2018 NORTH COUNTY INDICATORS

Place

People

Economy

Innovation

[bw] RESEARCH PARTNERSHIP

Acknowledgments

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Introduction to 2018 North County Indicators

North County Indicators (formerly North County Prospects) is designed to provide a quantitative assessment of the North County economy while identifying issues and evidence to support a more informed discussion about where the region should be headed moving forward.

As an economic region, San Diego's North County (North County) has over 1.2 million residents and just over 513,000 jobs. The region **has a larger population than eight states in the Country**, including Vermont, South Dakota, and Montana, along with **greater employment than eight states** including Alaska, Wyoming, and North Dakota. North County hosts several innovative, export-oriented industry clusters, including Biotechnology and Biomedical devices; Defense, Aerospace, and Communications Manufacturing; Sports and Active Lifestyle; and, Information and Communication Technologies (ICT). The region is also a net exporter of talent, providing highly-skilled workers to employers in neighboring communities.

State of North County

In 2017, North County's economy continues to grow, adding over 6,000 jobs in the region over the last 12 months, while the regional unemployment rate dropped below three percent. From a proportional job growth perspective, North County experienced increased employment (2016 to 2017) faster than California (1.2 percent growth vs. 1.0 percent growth) or the United States (1.2 percent growth vs. 0.7 percent growth). Within North County over the same time period, the North Coast added the most new jobs—roughly 2,300—of the four sub-regions, while North Central Inland grew at the fastest rate (1.8 percent). From a job quality perspective, the region added a balanced mix of Tier 1 (1.1 percent growth), Tier 2 (1.3 percent growth), and Tier 3 (1.3 percent growth) occupations.

North County's industry clusters remain a critical asset in the region's economic health and vitality. The five specialized industry clusters that have seen strong growth and have a high concentration in North County include Defense, Aerospace, and Communications Manufacturing; Life Sciences; Craft Beer and Related Beverages; Sports and Active Lifestyle; and, Visitor Attractions and Accommodations. From 2016 to 2017, four of these five clusters have grown faster than the regional average—between two and five percent—with only Sports and Active Lifestyle experiencing a slight decline in employment.

What We Learned in 2017

North County has an increasingly tight labor market. The region's unemployment rate continues to decline, from a high of 10 percent in 2010 to just under three percent at the end of December 2017; this is well below the Federal Reserve's lowest estimate for the long-run normal level of unemployment (4.5 percent).[1] At the same time, North County businesses have grown each year from 2010 to 2018, resulting in 23,400 new positions for jobseekers. The combination of sustained job growth with a declining number of active jobseekers is likely hampering economic growth for the region's businesses. The need for regional employers to search farther for qualified talent not only impacts their ability to grow, but also impacts commute times and traffic congestion within the region.

North County's high-wage, high-growth industry clusters continue to drive economic vitality in the region. Biotechnology and Biomedical Devices; Building and Design; and, Defense, Aerospace, and Transportation Manufacturing all support annual average wages of between $80,000 and $127,000. Altogether, these clusters have created 18,000 new jobs since 2010, and they are more concentrated in North County compared to the national average. Of North County's five *specialized* industry clusters, Defense, Aerospace, and Communications Manufacturing as well as Craft Beer and Beverages have seen the fastest growth since 2010. All five specialized clusters export most of their sales to markets outside the region.

Entrepreneurialism is on the rebound while innovation activity has slowed in North County. Startup activity—measured as the proportion of entrepreneurs and startup firms in the region—is slowly increasing following a period of decline through about 2013. More individuals are starting businesses due to market opportunities while at the same time, startup firms have been growing faster since 2014, indicating that there are enough resources and revenue to support such expansion. Yet innovation, as measured by patent output, has been on the decline since 2014. Following a steady increase averaging about 10 percent a year since 2010, patent activity declined by 23 percent over the last four years.

Opportunity is not evenly distributed across North County's sub-regions. Overall, the region has a highly educated workforce and high household incomes compared to state and countywide averages. The Central Coast and Central Inland have higher-than-average concentrations of households earning $150,000 a year or more as well as above average concentrations of individuals with a bachelor's degree or higher. In contrast, the Northern Coast and Inland North County not only have lower educational attainment and lower wages, but these regions have also had the slowest employment growth of the four sub-regions in North County over the last ten years. One result of this disparate growth is that residents in these two sub-regions are significantly more likely to allocate a greater portion of household income to housing costs.

[1] Source: https://www.federalreserve.gov/faqs/economy_14424.htm

North County continues to be a net exporter of high-skilled talent for Tier 1 occupations, meaning the region could be losing workers needed to meet local employer demand. North County is a net exporter of individuals in the management, business, sciences, and arts occupations and a net importer of service and production occupations. Given the high growth occurring in highly-skilled industries such as Biotechnology, Defense, Building and Design, and Healthcare, these workers are increasingly valuable to retain for regional businesses.

Public transportation use has declined while workers are faced with increasing commute times. The region's high housing costs prompt workers to seek more affordable housing outside of North County. This results in increased commute times, traffic, and wear on the region's roads and infrastructure. There was a three-point decline in the proportion of workers that reported using public transportation (2015 to 2016); these individuals shifted entirely to driving alone instead of carpooling, walking, or biking. In 2016, 86 percent of North County workers drove to work alone. The proportion of individuals spending 30 minutes or more to get to work increased by one point between 2015 and 2016.

Questions, Considerations & Opportunities for North County

1

Compete for Talent. How can North County attract and retain the talent that drives innovation, entrepreneurialism, and higher-value-added economic activity? North County is becoming a hub for high-quality jobs and is already known for its high quality of life, both of which are key to attracting workers to the region. The region needs to identify strategies to attract and retain talent that can support and grow North County's key industry clusters, including younger (22 to 39 years old) more educated workers.

2

Enhance Industry Cluster Ecosystems. What can North County do to support its specialized industry clusters? North County's specialized industry clusters represent competitive advantages for the region as well as the fuel for economic growth and prosperity. But North County generally has fewer organizations and "conveners" when compared to areas like Sorrento Valley, downtown San Diego, or Silicon Valley. Networking that gives way to collaboration is rare, and most industry associations hold the majority of their events south of SR 56. Entities like the California State University at San Marcos and San Diego Sports Innovators are exceptions to this rule but need more support and more replication for North County's cluster ecosystem to thrive.

3

Develop a Regional Innovation Center. Can North County continue to fuel creative innovation? Research, development, and innovation are key to attracting businesses, investments, and workers. The region is well-poised for innovative activity, with a highly educated workforce and specially-concentrated industry clusters like Life Sciences and Defense and Aerospace Manufacturing that can serve both regional and global marketplaces. While the recent decline in patent output may be attributable to the region's tight labor market—businesses might be spending more time and resources on talent recruitment and retention as opposed to innovation—other metrics indicate that the region has strong startup and entrepreneurship activity. Innovation centers, like the Los Angeles Cleantech Incubator, support local entrepreneurs to bring new products and services to the market while exposing students and the region to evolving industry opportunities.

4

Work Towards Economic Opportunity for All. How can North County expand economic opportunity to residents across the Coast and Inland? Targeted workforce development programs can connect residents in less dynamic economic areas to training and skill development opportunities in high-skill, sustainable career pathways. These programs could also capitalize on untapped talent in the Northern Inland and Coastal sub-regions. Such training and educational programs should be built around occupational categories that would help meet employer demand in less volatile occupational pathways and support the region's specialized industry clusters that typically offer higher wages.

5

Support New Commuting Behavior. What can North County do to address traffic and congestion while maintaining economic growth? Declining use of public transportation coupled with the increase in workers driving to work alone calls for the support and development of other, more efficient modes of transportation such as biking, carpooling, walking, and public transit. Decreasing commute times could also positively affect the quality of life and productivity in North County.

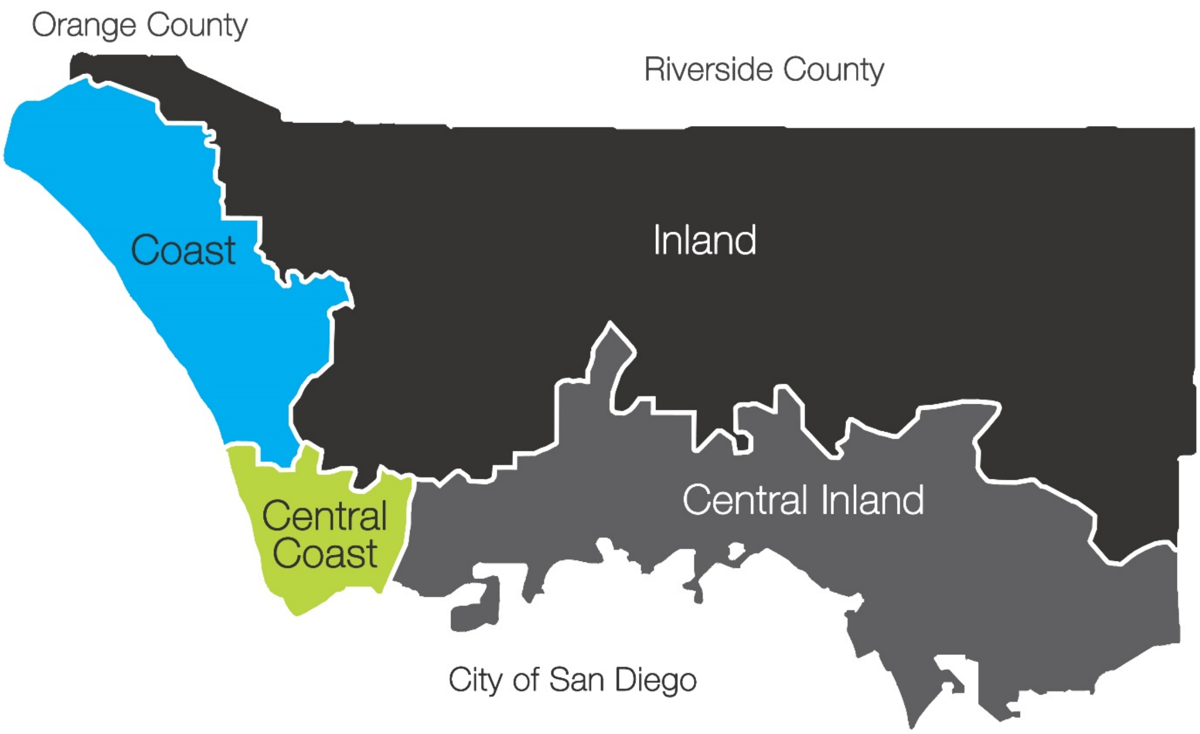
6

Find Solutions to the Housing Crisis. How will North County respond to the growing costs associated with the housing shortage? Housing costs and limited supply not only impact residents, but also regional businesses and their ability to attract and retain talent. Based on recent feedback from North County employers, the costs associated with inadequate housing supply are growing, and the housing crisis will likely play a more central role in the region's immediate economic horizon.

7

Foster Economic Opportunity and Protect North County's Quality of Life. Ultimately, regional economic development strategies should look to support healthy economic activity while protecting and/or improving North County's quality of life—for its residents, businesses, and workers. New business districts, research institutions, innovation centers, and housing in or near transportation hubs could all play a role in supporting the future of North County's high quality of life.

The North County Region



For this report, the North County (NC) region is divided into four sub-regions:

NC Coast	NC Central Coast	NC Inland	NC Central Inland
Carlsbad, Oceanside, Vista, and Camp Pendleton	Encinitas, Del Mar, and Solana Beach	San Marcos, Escondido, Fallbrook, Palomar Mountain, and Borrego Springs	Poway, Ramona, and Julian

For zip code breakdowns of sub-regions, please see Appendix B.

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North County's job growth has been strong, with the region's businesses adding 55,350 new jobs since 2010; this is a growth rate of just over 10 percent. Perhaps more importantly, North County's higher-paying Tier 1 Occupations[2] have grown at a faster rate than total job growth. The region is home to clusters of specialized high-growth, high-wage industries including Defense, Aerospace, and Communications Manufacturing; Life Sciences; Sports and Active Lifestyle; Visitor Attractions and Accommodations; and, Craft Beer and Beverages. In 2017, these businesses employed a total of 61,600 workers and grew collectively by roughly 21 percent over eight years.

Job growth in North County is slower than the county-, state-, and nationwide averages; this could be related to the availability of talent, as North County has the lowest unemployment rate compared to South and East County as well as the statewide average. Together, these data indicate a need to look at how current and future labor shortages might affect the region in the future. As businesses continue to create more jobs while unemployment declines, there will be fewer individuals actively seeking work and employers may begin to face difficulties to firm growth and expansion.

[2] For a definition of Tier 1 Occupations, please see section 1.4.

Economy

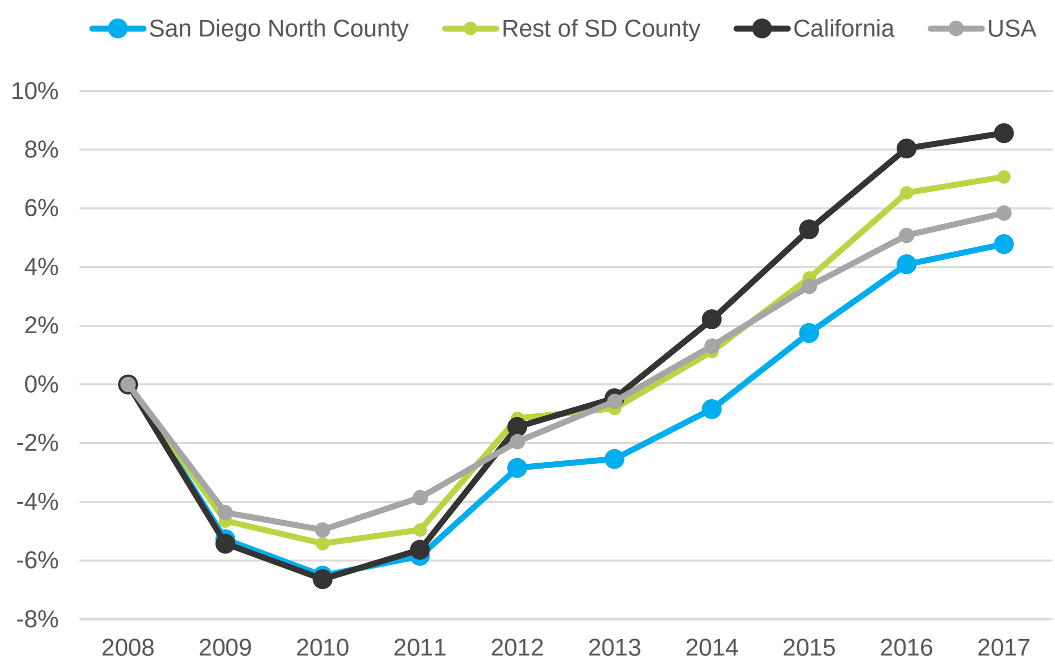
Overall Employment

As of 2017, North County supports a total of 513,447 workers—a growth rate of almost five percent over the last decade. The region's businesses have added just over 23,400 jobs since 2008. Between 2016 and 2017 alone, North County businesses created an additional 3,360 jobs across the region. However, the region is growing slower compared to the rest of the county (seven percent), state (nine percent), and nation (six percent) (Figure 1).

WHY DOES THIS MATTER?

Overall employment is a broadly-discussed general indicator of economic health for any region. In North County, businesses are working to help support the region's population by creating more jobs each year. Regional job growth has remained strong since 2010, continuing to climb over the last eight years following the considerable drop in employment between 2008 and 2010 due to the recession.

Figure 1: Overall Change in Employment by Region, 2008 – 2017[3]



[3] Source: EMSI 2018 q.1 QCEW and Non-QCEW Employees.

