leaving and entering North County hold. This metric is particularly important for North County as it continues to transition towards being an independent and dynamic economy.

¹¹ U.S. Census Bureau, American Community Survey, 5-year estimates, 2019.

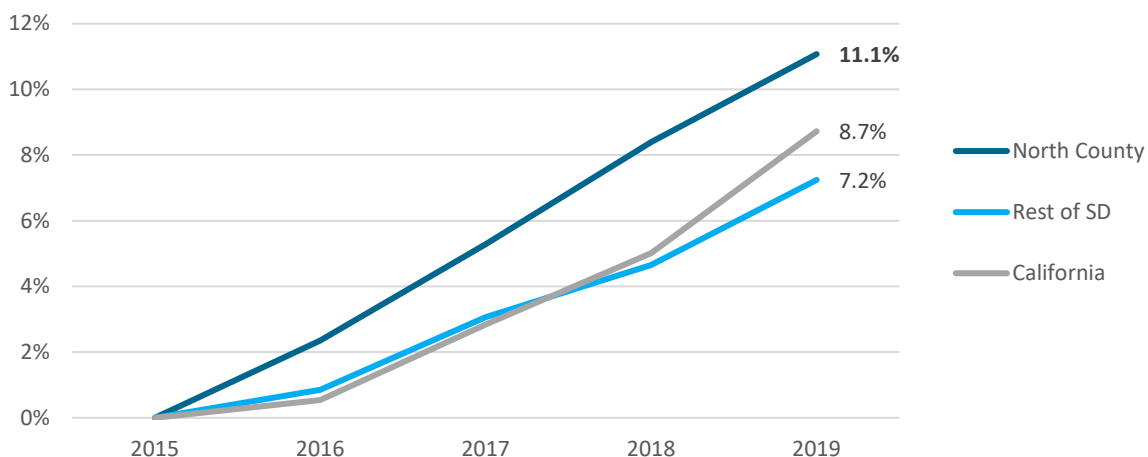
Figure 10. North County's Resident Workforce vs. Working in North County (2020)¹²



North County has about 85,000 residents working in “Management, Business, Science, and Arts” occupations that commute to regions outside of North County.

Median Household Incomes increased by about 11% in North County from 2015 to 2019, more than the rest of San Diego County or California.

Figure 11. Median Annual Household Income Growth, Adjusted for Inflation (2015-2019)¹³



¹² JobsEQ Q3 2020, American Community Survey 2019 5-year estimates. 2019 data does not reflect jobs losses due to the COVID-19 pandemic.

¹³ U.S. Census Bureau, 2014–2018 American Community Survey 5-Year Estimates.

Table 4: Median Household Income by Region¹⁴

United States	North County	Rest of San Diego County	San Diego County	California	Orange County	Santa Clara County	Los Angeles County
\$62,843	\$94,976	\$75,817	\$78,980	\$75,235	\$90,234	\$124,055	\$68,044

North County has higher median household incomes than the rest of the county, state, and nation.

¹⁴ U.S. Census Bureau, 2014–2018 American Community Survey 5-Year Estimates.



Economy

The complexity and diversity of regional economies requires analysis across numerous dimensions to achieve a comprehensive picture of the economy. The indicators in this section provide a variety of perspectives that, in aggregate, demonstrate the strengths, challenges, nuances, and resiliency of the North County economy and its residents.

Beyond the traditional employment numbers, the indicators included in this section cover industry clusters, which highlight the intertwining relationships between firms and their supply chains. Analysis of clusters often reveals regional competitive advantages, as is the case with the Information & Communication Technology and Biotechnology & Biomedical Devices clusters in North County. Additionally, the Economy Indicators include job quality. During times of low unemployment, job quality is especially relevant as factors such as low wages, few benefits, and little opportunity for career advancement provide a more nuanced story about the economic well-being of residents in a region. The various dimensions in this section highlight the complexities of the North County economy and its workforce, and suggest that the region continues to grow, both in quantity and quality of jobs.

As of April 2021, when the 2021 North County Indicators was written, the COVID-19 pandemic is still impacting the region's economy. While economic activity is beginning to return to some semblance of normalcy in North County as infections decline and more and more of the residents have been vaccinated, the economic data largely reflects the region at or near the end of 2020, when COVID-19 infections were at their highest level. As you examine the economic indicators, please keep this time frame in mind.

SECTION 1: OVERALL EMPLOYMENT

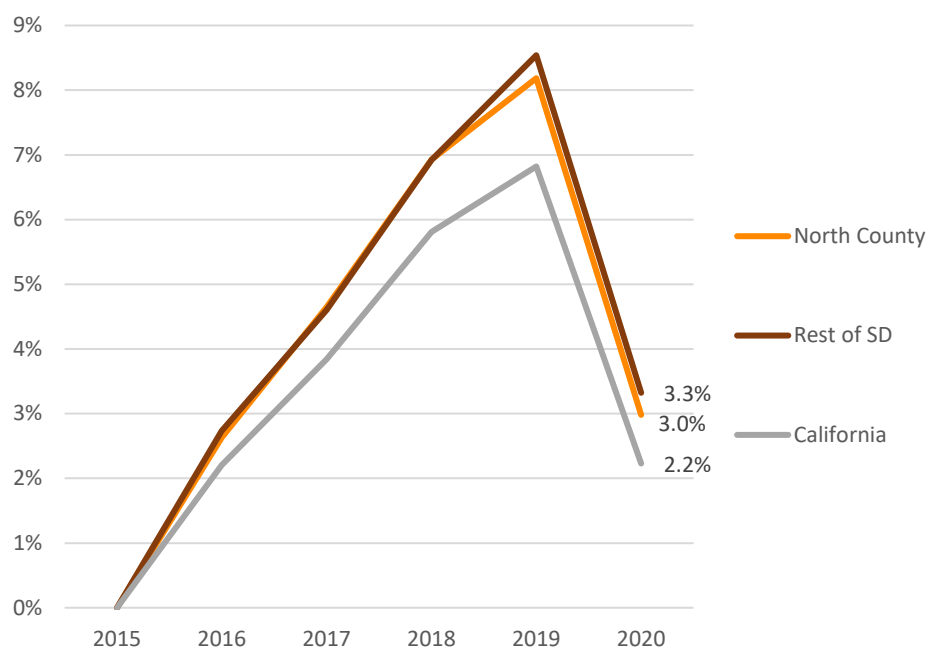
2020 was a challenging economic environment for the entire globe and North County was no exception. The pandemic saw a sizeable jump in unemployment in March of 2020 and some industries and occupations were significantly impacted while others saw little to no decline.

Between 2015 and 2019, employment in North County increased by 8%, but 2020 and the pandemic saw most of those gains lost in 12 months. North County's overall employment saw similar growth up through 2019 and decline in 2020 as the rest of San Diego County. California has experienced slower employment growth than North County from 2015 to 2019 and experienced a similar decline in the pandemic.

WHY DO THESE INDICATORS MATTER?

The number of jobs, as well as the change in number over time, is often the first metric used to evaluate any given economy. Analyzing the growth in employment and changes in unemployment provide immediate insights into the state of the economy. Consistent job growth, and particularly growth comparative to that seen in surrounding regions, signals that an economy is still growing and expanding.

Figure 12. Employment Growth in North County (2015-2020)¹⁵



North County has seen most of the employment growth from 2015 to 2019 disappear as a result of the pandemic.

¹⁵ JobsEQ 2015-2020 Q3

Table 5. Employment (2020) and Employment Growth (2019-2020)¹⁶

	2020 Employment	Growth (2019-2020)	Unemployment (January 2021)
North County	483,197	-4.8%	7.4%
Rest of SD	1,027,545	-4.8%	8.4%
San Diego County	1,510,742	-4.8%	8.1%
Orange County	1,665,947	-5.4%	7.3%
Los Angeles County	4,643,017	-4.9%	12.6%
Santa Clara County	1,127,239	-3.6%	5.7%
California	18,024,128	-4.3%	9.2%

SECTION 2: INDUSTRY CLUSTERS & JOB QUALITY

Dynamic industry clusters play a crucial role in a region's economy. Industry clusters with relatively high concentrations of employment in North County, such as Defense, Aerospace, & Transportation Manufacturing and Biotechnology & Biomedical Devices, have far-reaching effects on the region's economy and workforce.

Industry clusters have become the fundamental basis for understanding and evaluating regional economies. Industry clusters are closely affiliated industries that often work together in supply chains or through other relationships to create value that exceeds their individual parts. This grouping of industries allows for a quick identification of the keystone economic drivers in a region.

Additionally, job quality provides a deeper understanding of what types of employment opportunities exist in North County, and the livelihoods that they offer. The impact of COVID-19 on employment was not felt evenly by North County workers, as higher paid (tier 1) workers saw little to no decline in employment opportunities, while their lower paid counterparts (tier 3) saw a much larger decline in employment.

WHY DO THESE INDICATORS MATTER?

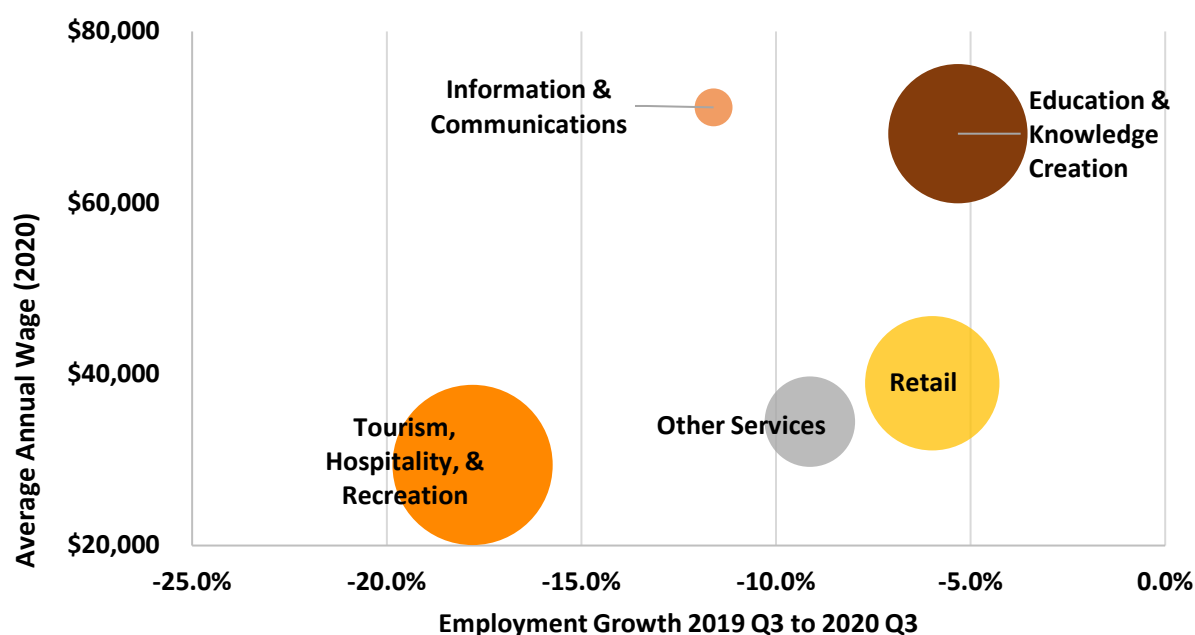
As noted above, industry clusters provide immediate insight into North County's largest drivers of employment and the interconnectedness of the region's firms. Industry clusters provide a macro-scale understanding of the past, present, and future for the region. Conversely, job quality analysis provides a micro-scale picture of what jobs in North County—and the lives of those who hold these jobs—look like. In unison, these two metrics highlight some of the nuances of the North County economy.

