



Northern Rural Training and
Employment Consortium (NoRTEC)

Sierra County Labor Market Profile and Industry Sector Analysis

July 2019

Prepared for:

NoRTEC Workforce Development Board

Michael Cross, Executive Director

TABLE OF CONTENTS

Introduction	2
Executive Summary.....	2
Economic Impact of 2018 Forest Fires.....	4
Demographic & Labor Force Characteristics	5
Total Population.....	5
Race/Ethnicity	6
Educational Attainment	6
Income	7
Commuting.....	7
Special Populations	9
Human Capital.....	12
Labor Force	12
Labor Force Participation Rate.....	13
Industry Sector Analysis	14
Industry Mix	15
Key Industries.....	18
Occupation Analysis	19
Occupational Groups	19
Broad Occupation Mix	20
Top Occupations by Employment.....	21
Education & Training Requirements for High Demand Jobs	22
Industry and Occupation Connections.....	24
Detailed Industry Analysis.....	25
Appendix	29
Data Sources and Glossary of Key Terms.....	29
Industry Sector Definitions	31

INTRODUCTION

The following is a labor market and industry/sector profile for Sierra County, California. This is an update to a prior version of the County Labor Market Profiles that were completed in the summer of 2017, which were completed using 2016 labor market data.



The quantitative data for the profile includes a geographic overview, demographic and labor force characteristics, industry analysis, occupation analysis, and labor force data. For the profile, the project team collected and analyzed data from Economic Modeling Specialists Int'l. (EMSI), U.S. Census Bureau, and the U.S. Bureau of Labor Statistics. Though 2019 is the current calendar year, 2018 labor market data are utilized as these represent the latest full calendar year of data available from federal statistical agencies.

EXECUTIVE SUMMARY

The following are some of the most pertinent information and statistics uncovered in the process of creating this report.

Social and Demographic Highlights

- Population growth in Sierra County significantly trails rates for California and the United States. Over the prior ten years, population decreased by 11% for Sierra County while population increased by 9% for the state and 8% for the nation.
- Sierra County has experienced a decline in all age cohorts with the exception of those 65 years and older since 2008. Over the next ten years, the pace of the decline will not be as fast as the last ten years, but it will continue.
- The percentage of individuals in Sierra County with some college is higher than those in the NoRTEC region, California, and U.S., but trails the NoRTEC region in those with an Associate's degree.
- Sierra County experiences a net loss of talent due to out-commuting. Though 200 individuals both live and work in the County, 645 live in the County and work elsewhere.
- The median household income in Sierra County is \$44,190. The poverty rate, 12.3% is the second lowest of all counties in the NoRTEC region as is the percentage of individuals enrolled in CalFresh benefits (8.5%).
- As of December 2018, there were 1,243 individuals in the Sierra County labor force, of which 70 were unemployed.
- Since the 2016 version of this report was released, the Sierra County economy has contracted at an average annual rate of 1.6%. The sectors Construction, and Government had the largest decreases. These sectors lost a combined 37 jobs, over 85% of the county's net job loss. Meanwhile, the sectors of Health Care & Social Assistance; and Professional, Scientific, & Technical Services saw the largest increases over the past two years.

- Between 2016 and 2018, Sierra County’s population remained constant. Although population remained stable, certain population groups expanded while others contracted. The highest growth age groups included those ages 70 to 74 years, and those age 50 to 54 years saw the largest decrease. The highest growth race/ethnicity group was White Hispanics, while White, Non-Hispanics saw the largest decrease.

Industry & Occupation Highlights

- Sierra County’s largest industry sectors include Government; Accommodation and Food Services; Construction; and Retail Trade. Government has more jobs than the next six sectors combined.
- Industries adding the most jobs in Sierra County over the last five years include Accommodation and Food Services (21 jobs); Administrative and Support and Waste Management and Remediation Services (11 jobs); and Agriculture, Forestry, Fishing and Hunting (5 jobs).
- Individual (4-digit North American Industry Classification System (NAICS) Code) industries with strong growth prospects for the county include: Individual and Family Services (17 jobs); Services to Buildings and Dwellings (9 jobs); and Traveler Accommodation (5 jobs).
- As Sierra County’s population 65 years and over continue to grow, the number of jobs in healthcare-related industries to serve their needs is limited. This may have an impact on the county’s quality of life as the population continues to age and lifesaving resources become limited.

ECONOMIC IMPACT OF 2018 FOREST FIRES

Thomas P. Miller & Associates (TPMA) conducted an economic impact analysis of the northern California forest fires of 2018 for NoRTEC in January 2019. TPMA's analysis started with a literature review and an empirical observation of the economic effects of wildfires in the United States. The literature review provided general and specific trends on the topic. For the empirical review, TPMA focused on other highly destructive fires in the United States in terms of acreage, structures, or both. Since few federal data sources have yet to reveal the specific effects of the Camp and Carr fires on Northern California, these analyses were primarily based on observations of past similar events. In addition, Dr. Robert Eyster of Sonoma State University, a renown regional economist, has summarized some of the recent effects of the Carr and Camp fires on northern California.

In general, economic impacts are most severe upon those counties in which the fires occurred, namely, Shasta and Butte, though some impacts upon adjacent counties is expected. The following are a few pertinent points that relate to likely affects on Sierra County.

- Not being adjacent to Shasta or Butte Counties, Sierra County likely experienced little positive economic impact in retail and accommodations industries during the 2018 forest fires.
- Historically, areas near wildfires suffer a slight lag in land-dependent industry sectors, such as tourism and agriculture, over the next several seasons.
- Forest service suppression spending on contractors located in Sierra equated to \$220 thousand between October 2017 and December 2018.

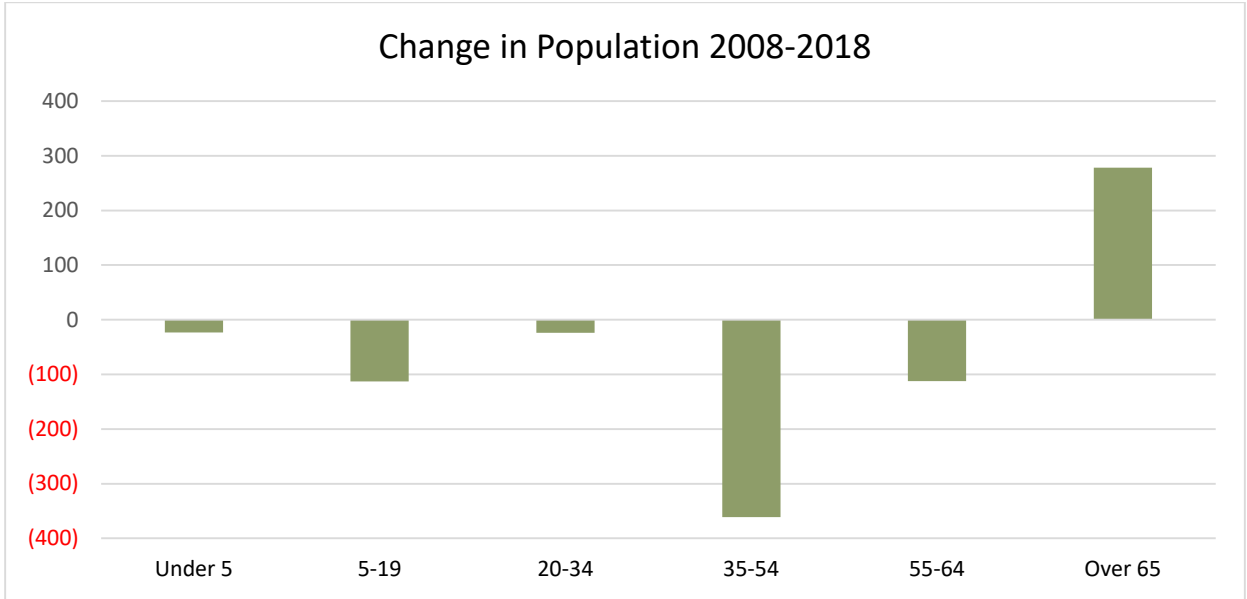
DEMOGRAPHIC & LABOR FORCE CHARACTERISTICS

Total Population

Sierra County is geographically located in the southeastern quadrant of the NoRTEC region. Compared to the state and national figures, Sierra County has experienced a declining population, experiencing a decline of by 11% over the last ten years. California’s population increased by 9% and the nation’s population increased by 8% over the same time period. By 2023, both the state and the nation’s population are projected to grow by 3% whereas Sierra County’s population is projected to decline by 2%.