Economy

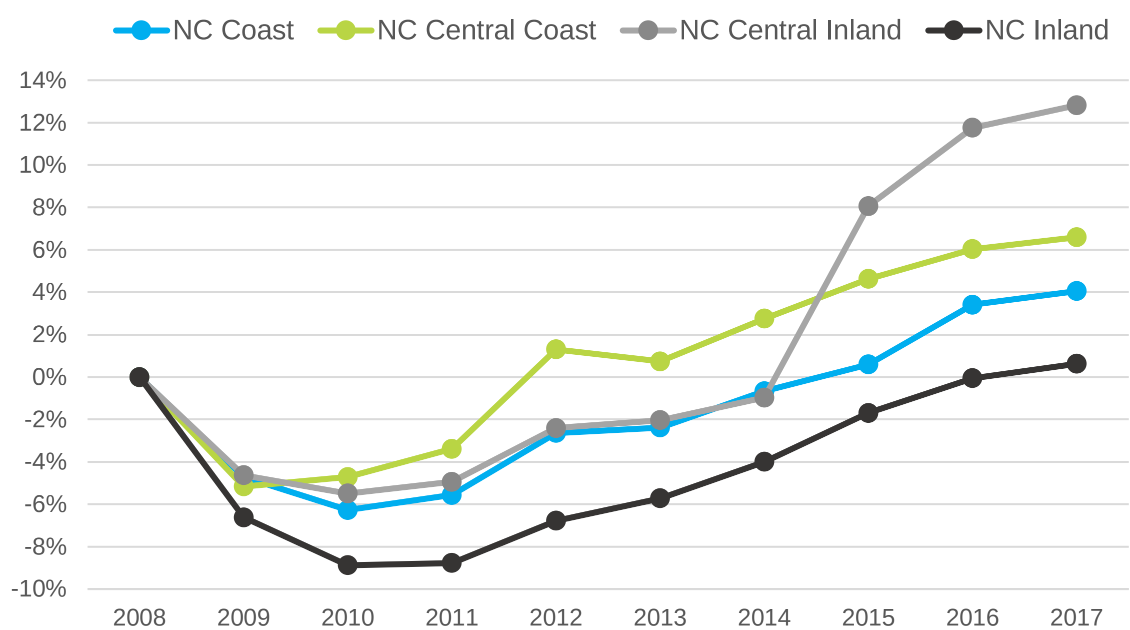
Employment by Area

Within North County, employment growth has varied considerably over the last 10 years. Central Inland North County has seen the highest job growth, particularly over the last four years. Since 2008, the region has grown employment by 12.8 percent. This is followed by the Central Coast with 6.6 percent growth, the (Northern) Coast with 4.1 percent growth and Inland North County with about 0.6 percent growth. In 2017, the Inland region finally grew beyond its employment total during the 2008 recession. This occurred for the Coast and Central Inland in 2015 and for the Central Coast in 2012 (Figure 2).

WHY DOES THIS MATTER?

As the sub-regions within North County change employment over time, it impacts not only the region's economic vitality, but it will impact commute times, development patterns, and ultimately the region's quality of life. The differences in sub-regional employment growth also reflect the diverse industry profile that have varied responses to the evolving economic environment.

Figure 2: Overall Change in Employment by Sub-Region, 2008 – 2017[4]



[4] Source: EMSI 2018 q.1 QCEW and Non-QCEW Employees.

Economy

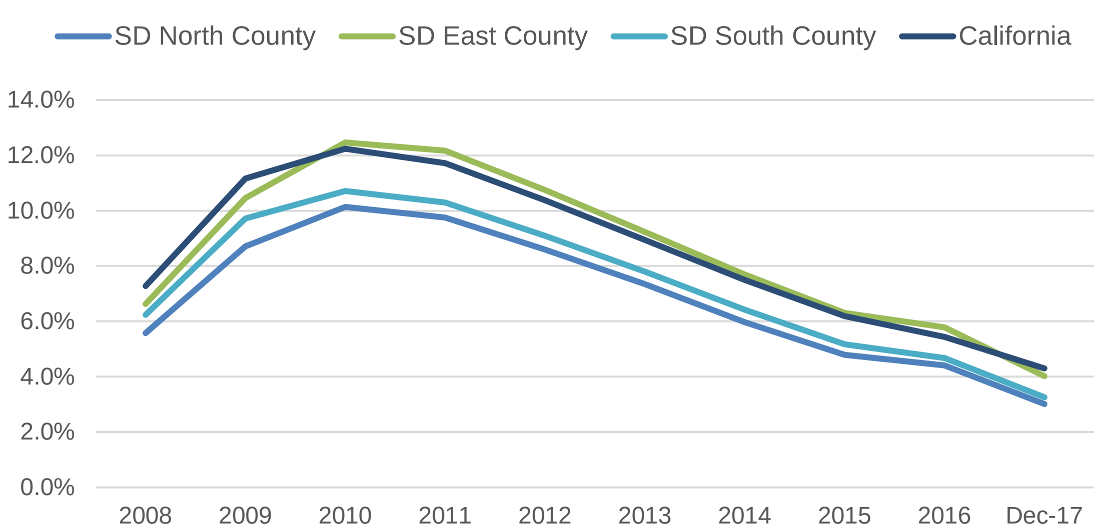
Overall Unemployment

The region's unemployment rate continues to decrease, resting now at about three percent as of December 2017. In fact, the unemployment rate declined by a whole percentage point over the course of 2017 alone—between January through December—and remains lower than the statewide average of 4.3 percent. Compared to the rest of San Diego, North County has had historically lower unemployment. In December 2017, South and East County had unemployment rates of three and four percent, respectively. As with job growth, the unemployment rate is used as another measure of a region's economic health. Low unemployment is typically an indicator of a "tight" labor market in which there are more jobs than there are workers. Since North County's employment total continues to climb as unemployment declines, the region could face talent shortages in the future (Figure 3).

WHY DOES THIS MATTER?

Unemployment metrics provide a valuable indication of the availability or lack of availability of workers, talent, or human capital within a given region. According to the Federal Reserve, the normal or natural rate of unemployment that is sustainable over time is between 4.3 and 5.0 percent.[5] North County's unemployment rate is more than a full percentage point below the natural rate of unemployment, indicating a shortage of available workers for employers to choose from.

Figure 3: Historic Unemployment Rate, 2008 – Dec 2017[6]



[5] Source: https://www.federalreserve.gov/faqs/economy_14424.htm

[6] Source: Employment Development Department (EDD). All years are annual averages, except for 2017, which is preliminary data for December 2017. North, East, and South County data is based on the sum of cities that fall into each of those regions.

Another measure of economic health, the civilian labor force participation rate, looks at the total number of civilians actively employed in the labor force compared to total individuals eligible to participate in the labor force (population 16 years of age or older). The civilian labor force participation rates for North County's four sub-regions are as follows: 57.9 percent for the Coast, 65.8 percent for Central Coast, 63.6 percent for Central Inland, and 60.3 percent for Inland North County. This means that roughly three in five employable adults across the region are currently working or looking for work. Central Coast and Central Inland both are above average in their labor-force participation rate, while the Coast and Inland sub-regions are below average. The current state- and nationwide average is 63 percent.[7]

WHY DOES THIS MATTER?

Labor force participation rates can provide information on two economic phenomena. First, they provide information on the demographic profile of a given area and the proportion of older residents who are less likely to work because they are retired. Secondly, labor force participation rates provide information on the ratio of residents who are actively engaged in work or looking for work in a region and those who are not. Labor force participation rates can also be impacted by those individuals who are going back to school or who are in the military, which is particularly relevant for the Coast sub-region.

[7] Source: American Community Survey, 2016. The civilian labor force excludes military personnel.

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North County’s Industry Clusters

Michael Porter, Harvard economist and pioneer of industry cluster research, defined the cluster as a geographic concentration of interconnected companies and institutions working in a common industry. This definition has been expanded over the years to account for employers with shared technologies, supply chains, services, or customers whose competition or collaboration create opportunities for new business creation, increased regional wealth, and new employment.[8]

Export-Oriented vs. Population-Serving Clusters

Not all industry clusters have the same impact on North County’s workforce and the regional economy. Export-oriented clusters that draw revenue from markets outside the region result in a multiplier effect that generates additional employment within the region. This is an important consideration for economic and workforce developers looking at training and education programs that will have the highest return on investment for the county. These export-oriented clusters are also likely to drive innovation as they typically face competitive global markets.

For this report, both standardized and specialized industry clusters are presented. The standardized industry clusters include 18 nationally-comparable clusters that have the benefit of examining industry and occupational trends in the nation, across states, and other regional economies. The specialized industry clusters identify five North County-specific clusters that were defined based on the economic strengths of the region; data for these clusters highlights what is happening with the region’s key economic drivers. Since there is some overlap readers are advised to keep in mind which kind of cluster the analysis is referencing.

[8] Source: Porter, Michael. *Clusters and the New Economics of Competition*. Harvard Business Review, 1998.

Some of the benefits of identifying and studying regional industry clusters include:

1 **Engaging with employers that are central to countywide economic growth.** Regional markets may be less connected to the overall labor market trend. A focus on industry clusters provides insight into how local employers collaborate to drive the county's economic growth.

2 **Providing valuable information to current workers and job-seekers looking to develop new skills and career pathways.** Workforce development focused on key areas of growth will capitalize on the region's job opportunities, guide individuals to sectors with strong employer demand, and grow the local economy.

3 **Designing programs that best support the current and projected regional workforce demand.** Industry cluster analysis hones in on regional employer demand to create valuable workforce development programs.

4 **Ensuring that job-seekers can transition into employment with sustainable wages and strong career opportunities.** Most industry clusters are targeted towards high-quality employment within the county.

Economy

North County’s Standardized Industry Clusters

There are 18 standard industry clusters and they are organized based on their location quotient, or level of regional concentration compared to the national average. Location quotients are used to identify what is unique to a region compared to the national economy and can indicate areas of competitive advantage.

The following are North County’s most concentrated standard clusters:

Information and Communications Technologies is a diverse group of technology industries that focus on the development and production of new products and services in telecommunications and information technology. Some of the sectors in this cluster include telecommunications carriers, software publishers, cybersecurity developers and computer and electronic product manufacturing. Some high-employment firms located in North County for this industry cluster include Viasat, Sony Electronics, Datron World Communications, and Palomar Medical Center.

Defense, Aerospace, and Transportation Manufacturing is the fastest growing standardized industry cluster in North County. It includes companies involved in the manufacturing and wholesale of motor vehicles and vehicle parts, aircrafts and aircraft parts, military vehicles and ammunition, boats and ships, and explosives, small arms, and ammunition. Some high-employment firms located in North County for this industry cluster include Northrop Grumman, Cohu Semiconductor Equipment, Magnaflow Permance Exhaust, Rockwell Collins, and Nortek Security and Control.

Biotechnology and Biomedical Devices is a particularly important cluster for North County. It is the research, development, and production of medical equipment and pharmaceuticals. Some high-employment firms located in North County for this industry cluster include DJO Finance, Signet Armorlite, Cardinal Health, Thermo Fisher Scientific, and Breg Incorporated.

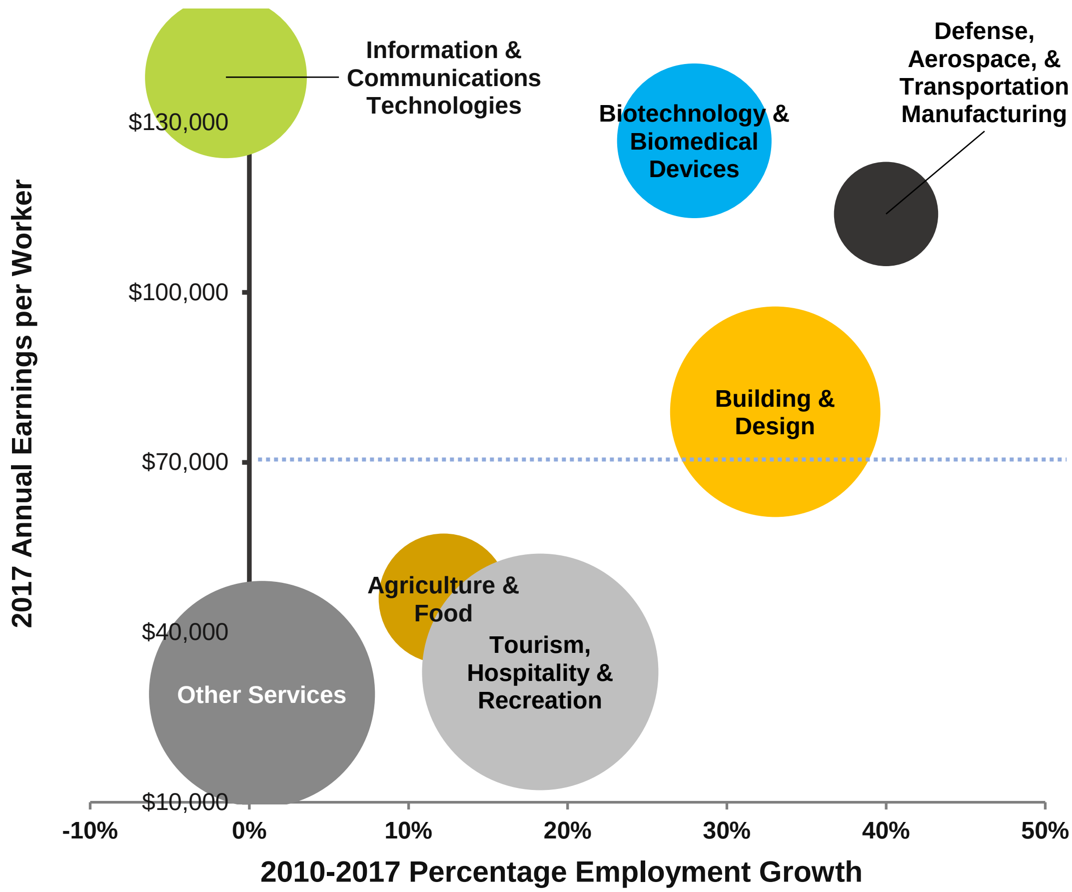
Building and Design involves the design and building of residential and non-residential buildings as well as the interior design of buildings. This industry is actively involved in energy efficiency, building retrofits, and the use of sustainable building materials. Some high-employment firms located in North County for this industry cluster include Oceanside Glass Tile, Balfour Beatty Construction, and Jeld-Wen Windows and Doors.

Tourism, Hospitality, and Recreation is one of the larger industry clusters in North County with over 60,000 jobs. This industry cluster is a mix of agriculture, food production, and service industries that draw tourists into the region. The cluster includes breweries, amusement services, gambling, and recreation industries. Some high-employment firms located in North County for this industry cluster include Legoland California, Harrah's Resort Southern California, Welk Resorts Group, Valley View Casino and Hotel, Pala Casino Spa and Resort, and Omni La Costa Resort and Spa.

High-wage, high-growth clusters such as Biotechnology and Biomedical Devices, Defense, Aerospace and Transportation Manufacturing, and Building and Design are more concentrated in North County compared to the national average. In fact, Biotechnology is about 2.8 times more concentrated compared to the national average. All three of these clusters provide an average annual wage roughly between $79,000 and $127,000 and have grown by 30 to 40 percent since 2010. Collectively, these three clusters have created almost 18,000 new jobs in North County over the last eight years.

While Information and Communication Technologies is also highly concentrated with an annual average wage of roughly $138,000, this cluster has seen negative growth, shedding roughly 300 jobs since 2010. The remaining clusters are only slightly more concentrated than the national average—about 1.01 to 1.07 times—and provide average annual wages between $29,000 and $46,000. Tourism and Hospitality and Agriculture and Food have grown by 18 and 12 percent respectively since 2010, totaling an additional 8,300 jobs for the region (Figure 4).