¹⁶ JobsEQ 2019-2020 Q3, California EDD, January 2021

Due to the considerable impact of the COVID-19 pandemic on the regional economy in 2020, the industry clusters were organized into three groups. Industry clusters that saw a considerable decline in employment (>5%) from 2019 (q3) through 2020 (q3), those that experienced a smaller employment decline (-4% to 0%), and lastly those that increased in employment over the same time period.

As shown in the figure below, the first group of industry clusters is made up of those whose total employment declined by more than five percent. Education, Retail, and Other Services¹⁷ all experienced between a five and 10 percent decline in total employment, while traditional Information & Communications and Tourism, Hospitality, & Recreation experienced a decline in employment between 10 and 20 percent.

Figure 13. Hardest Hit Industry Clusters (2019-2020 Q3)¹⁸

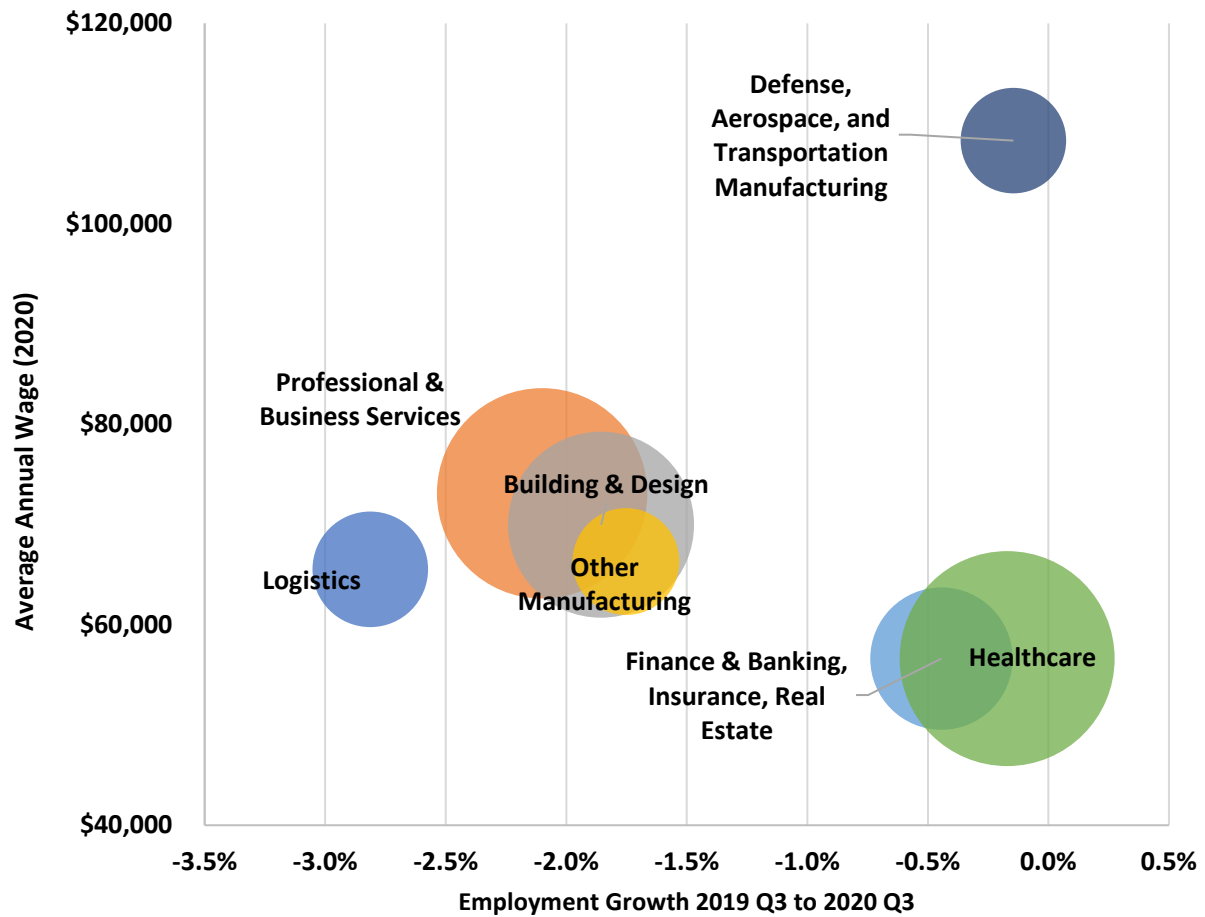


The figure below shows the second group of industry clusters that experienced some decline in employment, but less than four percent over the 2019 (q3) through 2020 (q3) time period. Defense, Aerospace, & Transportation Manufacturing, Healthcare, and Finance, Insurance, & Real Estate all experienced less than a one percent decline in employment, while Logistics experienced close to a three percent decline.

¹⁷ Other Services includes spas, salons, dry cleaning, and other related services.

¹⁸ JobsEQ 2019-2020 Q3

Figure 14. Moderately Impacted Industry Clusters (2019-2020 Q3)¹⁹



The figure below shows the third group of industry clusters that experienced an increase in employment over the 2019 (q3) through 2020 (q3) time period. Biotechnology & Biomedical Devices as well as Information & Communication Technologies increased employment by over two percent, while agriculture and food saw the smallest increase of the four industry clusters.

¹⁹ JobsEQ 2019-2020 Q3

Figure 15. Growth Industry Clusters (2019-2020 Q3)²⁰

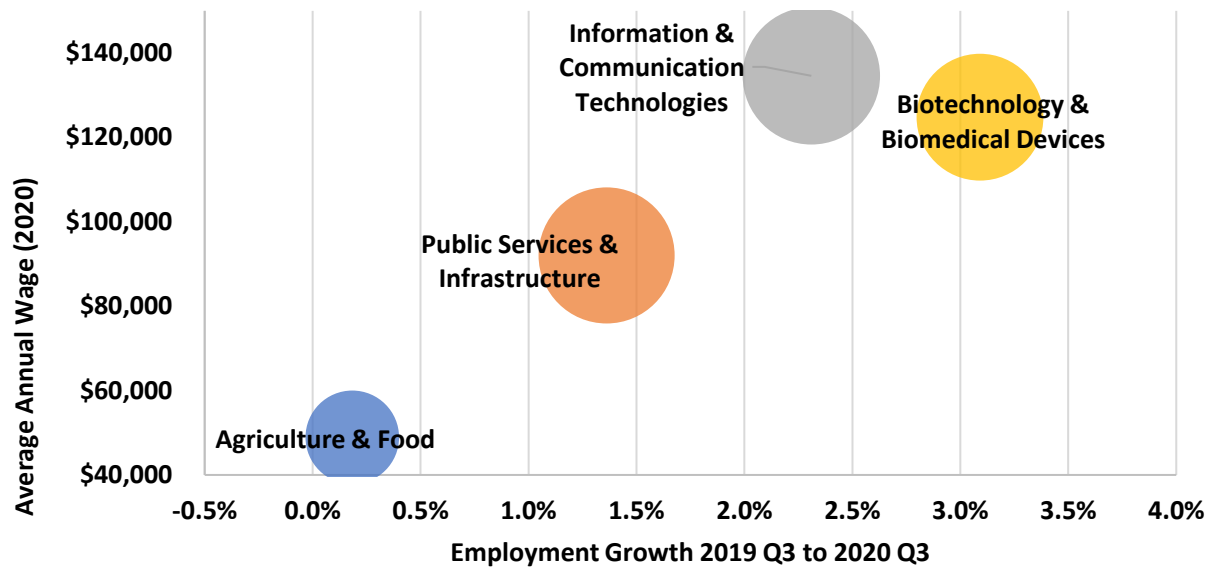


Table 6. Industry Cluster Employment and Annual Average Wages

INDUSTRY CLUSTER		2021 EMPLOYMENT	ANNUAL AVERAGE WAGES
HARDEST HIT INDUSTRIES	Tourism, Hospitality, & Recreation	63,589	\$29,407
	Information & Communications	4,114	\$71,140
	Other Services	23,462	\$34,459
	Retail	51,781	\$38,941
	Education & Knowledge Creation	46,967	\$68,068
MODERATELY IMPACT CLUSTERS	Logistics	15,685	\$65,533
	Professional & Business Services	51,975	\$73,113
	Building & Design	40,616	\$69,986
	Other Manufacturing	13,398	\$66,309
	Finance & Banking, Insurance, Real Estate	23,784	\$91,747
	Healthcare	54,243	\$56,626
	Defense, Aerospace, and Transportation Manufacturing	13,068	\$108,305
GROWTH INDUSTRIES	Agriculture & Food	10,911	\$48,916
	Public Services & Infrastructure	23,079	\$92,028
	Information & Communication Technologies	23,520	\$134,596
	Biotechnology & Biomedical Devices	20,045	\$124,798