The county experienced the greatest drop in population by those between the ages of 35-54. However, the greatest, and only growth in population was experienced by those over the age of 65 (44%). While most counties in the NoRTEC region have an aging population, Sierra County has an overall declining population. Figures over the last ten years reveal significant drops in population across nearly all age cohorts, and projections into the next ten years indicate a continual declining population. The pace over the next ten years is not as fast as the last ten but is worth noting as the county seeks to fill talent needs.

Age	2008 Population	2018 Population	Change 2008-2018	% Change 2008-2018	Projected Change 2018-2023	
Under 5	159	136	(23)	(14%)	(9)	(7%)
5-19	484	371	(113)	(23%)	8	2%
20-34	385	361	(24)	(6%)	14	4%
35-54	973	612	(361)	(37%)	(59)	(10%)
55-64	682	570	(112)	(16%)	(65)	(11%)
Over 65	638	916	278	44%	47	5%
Total	3,320	2,965	(355)	(11%)	(62)	(2%)



Race/Ethnicity

The population of the region is predominately White, with over 80% identifying as White in 2018, followed by 11% identifying as Hispanic.¹ The White population was the only race/ethnicity group that experienced a decline over the last ten years, dropping 15%. The top fastest growing race/ethnicity groups in Sierra County include Asian (42%); Black (40%); and Two or More Races (34%).

Race/Ethnicity	2018 Population	Change 2008-2018	% Change 2008-2018
White	2,480	(453)	(15%)
Hispanic	337	66	24%
Two or More Races	71	18	34%
American Indian or Alaskan Native	50	8	19%
Asian	17	5	42%
Black	7	2	40%
Native Hawaiian or Pacific Islander	3	0	0%

Educational Attainment

The percentage of individuals in Sierra County with some college is higher than those in the NoRTEC region, California, and the U.S. The county also has a higher percentage of individuals with an Associate’s degree than those in California and the U.S., though trailing the figure in the NoRTEC region. Nearly three-fourths (74%) of the population in Sierra County have an educational attainment of some college or less, compared to 68% of NoRTEC region, 61% of California, and 62% of the U.S.

Education Level	2018 Sierra Population	2018 Sierra County Percent	2018 Percent NoRTEC	2018 Percent California	2018 Percent US
Less Than 9th Grade	95	4.1%	4.9%	11.8%	6.8%
9th Grade to 12th Grade	228	9.8%	6.9%	7.0%	6.9%
High School Diploma	634	27.3%	25.3%	20.8%	27.6%
Some College	751	32.3%	30.5%	21.4%	20.7%
Associate's Degree	201	8.6%	9.8%	7.6%	8.0%
Bachelor's Degree	270	11.6%	15.0%	19.9%	18.6%
Graduate Degree and Higher	146	6.3%	7.6%	11.6%	11.3%

¹ The Hispanic population includes Hispanics in White, Black, Two or More Races, Asian, American Indian or Alaskan Native, Native Hawaiian, or Pacific Islander.

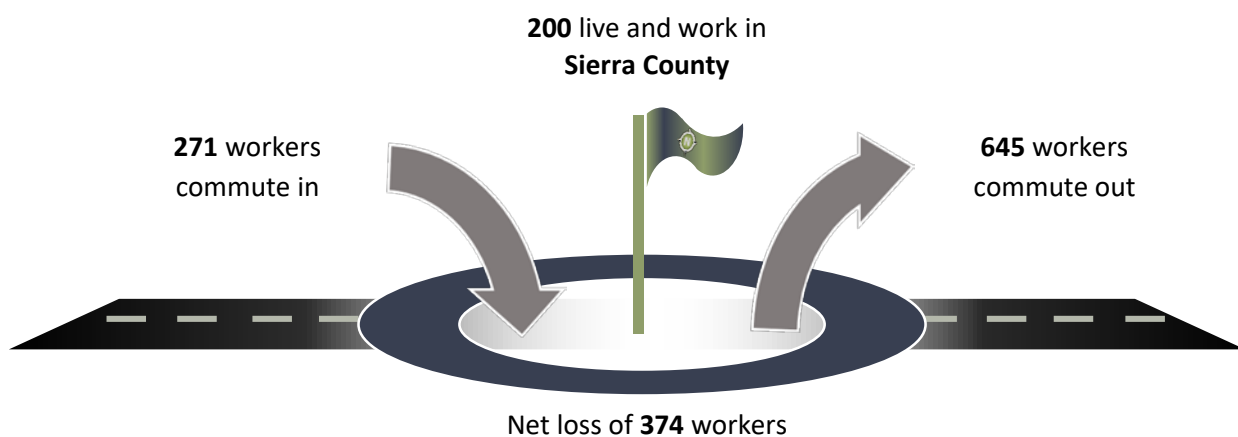
Income

Compared with neighboring counties in the NoRTEC region, Sierra County’s median household income falls in the middle at \$44,190. This is \$13,462 less than the median household income of the U.S. and \$22,979 less than that of California. Sierra County’s poverty rate, 12.3%, is the second lowest of all counties in the NoRTEC region. It is also lower than that of California and the U.S.

County	Median Household Income 2013-2017	Poverty Rate
Butte	\$46,516	20.5%
Del Norte	\$41,287	23.2%
Lassen	\$54,083	14.6%
Modoc	\$39,296	18.1%
Nevada	\$60,610	12.1%
Plumas	\$50,266	13.3%
Shasta	\$47,258	18.1%
Sierra	\$44,190	12.3%
Siskiyou	\$40,884	20.7%
Tehama	\$42,512	20.9%
Trinity	\$36,563	19.9%
California	\$67,169	15.1%
United States	\$57,652	14.6%

Commuting

The graphic below details the commuting patterns into and out of Sierra County in 2015. With 645 workers commuting out of the county and 271 commuting into the county, a net loss of 374 workers is experienced in Sierra County. Only 200 individuals work and live in the county. Of those commuting into Sierra County, 52.8% are workers between the ages of 30 and 54, and 48.3% earn more \$1,251 to \$3,333 per month. Compared to those commuting out of Sierra County, 49.1% earn more than \$3,333 per month.



In addition to looking at commuting data by total population, it is also helpful to examine commuter statistics by occupational classification. In terms of occupational classification, Education, Training, and Library Occupations; Protective Service Occupations; Life, Physical, and Social Science Occupations; Personal Care and Service Occupations; and Management Occupations were the only groups which experience a net gain of in-commuters to the county. A larger number of county residents commute outside of the county for employment. The largest occupation groups for out-commuters are Office and Administrative Support Occupations (37); and Food Preparation and Serving Related Occupations (32).

Occupation Group	2018 Commuters
Education, Training, and Library Occupations	21 in-commuters
Protective Service Occupations	16 in-commuters
Life, Physical, and Social Science Occupations	11 in-commuters
Personal Care and Service Occupations	8 in-commuters
Management Occupations	3 in-commuters
Business and Financial Operations Occupations	3 out-commuters
Healthcare Practitioners and Technical Occupations	6 out-commuters
Farming, Fishing, and Forestry Occupations	7 out-commuters
Transportation and Material Moving Occupations	13 out-commuters
Building and Grounds Cleaning and Maintenance Occupations	13 out-commuters
Construction and Extraction Occupations	13 out-commuters
Food Preparation and Serving Related Occupations	32 out-commuters
Office and Administrative Support Occupations	37 out-commuters