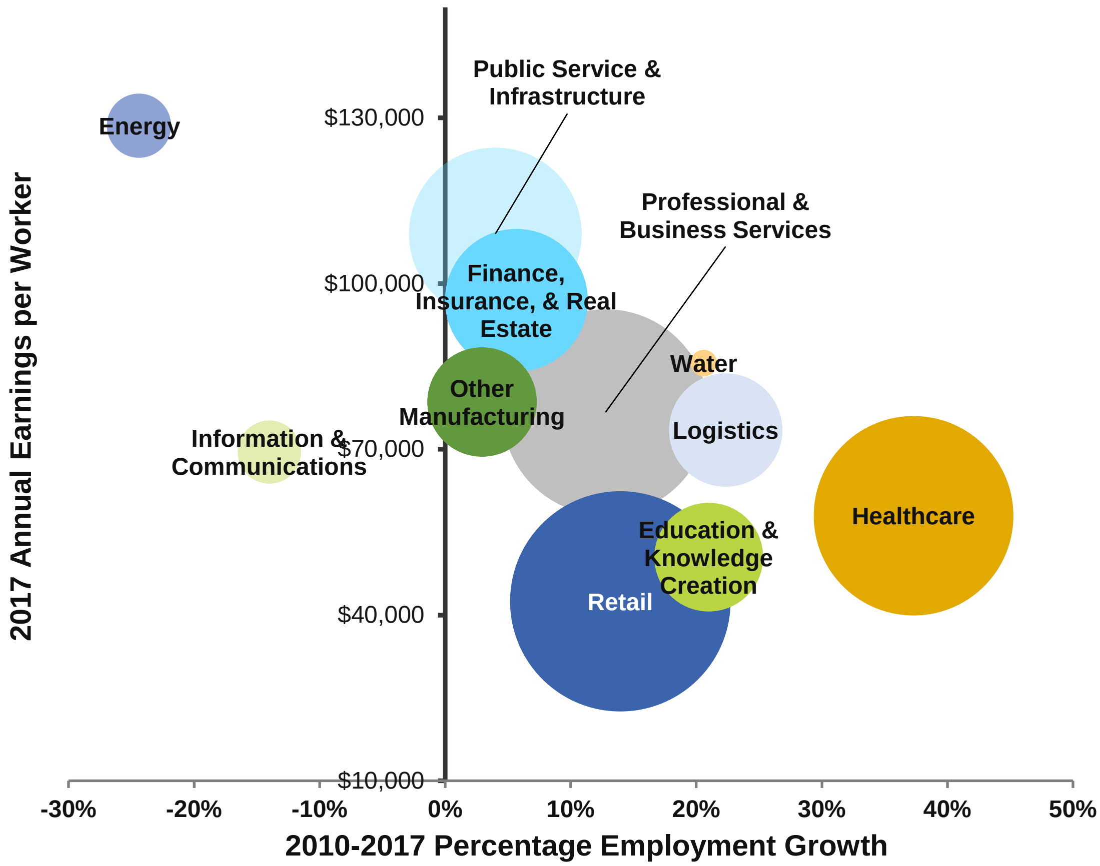
Figure 4: Standard Industry Clusters – High Concentration[9]



The remaining 11 standard industry clusters are all less concentrated in North County compared to the national average. Nevertheless, these clusters account for most of the jobs in the region and provide average annual wages between roughly $42,500 and $129,000. Out of these less-concentrated clusters, Healthcare is the fastest growing industry; this cluster currently employs 44,000 workers and has created almost 12,000 jobs since 2010 for a growth rate of roughly 37 percent. Another important employer for the North County region is the Retail industry cluster. As of 2017, these businesses supported 53,400 workers. The largest industry cluster in North County, Retail, also continues to grow; between 2010 and 2017, the sector created 6,500 new jobs, a growth rate of 14 percent (Figure 5).

[9] Source: EMSI 2018 q.1 QCEW and Non-QCEW employees. In the bubble chart, the x-axis denotes employment growth over time between 2010 and 2017, the y-axis indicates average annual earnings in 2017, and the size of the bubble denotes the relative size of each industry cluster in terms of jobs.

Figure 5: Standard Industry Clusters – Low Concentration[10]



[10] Source: EMSI 2018 q.1 QCEW and Non-QCEW employees. In the bubble chart, the x-axis denotes employment growth over time between 2010 and 2017, the y-axis indicates average annual earnings in 2017, and the size of the bubble denotes the relative size of each industry cluster in terms of jobs.

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North County's Specialized Industry Clusters

The benefit of examining *standardized industry clusters* is that they provide for national, statewide, or other regional comparisons. However, it is also useful to examine a somewhat different construction to understand particular features of a region's economy. *Specialized industry clusters* are defined as those which are fast growing, exceptionally concentrated, and pay high wages in North County. Furthermore, these clusters are typically export-oriented or traded, meaning that they sell their products or services to a market beyond North County residents. These specialized industry clusters are described below.

Sports and Active Lifestyle includes those firms that develop and manufacture sports and related equipment and apparel, as well as those firms that sell and distribute related sports and recreational products and services.

Visitor Attractions and Accommodations include museums, historical sites, amusement parks, gambling industries, and traveler accommodations.

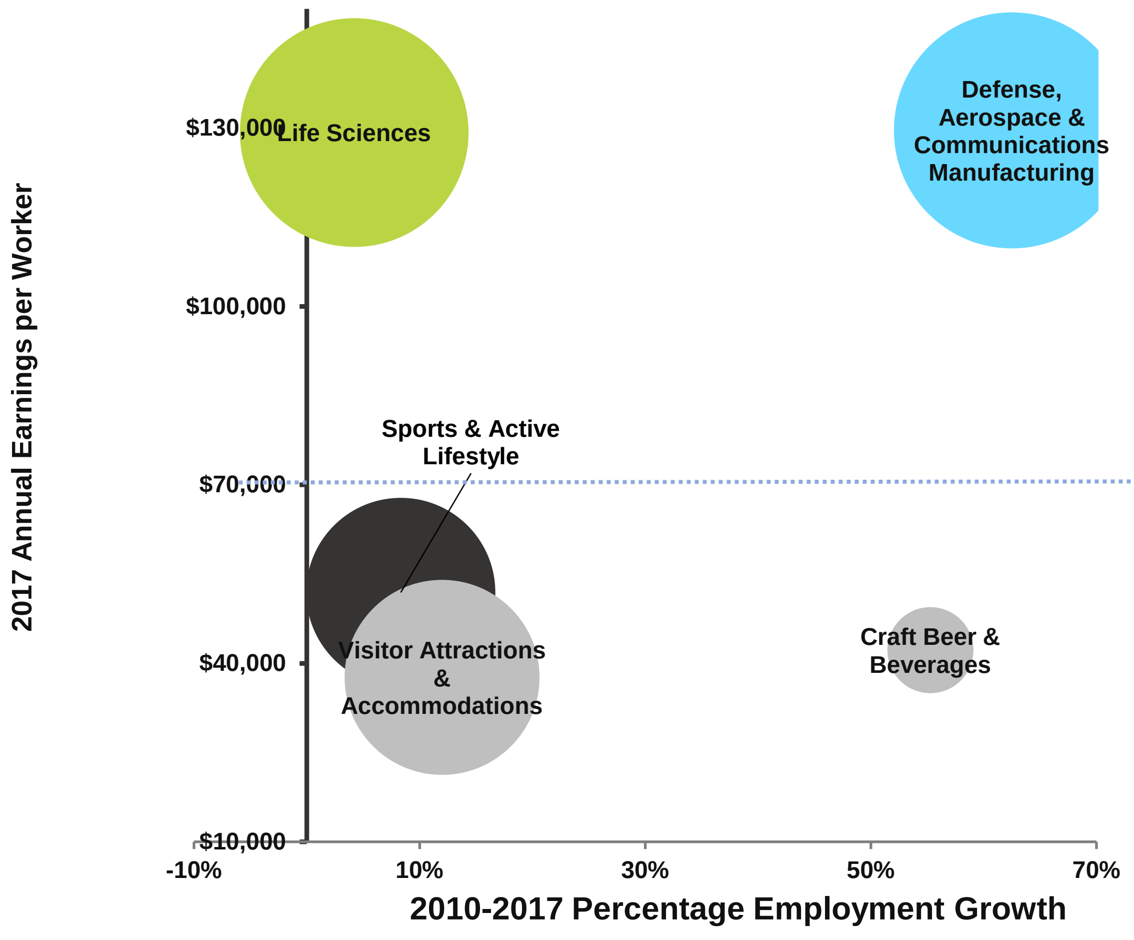
Life Sciences include the research, design, and production of medical devices and biological technologies as well as the manufacturing of medicinal and diagnostic substances.

Craft Beer and Beverages includes beverage manufacturing, beer, wine, and distilled alcoholic beverages wholesalers, beer, wine, and liquor stores, and drinking places.

Defense, Aerospace, and Communications Manufacturing (DACM) includes the manufacturing of metal and chemical products, communications equipment, audio and video equipment, navigational and control instruments, and aerospace products and parts.

North County's five specialized industry clusters together employ 61,600 workers across the region. Each cluster has experienced strong growth since 2010, altogether generating an additional 10,600 jobs for North County residents. These clusters provide an average annual wage that is at least $38,000 and up to $130,000. The largest cluster—Defense, Aerospace, and Communications Manufacturing—is also the most highly concentrated, at 3.85 times the national average, and has exhibited the greatest growth at 63 percent since 2010. These firms also provided the highest average annual wage—about $129,600 per year (Figure 6).

Figure 6: North County's Specialized Industry Clusters[11]



[11] Source: EMSI 2018 q.1 QCEW and Non-QCEW employees.

Table 1: Industry Cluster Employment, Earnings, and Out-of-Region Sales (2016)[12]

Industry Cluster	Employment	Average Wage Per Worker	% Exported Sales
Sports and Active Lifestyle	11,378	$51,912	72%
Life Sciences	16,629	$129,211	76%
Craft Beer & Beverages	2,354	$42,213	50%
Visitor Attractions & Accommodations	13,534	$37,640	66%
Defense, Aerospace, & Communications Manufacturing	17,706	$129,579	81%

[12] Source: EMSI 2018 q.1 QCEW and Non-QCEW employees.

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Quality of Employment

Unemployment, labor force participation, and job growth are general indicators of economic health. However, the reality is that not all jobs are equal in terms of skill requirements and compensation levels. A study by David Autor examined changes to the nation's occupational profile and provided an in-depth examination of the quality and quantity of jobs that employers have demanded over the last 30 years. In his analysis, Autor developed an occupational segmentation that BW Research has also used in regional occupational analyses.[13]

The following three-tier occupational structure is largely based on median wages and has been used by other researchers to better understand the changing dynamics of occupational employment. Most occupations can be delineated into one of the following three occupational tiers:

Tier 1 Occupations

include managers, professional positions (lawyers, accountants, physicians), and high-skill technical occupations (scientists, programmers, engineers). These are typically higher-paying occupations. In North County, the **median wage for a Tier 1 worker is $90,700 a year**.

Tier 2 Occupations

include sales positions, teachers, librarians, office and administrative positions, as well as manufacturing, operations, and production occupations. These can be considered middle-skill, middle-wage position. In North County, the **median wage for a Tier 2 worker is $46,000 a year**.

Tier 3 Occupations

include protective services, food service and retail, building and grounds keeping, and personal care positions. These are typically lower-paying occupations. In North County, the **median wage for a Tier 3 worker is $24,400 a year**.

[13] Autor, David. *The Polarization of Job Opportunities in the U.S. Labor Market*. MIT Department of Economics, April 2010.

Since 2008, both high-skill and low-skill employment growth has outpaced mid-skill, mid-wage, or Tier 2, employment opportunities. Both Tier 1 and Tier 3 jobs have grown by over nine percent over the last decade, while Tier 2 jobs have grown at a rate of 2.8 percent (Figure 7). In fact, the region's Tier 2 employment growth is lower than the statewide average of 5.9 percent (Figure 8). In general, Tier 2 employment still accounts for the largest chunk of workers, at about 35 percent of total jobs, followed by Tier 3 which is 29 percent, and Tier 1 jobs which are 23 percent of total jobs in the North County.[14] It is worth noting that the region's major losses in Tier 2 employment were in part related to construction-related occupations such as carpenters (six percent decline between 2008 and 2017), construction laborers (five percent decline), and construction and maintenance painters (three percent decline); together, these occupations account for roughly 10,400 jobs in North County as of 2017. Other construction-related occupational groups that lost employment at a high rate include brick- and block masons (38 percent decline), painting, coating, and decorating workers (28 percent), and upholsterers (19 percent decline); however, these occupations all employ less than 200 workers each.

This trend has been exhibited at both the state and national level and for many other regions. Concentrated employment growth in both the high- and low-end of the wage and skillset scale is creating a polarized field of employment opportunity, resulting in increasing wage inequality and the decline of middle-class jobs. Though widespread automation and offshore labor market integration accelerated this trend, the recent economic recession has largely contributed to a diminishing Tier 2 workforce. Since 2010, Tier 2 employment has somewhat recovered, but there is growing concern that as technology and the global labor market evolve, middle-skill, middle-wage jobs could be hit again.

WHY DOES THIS MATTER?

This may be the most important employment indicator for a region's long-term economic sustainability. High-quality, high-paying jobs in a region not only have a large employment multiplier effect, but also provide more opportunities for developing a local workforce that can sustainably live, work, and play within a high-cost region like North County.

[14] It should be noted that these percentages will not sum to 100 since not all occupations can be delineated into one of the three tiers.