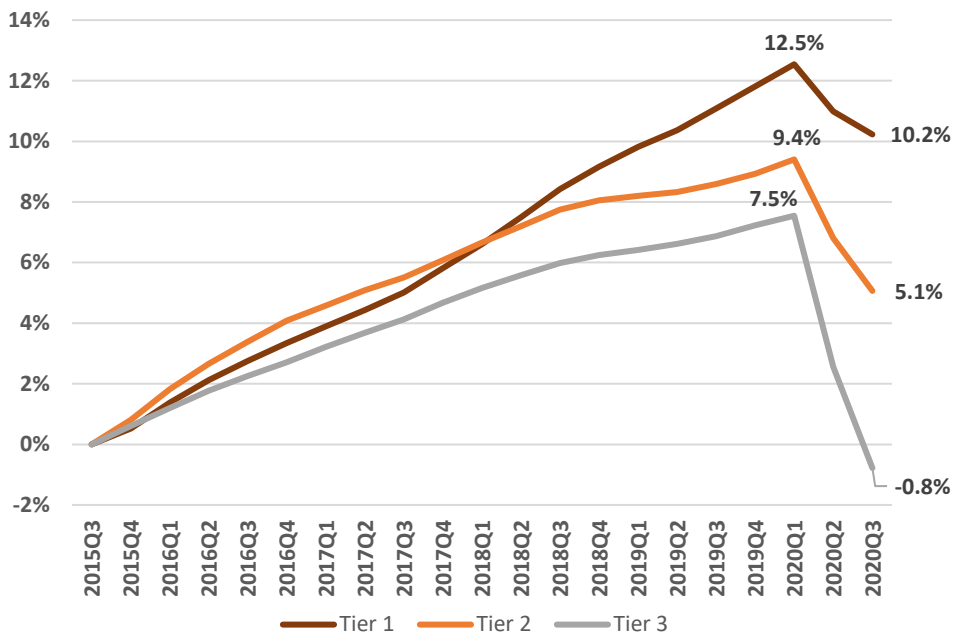
²⁰ JobsEQ 2019-2020 Q3

Job Quality

An analysis of job quality provides an understanding of the types of jobs and workers in North County, as well as the typical range of pay associated with those jobs. These details add context to general employment numbers and reveal insights into the opportunities available to the workforce, the workforce’s ability to earn living wages, and economic resilience.

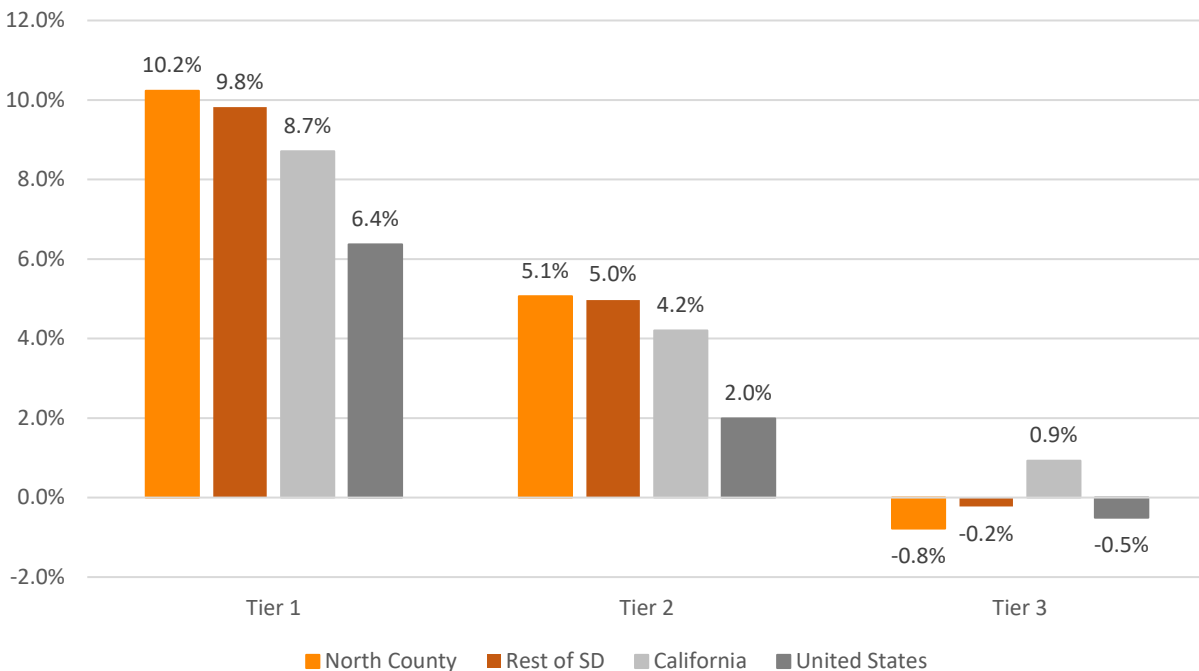
TIER 1 OCCUPATIONS	TIER 2 OCCUPATIONS	TIER 3 OCCUPATIONS
Tier 1 occupations are typically the highest-paying, highest-skilled occupations in the economy. This occupational category includes positions such as managers (e.g., Chief Executives and Sales Managers), professional positions (e.g., Lawyers and Physicians), and highly-skilled technology occupations, such as scientists, engineers, computer programmers, and software developers.	Tier 2 occupations are typically the middle-skill, middle-wage occupations. This occupational category includes positions such as technicians, teachers, office and administrative positions (e.g., Accounting Clerks and Secretaries), manufacturing, operations, and production positions (e.g., Assemblers, Electricians, and Machinists).	Tier 3 occupations are typically the lowest-paying, lowest-skilled occupations that have historically provided the largest portion of employment in the region. These occupations include positions such as security guards, food service and retail positions, building and grounds cleaning positions (e.g., Janitors), and personal care positions (e.g., Home Health Aides and Child Care Workers).

Figure 16. Growth in Employment by Occupational Tier (2015-2020 Q3)²¹



Tier 1 workers in North County, those with the highest average wages, saw the smallest decline from the pandemic, while tier 3 workers, those with the lowest average wages, saw the largest decline in employment.

Figure 17. Growth by Occupational Tier (2015-2020)²²



²¹ JobsEQ 2015-2020 Q3

²² JobsEQ 2015-2020 Q3

Table 7. Job Quality Composition (2020)²³

	Tier 1	Tier 2	Tier 3
North County	23.0%	24.3%	52.7%
Rest of San Diego County	24.6%	23.8%	51.4%
California	22.3%	24.5%	53.1%
United States	21.8%	25.7%	52.4%

SECTION 3: ECONOMIC DISTRESS

Economic distress requires an examination of both the challenges households are facing in the current economic environment as well as an assessment of economic resilience and how the region can endure and recover from an economic downturn. The pandemic has shown the importance of these indicators both now and in the future.

While poverty rates are considerably higher in certain geographic pockets around North County, the relatively high regional-specific costs in North County mean that living wages are considerably higher than national rates. Living wages, in comparison to poverty rates, include regional differences in costs of housing, food, energy, and other essentials. The living wage in North County is about \$69,000 per year for a family of four (one parent working). This means that at least 29%—nearly a third of households—are likely struggling to get by. This is further evidenced by the fact that it would take about two tier-3 jobs (lower-skill, lower paying) or about one-and-a-fifth tier 2 jobs for a family of four (one parent working) to achieve the living wage in North County.

San Diego County’s relatively high debt-to-income ratio is also a cause for concern as we consider economic resilience; on average, households in San Diego County have nearly \$2 of debt for every dollar of annual income.²⁴ Furthermore, the decline in this ratio—a trend observed nationally and statewide—is occurring at a slower rate than regional neighbors such as Orange and Los Angeles Counties.

WHY DO THESE INDICATORS MATTER?

North County is among the more expensive regions to live in in the United States. The high costs of living mean that many families may struggle to meet other daily household needs. It likely impacts savings rates and the ability of individuals and families to accumulate household wealth and stability. A sizable population that is struggling to make ends meet can also suppress local economies, as depressed purchases of goods and services can have multiplier effects throughout the region.

Living wages are calculated by factoring the local costs of food, childcare, medical expenses, housing, transportation, and other factors. Poverty rates do not account for these local differences.

²³ JobsEQ 2020 Q3

²⁴ It is worth noting that this figure does not include student loan debt—a factor which is increasing in scale across the country.

Figure 18. Number of Jobs Needed to Achieve a Living Wage

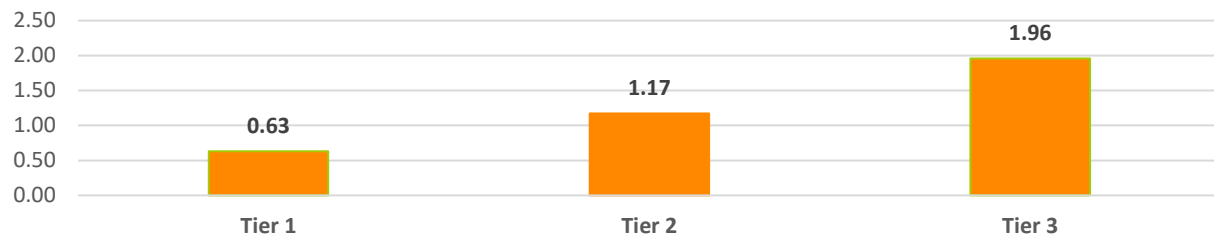
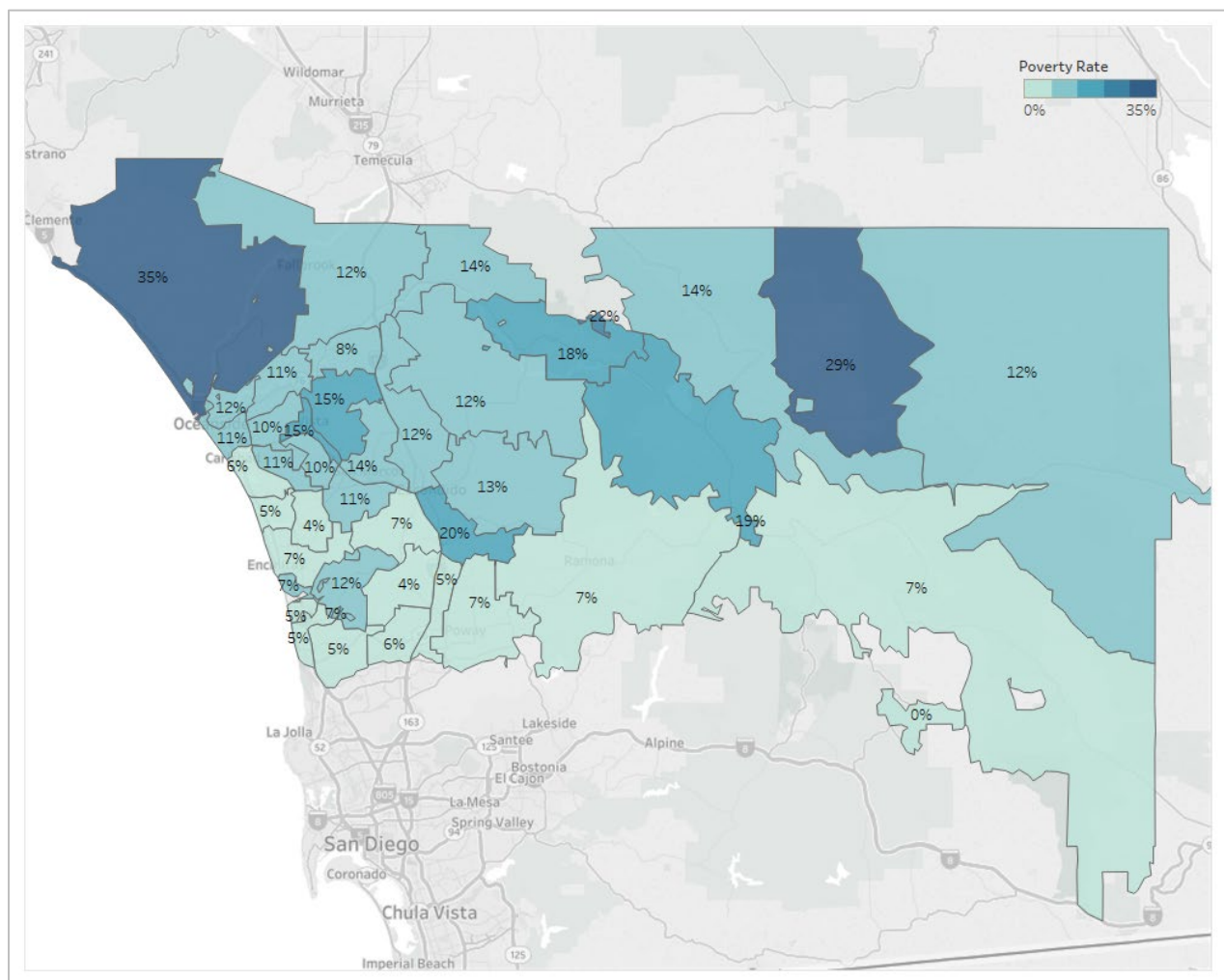