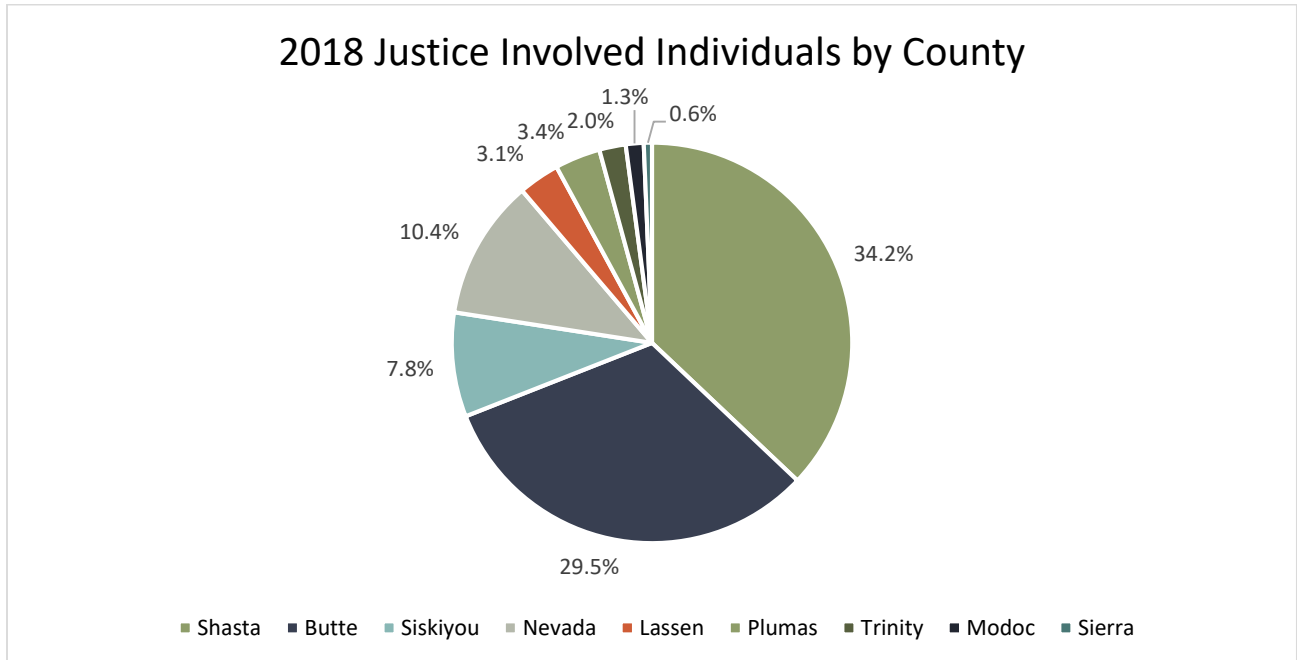
Special Populations

With consideration of the state of California’s Regional and Local Planning Guidance for program year 2018-19, California counties are also concerned with quantifying and assisting certain sub-population groups, namely: formerly incarcerated and other justice-involved individuals and CalFresh recipients.

Justice-Involved Individuals

The graph and table below detail the percentage of individuals involved in felony probations, misdemeanor probations, mandatory supervisions, and post-release community supervisions (PRCS) within the 11- county NoRTEC region.²

The largest share of activity stems from Shasta County (34.2%) followed by Butte County (29.5%) and Siskiyou County (7.8%). Sierra County represented 0.6% of individuals involved in justice. In the NoRTEC region in 2017, there were a total of 7,372 individuals involved in felony probations, misdemeanor probations, or mandatory supervision.



² Data for this section of the report are derived from the Chief Probation Officers of California, <https://www.cpoc.org/data>.

	Felony Probation	Misdemeanor Probation	Mandatory Supervision	PRCS	Total
Shasta	1,976	0	156	389	2,521
Butte	1,339	272	165	401	2,177
Siskiyou	507	7	12	47	573
Tehama	N/A	N/A	N/A	N/A	N/A
Nevada	566	127	30	47	770
Lassen	126	75	8	17	226
Plumas	148	86	1	15	250
Trinity	111	17	4	13	145
Modoc	79	19	N/A	N/A	98
Del Norte	N/A	N/A	N/A	N/A	N/A
Sierra	28	15	1	1	45

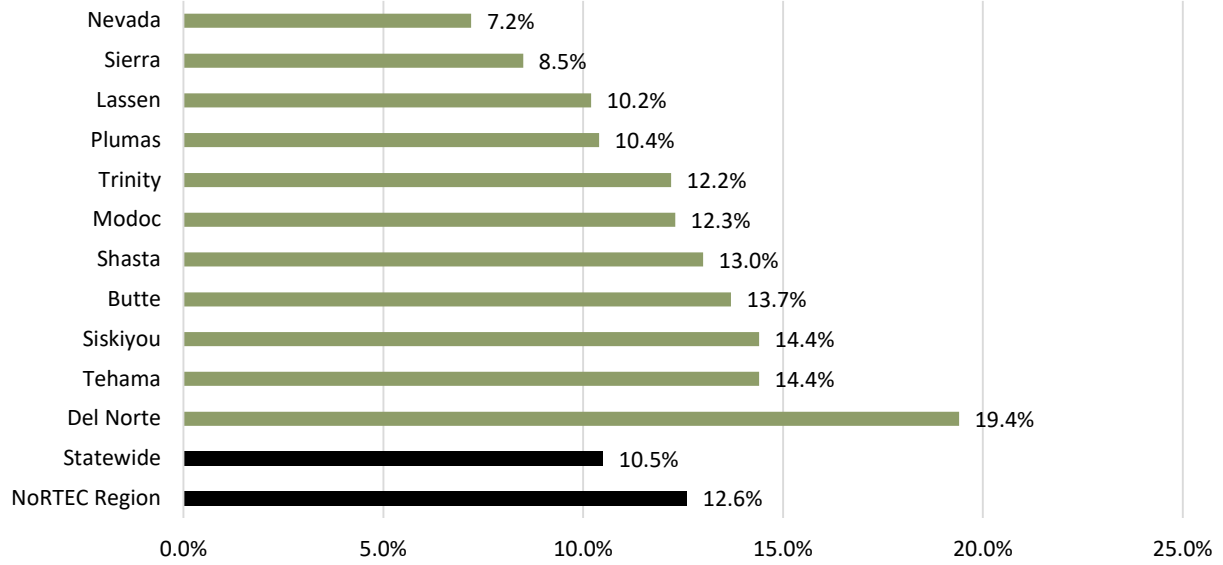
CalFresh Recipients

CalFresh, the California implementation of Supplemental Nutrition Assistance Program (SNAP), is received by larger percentage of NoRTEC area residents than statewide residents.³ In Sierra County, 8.5% of individuals receive CalFresh, the second least of any county in the NoRTEC region, behind only Nevada County.

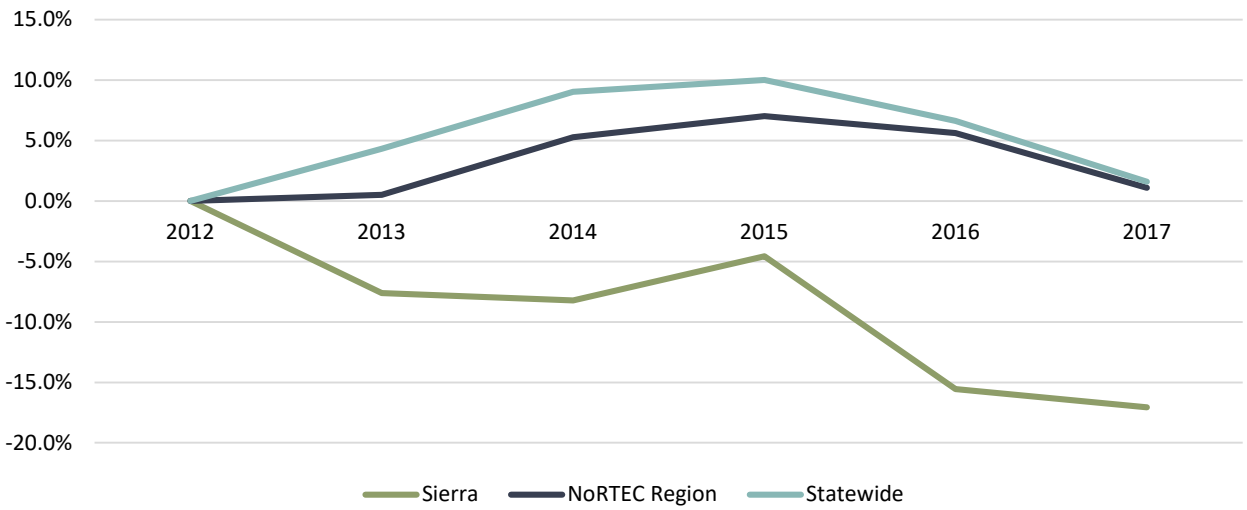
Between 2012 and 2015, the NoRTEC region experienced a rise in the number of individuals enrolled in CalFresh and then a considerable decrease between 2015 and 2017. Since 2015, the number of individuals in Sierra County enrolled in CalFresh benefits has declined, though a slight increase occurred between 2014-2015 (12). Between 2012-2017, the highest number of individuals enrolled in CalFresh benefits in Sierra County occurred in 2012 (328), representing 0.37% of the NoRTEC region.