Figure 7: Percent Change in Occupational Tier Employment, North County, 2008 – 2017[15]

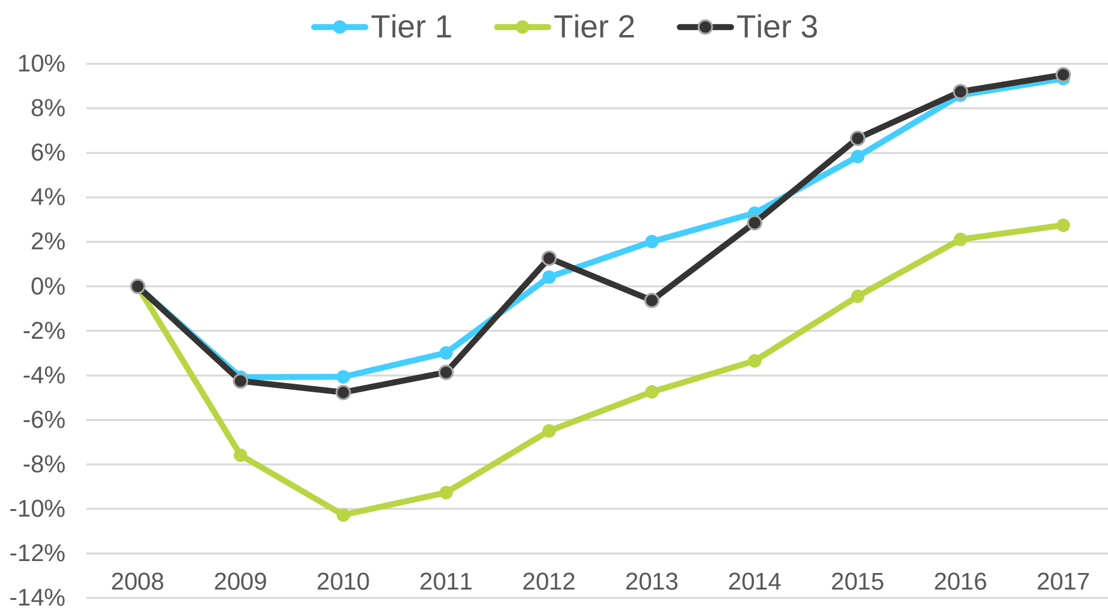
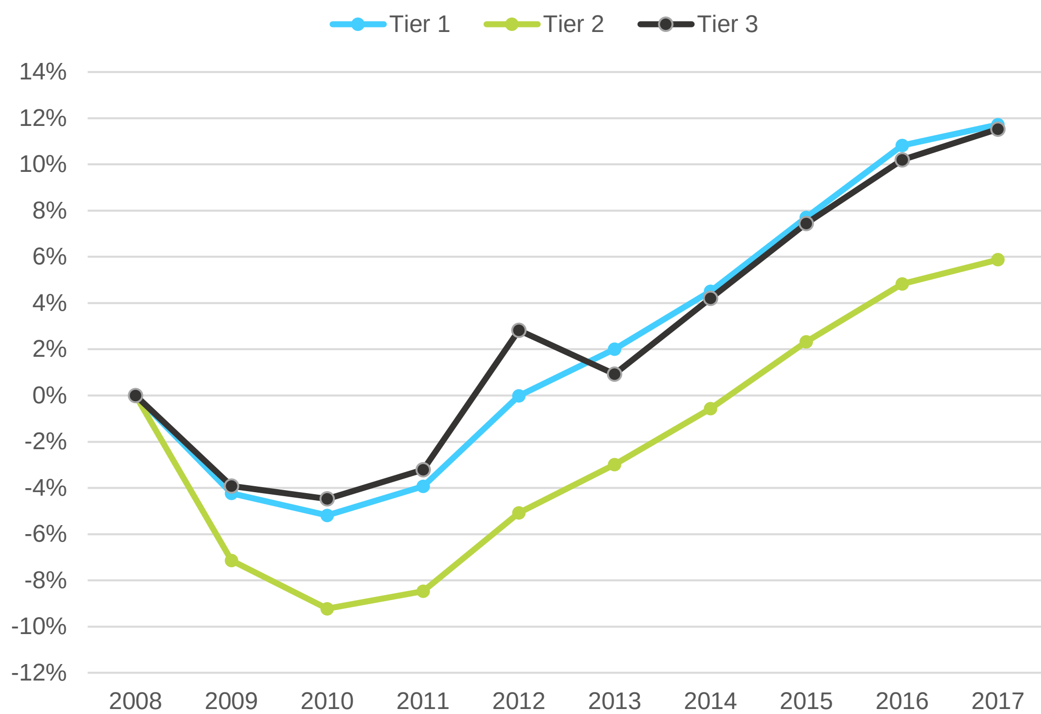


Table 2: Occupational Tier Proportions by Region, 2017[16]

	North County	San Diego County	California	United States
Tier 1	26.2%	27.4%	27.1%	24.4%
Tier 2	40.5%	39.5%	40.8%	42.9%
Tier 3	33.3%	33.1%	32.2%	32.7%

[15] Source: EMSI 2018 q.1 QCEW and Non-QCEW employees.
[16] Source: EMSI 2018 q.1 QCEW and Non-QCEW employees. It should be noted that these percentages are based upon the approximately 90 percent of occupations that are classified into one of the three tiers.

Figure 8: Percent Change in Occupational Tier Employment, California, 2008-2017[17]



[17] Source: EMSI 2018 q.1 QCEW and Non-QCEW employees.

Innovation

Innovation—the generation of new products, ideas, or processes—is critical to maintaining a healthy and competitive local economy. The research, development, and ultimately commercialization of new technologies lead to increased efficiency, productivity, and profitability. Capitalizing on a region's innovative strengths ensures that the region continues to remain economically competitive, attracting new businesses, investments, and workers while tapping into new markets both in-region and globally.

With its concentrated activity in innovation-related activities such as Life Sciences and Defense, Aerospace, and Communications, North County inventors have contributed to steady patent output over the last decade. Comparatively, North County sits between South County and the City of San Diego and East county in terms of growth and output in patent activity. Not surprisingly, San Diego City has seen consistently high growth in patent activity over the last decade.

Innovation

Patents

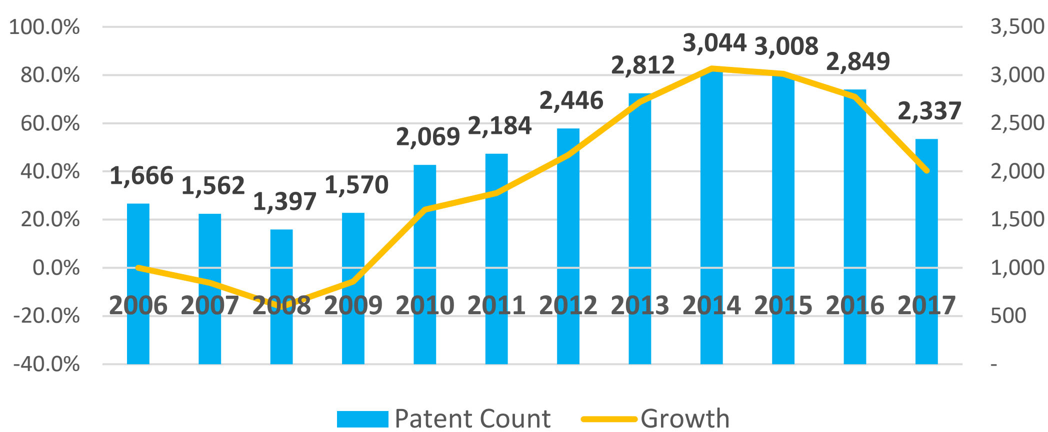
Patent activity has traditionally been used to measure a region's inventive activity—to what extent are North County's residents creatively contributing new ideas to both local and global markets. Between 2006 and 2017, North County's resident inventors have filed for almost 27,000 patents across a number of areas including transportation, textiles, construction, engineering, physics, and electricity. However, following a continuous upward trend from 2008 through 2014, patent production has since declined by about 23 percent (
Figure 9). It's possible that given the region's labor shortages, employers are spending more time and resources focused on talent attraction and retention. With a tight labor market, businesses have fewer resources for innovation-related endeavors.

By contrast, the City of San Diego has seen a steady increase in patent output over the last decade. The City produced just almost 50,000 total patents between 2006 and 2017 for an overall growth rate of 150 percent (Figure 10). East and South County San Diego, on the other hand, have seen the least patent activity over the same time period. Patent output across these two regions has also been more volatile compared to North County and San Diego City (Figure 11 and Figure 12).

WHY DOES THIS MATTER?

Patent activity is one way of measuring how much research and development activity in a region is being commercialized into potential products or services. It also provides some longer-term direction of overall development activity in a given region.

Figure 9: Patents by Inventors from North County, 2006 – 2017[18]



[18] Source: USPTO PatentsView Data Query. Search was done within the inventor database using inventor last known location by city. Inventors from the following 11 cities and communities are included: Carlsbad, Del Mar, Encinitas, Escondido, Fallbrook, Oceanside, Poway, Ramona, San Marcos, Solana Beach, and Vista.

Figure 10. Patents by Inventors from City of San Diego, 2006-2017[19]

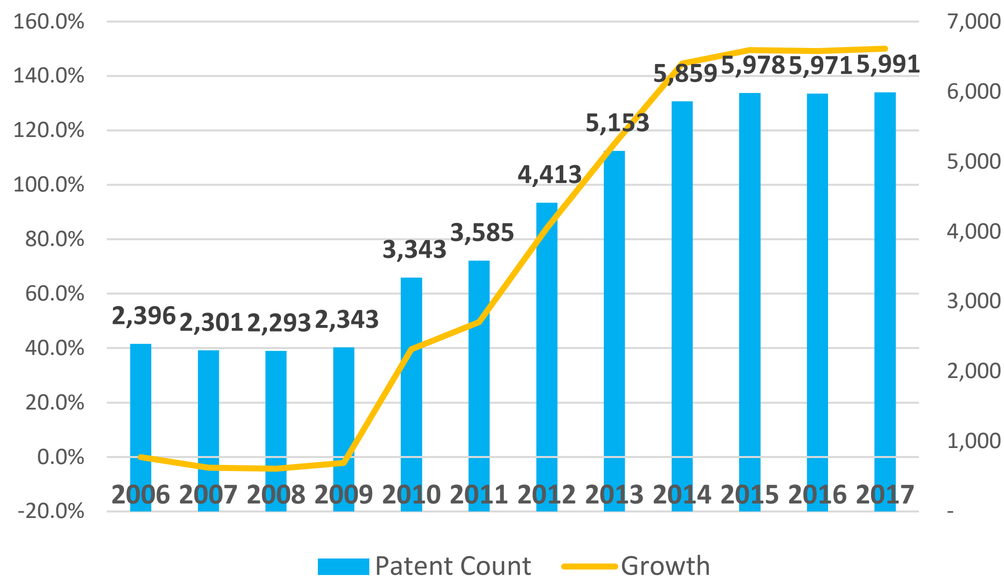
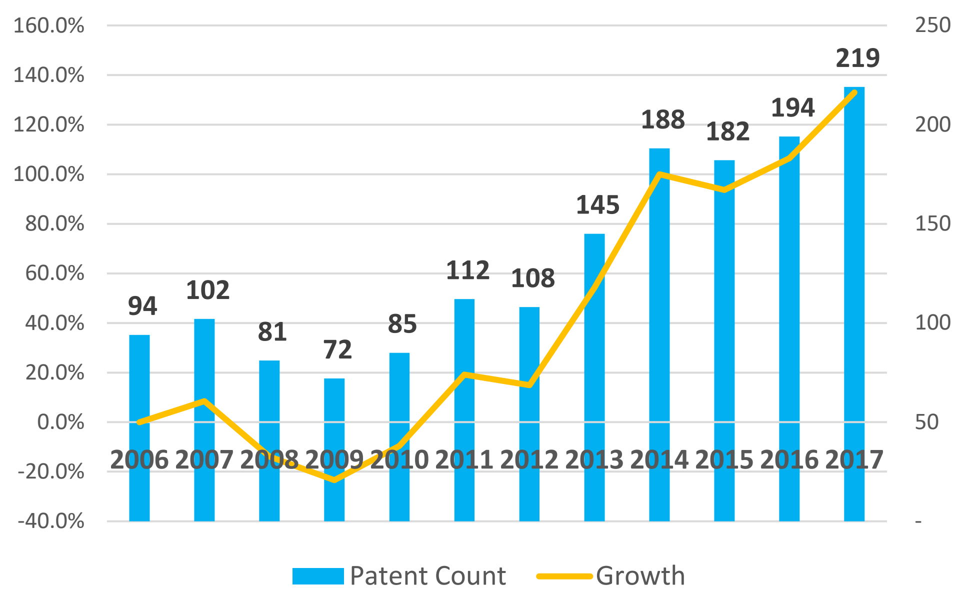


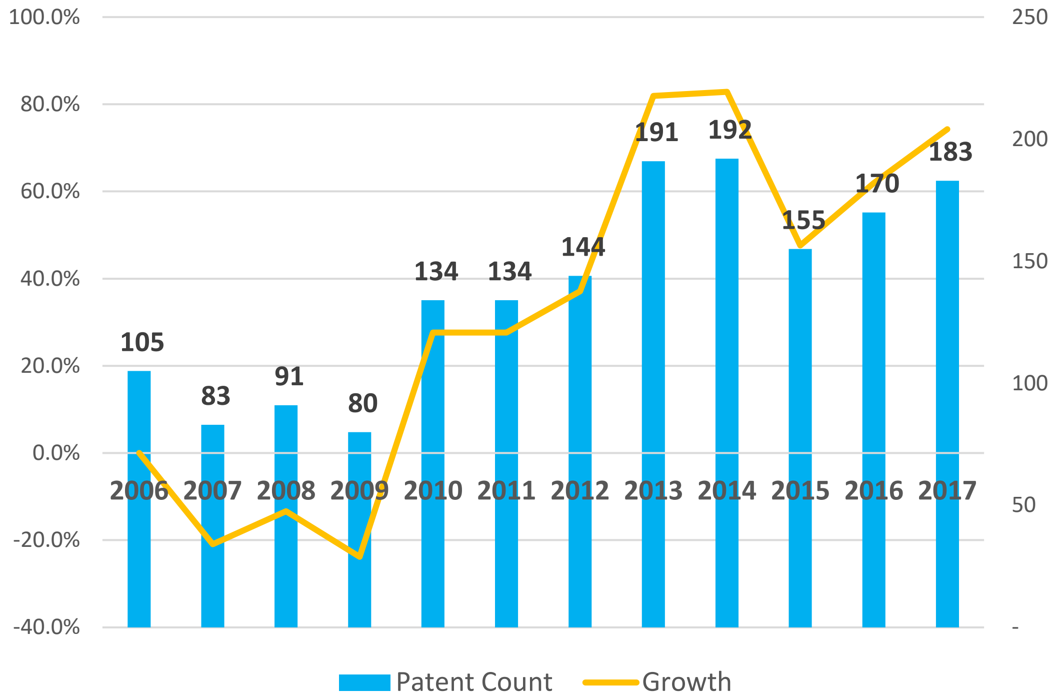
Figure 11. Patents by Inventors from South County, 2006-2017[20]



[19] Source: USPTO PatentsView Data Query. Search was done within the inventor database using inventor last known location by city. Inventors from City of San Diego are included.

[20] Source: USPTO PatentsView Data Query. Search was done within the inventor database using inventor last known location by city. Inventors from the following cities are included: Bonita, Chula Vista, Coronado, Imperial Beach, and National City.

Figure 12. Patents by Inventors from East County, 2006-2017[21]



[21] Source: USPTO PatentsView Data Query. Search was done within the inventor database using inventor last known location by city. Inventors from the following cities are included: Casa de Oro, El Cajon, La Mesa, Lakeside, Lemon Grove, and Spring Valley.

Innovation

Entrepreneurialism and New Business Growth

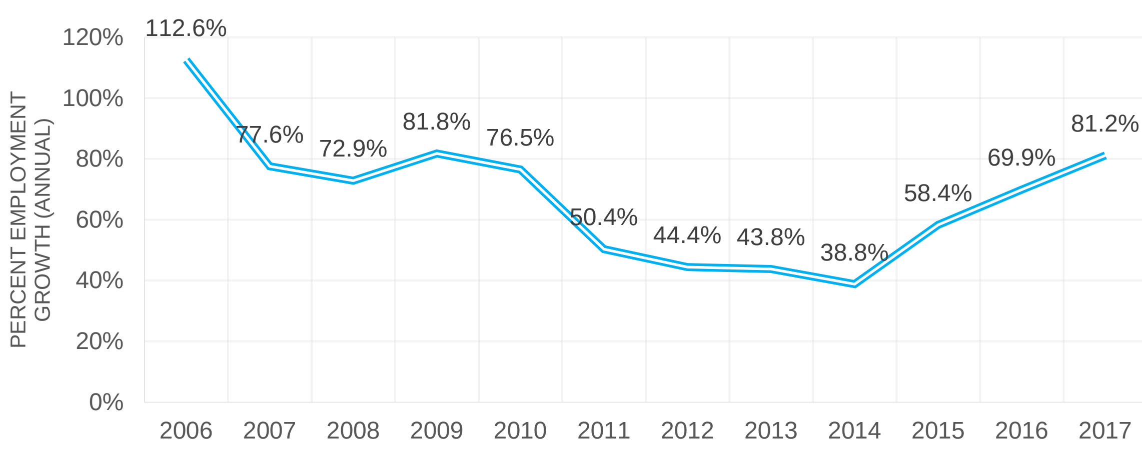
The rate of growth for startup businesses in the San Diego-Carlsbad-San Marcos MSA region has been strong since 2014.[22] The following figure measures the average employment growth of all startups five years after they were founded. In 2017, the average startup—founded five years ago in 2012—had about 4.7 employees and grew by 81 percent to 8.5 employees between 2012 and 2017. Over time, it appears as if startups have been growing faster since 2014 (Figure 13).