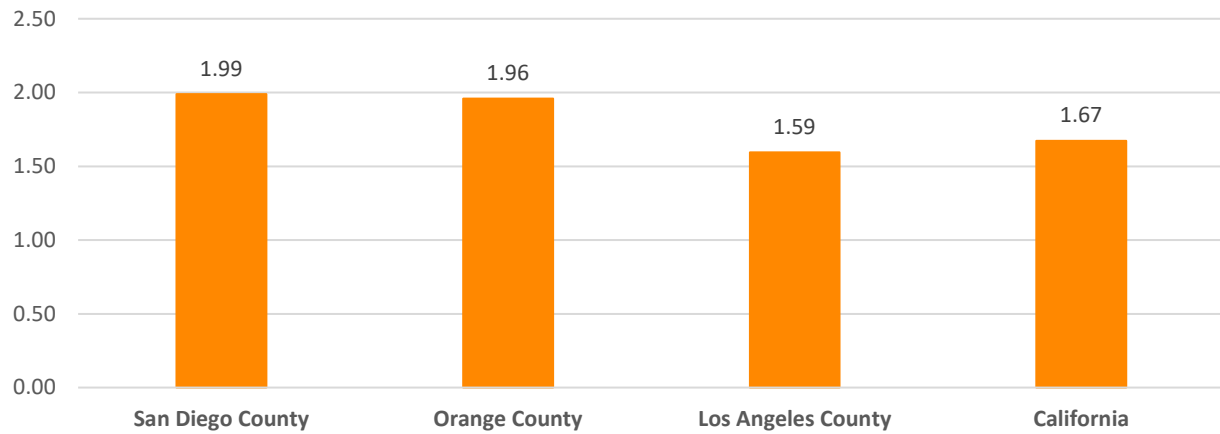
Figure 19. Poverty Rate Among All Residents in North County (2018)²⁵



²⁵ US Census Bureau, 2013–2017 American Community Survey 5-Year Estimates.

San Diego County households have a debt-to-household income ratio that is greater than that in surrounding counties and the state. High debt-to-income ratios can hamper resilience in the event of economic downturn.

Figure 20. Household Debt-to-Income Ratio (2018)^{26 27}



²⁶ Board of Governors, United States Federal Reserve, 1999-2018.

²⁷ These ratios do not include student loan debt.



Innovation

The innovation sector has played an increasingly important role in the North County economy. Now, as the recovery from the pandemic begins to accelerate, the role of innovation is more crucial than ever. The innovation economy in North County may have already softened some of the blows from the pandemic; venture capital and R&D spending is flowing into the region at or near all-time highs.

Innovation is a factor not easily captured by a single metric. This section highlights an array of indicators that display different aspects of innovation in North County. These metrics include venture capital raises, the ratio of business births and deaths, research and development funding, and patent approvals by inventors living in North County. These indicators show the various stages of innovation in North County, ranging from research and development in the earliest stages and late-stage venture capital raises as businesses and their products are scaled.

SECTION 1: INNOVATION FUNDING

Venture capital funding includes funding for a wide variety of businesses, ranging from those that support early stages of experimenting and prototyping to companies in late-stage development and commercialization funded through venture capital and Post-IPO issuances. Figure 22 shows the surge of funding raised by businesses headquartered in North County in 2020.

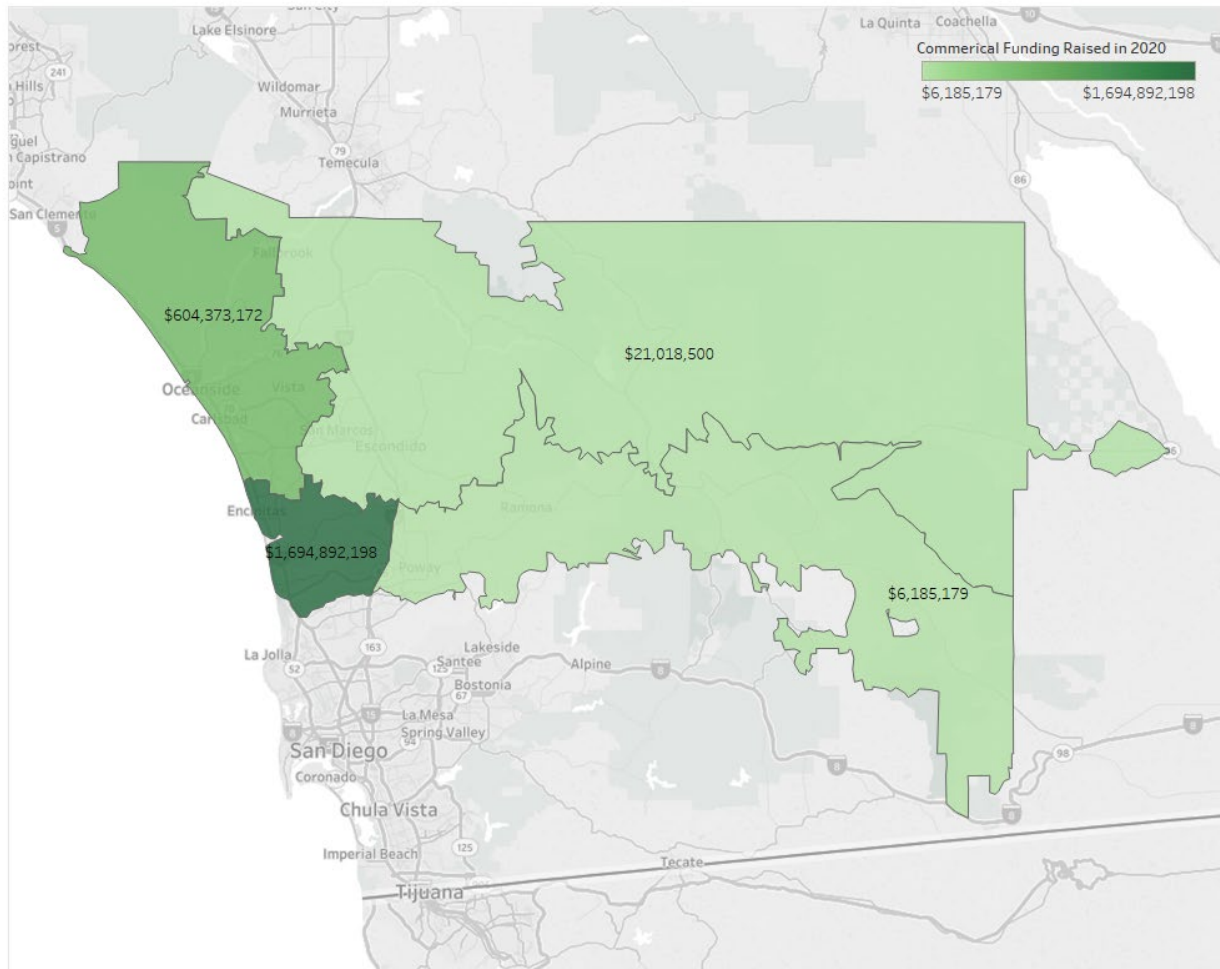
North County businesses raised more than \$2.3 billion in funds in 2020. Realty Income Corporation, located near the intersection of Highway 5 and 56, raised more than \$1.4 billion alone in 2020. Even when excluding Realty Income Corporation's raises, North County businesses nearly doubled (81%) the amount of money raised between 2019 and 2020.

WHY DO THESE INDICATORS MATTER?

Innovation funding captures a broad swath of innovation activity across a range of product development stages, from seed funding for initial companies to later stage B and C funding.

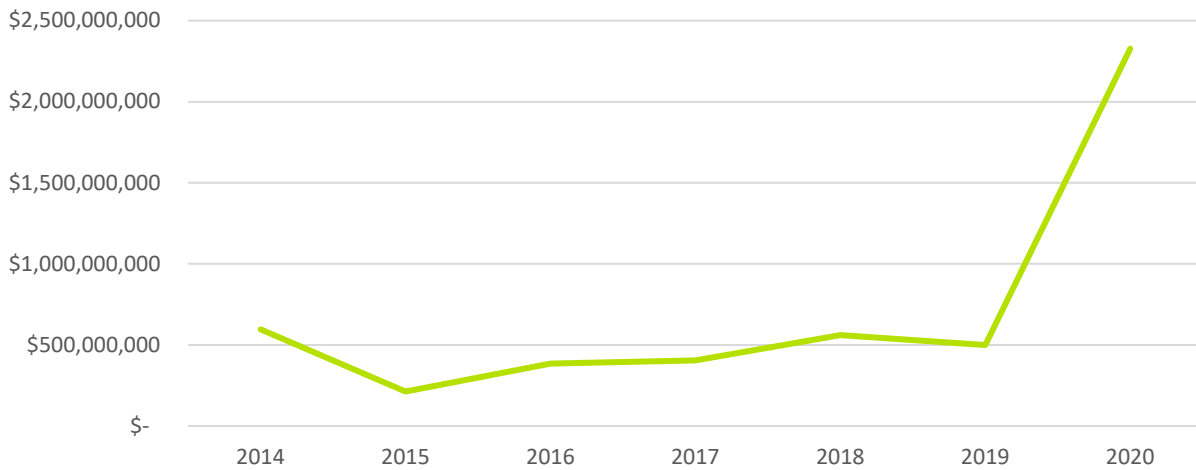
Realty Income Corporation raised more than \$1.4 billion in 2020 through Post-IPO debt and equities issuances.