³ Data for this section are derived from the California Department of Social Services, CalFresh Data Dashboard, <https://www.cdss.ca.gov/inforesources/Data-Portal/Research-and-Data/CalFresh-Data-Dashboard>.

Percent of Population Receiving CalFresh Benefits



Cumulative Growth Rate in CalFresh Enrollment 2012-2017



HUMAN CAPITAL

Labor Force

Labor Force Participation Rate
 The labor force participation rate represents the proportion of the population that is working or pursuing work, as opposed to those voluntarily not working or not pursuing work. The labor force participation rate is affected by various factors, including availability of jobs, socioeconomic composition of the population, demographics, as well as structural changes in the economy.

EMPLOYMENT IN SIERRA COUNTY 1998-2018 ⁴		
Peak	August 2000 (1,905)	December 2018 (1,173 – 38% lower)
Trough	January 2018 (1,144)	December 2018 (1,173 – 3% higher)
December 2018	Employment: 1,173 Labor Force: 1,243 Unemployment rate: 5.6%	

Labor force statistics include both the employed and the unemployed, excluding only those who have stopped looking for work (discouraged workers) and those who are voluntarily not in the labor force. In December 2018, 1,243 individuals participated in the Sierra County labor force, of these, 1,173 were employed and 70 were unemployed⁵. Over the last 20 years, employment in the county was at its highest in August 2000 and lowest in January 2018. As of December 2018, the unemployment rate was 5.6%, higher than the unemployment rate of California (4.1%) and the United States (3.9%).

Age	2008 Population	2018 Population	Change 2008-2018	% Change 2008-2018	Projected Change 2018-2023	
Under 5	159	136	(23)	(14%)	(9)	(7%)
5-19	484	371	(113)	(23%)	8	2%
20-34	385	361	(24)	(6%)	14	4%
35-54	973	612	(361)	(37%)	(59)	(10%)
55-64	682	570	(112)	(16%)	(65)	(11%)
Over 65	638	916	278	44%	47	5%
Total	3,320	2,965	(355)	(11%)	(62)	(2%)

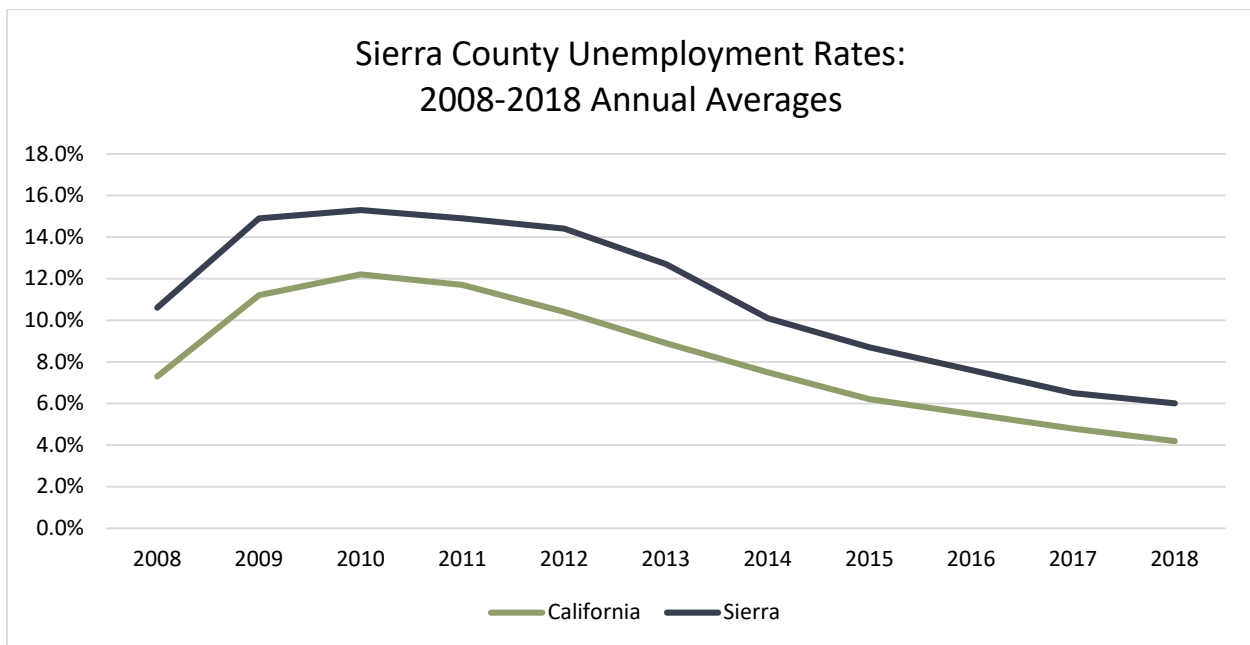
⁴ U.S. Bureau of Labor Statistics, 1998.4-2018.4. <http://www.bls.gov/data/>

⁵ December of 2018 was used as comparison throughout the 1998-2008 timeframe.

Labor Force Participation Rate

The labor force participation rate is sensitive to demographic changes because participation rates vary across age, gender, income and race/ethnicity.⁶ The national labor force participation rate has decreased since 2000, a trend that is expected to continue in the next decade in part due to the aging of the baby-boomer generation. In 2000, baby boomers were the heart of the workforce. However, as this large group of individuals moves closer to retirement, the overall workforce participation rate decreases. It is worth mentioning that the participation rate of older workers has been increasing in the past ten years, but it is still significantly lower than those of the young adult and middle-aged groups.

Workers in older age brackets and those who are retirement age, compose a considerable proportion of Sierra County's population. The older worker population (55 to 64 years of age) was estimated to be 570 in 2018, which is equivalent to 19% of the county's population.⁷ A large number of these older workers are expected to retire in the next ten years. Even more notably, those who are 65 years and older were estimated to total 916, equivalent to 31% of the county's population.



Generally, unemployment tends to spike during recessions and following major layoffs, eventually settling to a more normal and stable rate as individuals adjust to the new availability of employment opportunities. Prolonged periods of unusually high unemployment are typically a signal that the supply of workers is not in balance with demand for workers.

Since 2010, Sierra County's unemployment rate has continued to decline to 6.0% in 2018. The unemployment rate for the county has been higher than California over the period analyzed. In 2012, the unemployment rate difference was at its highest between the two areas: 4.0%.

⁶ For example, in 2015 the national labor force participation rate for individuals older than age 54 (40.0%) was significantly lower than for those between the ages of 25 and 54 (81.3%).

INDUSTRY SECTOR ANALYSIS

To this point, the analysis of Sierra County has focused on the socioeconomic characteristics of the region's population. Socioeconomic data are useful in understanding the economy, but to truly comprehend economic dynamics we must also analyze industry data. Industry data are classified according to the types of goods and services that are rendered by businesses. These data indicate past and projected growth trends by sector and reveal sectors in which Sierra County is well suited to be competitive.

A chart and several tables are displayed related to industry data. Each of the figures provide data that descend in order according to 2018 employment. Other data displayed include: employment growth over the past five years, forecasted growth over the next five years, growth due to competitive effect (CE), and location quotient (LQ).

The *competitive effect* helps to determine the amount of job growth that occurred due to the county's competitive advantages as compared to the national growth in general and the national growth rate for each sector. In other words, a positive number indicates that the county experienced more growth than was expected.