At the same time, the percent of the region's adult population that became entrepreneurs in a given month increased dramatically between 2015 and 2016. As of 2016, 490 out of every 100,000 adults became entrepreneurs in the San Diego-Carlsbad-San Marcos MSA (Figure 14).

WHY DOES THIS MATTER?

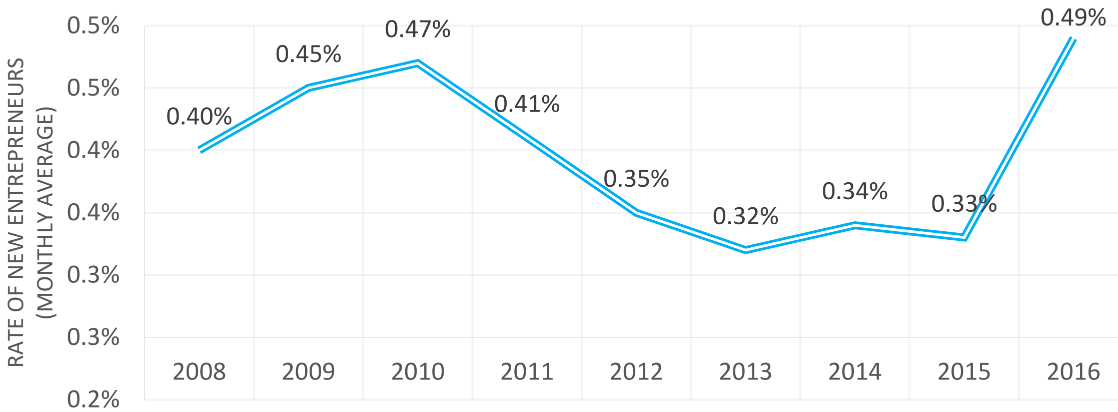
Entrepreneurial activity and new business growth is a valuable metric for assessing the health of a regional ecosystem as it relates to new business births and the ability to foster new businesses. It also provides some indication of the quantity and quality of entrepreneurs that can be found in a given region.

Figure 13: Rate of Startup Growth, 2006 – 2017[23]



[22] It should be noted that data for this section is at the MSA level because this is the most granular region at which the Kauffman Index provides data for entrepreneurialism and start-up activity.
[23] Source: The Kaufmann Index, Growth Entrepreneurship for San Diego-Carlsbad-San Marcos MSA. Last updated October 2017.

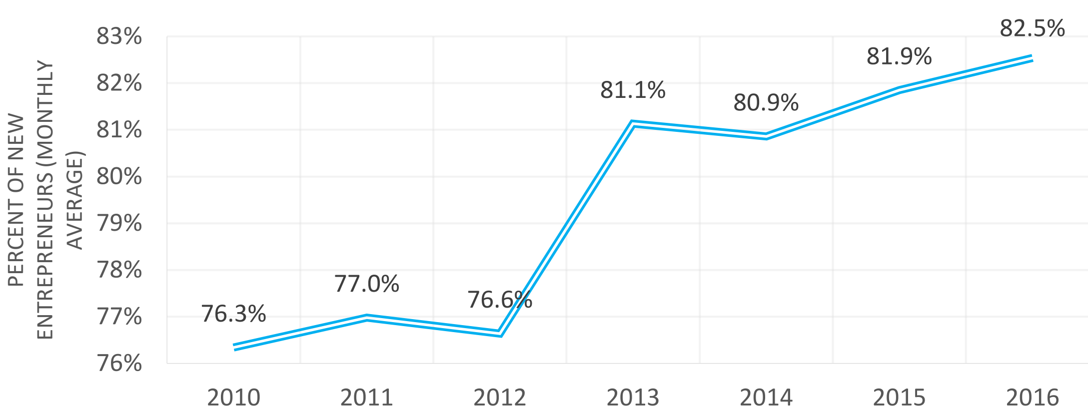
Figure 14: Rate of New Entrepreneurs, 2008 – 2016[24]



The following figure measures the percentage of new entrepreneurs who were not unemployed before starting their businesses. This is a proxy indicator of the percent of new entrepreneurs that started their business because they saw a market opportunity. In 2015, 8.3 out of every ten new entrepreneurs was not unemployed. In general, this number has seen an upward trend since 2010 (Figure 15).

Startup density has also increased slightly following steady decline from 2006 through 2010. As of 2014, there were 96 startups per every 1,000 firms in the metropolitan area. Startup businesses are defined here as firms less than one year old that employ at least one person including the owner (Figure 16). It's possible that the decline was a result of the recession, but as the economy has exhibited steady growth, more individuals are seeking to start their own businesses.

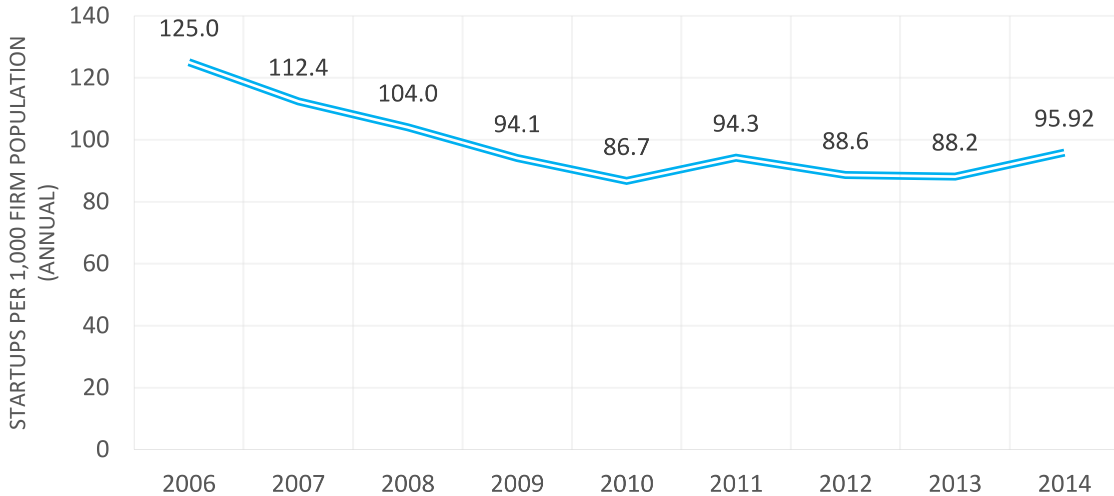
Figure 15: Opportunity Share of New Entrepreneurs, 2010 – 2015[25]



[24] Source: The Kaufmann Index, Startup Activity for San Diego-Carlsbad-San Marcos MSA. Last updated May 2017.

[25] *Id.*

Figure 16: Startup Density 2006 – 2014[26]



[26] *Id.*

SPECIAL SECTION: HOUSING IN NORTH COUNTY

BW Research recently teamed with London Moeder Advisers to follow-up on a 2016 study of the economic impacts of housing on the regional San Diego County economy. This study focused more specifically on the economy and businesses in North County and the I-15 corridor. The initial study and the follow-up research looked to:

- Assess and update the impact housing has on the region's workforce and labor supply;
- Evaluate and update the impact housing has on the region's employers and their businesses; and,
- Identify the impact housing has on regional and local economic development.

In 2018, after updating the analysis of economic, demographic, and labor market data, the follow-up research included a survey of 102 businesses in San Diego's North County. The random sampling of businesses was stratified by geography and business size (number of employees). The survey was meant to assess the priorities of San Diego North County businesses and the challenges facing the region's employers.

What We Have Learned

The research findings for the housing studies in San Diego County (2016) and North San Diego County (2018) illustrated three key findings:

<u>High rent to income ratios.</u> In North County, approximately half of renters continue to spend more than 35 percent of their gross income on housing; this is a higher portion than communities in the Bay Area, such as Santa Clara County. The discrepancy between increased housing costs and little to no wage increases continues to exacerbate this challenge and is negatively impacting employer's ability to find qualified workers.

<u>Challenges to talent attraction and retention</u>. Retaining and attracting talent was the biggest challenge identified by San Diego County businesses when asked to identify the biggest obstacle for their firm's growth. In fact, the need to attract and retain talent was identified more often than the overall cost or expenses associated with doing business in the region. This challenge of recruiting and retaining talent that can find housing in the area continues to be a real difficulty for most North County employers. Almost one in three (30 percent) North County employers indicated that "recruiting employees who can find adequate housing within a reasonable distance from work" was a great difficulty and another 43 percent indicated that it is providing some difficulty. Almost three-quarters (74 percent) of North

County businesses are having at least some difficulty "retaining valuable employees who want to purchase housing within a reasonable distance from work".

Ability to find reasonably-priced housing. Of the eight issues tested, the ability for employees to find reasonably priced housing that is close to work was the issue San Diego County employers were most dissatisfied with (28 percent). The only other issue to register just over 10 percent dissatisfaction was the ability to attract new employees that live outside the region. The nexus between talent and housing was a consistent theme in the employer survey results, as the proportion of employers dissatisfied with employee ability to find reasonably priced housing close to work increased from 28 to 47 percent between 2016 and 2018.

Provision of employee housing assistance. Employers are increasingly taking things into their own hands. Almost one-third (31 percent) of North County employers in the 2018 survey provided some type of housing assistance for their employees to move in or near North County. This housing assistance could take the form of relocation or mortgage assistance, housing allowances, or company-provided housing. Another 21 percent of North County employers are possibly considering some type of housing benefit or subsidy for their North County employees.

Growing Challenges

The housing and employment challenges uncovered in 2016 have since worsened. A growing proportion of employers are indicating dissatisfaction with the situation and noting the difficulty they are having with finding and keeping qualified workers, particularly as it relates to their ability to find housing.

Perhaps most troubling, it seems the challenges in recruitment and retention and the nexus to high housing costs is having a notable impact on employer sentiments. In 2016, **47 percent** of North County businesses indicated that San Diego County was an excellent place to do business; in 2018, that number **dropped to 26 percent**. Over the same time, the proportion of North County employers that indicated difficulty finding qualified applicants went from four percent indicating great difficulty and another 56 percent indicating some difficulty, to 17 percent great difficulty and another 61 percent indicating some difficulty.

Unemployment levels have dropped below three percent, commute times have increased, and job growth has started to slow in North County, as employers face an increasingly tight labor market with less available qualified job applicants.

These results indicate that North County employers are already feeling the costs associated with inadequate housing supply and the direct impact it has upon a qualified local workforce.

Special Section: Job Volatility in North County

The world of work is continually changing and many of the jobs of today will not be the jobs of tomorrow. BW Research recently (2017 data) completed a national analysis of job volatility by occupation and industry to better understand how the world of work could change over the next five to 10 years. The analysis focused more specifically on the impact that ***technology and automation*** can have on employment opportunities into the future. The analysis looked to:

- Assess occupations and industry employment patterns based on current job skills and the likelihood that those skills could be replaced by technology or some related advancement in automation;
- Evaluate and better understand the magnitude of change that is likely to occur in employment composition by industry and occupational segment over the next five to 10 years; and,
- Measure the potential job volatility within a given region, such as North County, and the impact it could have on leading industry clusters.

The national job volatility analysis included a review of historical industry and occupational trends from 2010 to 2016 as well as an examination into the skills and abilities that are required in today's occupations. The examination of occupational skills was built upon an assessment of the likelihood of that skill being automated and its relative importance for the position. [27]

From an occupational perspective, North County has less highly volatile jobs than the national average.

Nationally, 52 percent of employment is currently found in positions that are considered highly volatile or somewhat highly volatile according to the national analysis. Approximately 48 percent of current North County employment would fall into a higher volatility category. These findings still indicate that almost half of North County employment will likely be impacted by automation and technology in the next five to 10 years, changing the skills and training required for the position or changing the position and title altogether.

Occupationally, North County has a relatively low concentration of:

- Transportation and material movement positions
- Production positions
- Installation, maintenance, and repair positions

[27] Automation Assessment included information and analysis from the following study: https://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf

This contributes to the region's below average proportion of high volatility jobs. However, North County does have a relatively high concentration of food preparation and service positions, which have the second highest job volatility score.

From an industry perspective, North County has a low concentration of higher volatility industry employment, except for the Tourism, Hospitality, and Recreation cluster.

Several of the industry clusters with the greatest proportion of highly volatile occupations, have below average employment in North County. Industry clusters such as, logistics and other manufacturing[28], have below average employment in North County. Of the five industry clusters with the lowest average job volatility score, only Tourism, Hospitality, and Recreation, a single industry cluster, had above average employment in North County.

At the other end of the spectrum, the industry clusters with the highest percentage of low volatile occupations, are more mixed in North County. The region has above average employment in Information and Communication Technologies as well as Biotechnology and Biomedical Devices, while having below average employment in Education and Knowledge Creation, Healthcare, as well as Finance, Insurance, and Real Estate.

The table below shows current national and North County employment for the four primary[29] industry clusters with the highest job volatility scores as well as their current North County employment concentration.

Table 3: Highest Volatility Industry Clusters

Industry Clusters	US Employment (2017)	NC Employment (2017)	NC Employment Concentration
Logistics	7,064,478	15,385	61%
Agriculture and Food	4,378,761	14,490	93%
Other Manufacturing	5,622,049	14,234	71%
Tourism, Hospitality, and Recreation	12,827,683	49,182	108%

[28] Other Manufacturing includes all manufacturing that is not found in one of the other 17 industry clusters.
[29] Primary Industry Clusters are defined as having at least one million people currently employed in the United States.

Generally, positions with higher median pay, both nationally and within North County, are less likely to be categorized as a highly volatile.

In North County, the median pay of those occupational categories with the highest volatility score, was approximately $33,000 annually. Those occupational categories with a negative volatility score, meaning less likely to be in a volatile position, had a median annual pay of approximately $67,000. It is also worth noting that not all low volatility occupational categories were higher paying; Community and Social Service positions had a low volatility score and offered a median wage, in the United States, below $45,000 annually.

Why is understanding Job Volatility important for educators, employers, and economic developers?

As North County's educators, employers, and regional economic developers plan for a prosperous North County, all three will generally agree that stable higher-paying occupations and industry clusters are a vital element in any successful region. Educators need to be aware of those occupational pathways and industries that are likely to experience considerable change and have their relevant curriculum change accordingly. Employers who are examining their talent pipeline need to be aware of those positions that will face different skill and knowledge requirements into the future. Lastly, regional economic development stakeholders need to be aware of the changing employment landscape for different industry clusters and what that means for employment opportunities in their region.

People

In examining a region's economic health, it is important to look not only at economic indicators, but also the composition of the region's current and future talent. North County residents contribute to overall economic health as workers through creative innovation as well as to the region's quality of life. Social characteristics like demographics, education, and income highlight the hiring landscape for employers and income sustainability for the workforce—does the income distribution reflect the higher costs of living in North San Diego County. Furthermore, examining the gap in North County's resident workforce against the number of workers in North County by specific occupational categories provides insight as to where the region is a net importer or exporter of specific talents and skillsets.

People

Demographics

The following section examines North County's age distribution compared to other regions. This is important in the context of the local economy, and particularly job growth, as growth in the working age population determines the level of jobseekers and labor supply for the region's businesses.