Figure 21. Total Innovation Capital Raised in North County in 2020²⁸



²⁸ Crunchbase

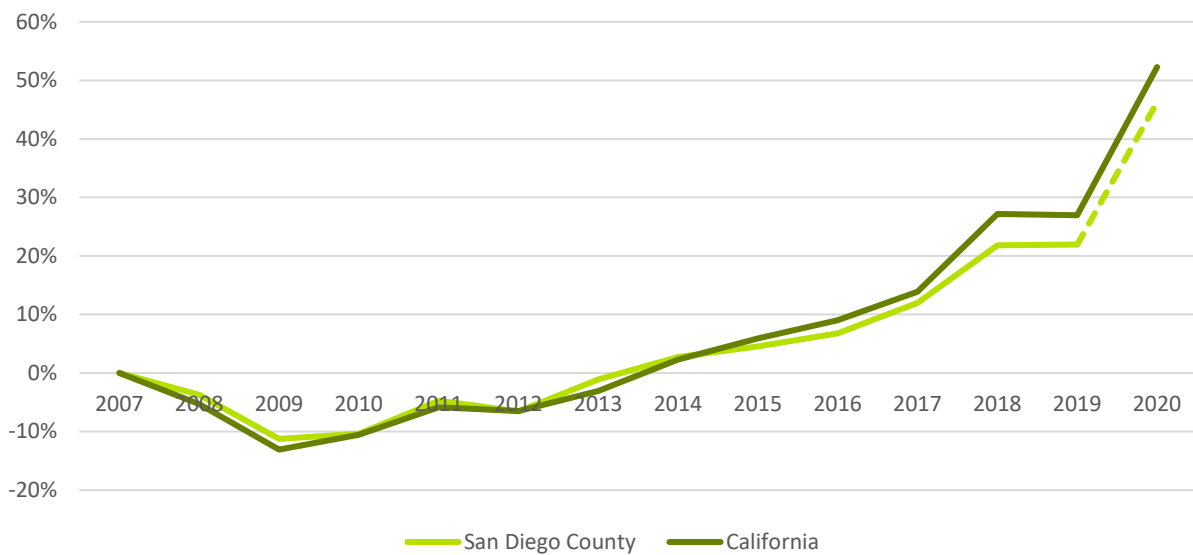
Figure 22. Innovation Funding in North County



SECTION 2: NEW BUSINESSES FORMATIONS

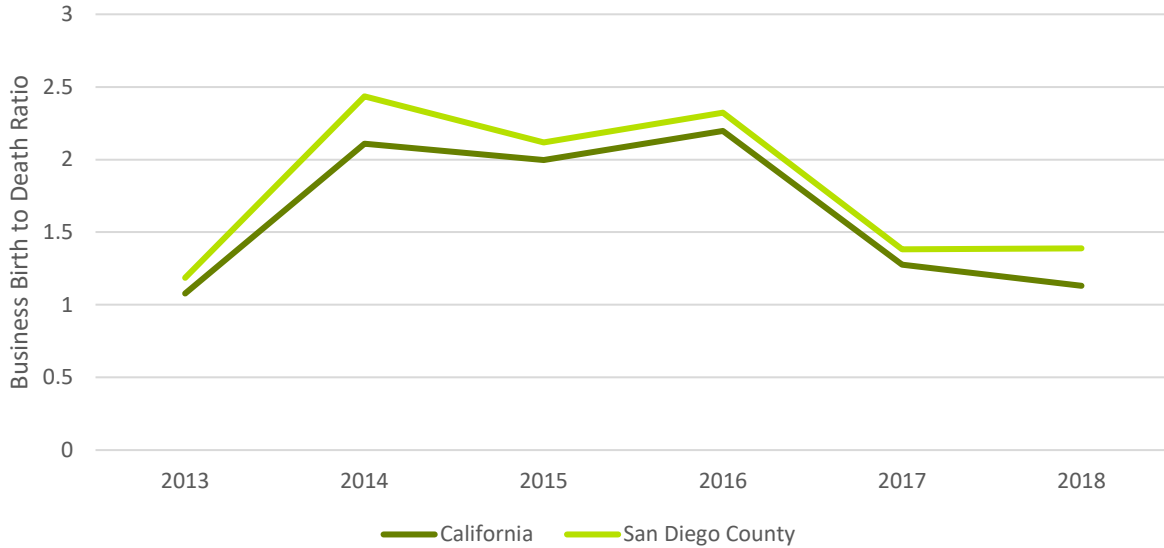
The growth in the number of businesses in a region is an indicator of a region's economy and business climate. Having seen steady growth between 2009 and 2017, new business formations have increased substantially statewide in 2020. While this data is currently unavailable at the county level, if San Diego County continues to trend closely with new business formations seen in California, new business formations in the county will have increased by roughly 20% between 2019 and 2020 (Figure 23). San Diego County has also enjoyed a slightly greater business birth-to-death ratio than the statewide average (Figure 24). This means San Diego County has a greater rate of net new business growth.

Figure 23. New Business Formations (growth from 2007 baseline)²⁹



²⁹ U.S. Census Bureau. Business Formation Statistics. Experimental Data

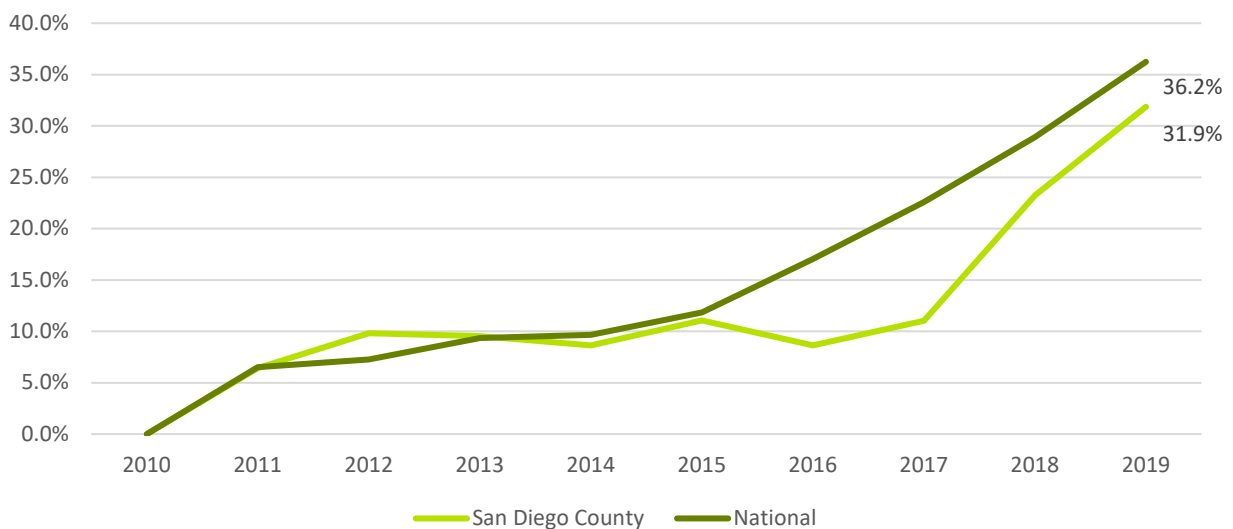
Figure 24. San Diego County Business Birth to Death Ratio



SECTION 3: Research and Development

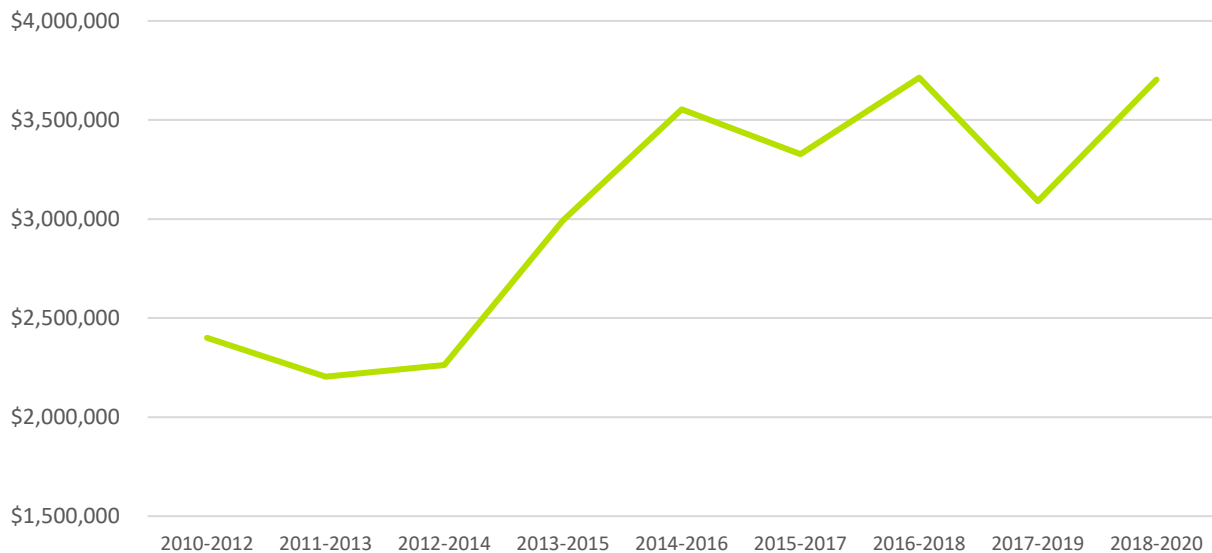
San Diego County and North County have seen dramatic increases in research and development (R&D) activities. R&D funding and activity is an important source of start-ups and entrepreneurs, so a robust R&D ecosystem is important to innovation. UC San Diego continues to be the greatest source of R&D expenditures, receiving and granting nearly \$1.4 billion for research and development in 2019 (Figure 25). North County residents received a significant amount of Phase I Small Business Innovation Research (SBIR) and Small Business technology Transfer (STTR) funding in 2020, receiving nearly \$4.7 million in research grants (Figure 26).