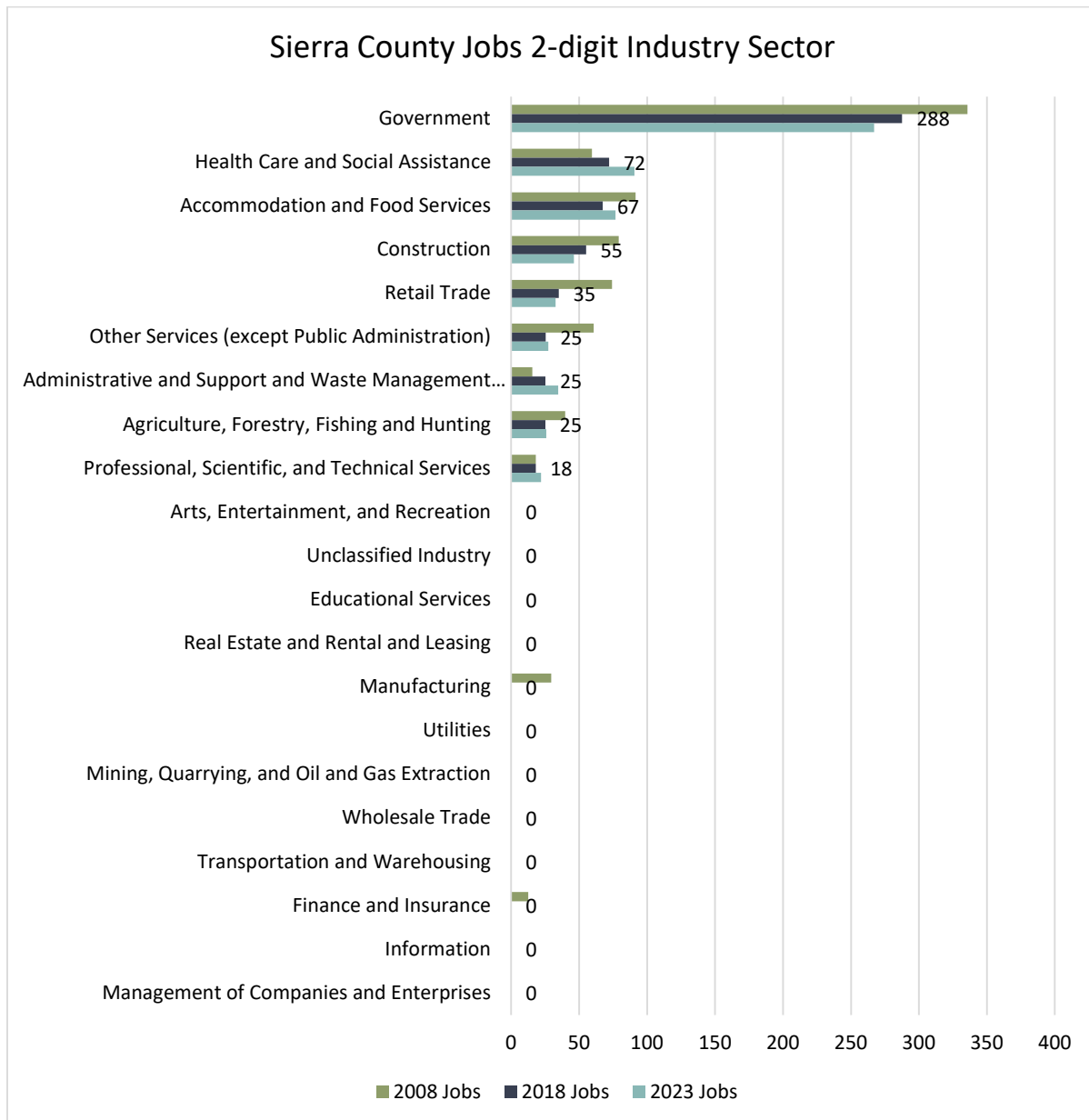
Location Quotient (LQ) measures how concentrated or specialized an industry is in a particular county and helps to demonstrate what makes a particular county's economy unique. A number greater than 1.25 indicates that the particular sector is considerably more concentrated than the national average. It also typically indicates that local demand for the products and/or services produced by that industry have been met and the industry is likely exporting products and/or services outside of the county. In other words, these may be industries that are bringing money into the county, rather than circulating money already present within the county.⁸

⁸ Data from this section are from Economic Modeling Specialists International (EMSI), 2019.2 Class of Worker.

Industry Mix

The broad industry sectors in Sierra County employing the most workers are Government (288; 44%); Health Care and Social Assistance (72; 11%); Accommodation and Food Services (67; 10%); and Construction (55; 8%).

The chart below includes the only industries at the 2-digit NAICS level that have more than 10 jobs in 2010. Of those sectors, four (Health Care and Social Assistance; Construction; Retail Trade; and Professional, Scientific, and Technical Services) have experienced a decline in jobs over the last five years and three are projected to decline over the next five years (Government; Construction; and Retail Trade). Accommodation and Food Services added the most jobs over the last five years in projected to add the second most jobs by 2023, following Health Care and Social Assistance (19 jobs).



Looking deeper into job change in the county, competitive effect reveals how many jobs were created or retained due uniquely to characteristics of Sierra County. According to these data, Accommodation and Food Services is the strongest (adding 15 jobs due to competitive effect), followed by Administrative and Support and Waste Management and Remediation Services (10 jobs).

Industries with the strongest location quotient score in Sierra County include Agriculture, Forestry, Fishing and Hunting (3.30); Government (2.95); and Construction (1.52).

Industry	2013 Jobs	2018 Jobs	Change 2013 – 2018	% Change 2013-2018	Change 2018-2023	% Change 2018-2023	2018 LQ	Comp. Effect
Government	284	288	4	1%	(21)	(7%)	2.95	(2)
Health Care and Social Assistance	120	72	(48)	(40%)	19	26%	0.88	(61)
Accommodation and Food Services	46	67	21	46%	10	15%	1.21	15
Construction	67	55	(12)	(18%)	(9)	(16%)	1.52	(24)
Retail Trade	39	35	(4)	(10%)	(2)	(6%)	0.54	(6)
Other Services (except Public Administration)	18	25	7	39%	2	8%	0.82	7
Administrative and Support and Waste Management and Remediation Services	14	25	11	79%	10	40%	0.62	10
Agriculture, Forestry, Fishing and Hunting	20	25	5	25%	1	4%	3.30	5
Professional, Scientific, and Technical Services	29	18	(11)	(38%)	4	22%	0.43	(14)
Arts, Entertainment, and Recreation	<10	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data	0.75	0
Unclassified Industry	<10	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data	2.08	(2)
Educational Services	<10	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data	0.26	2
Real Estate and Rental and Leasing	14	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data	0.49	(11)
Manufacturing	<10	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data	0.08	2
Utilities	<10	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data	0.75	(6)
Mining, Quarrying, and Oil and Gas Extraction	<10	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data	0.88	(3)
Wholesale Trade	13	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data	0.02	(13)
Transportation and Warehousing	<10	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data	0.15	(4)
Finance and Insurance	<10	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data	0.14	(2)
Information	<10	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data	0.13	(3)
Management of Companies and Enterprises	0	0	0	0%	0	0%	0.00	0

Key Industries

The following table shows the 20 largest 4-digit NAICS industries in terms of employment in Sierra County in 2018. Of the top industry subsectors, only Federal Government, Civilian experienced a decline in jobs (7) over the last five years. Projections into 2023 indicate more industries with declines in jobs with Education and Hospitals (Local Government) experiencing the greatest decline (10). Very little data is available for industry subsectors at the 4-digit NAICS level.

Industry	2018 Jobs	Change 2013-2018	% Change 2013-2018	Projected Change 2018-2023	Projected % Change 2018-2023
Local Government, Excluding Education and Hospitals	143	12	9%	(1)	(1%)
Education and Hospitals (Local Government)	97	1	1%	(10)	(10%)
Individual and Family Services	50	18	56%	17	34%
Federal Government, Civilian	44	(7)	(14%)	(9)	(20%)
Restaurants and Other Eating Places	36	16	80%	4	11%
Residential Building Construction	28	2	8%	(5)	(18%)
Traveler Accommodation	28	7	33%	5	18%
Services to Buildings and Dwellings	24	Insf. Data	Insf. Data	9	38%
Gasoline Stations	17	6	55%	(1)	(6%)
Animal Production	12	0	0%	0	0%
Business Support Services	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data
Other Professional, Scientific, and Technical Services	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data
Management, Scientific, and Technical Consulting Services	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data
Legal Services	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data
Household and Institutional Furniture and Kitchen Cabinet Manufacturing	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data
Accounting, Tax Preparation, Bookkeeping, and Payroll Services	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data
Architectural, Engineering, and Related Services	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data
Computer Systems Design and Related Services	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data
Semiconductor and Other Electronic Component Manufacturing	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data
Elementary and Secondary Schools	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data

OCCUPATION ANALYSIS

An examination of occupational demand is separate and distinct from industry analysis because industries require a mix of occupations to function. For example, the Manufacturing sector employs occupations that might be traditionally defined as “manufacturing occupations” – called Production occupations at the broadest level of occupation classification. The Manufacturing sector, however, also employs managers, accountants, maintenance and repair personnel, and many other occupational categories necessary for the industry’s operation. As a workforce development board, NoRTEC’s mission is to serve individual job seekers and businesses more than driving forward industry-specific economic development. As such, it’s important to understand the specific occupational roles that are required to keep local businesses functioning.