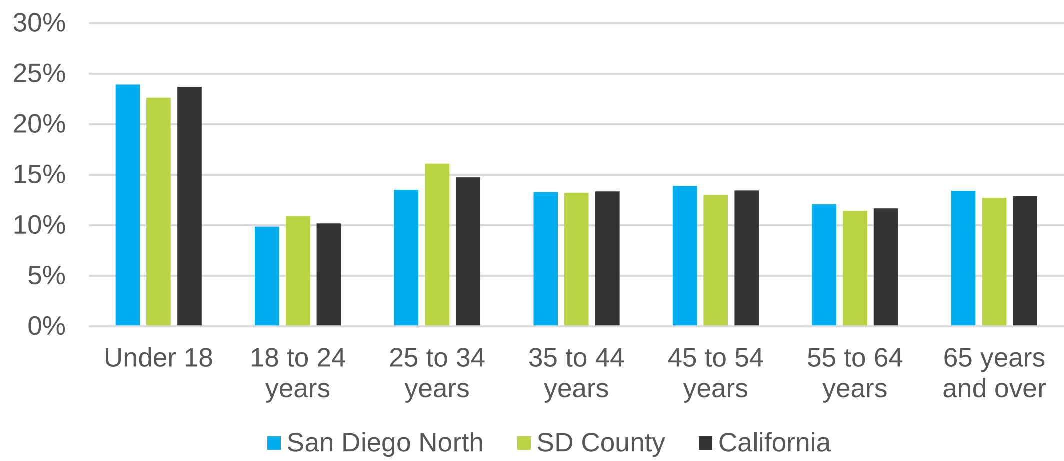
About 24 percent of San Diego North County's population is under the age of 18; this is about one point higher than the countywide average. Thirty-nine percent of the region's population is 45 years of age or older, about two points higher than the statewide average and one point higher than the countywide average.

North County has a healthy proportion of working-age adults, roughly ages 18 to 54; this age cohort represents just over half, or 51 percent of the population—comparable to the rest of the county, state, and nation (Table 4, Figure 17). In general, North County's population is becoming slightly more concentrated in the younger and older range, while middle-aged residents are shrinking. In 2010, 31 percent of the population was under 25 compared to 34 percent in 2016. At the same time, residents between the ages of 25 and 54 shrank by about four points from 45 percent in 2010 to 41 percent in 2016. Residents over the age of 54 comprised 26 percent of the population in 2016, compared to 24 percent in 2010.

WHY DOES THIS MATTER?

The regional age distribution provides a better understanding of a region's potential workforce, student, and senior population. These populations impact regional healthcare demand, education, training, and childcare investments.

Figure 17: Age Distribution, 2016[30]



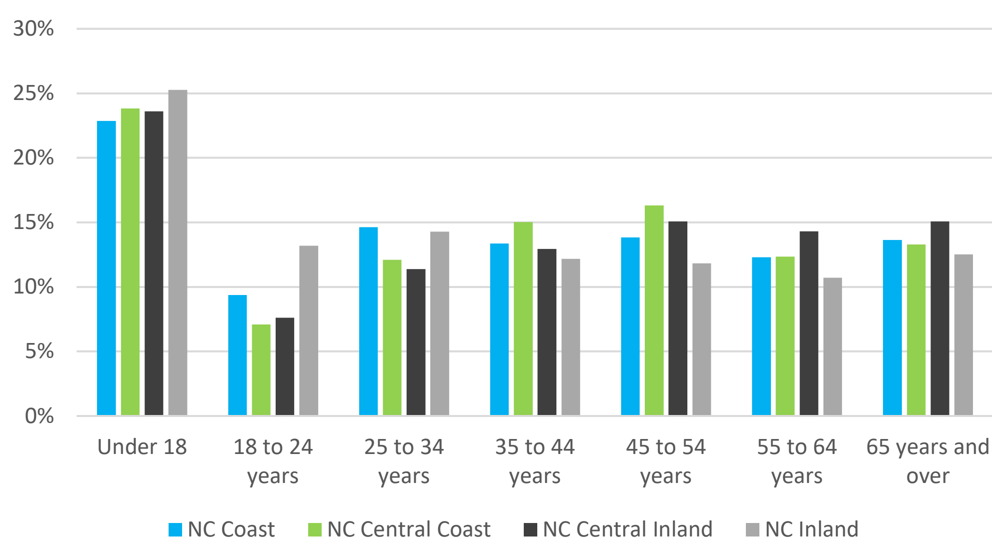
[30] Source: American Community Survey (ACS) 2016 5-year estimates

Table 4: Age Distribution, 2016[31]

	North County	San Diego County	California	United States
Under 18	23.9%	22.6%	23.7%	23.1%
18 to 24 years	9.9%	10.9%	10.2%	9.8%
25 to 54 years	40.7%	42.3%	41.6%	39.9%
55 to 64 years	12.1%	11.4%	11.7%	12.6%
65 years and over	13.4%	12.7%	12.9%	14.5%

The Inland region has a higher proportion of young adults under the age of 25 compared to the rest North County's sub-regions, while Central Coast and Central Inland have a higher proportion of older residents (Figure 18).

Figure 18. Age Distribution by Sub-Region, 2016



[31] Source: American Community Survey (ACS) 2016 5-year estimates

People

Healthcare

In general, North County has a high proportion of insured individuals in the region—89 percent compared to the state- and nationwide averages of 87 and 88 percent respectively. North County also has a higher proportion of insured individuals compared to South and East San Diego County (Table 5).

In North County, individuals earning less than $25,000 per year in household income are slightly more likely to be insured compared to the state and national averages (Table 6).

Table 5. Healthcare Coverage by Region, 2016[32]

Area/Region	% Insured	% Uninsured
San Diego North County	89.0%	11.0%
San Diego South County	86.5%	13.5%
Sam Diego East County	88.8%	11.2%
California	87.4%	12.6%
United States	88.3%	11.7%

Table 6. Percent Insured by Household Income, 2016[33]

	Under $25,000	$25,000 to $49,000	$50,000 to $74,999	$75,000 to $99,999	$100,000 and over
SD North County	82.4%	80.9%	85.4%	90.6%	94.9%
California	81.9%	80.7%	84.8%	88.9%	94.1%
United States	81.4%	82.3%	87.5%	91.4%	95.1%

[32] Source: American Community Survey (ACS) 2016 5-year estimates. Based on civilian noninstitutionalized population.
[33] Source: American Community Survey (ACS) 2016 5-year estimates

People

Education

North County has a higher-than-average concentration of residents with a college degree. Just over half, or 51 percent, of the population has at least an Associate's degree if not a graduate or professional degree; this is nine to 10 points higher than the county, state, and nationwide average, as well as other San Diego County sub-regions such as South and East County (Table 7, Figure 19).

The educational distribution varies by sub-region, with the Central Coast having a much higher concentration of individuals with a Bachelor's degree or higher compared to the rest of North County. About two in three residents in the Central Coast have at least a Bachelor's degree. On the other hand, Inland North County has the highest concentration—almost 40 percent—of individuals with a high school diploma or less (Figure 20). Figure 21 highlights the high concentration of educated individuals around the Central Coast.

WHY DOES THIS MATTER?

Educational attainment metrics provide an initial assessment of how skilled a regional workforce is today and will be in the immediate future.

Table 7: Educational Attainment for the Population 25 Years and Older, 2016[34]

	North County	East County	South County	San Diego County Overall	California	United States
High school or less	**28.5%**	37.9%	33.5%	32.4%	**38.1%**	40.5%
Some college or Associate's	**30.5%**	36.8%	29.8%	31.1%	**29.0%**	29.2%
Bachelor's or higher	**40.9%**	25.3%	36.7%	36.5%	**32.9%**	30.3%

[34] Source: American Community Survey (ACS) 2016 5-year estimates

Figure 19: Educational Attainment for the Population 25 Years and Older, 2016[35]

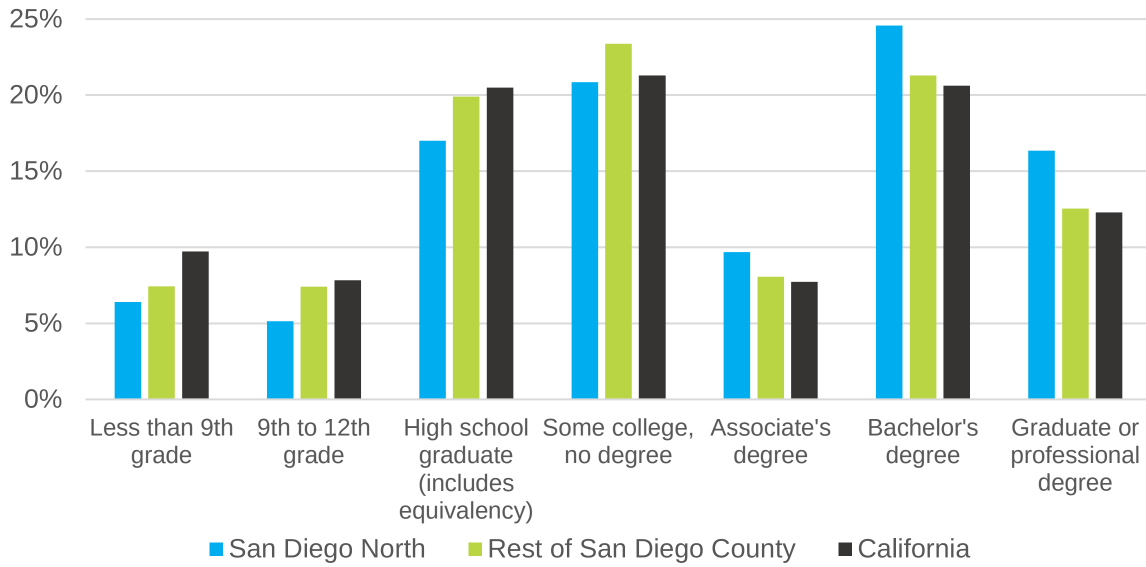
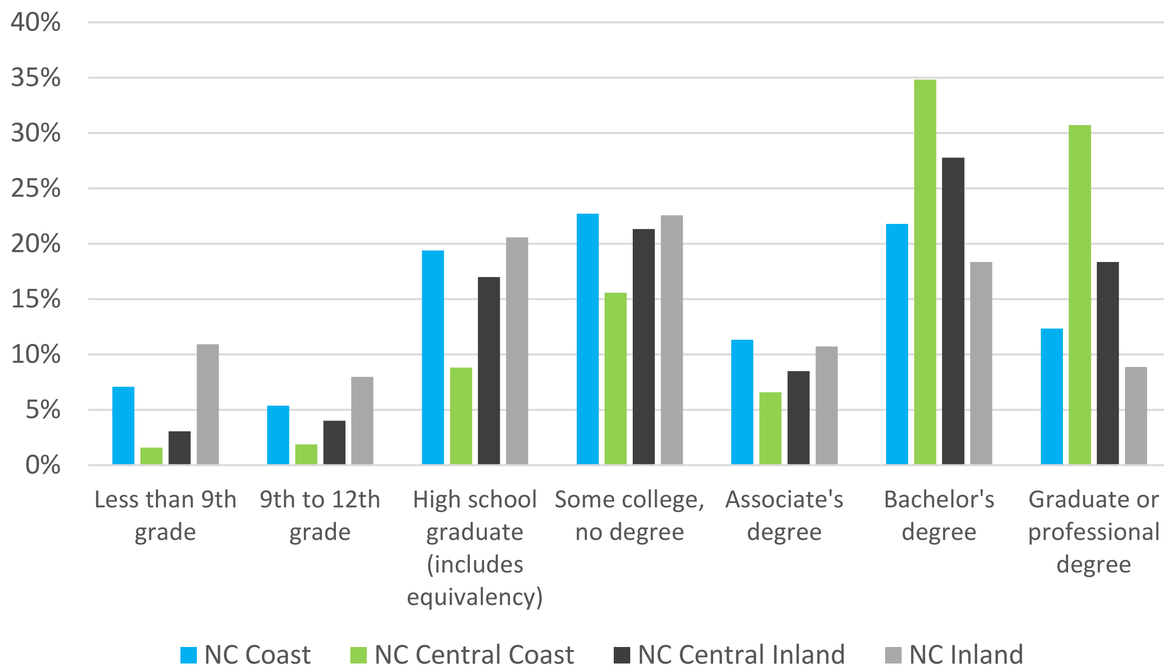


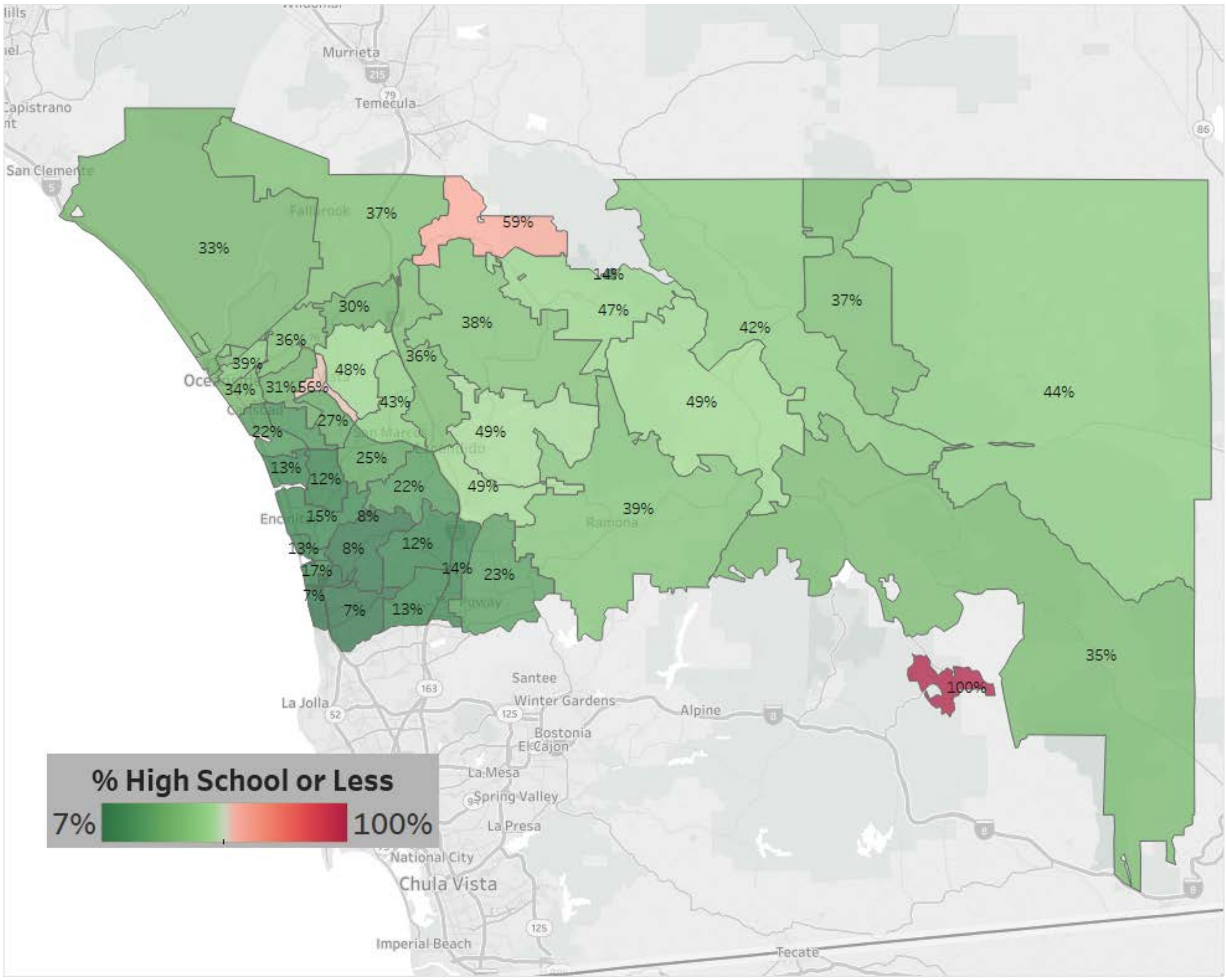
Figure 20: Educational Attainment for Population 25 Years and Older by Sub-region, 2016[36]