Figure 25. Research and Development Expenditures in San Diego County Universities



The largest value Phase I SBIR/STTR grant in 2020 in North County was for development of a test for high genetic risk of Coronary Artery Disease. Biospyder Technologies, the grant recipient, received \$409,000 in research funding.

Figure 26. Phase I SBIR and STTR Grant Receipts in North County



SECTION 4: PATENTS

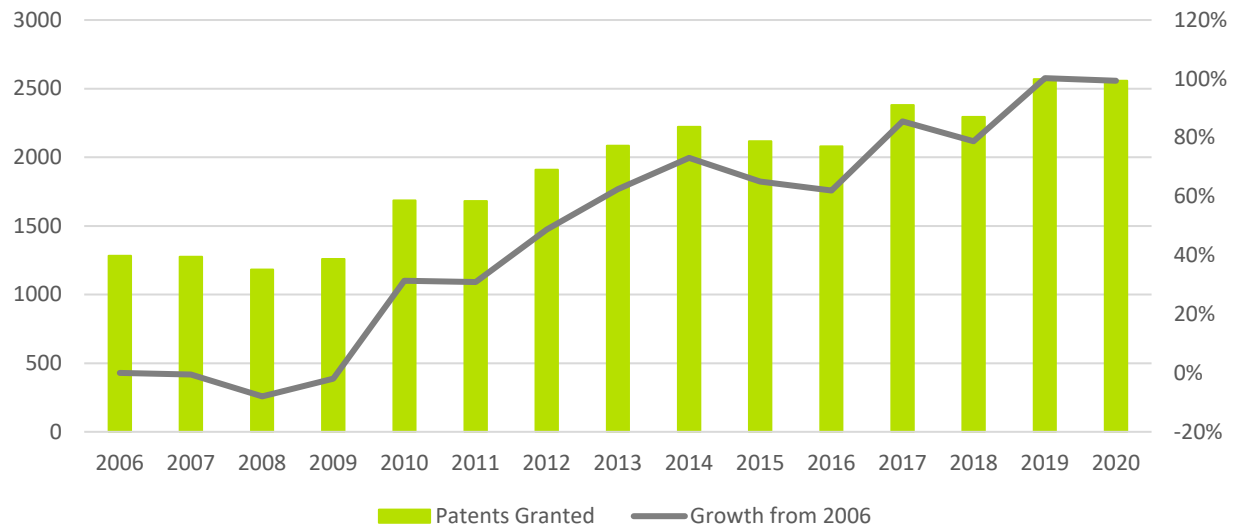
Patents are one of the earliest steps an inventor or entrepreneur takes when creating a novel product or design. Patents often lead to new products, new businesses, and even encourage other new ideas. The high number of approved patents by North County inventors suggests that the region continues to attract innovative companies and entrepreneurs that are looking to introduce new technologies and products to the marketplace.

WHY DOES THIS MATTER?

Patents are important leading indicators of innovation since they are often one of the first steps an inventor or entrepreneur takes upon coming up with a new invention, product, or technique.

More than 2,500 patents were awarded to North County residents in 2020.

Figure 27. Approved Patents by Inventors in North County 2006-2020³⁰



³⁰ USPTO PatentsView Data Query. Search was done on the inventor database using inventor last known location by city.



Education

Education is increasingly important in the world of work. As technology plays a growing role both in and out of the office, a population that can learn, communicate, understand new technologies, and think critically is crucial to North County's future workforce. These indicators address the educational attainment of the current working population, as well as the educational success and challenges of the youth and young adults that represent the future workforces of North County.

Most of the education indicators, in this year's NCI (2021), are held over from the 2020 NCI as most schools and educational institutions did not complete their standardized testing in the 2019 to 2020 school year due to the COVID-19 pandemic and other degree completion data was not available. Hopefully, standardized testing will be completed in the 2020 to 2021 school year, so we will be able to see the impact the pandemic had on educational performance not just in North County, but across the country.

In aggregate, the education metrics highlight North County's success in education. More than four-in-ten adults have a bachelor's degree or advanced degree, and the proportion of adults without a high school diploma is notably lower than surrounding counties. North County's current students are also doing relatively well in their educational pursuits, exceeding state proficiency averages of in both Math and English Language Arts (ELA).

WHAT ARE WE MEASURING & WHY DOES IT MATTER?

The North County Education Indicators include the current educational attainment of the adult population, as well as a substantial examination of key metrics along the education pipeline, ranging from youth and young adults to college graduates. Education is increasingly important in the world of work, and the educational progress and success of North County's youth will play a substantial role in the region's future.

SECTION 1: EDUCATIONAL ATTAINMENT

North County has an exceptionally well-educated population. More than 44% of North County's population 25 and older have a bachelor's degree or higher. This rate is considerably higher than statewide average (35%) and comparable counties, with the exception of Santa Clara County. A high rate of educational attainment among the working-aged population is important to economic development, as it signals to businesses and entrepreneurs that the region has an adequate workforce to support their talent needs.

WHY DOES THIS MATTER?

A region's educational attainment often provides insights into the region's workforce and workforce potential. A highly educated adult population, for example as seen in North County, suggests that the local workforce is likely well-equipped to support innovative and technology-based industries that require advanced degrees.

North County has a relatively high percentage (17%) of adults with a post-graduate degree.

Table 8. Educational Attainment for Working Aged Adults (25 and older) Comparison (2019)³¹

	No High School Diploma	High School Graduate	Some College, No Degree	Associate Degree	Bachelor's Degree	Postgraduate Degree
North County	10.7%	16.2%	21.1%	7.9%	26.9%	17.2%
Rest of San Diego County	12.2%	19.0%	23.5%	8.4%	23.9%	13.0%
San Diego County	11.7%	18.0%	22.6%	8.2%	25.0%	14.5%
Orange County	14.2%	16.9%	19.8%	7.6%	27.3%	14.2%
Los Angeles County	19.3%	20.6%	19.4%	7.1%	22.3%	11.2%
Santa Clara County	10.4%	13.2%	14.7%	6.8%	28.8%	26.1%
California	15.9%	20.4%	21.2%	7.9%	22.0%	12.5%

³¹ U.S. Census Bureau, American Community Survey, 5-year estimates, 2019.

SECTION 2: PERFORMANCE & COMPLETIONS

In the 2018 to 2019 school year, students across North County scored above the state averages both in Math and English Language Arts proficiency. Furthermore, North County proficiency averages tend to be higher than many neighboring counties. Meanwhile, North County continues to observe a rapid increase in STEM graduation from California State University San Marcos and its two community colleges.

WHY DOES THIS MATTER?

Statewide test scores indicate that higher rates of students in North County are at least proficient in the critical subjects of Math and English Language Arts. Additionally, North County's growing number of graduates in STEM programs suggest that increasing numbers of students have foundational skills that will better prepare them for the jobs of the future.

Table 9. CAASPP Math Proficiency Comparison (2018-2019)³²

Riverside County	California	Los Angeles County	San Diego County	Orange County	North County	Santa Clara County
34.10%	37.40%	39.10%	45.00%	50.40%	52.70%	56.60%

Table 10. CAASPP English Language Arts Proficiency Comparison (2018-2019)³³

Riverside County	Los Angeles County	California	San Diego County	Orange County	North County	Santa Clara County
47.60%	50.20%	50.90%	56.60%	59.50%	62.70%	63.00%

³² CA Ed Data

³³ CA Ed Data

Figure 28. STEM Annual Degree Completions in North County (2009-2018)³⁴

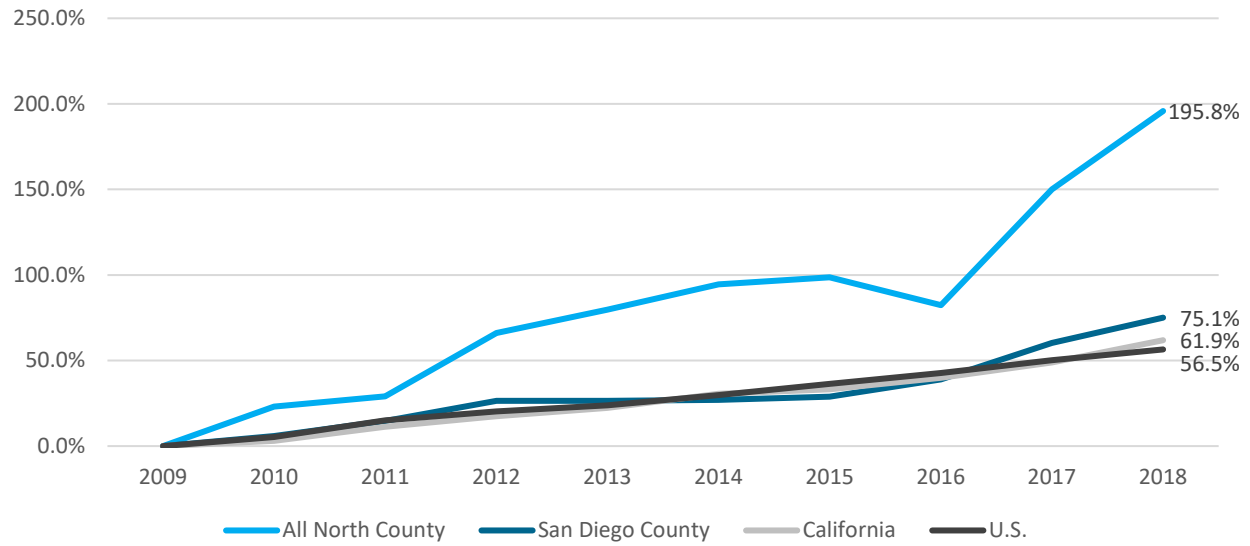


Table 11. STEM Annual Degree Completions (2009-2018)

	Completions (2018)	2009-2018 Growth
North County	1,127	195.8%
San Diego County	11,624	75.1%
California	99,688	61.9%
U.S.	841,728	56.5%

³⁴ Emsi 2019.1 2019.1 QCEW and Non-QCEW

SECTION 3: DISADVANTAGED POPULATIONS

North County generally has lower levels of disadvantaged student populations—including those who are learning English and those who receive free or reduced-price meals—than the state averages.

WHY DOES THIS MATTER?

Knowing the number and location of students with disadvantages is the first step in providing additional support and services to give students their best chance at success.