The occupational analysis that follows provides a view of the most critical occupations within the region from an overarching economic perspective and specifically related to some of the key industries that were highlighted previously.

Occupational Groups

Sierra County’s top 2-digit Standard Occupational Classification (SOC) System categories include:

- Education, Training, and Library Occupations (96 jobs)
- Office and Administrative Support Occupations (58 jobs)
- Personal Care and Service Occupations (57 jobs)
- Construction and Extraction Occupations (55 jobs)

The median hourly earnings for all occupations range from \$11.81/hr. for Personal Care and Service Occupations to \$36.01/hr. for Healthcare Practitioners and Technical Occupations.

As noted in the industry analysis section, location quotient scores can indicate fields where the county has a strong competitive advantage over other regions in United States. Occupational categories where Sierra County has a strong concentration of workers (above an LQ of 1.25) include

- Life, Physical, and Social Science Occupations (4.11)
- Farming, Fishing, and Forestry Occupations (2.99)
- Protective Service Occupations (2.78)
- Education, Training, and Library Occupations (2.60)
- Personal Care and Service Occupations (2.04)
- Construction and Extraction Occupations (1.85)
- Building and Grounds Cleaning Maintenance Occupations (1.79)
- Community and Social Service Occupations (1.38)

These are the occupation groups for which the region is highly specialized.

Broad Occupation Mix

Occupation	2018 Employment	% of Total Employment	Median Hourly Earning	2018 Location Quotient
Education, Training, and Library Occupations	96	14.8%	\$19.79	2.60
Office and Administrative Support Occupations	58	9.0%	\$17.16	0.62
Personal Care and Service Occupations	57	8.8%	\$11.81	2.04
Construction and Extraction Occupations	55	8.5%	\$16.27	1.85
Management Occupations	46	7.0%	\$23.37	1.25
Food Preparation and Serving Related Occupations	45	6.9%	\$12.20	0.83
Building and Grounds Cleaning and Maintenance Occupations	43	6.6%	\$12.93	1.79
Protective Service Occupations	40	6.2%	\$27.04	2.78
Sales and Related Occupations	37	5.8%	\$13.21	0.58
Life, Physical, and Social Science Occupations	22	3.4%	\$20.97	4.11
Business and Financial Operations Occupations	21	3.3%	\$28.87	0.64
Installation, Maintenance, and Repair Occupations	21	3.2%	\$16.74	0.83
Transportation and Material Moving Occupations	20	3.1%	\$17.62	0.46
Community and Social Service Occupations	15	2.3%	\$18.81	1.38
Farming, Fishing, and Forestry Occupations	14	2.2%	\$13.81	2.99
Healthcare Practitioners and Technical Occupations	13	2.1%	\$36.01	0.37
Production Occupations	13	2.0%	\$19.65	0.35
Arts, Design, Entertainment, Sports, and Media Occupations	11	1.8%	\$19.13	0.95
Military-only occupations	<10	Insf. Data	Insf. Data	0.49
Computer and Mathematical Occupations	<10	Insf. Data	Insf. Data	0.17
Healthcare Support Occupations	<10	Insf. Data	Insf. Data	0.39
Legal Occupations	<10	Insf. Data	Insf. Data	0.38
Architecture and Engineering Occupations	<10	Insf. Data	Insf. Data	0.50

Top Occupations by Employment

The following table displays the top occupational by total employment for the slightly more specific group of 4-digit Standard Occupational Classification (SOC) Codes. Median hourly earnings for these occupations range from \$11.41 for Personal Care Aides to \$30.99 for Elementary and Middle School Teachers. Personal Care Aides experienced the greatest growth in jobs over the last five years, adding 14 jobs, followed by Building Cleaning Workers (6). Projections into 2023 indicate that Personal Care Aides and Grounds Maintenance Workers will add the most jobs, however the median hourly earnings for both of these occupations are relatively low. Of the occupations that experienced a decline in jobs over the last five years, most declines were 1-2 jobs, but Secretaries and Administrative Assistants experienced the greatest decline in employment (10).

The top five occupations in Sierra County have median hourly earnings below \$14.00 with the exception of Elementary and Middle School Teachers. While they may have the most projected annual openings, these five occupations are associated with low median hourly earnings which could the local economy.

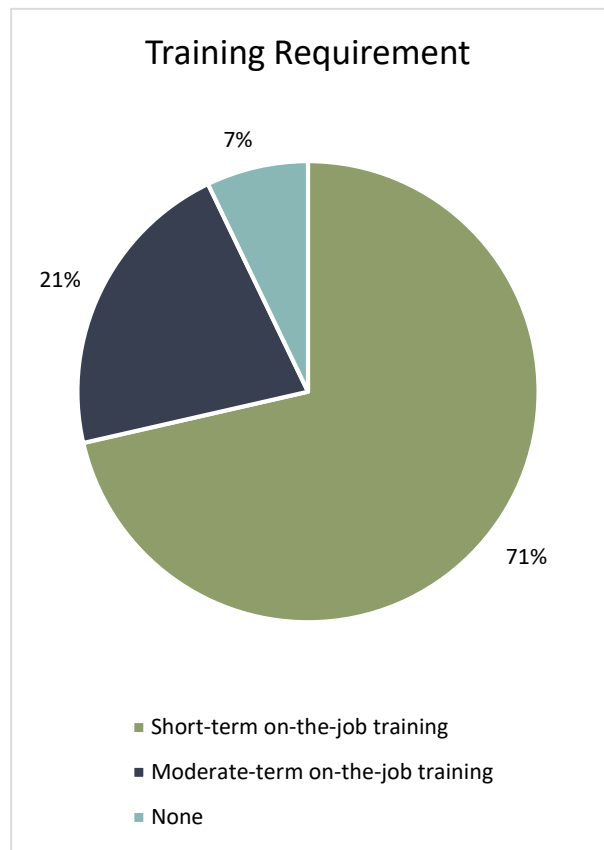
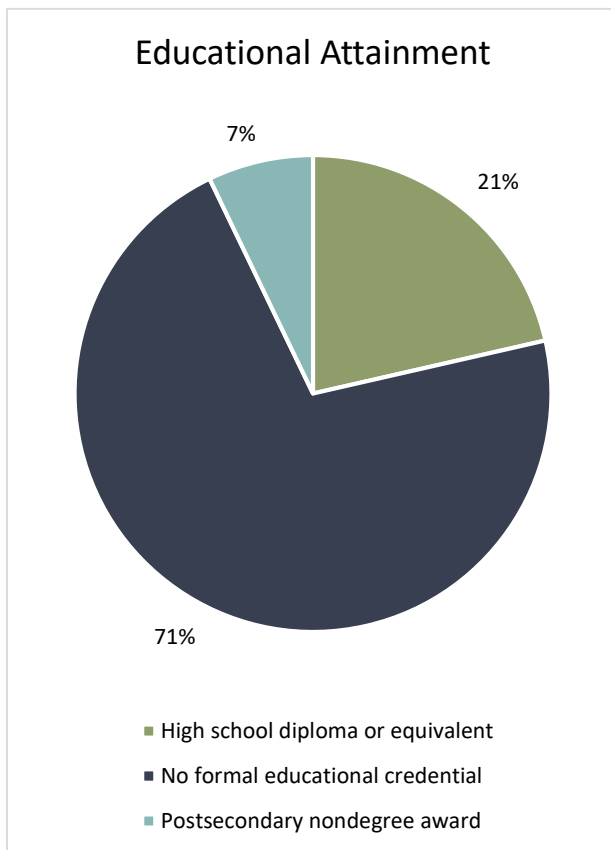
Occupation	2018 Employment	Change 2013-2018		Projected Change 2018-2023		Projected Annual Openings	Median Hourly Earnings
Personal Care Aides	28	14	100%	10	36%	6	\$11.41
Miscellaneous Teachers and Instructors	26	(1)	(4%)	(2)	(8%)	3	\$13.73
Elementary and Middle School Teachers	21	1	5%	(2)	(10%)	2	\$30.99
Building Cleaning Workers	21	6	40%	3	14%	5	\$11.71
Grounds Maintenance Workers	18	Insf. Data	Insf. Data	6	33%	4	\$13.29
Teacher Assistants	17	(1)	(6%)	(2)	(12%)	2	\$13.39
Secondary School Teachers	17	2	13%	(2)	(12%)	Insf. Data	\$26.11
Cashiers	16	3	23%	(1)	(6%)	5	\$11.53
Miscellaneous Life, Physical, and Social Science Technicians	15	(2)	(12%)	(3)	(20%)	Insf. Data	\$17.30
Secretaries and Administrative Assistants	12	(10)	(45%)	0	0%	3	\$16.84
Cooks	12	Insf. Data	Insf. Data	1	8%	3	\$12.90
Carpenters	12	(2)	(14%)	Insf. Data	Insf. Data	3	\$15.10
Construction Laborers	12	(2)	(14%)	(1)	(8%)	2	\$13.61
Firefighters	11	1	10%	0	0%	Insf. Data	\$22.32
Recreation and Fitness Workers	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data	Insf. Data	Insf. Data
First-Line Supervisors of Sales Workers	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data	Insf. Data	Insf. Data
Miscellaneous Personal Care and Service Workers	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data	Insf. Data	Insf. Data