[35] Source: American Community Survey (ACS) 2016 5-year estimates

[36] Source: American Community Survey (ACS) 2016 5-year estimates

Figure 21: Proportion of Population 25 Years and Older in North County with a High School Degree or Less by Zip Code, 2016[37]



[37] Source: American Community Survey (ACS) 2016 5-year estimates

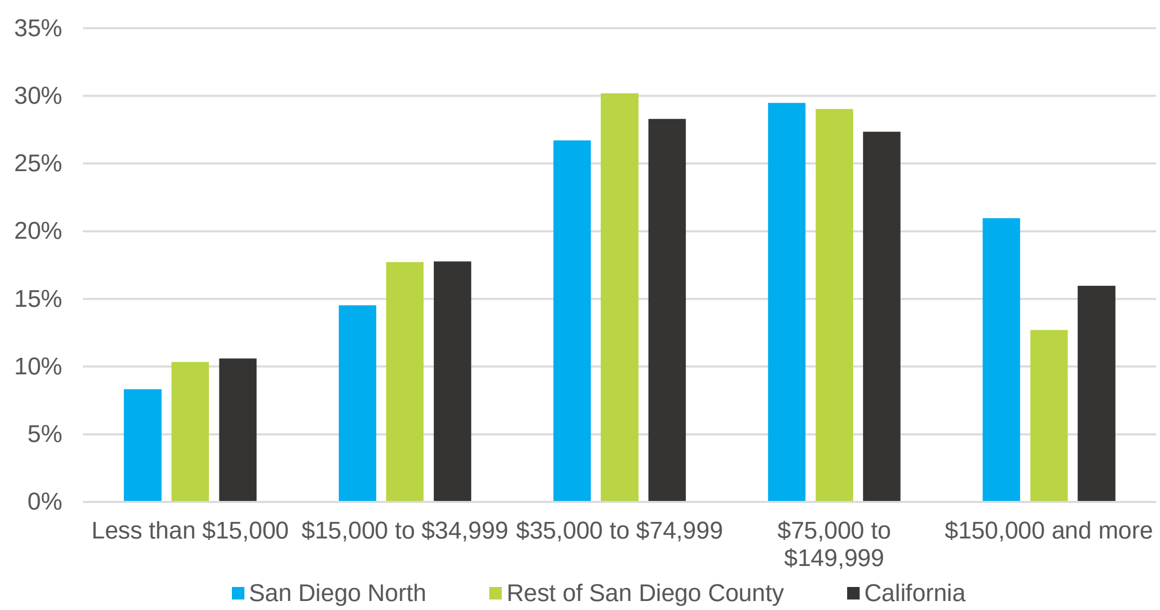
People

Income Distribution

North County San Diego has a significantly higher proportion of households who earn $150,000 a year or more—21 percent compared to about 16 percent for the overall county and statewide average and 11 percent for the national average. In general, just over half the population earns at least $75,000 a year.

Both the Central Coast (37 percent) and Central Inland (25 percent) have a higher-than-average concentration of households earning an annual average income of $150,000 a year or more. On the contrary, the Coast (25 percent) and Inland (30 percent) have more households that earn less than $35,000 a year compared to the North County overall average of 23 percent (Figure 22, Table 8, Figure 23).

Figure 22: Household Income Distribution, 2016[38]

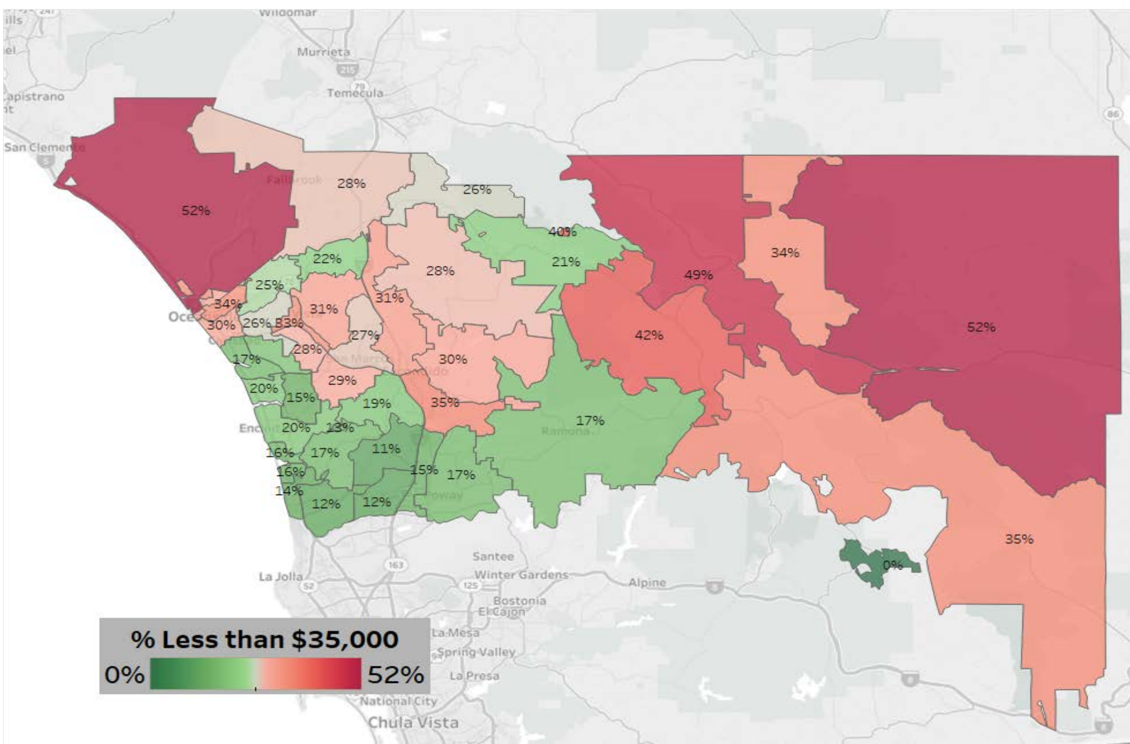


[38] Source: American Community Survey (ACS) 2016 5-year estimates

Table 8: Household Income Distribution by Sub-region, 2016[39]

Sub-Region	Less than $35,000	$150,000 or more
NC Coast	25.3%	15.6%
NC Central Coast	14.7%	36.7%
NC Central Inland	15.6%	24.8%
NC Inland	30.0%	12.8%
San Diego North County	22.9%	21.0%
San Diego County	26.1%	15.8%
California	28.4%	16.0%
United States	32.2%	11.1%

Figure 23. Proportion of Population in North County with Household Income Less than $35,000 by Zip Code, 2016[40]



[39] Source: American Community Survey (ACS) 2016 5-year estimates
[40] Source: American Community Survey (ACS) 2016 5-year estimates

People

Workforce

North County's resident workforce—or those individuals that live in North County and are in the labor force—is larger than the number of people that are self-employed or work at North County firms. There are a total of 551,544 individuals in the resident workforce compared to 470,617 individuals working in North County, indicating that the region is a net exporter of talent, of a little more than 80,000 individuals.

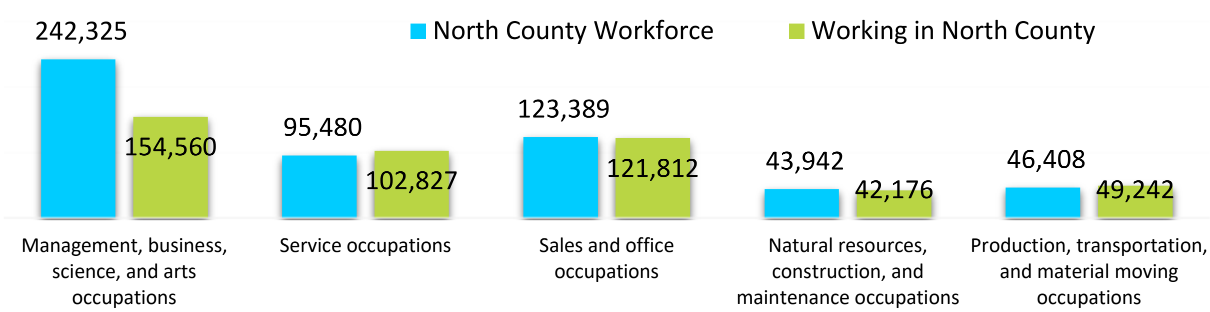
The largest gap between resident workforce and those employed in the region is found in the management, business, science, and arts occupations. There are 242,325 individuals in this occupational category living in North County, yet only 154,560 such jobs in North County; this means that the region is a net exporter of high-skill, higher-pay positions (87,765 jobs). On the other hand, the region is a net importer of workers in service occupations (7,347 jobs) as well as production, transportation, and material moving occupations (Figure 24).

The region could continue to benefit from economic development efforts targeting employers whose North County employees must face daily commutes on Interstates 5 and 15. While North County is facing a shortage of available industrial and commercial space, the region is not entirely built out and thus there remains opportunities for focused economic development attraction efforts. Furthermore, the net import of service and production workers highlights the challenges North County faces in providing sufficient middle-tier housing. Key to the region's sustainable economic development will be the build out of a sufficient supply of housing at various price points to support the entirety of North County's workforce across the wage spectrum.

WHY DOES THIS MATTER?

The resident workforce versus employees working in the region metric provides a direct measure of how a region's workforce overlays with the available jobs in a given area. This analysis has important implications for transportation and commuting, housing, employment opportunities, and ultimately a region's economic vitality and quality of life.

Figure 24: Resident Workforce vs. Working in the Region by Occupations[41]



[41] Source: American Community Survey (ACS) 2016 5-year estimates and EMSI 2018 q.1 Class of Worker, QCEW and Non-QCEW employees.



Place

Another important component of economic vitality is a region's ability to support both businesses and residents with affordable office rent and housing. Housing costs often impact the quality of life and labor supply—inadequate supply or high costs might drive residents out of the region at the same time deterring others from moving in. Unaffordable housing also prompts workers to move to more affordable areas outside of North County, increasing commute times, traffic, and wear on roads and infrastructure. The amount of time spent commuting to work also affects the quality of life and productivity—as workers spend more time in traffic, they are dedicating less time to both work and leisure activities such as spending time with family, in the community, or on mental and physical health and well-being.

Place

Commercial Real Estate

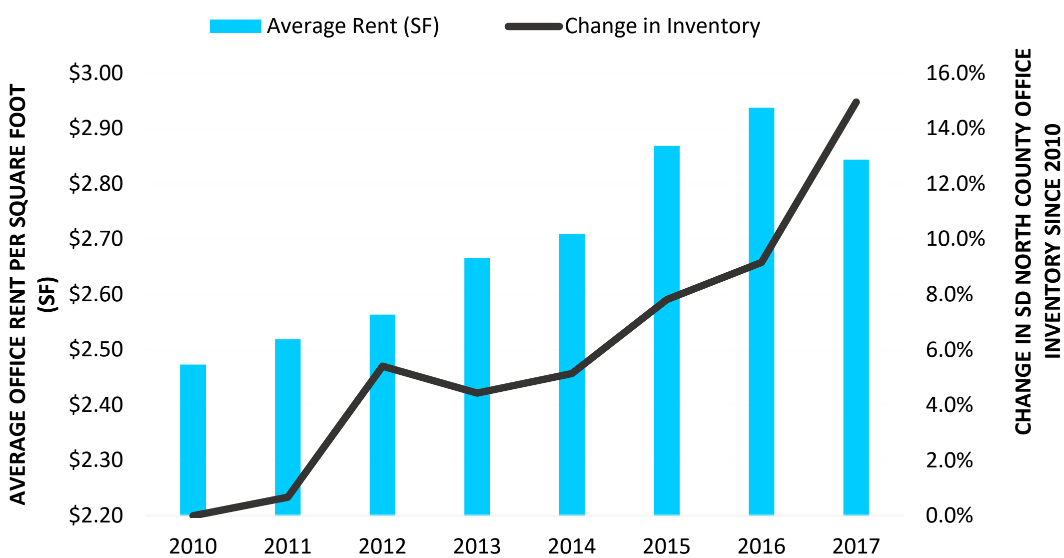
To complement the region's continuous job growth, North County has also seen steady increase in office inventory since 2010—roughly 15 percent increase over eight years. At the same time, average office rent has increased steadily from 2010 through 2016. However, between 2016 and 2017, average rent per square footage declined by about three percent (Figure 25).

Average office rent varies by sub-region, where the Central Coast has had the highest average rent per square footage since 2010. The remaining three sub-regions are roughly similar in rent—about $2.00 to $2.50 per square footage in 2017—with Central Inland having the lowest historical rents (Figure 26).

WHY DOES THIS MATTER?

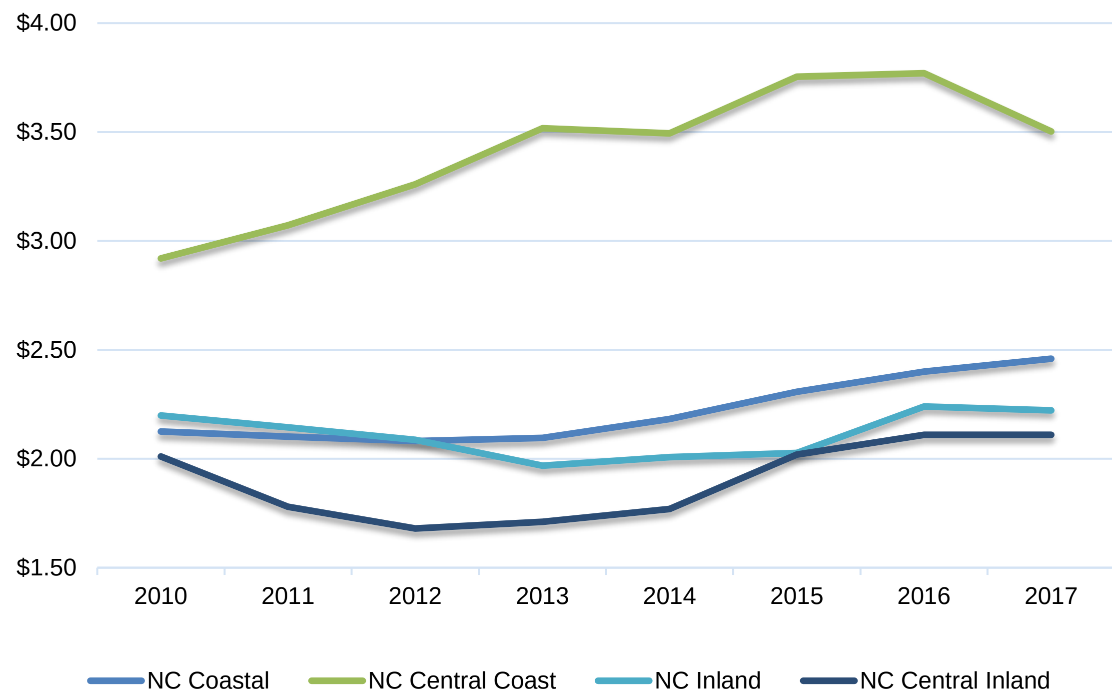
The changing cost of commercial real estate provides a measure of the evolving demand for business space in the region as well as the changing costs of doing business in North County.