Table 12. English Language Learner Population Comparison (2018-2019)³⁵

North County	California	Riverside County	Los Angeles County	San Diego County	Santa Clara County	Orange County
15.5%	18.3%	18.4%	18.8%	19.9%	21.9%	22.1%

Table 13. Students Who Receive Free or Reduced-Price Meals Comparison (2018-2019)³⁶

Santa Clara County	North County	Orange County	San Diego County	California	Riverside County	Los Angeles County
35.9%	40.8%	48.8%	50.7%	59.4%	64.9%	68.6%

³⁵ CA Ed Data

³⁶ CA Ed Data



Place

Anyone who has lived, worked, or even visited North County knows it is special. But it is not without its challenges. High demand for North County's quality of life translates to higher housing costs, growing rental rates for commercial space, and crowded roads. The Place Indicators evaluate the changes in these areas in order to develop an understanding of how these factors change and impact quality of life.

Tracking and evaluating these Place Indicators is vital, as many of these aspects have far-reaching effects that flow beyond simply paying more for rent or putting additional mileage on a vehicle. These factors often play into one another and can grow to be detrimental to a region. High housing costs make workers commute from further away, increasing traffic. If either of these factors reach a critical point, prospective employers and entrepreneurs may decide to avoid North County. Given that these factors can interact and negatively shape a region, it is critical to monitor these indicators.

WHAT ARE WE MEASURING & WHY DOES IT MATTER?

The North County Place Indicators provide metrics that highlight crucial aspects of quality of life. Quality of life is a primary driver of economic development, and it continues to play a crucial role in North County's success in drawing top businesses and talent. These indicators also provide a glimpse into some of North County's greatest challenges, as issues such as the cost of housing and commuting times can make the region less accessible, compound inequalities, and erode quality of life for residents, workers, and visitors to the region.

SECTION 1: HOUSING

The cost of living and working in North County remains high. Median home sale prices in North County are among the highest among comparative regions, surpassed only by Santa Clara County. North County has a relatively low share of residents who rent their domiciles, but of those that do rent, nearly half (47%) spend 35% or more of their income on housing. High costs of housing can make living in a region unsustainable for some and can contribute to issues for employers such as hiring and retention, particularly of lower-wage workers.

WHY DOES THIS MATTER?

Housing is often the largest expense for households. Given North County's relatively high housing costs, it is important to track housing costs, availability, and vacancy. These metrics provide a picture of affordability and sustainability in the region, particularly for the populations that are already struggling to make ends meet.

Housing availability and relative costs also play a role in economic development. Businesses and entrepreneurs are less likely to relocate or start a business in an area where the costs of housing require substantial salary increases to maintain standards of living. Additionally, high housing costs can impact talent, as workers may choose one job over another if one has substantially lower housing costs, provided all other aspects are constant. Given the role that housing can play in economic development, these Indicators are key for North County.

North County's Central Coast median house sale price is higher than all localities included in this report, with exception of Santa Clara County.

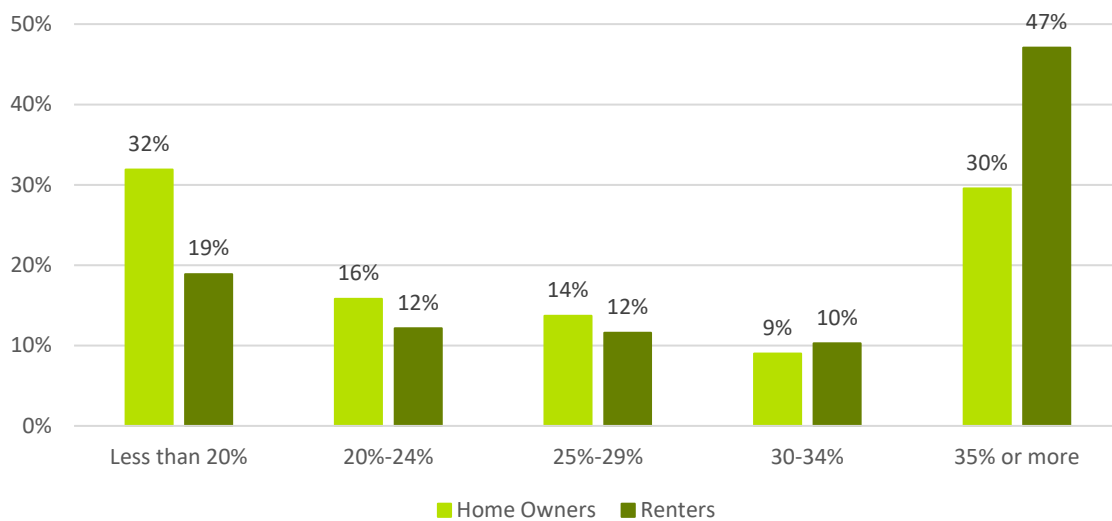
Table 14. Regional Housing Comparison (2019)³⁷

	Median House Value (2019)	Homeowner Vacancy	Rental Vacancy	Renter-Occupied Housing Units (% of Occupied Units)
North County	\$677,639	1.2%	3.9%	38.2%
Rest of San Diego County	\$586,617	1.0%	3.9%	51.5%
San Diego County	\$563,700	1.1%	3.9%	46.7%
Orange County	\$679,300	1.0%	3.6%	42.6%
Los Angeles County	\$583,200	1.0%	3.4%	54.2%
Santa Clara County	\$984,000	0.4%	3.9%	43.6%
California	\$505,000	1.1%	3.6%	45.2%

³⁷ U.S. Census Bureau, American Community Survey, 5-year estimates, 2019.

The poverty rate is an incomplete measure of economic distress as it is largely based on the cost of food and does not account for regional differences in housing costs and services such as childcare. These figures highlight that many renters—and even a number of homeowners—spend a large portion of their income on housing.

Figure 29. North County Housing Costs as a Percentage of Household Income (2019)³⁸



A visual comparison suggests there is a correlation between areas with higher poverty and high percentages of renters spending 35% or more on housing.

³⁸ U.S. Census Bureau, 2014–2018 American Community Survey 5-Year Estimates.

Figure 30. Proportion of Population in North County that Spends 35% or More of Household Income on Housing by Zip Code (2019).³⁹

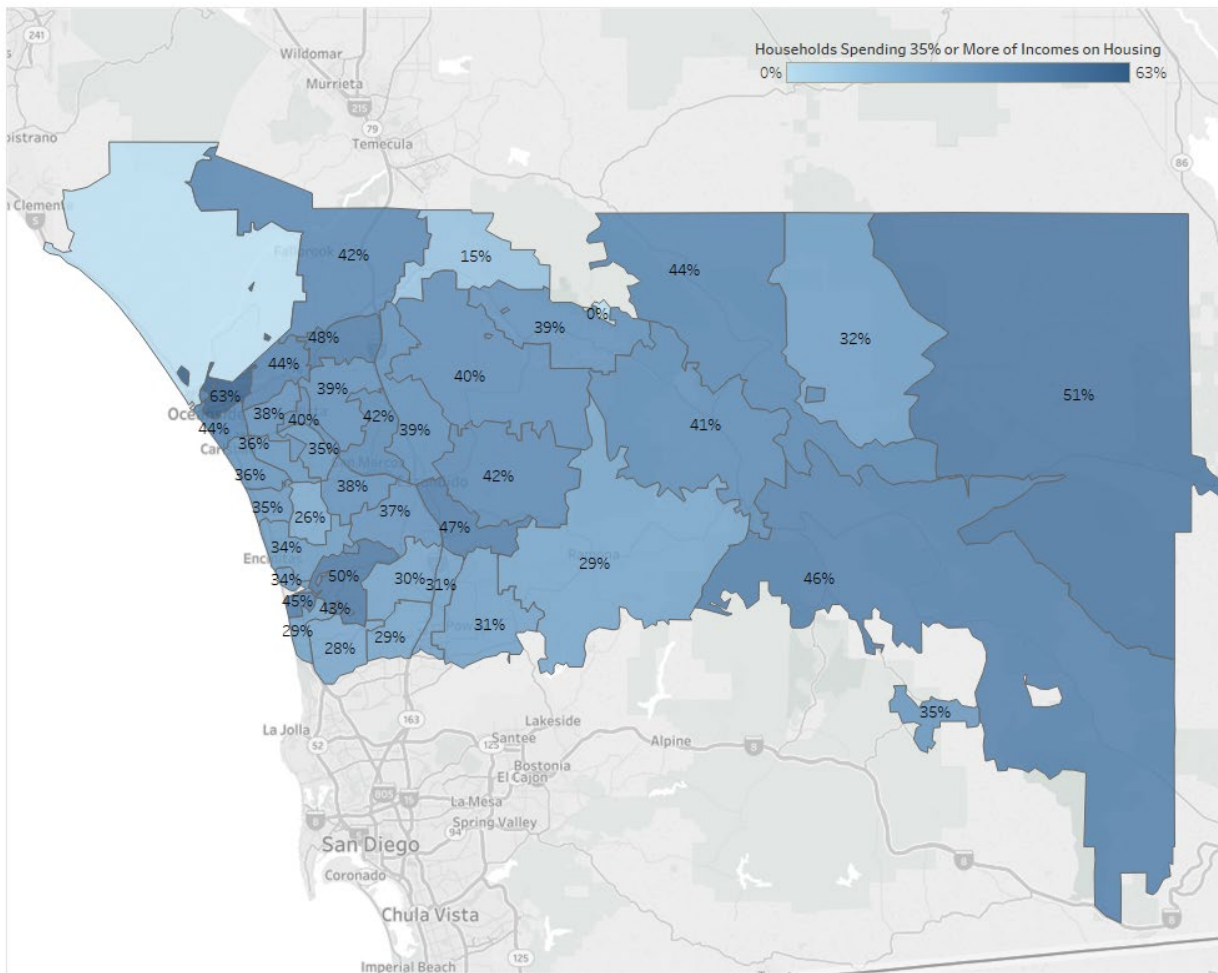
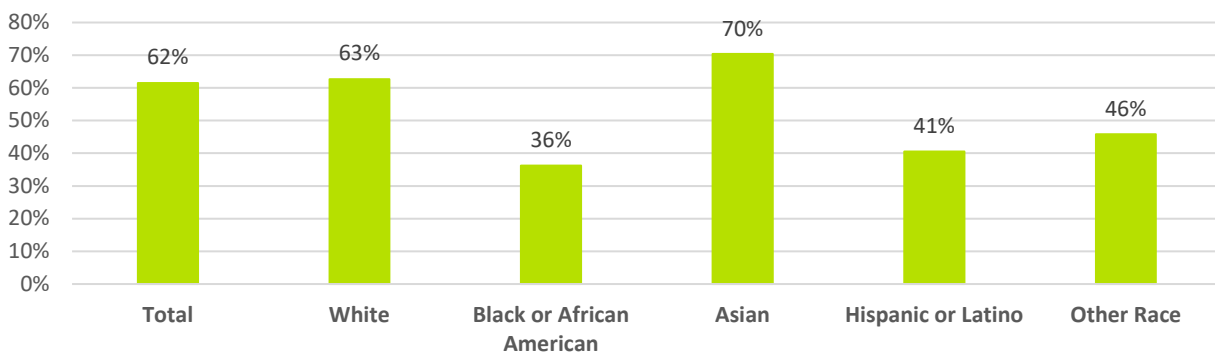


Figure 31. Homeownership Rates by Race and Ethnicity (2018)⁴⁰



³⁹ U.S. Census Bureau, 2014–2018 American Community Survey 5-Year Estimates.