Occupation	2018 Employment	Change 2013-2018		Projected Change 2018-2023		Projected Annual Openings	Median Hourly Earnings
Childcare Workers	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data	Insf. Data	Insf. Data
Ushers, Lobby Attendants, and Ticket Takers	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data	Insf. Data	Insf. Data
Gaming Services Workers	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data	Insf. Data	\$0.00

Education & Training Requirements for High Demand Jobs

The top high demand jobs in Sierra County include Personal Care Aides; Landscaping and Groundskeeping Workers; and Maids and Housekeeping Cleaners. Of all high demand jobs, 7% require some type of postsecondary educational attainment⁹. An even larger percentage of high demand jobs do not require any type of training requirement (71%).

Average hourly earnings for high demand jobs range from \$11.83/hr. for Maids and Housekeeping Cleaners to \$14.03/hr. for Landscaping and Groundskeeping Workers. Very limited data is available of Sierra County’s high demand jobs.



⁹ Sierra County only has four occupations at the 4-digit SOC that are projected to grow (39-902, 37-3010, 27-2010, 35-2010). Only these occupations were used to analyze the data at the 5-digit SOC to identify Sierra County’s top high demand jobs.

Description	2023 Jobs	Change 2018 - 2023	Annual Openings	Avg. Hourly Earnings	Typical Entry Level Education	Typical On-The-Job Training
Personal Care Aides	38	10	7	\$12.03	High school diploma or equivalent	Short-term on-the-job training
Landscaping and Groundskeeping Workers	20	5	3	\$14.03	No formal educational credential	Short-term on-the-job training
Maids and Housekeeping Cleaners	16	2	2	\$11.83	No formal educational credential	Short-term on-the-job training
Building Cleaning Workers, All Other	0	0	0	\$0.00	No formal educational credential	Short-term on-the-job training
Grounds Maintenance Workers, All Other	0	0	0	\$0.00	No formal educational credential	Short-term on-the-job training
Cooks, All Other	0	0	0	\$0.00	No formal educational credential	Moderate-term on-the-job training
Cooks, Private Household	0	0	0	\$0.00	Postsecondary nondegree award	None
Pesticide Handlers, Sprayers, and Applicators, Vegetation	<10	Insf. Data	Insf. Data	Insf. Data	High school diploma or equivalent	Moderate-term on-the-job training
Cooks, Short Order	<10	Insf. Data	Insf. Data	Insf. Data	No formal educational credential	Short-term on-the-job training
Cooks, Restaurant	<10	Insf. Data	Insf. Data	Insf. Data	No formal educational credential	Moderate-term on-the-job training
Cooks, Institution and Cafeteria	<10	Insf. Data	Insf. Data	Insf. Data	No formal educational credential	Short-term on-the-job training
Tree Trimmers and Pruners	<10	Insf. Data	Insf. Data	Insf. Data	High school diploma or equivalent	Short-term on-the-job training
Cooks, Fast Food	<10	Insf. Data	Insf. Data	Insf. Data	No formal educational credential	Short-term on-the-job training
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	<10	Insf. Data	Insf. Data	Insf. Data	No formal educational credential	Short-term on-the-job training

Industry and Occupation Connections

Industries drive economic growth, but the fuel that enables those industries to function are its workforce. Considering the importance of talent to supporting key regional industries, it is worth exploring the connections between significant industries and the occupations that are most critical to those industries.

The following table identifies the county's top two high demand occupations by 5-digit Standard Occupational Classification (SOC) codes and how they are connected to some of the region's key industries (2-digit NAICS).

Connection between Top Occupations and Key Industries	
Top Occupation	Key Industries
Personal Care Aides	<ul style="list-style-type: none">• Health Care and Social Assistance
Landscaping and Groundskeeping Workers	<ul style="list-style-type: none">• Administrative and Support and Waste Management and Remediation Services

DETAILED INDUSTRY ANALYSIS

The following section provides an in-depth look at 4-digit NAICS sectors that are important to the Sierra County economy. These industry sectors include: Health Care and Tourism. For each of these sectors the top employing sub-sectors are listed by 4-digit NAICS code, as well as the staffing patterns for each sector. Staffing patterns data show the top employing occupations at the 4-digit SOC level, along with past and projected growth, competitive effect, location quotient and average earnings.

Employment for Top Health Care Industries

Limited data is available for Health Care industries in Sierra County. However, Individual and Family Services employs the largest share of jobs (50) and has the highest LQ score of 4.77. Other subsectors with an LQ score above 1.25 include Community Food and Housing, and Emergency and Other Relief Services (2.82); Vocational Rehabilitation Services (1.86); Offices of Dentists (1.78); and Offices of Other Health Practitioners (1.47).

Industry	2018 Jobs	'13-'18 Change	CE '13-'18	'18-'23 Change	CE '18-'23	'18 LQ	Average Earnings
Individual and Family Services	50	18	9	17	6	4.77	\$13,006
Vocational Rehabilitation Services	<10	Insf. Data	3	Insf. Data	2	1.86	Insf. Data
Community Food and Housing, and Emergency and Other Relief Services	<10	Insf. Data	2	Insf. Data	1	2.82	Insf. Data
Child Day Care Services	<10	Insf. Data	(21)	Insf. Data	(2)	0.68	Insf. Data
Home Health Care Services	<10	Insf. Data	(0)	Insf. Data	(0)	0.12	Insf. Data
Offices of Dentists	<10	Insf. Data	1	Insf. Data	(1)	1.78	Insf. Data
Offices of Other Health Practitioners	<10	Insf. Data	3	Insf. Data	(0)	1.47	Insf. Data
Industry	2018 Jobs	'13-'18 Change	CE '13-'18	'18-'23 Change	CE '18-'23	'18 LQ	Average Earnings
Outpatient Care Centers	<10	Insf. Data	0	Insf. Data	0	0.13	Insf. Data
Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly	0	0	0	0	0	0.00	\$0
Other Residential Care Facilities	0	0	0	0	0	0.00	\$0

Staffing Patterns for Health Care

Diving deeper into the staffing patterns for the Health Care industry, Personal Care Aides has the largest share of employment (28 jobs). Like the industry table, the staffing patterns data for the Health Care industry is limited. Median hourly earnings range from \$11.41 for Personal Care Aides to \$91.37 for Dentists.

Occupation	2018 Employment	Change 2013-2018		Projected Change 2018-2023		Median Hourly Earnings
Personal Care Aides	28	14	100%	10	36%	\$11.41
Psychologists	<10	1	100%	1	50%	\$35.27
Maintenance and Repair Workers, General	<10	0	0%	0	0%	\$16.58
Cooks	<10	(1)	(100%)	1	Insf. Data	\$12.90
Dentists	<10	0	0%	0	0%	\$91.37
Taxi Drivers and Chauffeurs	<10	0	0%	0	0%	\$11.70
Building Cleaning Workers	<10	0	0%	0	0%	\$11.71
Counselors	<10	0	0%	1	50%	\$20.44
First-Line Supervisors of Personal Service Workers	<10	1	Insf. Data	0	0%	\$17.39
Social and Community Service Managers	<10	1	100%	1	50%	\$22.05
Receptionists and Information Clerks	<10	(3)	(75%)	0	0%	\$13.58
Bookkeeping, Accounting, and Auditing Clerks	<10	0	0%	0	0%	\$18.05
Nursing, Psychiatric, and Home Health Aides	<10	(1)	(33%)	1	50%	\$12.84
Dental Hygienists	<10	0	0%	0	0%	\$53.70
Office Clerks, General	<10	(1)	(50%)	0	0%	\$15.39
Miscellaneous Health Diagnosing and Treating Practitioners	<10	1	Insf. Data	0	0%	\$25.08
Miscellaneous Healthcare Support Occupations	<10	(10)	(77%)	0	0%	\$20.68
Therapists	<10	1	100%	0	0%	\$33.81
Registered Nurses	<10	(2)	(67%)	0	0%	\$38.53
Secretaries and Administrative Assistants	<10	(10)	(83%)	1	50%	\$16.84

Employment for Top Tourism Industries

Data for employment within the tourism industry in Sierra County is very limited. The top industry subsectors include Restaurants and Other Eating Places (36 jobs); and Traveler Accommodation (28 jobs). The data indicates that nearly of the average earnings for the tourism industries are less than \$32,000. With an LQ score of 4.22, Independent Artists, Writers, and Performers highest LQ score indicating it importance to the county's employment.