Figure 25: Average Office Rent and Change in Office Inventory, 2010 to 2017[42]



[42] Source: Cushman and Wakefield

Figure 26: Average Office Rents by Sub-Region, 2010 to 2017[43]



[43] Source: Cushman and Wakefield

People

Housing Insecurity

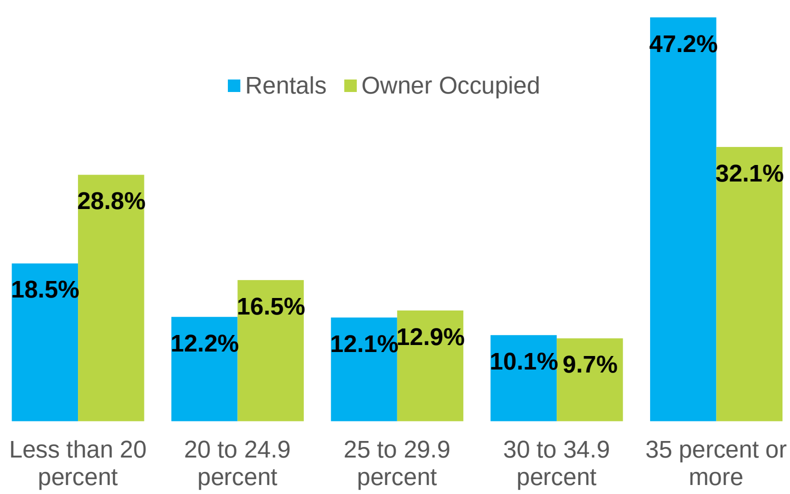
North County's housing market for renters is comparable to both state and county averages. The proportion of household income that must be dedicated to housing is particularly high for renters. Almost half (47 percent) of renters in North County and a third of homeowners must spend 35 percent or more of their household income on monthly rent (Figure 27). While the proportion of homeowners that spend more than a third of household income on monthly mortgage payments has decreased by four points since 2014, renters have remained unchanged. About 45 percent of all households in North County were renters in 2016; this proportion has remained quite steady since 2013.

Renters along the Coast and Inland are more likely to spend 35 percent or more of their household income on rent—roughly 51 percent of homes on the Coast and Inland, compared to the regional average of 47 percent. In contrast, renters in the Central Coast and Central Inland are lower than the regional average, at 40 and 34 percent respectively (Figure 28).

WHY DOES THIS MATTER?

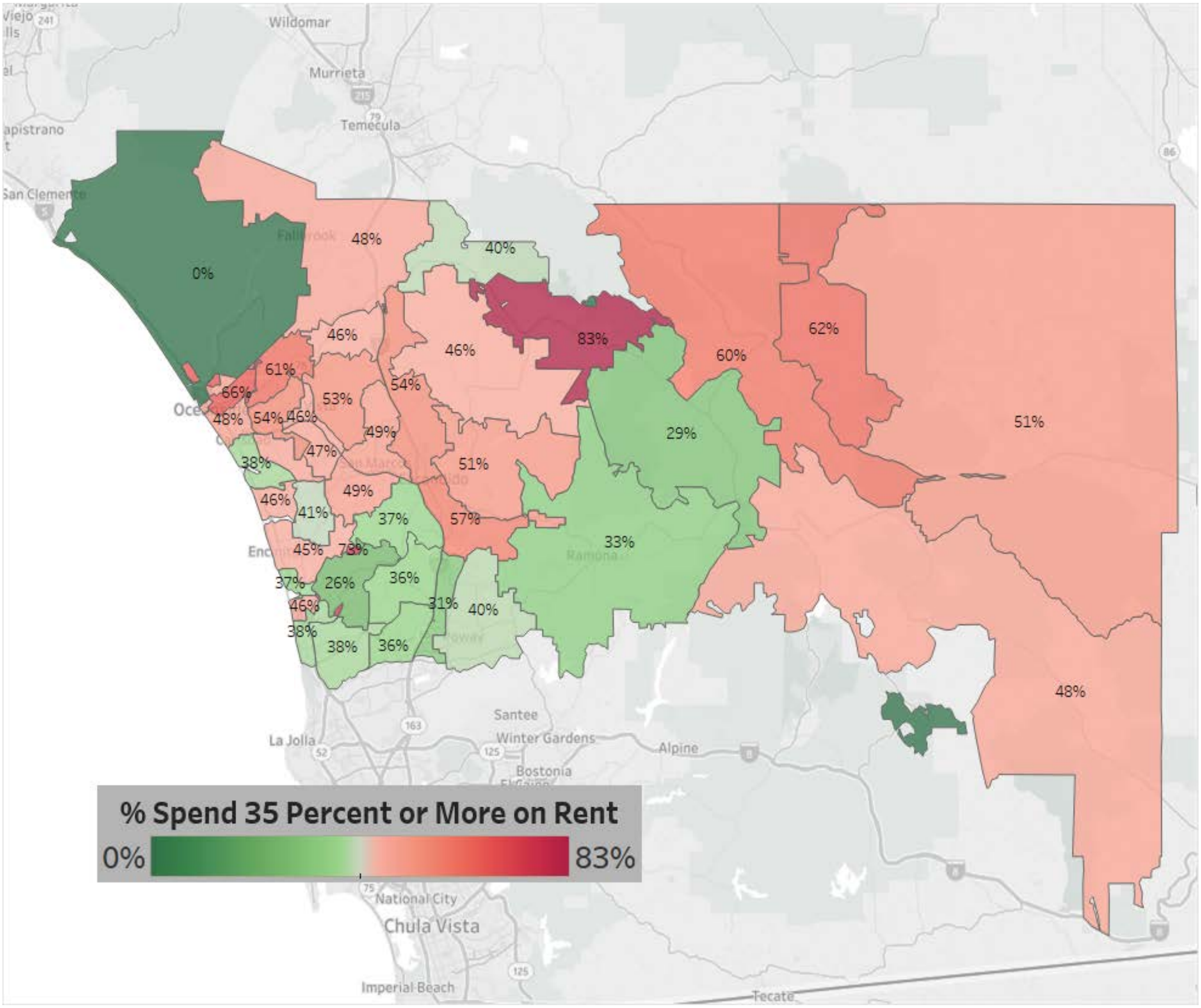
Housing costs have largely taken over food as the primary expense of a household. Housing costs as a percentage of gross income tell a complete story of the total expense of living in a region.

Figure 27: Housing Costs as a Percentage of Household Income, 2016[44]



[44] Source: American Community Survey (ACS) 2016 5-year estimates

Figure 28. Proportion of Population in North County that Spends 35 Percent or More of Household Income on Rent by Zip Code, 2016[45]



[45] Source: American Community Survey (ACS) 2016 5-year estimates

Place

Commute

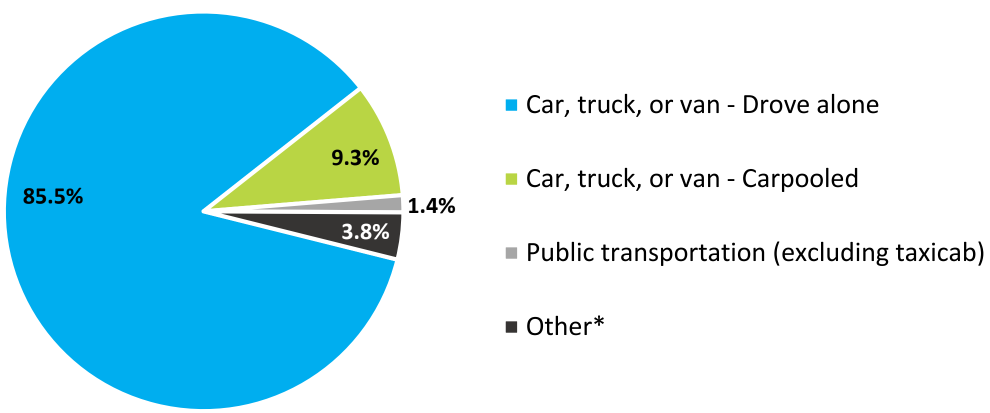
The majority of workers (86 percent) travel to work alone in a motor vehicle—car, truck, or van (Figure 29). In fact, this number has continued to increase since 2014, where only 415,600 individuals drove to work alone, to the 574,332 workers who drove to work alone in 2016. At the same time, the proportion of individuals that use public transportation has declined to only 1.4 percent from 4.3 percent in 2015. The decline in public transit use shifted entirely to driving alone instead of other categories—individuals who stopped taking public transit resorted to driving alone instead of carpooling, walking, or biking.

In general, North County has a higher proportion of workers that commute to work alone compared to the county, state, and nationwide averages (Table 9).

WHY DOES THIS MATTER?

Commuting times and behavior have a considerable impact on residents perceived quality of life. They also impact employer's ability to recruit workers for a larger geographic area.

Figure 29: Type of Travel for Workers 16 Years and Older, 2016[46]



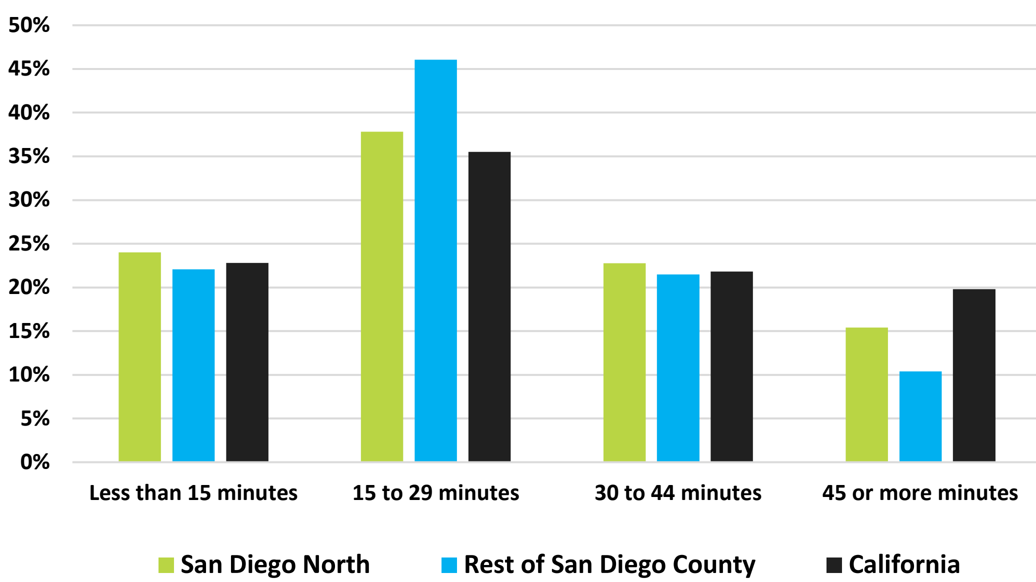
[46] Source: American Community Survey (ACS) 2016 5-year estimates. *Other includes biking, walking, taxicab, and motorcycle.

Table 9: Type of Travel for Workers 16 Years and Older by Region, 2016[47]

Region	Car, truck, or van – Drove alone	Car, truck, or van - Carpooled	Public transportation (excluding taxicab)	Other
San Diego North County	85.5%	9.3%	1.4%	3.8%
San Diego County Overall	81.6%	9.8%	3.2%	5.4%
California	77.7%	11.2%	5.5%	5.6%
United States	80.1%	9.7%	5.3%	4.8%

About two in five workers in North County spend at least 30 minutes if not more in getting to work. This proportion is higher than both the rest of San Diego County and the statewide average (Figure 30). The percentage commuting for over 45 minutes has increased slightly over the last several years. Between 2014 and 2016, the proportion of individuals who must commute at least 45 minutes to work increased by one point to 15.4 percent in 2016. In general, North County has a higher proportion of individuals who commute for 45 minutes or longer to get to work than South (11 percent) or East County (15 percent) (Figure 31).

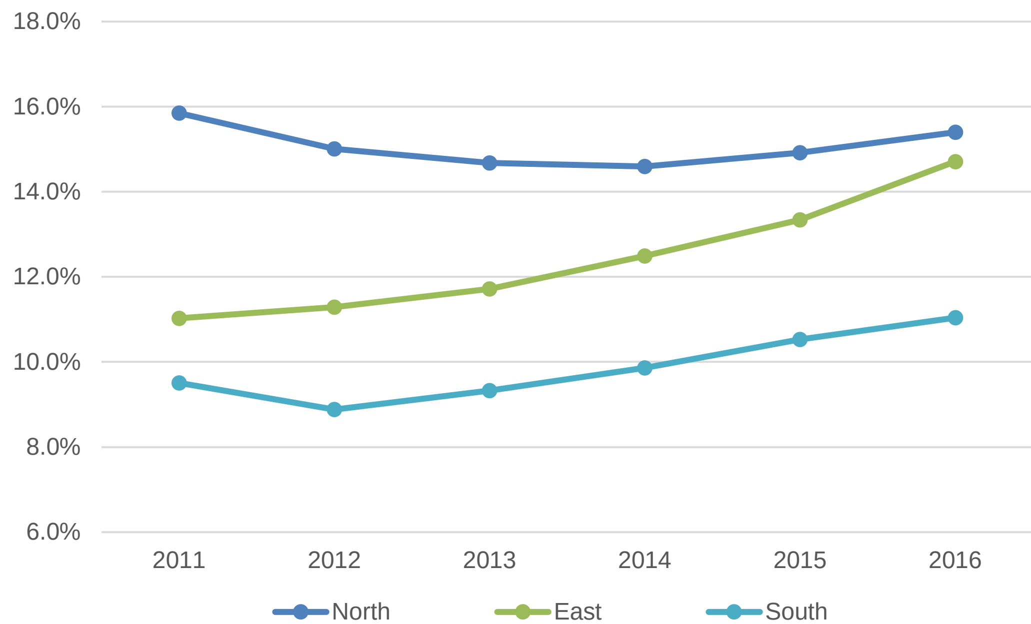
Figure 30: Travel Time for Workers 16 Years and Older by Region, 2016[48]



[47] *Id.*

[48] Source: American Community Survey (ACS) 2016 5-year estimates

Figure 31. Percent of Workers 16 Years and Older that Commute 45 or More Minutes to Work[49]



[49] Source: American Community Survey (ACS) 2016 5-year estimates

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 data was compiled from EMSI 2018 q.1 Class of Worker dataset for the zip code defined North County. The EMSI dataset includes state and federal level data sources and include QCEW and non-QCEW workers.

EMSI estimates are partial projections based on the Quarterly Census of Employment and Wages (QCEW) and Current Employment Statistics (CES) provided by the Bureau of Labor Statistics (BLS).

Complete employment datasets were also called directly from the Economic Development Department (EDD) and Bureau of Labor Statistics (BLS).

Population statistics were compiled from the Census Bureau’s American Community Survey (ACS) 2016 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 A:

North County City & Zip Codes

North County Coast Region

City	Zip Codes
Carlsbad	92008, 92009, 92010, 92011
Oceanside	92049, 92051, 92052, 92054, 92056, 92057, 92058
Camp Pendleton	92055
Vista	92081, 92083, 92084, 92085

North County Central Coast Region

City	Zip Codes
Cardiff by The Sea	92007
Del Mar	92014
Encinitas	92024
Solana Beach	92075
San Diego	92127, 92129, 92130
Rancho Santa Fe	92067, 92091

North County Central Inland Region

City	Zip Codes
Julian	92036
Poway	92064
Ramona	92065
San Diego	92128

North County Inland Region

City	Zip Codes
Mount Laguna	91948
Bonsall	92003
Borrego Springs	92004
Escondido	92025, 92026, 92027, 92029, 92030, 92033, 92046
Fallbrook	92028, 92088
Pala	92059
Palomar Mountain	92060
Pauma Valley	92061
Ranchita	92066
San Luis Rey	92068
San Marcos	92069, 92078, 92079, 92096
Santa Ysabel	92070
Valley Center	92082
Warner Springs	92086