⁴⁰ U.S. Census Bureau has not updated this data at the zip code level for 2019

SECTION 2: TRANSPORTATION

Commute times in North County Inland have declined over the past five years, giving North County an average commute time equal to or lower than the surrounding areas and the state average. In fact, all sub-regions of North County now have lower commute times than the state average. North County residents' choice of commuting methods have also changed. Carpooling declined by 21% between 2013 and 2018, while walking and ridesharing have increased in popularity over the time period. Additionally, the number of North County residents that work from home increased 16% between 2013-2018.

WHY DOES THIS MATTER?

Commute times can play a pivotal role in economic development, as businesses and talent may be hesitant to expand or relocate in a region that is not easily accessible for the workforce.

Residents in North County Inland and North County Central Inland had the largest average commute times in the county, at 28 minutes each.

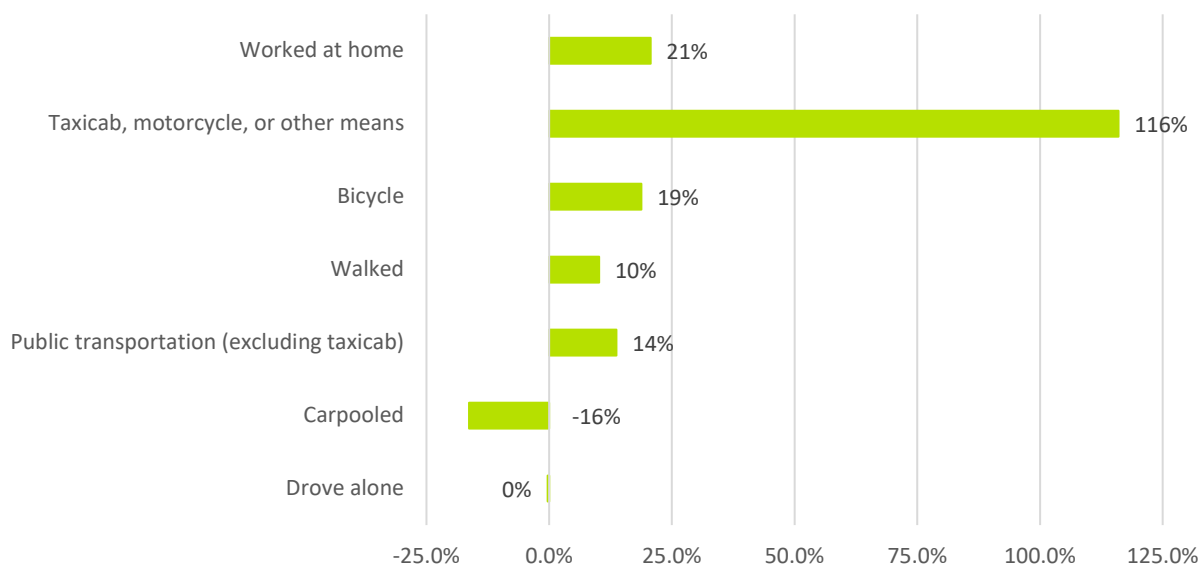
Table 15. Mean Travel Time to Work in Minutes (2019)⁴¹

North County	Rest of San Diego County	San Diego County	United States	Orange County	Santa Clara County	California	Los Angeles County
27.2	26.1	26.5	26.9	28.0	29.3	29.8	31.8

Likely a result of the increased prevalence of ridesharing, North County commuters taking a taxicab, motorcycle, or rideshare to work increased 116% from 2014 to 2019.

⁴¹ U.S. Census Bureau, 2014–2018 American Community Survey 5-Year Estimates.

Figure 32. Change in Means of Commute Transportation in North County (2014-2019)⁴²



SECTION 3: COMMERCIAL REAL ESTATE

Office inventory in North County continued to increase in 2020, while the average rental rate per square foot increased slightly, which is notable in a year that saw a considerable increase in people working from home, due to the pandemic.

The resilience of average office rents in North County during the pandemic combined with the increasing inventory point to the expectation that demand for office space in North County will continue to grow as the economy recovers from COVID-19.

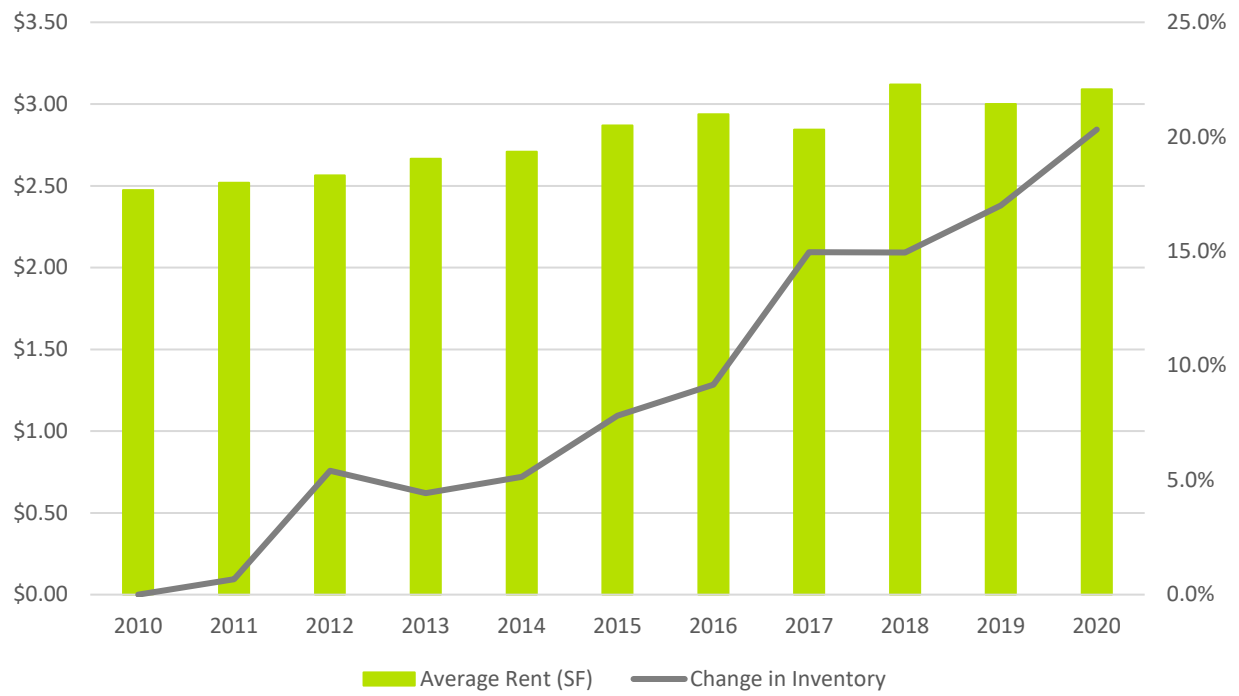
WHY DOES THIS MATTER?

Commercial real estate metrics, such as average rent and changes in inventory serve as a signal that demonstrates the relative supply and demand for commercial space in an area. North County's steadily increasing rental rates paired with increasing inventory levels suggest that commercial real estate in North County is in growing demand—particularly in North County Central Coast.

Office inventory in North County has increased by about 20% between 2010 and 2020, while housing prices in North County have consistently trended upwards over the same ten-year timeframe.

⁴² U.S. Census Bureau, 2014–2018 American Community Survey 5-Year Estimates.

Figure 33. Average Office Rent & Change in Inventory in North County (2010-2020)⁴³



⁴³ Cushman & Wakefield Market Research, Voit Real Estate Services, and Lee Associates (Q1 2021).

Appendix A:

Research Methodology

Data compiled for this report were drawn from secondary data sources.

SECONDARY RESEARCH

Complete employment, gross regional product, population, and educational completion statistics datasets for San Diego North County were defined by zip code, census tracts, or classification of instructional programs (CIP) codes.

For this study, industry clusters were defined using the North American Industry Classification System (NAICS) codes.

Complete employment datasets were taken directly from the Economic Development Department (EDD) and Bureau of Labor Statistics (BLS) and modeled by BW Research. Specific industry and occupational employment data were taken from the Quarterly Census of Employment and Wages (QCEW) and Current Employment Statistics (CES) provided by the Bureau of Labor Statistics (BLS), unless footnoted from a different source.

Population statistics were compiled from the U.S. Census Bureau's American Community Survey (ACS) 2018 5-year estimates for the census tract or zip code defined North County.

Patent data was compiled using the United States Patent and Trademark Office.

Appendix B:

North County Cities and Zip Codes

NORTH COUNTY REGION

CITY	ZIP CODES
Bonsall	92003
Borrego Springs	92004
Camp Pendleton	92055
Cardiff by The Sea	92007
Carlsbad	92008, 92009, 92010, 92011
Del Mar	92014
Encinitas	92024
Escondido	92025, 92026, 92027, 92029, 92030, 92033, 92046
Fallbrook	92028, 92088
Julian	92036
Mount Laguna	91948
Oceanside	92049, 92051, 92052, 92054, 92056, 92057, 92058
Pala	92059
Palomar Mountain	92060
Pauma Valley	92061
Poway	92064
Ramona	92065
Ranchita	92066
Rancho Santa Fe	92067, 92091
San Diego	92127, 92128, 92129, 92130
San Luis Rey	92068
San Marcos	92069, 92078, 92079, 92096
Santa Ysabel	92070
Solana Beach	92075
Valley Center	92082
Vista	92081, 92083, 92084, 92085
Warner Springs	92086

Appendix C:

Industry Cluster Definitions

For a full list of NAICS codes used to define these industry clusters in this report, please visit:

<https://www.sdnedc.org/2021-economic-summit/>