Industry	2018 Jobs	'13-'18 Change	CE '13-18'	'18-'23 Change	CE '18-23	'18 LQ	Average Earnings
Restaurants and Other Eating Places	36	16	13	4	0	0.85	\$20,150
Traveler Accommodation	28	7	6	5	4	3.62	\$31,373
Other Amusement and Recreation Industries	<10	Insf. Data	2	Insf. Data	1	0.46	Insf. Data
Special Food Services	<10	Insf. Data	2	Insf. Data	1	0.80	Insf. Data
Spectator Sports	<10	Insf. Data	1	Insf. Data	0	0.87	Insf. Data
RV (Recreational Vehicle) Parks and Recreational Camps	<10	Insf. Data	0	Insf. Data	0	1.26	Insf. Data
Independent Artists, Writers, and Performers	<10	Insf. Data	(1)	Insf. Data	0	4.22	Insf. Data
Rooming and Boarding Houses, Dormitories, and Workers' Camps	0	0	0	0	0	0.00	\$0
Travel Arrangement and Reservation Services	0	0	0	0	0	0.00	\$0
Scenic and Sightseeing Transportation, Other	0	0	0	0	0	0.00	\$0

Staffing Patterns for Tourism¹⁰

The Tourism industry in Sierra County is limited in employment as evident in the table below. No one single occupation exceeds an employment size of more than 10. Median hourly earnings range from \$10.80 for Dining Room and Cafeteria Attendants and Bartender Helpers to \$22.08 for Miscellaneous Entertainers and Performers, Sports and Related Workers. The greatest growth in jobs over the last five years was experienced by Waiters and Waitresses (4), which is also projected to add the greatest number of jobs by 2023 (2).

Occupation	2018 Employment	Change 2013-2018		Projected Change 2018-2023		Median Hourly Earnings
Bartenders	<10	(2)	(67%)	1	100%	\$12.65
Food Preparation Workers	<10	1	100%	0	0%	\$12.12
Fast Food and Counter Workers	<10	2	67%	(1)	(20%)	\$12.34
Waiters and Waitresses	<10	4	80%	2	22%	\$11.84
Dishwashers	<10	2	100%	1	25%	\$11.46
Dining Room and Cafeteria Attendants and Bartender Helpers	<10	1	100%	1	50%	\$10.80
Cooks	<10	4	67%	1	10%	\$12.90
Supervisors of Food Preparation and Serving Workers	<10	1	50%	0	0%	\$13.81
Athletes, Coaches, Umpires, and Related Workers	<10	1	Insf. Data	0	0%	\$20.72
Actors, Producers, and Directors	<10	0	0%	0	0%	\$19.07
Musicians, Singers, and Related Workers	<10	(1)	(50%)	1	100%	\$18.14
Miscellaneous Entertainers and Performers, Sports and Related Workers	<10	0	0%	0	0%	\$22.08
Security Guards and Gaming Surveillance Officers	<10	0	0%	0	0%	\$14.89
Writers and Editors	<10	0	0%	0	0%	\$20.07
Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	<10	0	0%	1	100%	\$11.91
First-Line Supervisors of Building and Grounds Cleaning and Maintenance Workers	<10	1	Insf. Data	0	0%	\$15.57
Hotel, Motel, and Resort Desk Clerks	<10	1	50%	0	0%	\$12.97
Bookkeeping, Accounting, and Auditing Clerks	<10	1	Insf. Data	0	0%	\$18.05
Secretaries and Administrative Assistants	<10	0	0%	0	0%	\$16.84
Maintenance and Repair Workers, General	<10	1	100%	0	0%	\$16.58

¹⁰ The Tourism industry crosses over several industries, including NAICS 48 (Transportation and Warehousing); 56 (Administrative and Support Services); 71 (Arts, Entertainment, and Recreation; and 72 (Accommodation and Food Services).

APPENDIX

Data Sources and Glossary of Key Terms

Data Sources

All data and analysis for this report are directly or indirectly derived from information provided by either the U.S. Bureau of the Census or U.S. Bureau of Labor Statistics:

- Economic Modeling Specialists International (EMSI), 2018.4 Class of Worker data (based on the U.S. Quarterly Census of Employment and Wages) and general demographic estimates
- U.S. Census American Community Survey 2012-2016 Estimates
- U.S. Census OnTheMap

Competitive Effect

Used in conjunction with "Shift-Share Analysis" techniques¹¹, *The Competitive Effect* metric seeks to isolate the influence of local dynamics from the influence of non-local factors on industries' employment growth or decline. A positive number indicates that the study area experienced more growth within a particular industry than would have been expected from non-local trends; the magnitude of *The Competitive Effect* indicates the strength of the purely local influence on the industry's employment change.

Location Quotient

Location Quotient (LQ) measures the relative importance of an industry's employment to a particular region, and uses the straightforward formula:

$$LQ = [\% \text{ of total local employment} / \% \text{ of total national employment}]$$

Location Quotients are one of the most common and important indicators of local economic characteristics; LQ's greater than 1.25 are typically considered to be the threshold for identifying an industry as especially relatively strong.

NAICS Codes (The North American Industry Classification System)

NAICS is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy. The numbering structure is hierarchical in nature, meaning that fewer digits are broader in their meaning, while longer (up to six) digits provide greater specificity.

¹¹ Shift share is a standard regional analysis method that attempts to determine how much of regional job growth can be attributed to national trends and how much is due to unique regional factors. Shift share helps answer why employment is growing or declining in a regional industry, cluster, or occupation.

SOC Codes (Standard Occupational Classification)

The 2000 Standard Occupational Classification (SOC) System was developed in response to a growing need for a universal occupational classification system. Such a classification system allows government agencies and private industry to produce comparable data. Users of occupational data include government program managers, industrial and labor relations practitioners, students considering career training, job seekers, vocational training schools, and employers wishing to set salary scales or locate a new plant. It is used by federal agencies collecting occupational data, providing a standard means to compare such data across agencies. It is designed to cover all occupations in which work is performed for pay or profit, reflecting the current occupational structure in the United States.

As with NAICS, the SOC coding structure is hierarchical, with fewer digits provide broad data (occupational categories), while larger provide more specific data (specific professions).

Industry Sector Definitions

Health Care

NAICS	Description
6241	Individual and Family Services
6211	Offices of Physicians
6214	Outpatient Care Centers
6212	Offices of Dentists
6242	Community Food and Housing, and Emergency and Other Relief Services
6244	Child Day Care Services
6213	Offices of Other Health Practitioners
6219	Other Ambulatory Health Care Services
6233	Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly
6215	Medical and Diagnostic Laboratories
6216	Home Health Care Services
6243	Vocational Rehabilitation Services
6239	Other Residential Care Facilities
6222	Psychiatric and Substance Abuse Hospitals
6221	General Medical and Surgical Hospitals
6223	Specialty (except Psychiatric and Substance Abuse) Hospitals
6231	Nursing Care Facilities (Skilled Nursing Facilities)
6232	Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities

Tourism

NAICS	Description
7225	Restaurants and Other Eating Places
4841	General Freight Trucking
4931	Warehousing and Storage
7211	Traveler Accommodation
4842	Specialized Freight Trucking
5617	Services to Buildings and Dwellings
7113	Promoters of Performing Arts, Sports, and Similar Events
4922	Local Messengers and Local Delivery
5629	Remediation and Other Waste Management Services
5611	Office Administrative Services
7139	Other Amusement and Recreation Industries
4884	Support Activities for Road Transportation
7115	Independent Artists, Writers, and Performers
5614	Business Support Services
7224	Drinking Places (Alcoholic Beverages)
5616	Investigation and Security Services
5619	Other Support Services
7223	Special Food Services
5621	Waste Collection
4821	Rail Transportation