# Industry Clusters and Employment Multipliers Key Findings

Mendocino County, California

July 2020

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## Objectives of the Study and Geographic Scope

This research will identify, research, and development data analytics regarding:

- Define Industry clusters of promise for the county/region (see below for definition)
- Identify clusters that are growing and those that are declining
- Identify clusters with Living Wage jobs
- Employment multipliers
- In terms of geographic scope, this analysis was developed for Mendocino County and an aggregated four-county region consisting of Mendocino, Sonoma, Humboldt, and Trinity counties.

### Introduction

California's diverse economy contains a wide range of regional specializations, from tourism, healthcare and retail in southern California, to information technology in the Bay Area, and agriculture, forestry, fishing and hunting in northern California. Located above Sacramento, Mendocino County and its regional neighbors Sonoma, Humboldt, and Trinity have vineyards, dense forests and other resources that enable specialization in wine, tourism, agriculture, forestry and manufacturing. Understanding these regional specializations and their differential economic impacts on the overall Mendocino County economy is crucial in determining successful growth strategies.

This report summarizes industry cluster and regional economic specialization in Mendocino County and the four-county area composed of Mendocino, Sonoma, Humboldt, and Trinity counties. It analyzes the regional economy in a variety of ways, using location quotients, industry employment trends, occupational analysis,

wage levels and employment multipliers. This analysis showcases local and regional strengths, helping Mendocino County stakeholders better understand and support their local economies, showcase local and regional strengths, provide stakeholders with a better understanding of their economic environment, enabling them to craft more effective economic development policies and practices. In doing so, areas or industries suffering economic declines or growth can be better supported, enhancing the economic activity and improving residents' quality of life.

Regional specializations or "industry clusters" are geographical industry ecosystems of interrelated firms with high concentrations of competitive, complementary and supplementary businesses. Industry clusters allow for increased levels of collaboration and competition between businesses which fuels economic activity, growth and innovation. Clusters also attract workers, businesses and entrepreneurs to the region, leading to high job growth and high wages. Examples of industry clusters include the entertainment industry in Hollywood, agriculture in the Central Valley, biotechnology in San Diego, medical devices in Orange County and information technology in Silicon Valley.

Industry clusters are typically measured through location quotients, which identify how concentrated an industry in a region is compared to the nation. A location quotient of 1 means that an industry is as concentrated in the region as in the national as a whole, while a quotient of 10 means that it is ten times more concentrated. Location quotients can be used to determine local or regional specializations, to identify strong or weak export industries, and to identify which industries and occupations to invest time and resources in. Industries with high location quotients typically have high levels of exports and bring new capital into the regional economies. This provides significantly more benefit than industries such as retail or restaurants which largely re-circulate capital in a region.

Location quotients are provided for both industries and occupations. In order to capture the most impactful sectors, this report analysis industries with location quotients above 2 in Mendocino County and location quotients above 4 for the four-county aggregated area. Industries and occupations are broken down using the North American Industry Classification System (NAICS) and the Standard Occupational Classification (SOC) system, respectively. Industry and occupations are segmented at various levels ranging from more broad sectors such as

"manufacturing" defined by a 2-digit NAICS code (31-33) to much more specific sectors such as Wineries defined by a 6-digit NAICS code (312130), a sub-sector of the broader manufacturing industry. In order to provide both a macro- and micro-level analysis of industry clusters, this report will highlight both 2- and 6-digit NAICS coded industries and similarly defined Standard Occupational Classification (SOC) occupations. Full industry and occupational location quotient tables will be provided in the appendix to show industry and occupational hierarchies.

This report also explores employment multipliers, which provide an indication of how important an industry in the region. These have been developed using an input-output model which includes proprietary data, gravitational flows, commuting patterns, and several other sources; employment multipliers created by Emsi indicate a positive or negative impact associated with job gains or losses. For example, if an industry has a multiplier of 5, for every positive or negative job change, the total effect on the economy will be 5 times the original change – if this industry gains one job, it will see 4 additional jobs created throughout its economy. In identifying occupations and industries with high employment multipliers, additional effort can be focused in increasing high employment multiplier occupations to enhance job growth across a region.

#### **Data Sources**

Data in this report was sourced from a variety of best-in-class government and industry leading proprietary private data sources. TCCG's employment data and forecasting model uses a large number of government and private data sources to gauge overall employment and occupations by county and zip code, including the Bureau of Labor Statistic's Quarterly Census of Employment and Wages (QCEW), Current Employment Statistics (CES), the Current Population Survey (CPS), the Occupational Employment Statistics (OES) data series, and Emsi data in the form of job posting analytics and profile data. We combine these data sources to estimate both historical small-area (county level) employment and occupations, fine-grained level of industrial and occupation detail, and to generate employment and occupation forecasts up to ten years into the future.

TCCG uses multiple data sources to create more detail than is typically available in any one individual census or Bureau of Labor Statistics data product, making both our historical data and forecasting models highly reliable.

## **Definitions**

#### **Industry Clusters**

Clusters are regional concentration of related industries that arise out of connections between industries in a particular location and are designed to enable systemic comparison across regions and over time. Cluster complimentary and supplementary businesses leverage their proximity to one another to more rapidly develop their supply chains, processes and overall profitability. This fuels rapid employment growth, investment and technological progress, creating a virtuous cycle of growth and expansion. Over time, these clusters become increasingly concentrated and specialized, driving regional and even national innovation through patent generation and venture capital investments.

Cluster effectively create concentrated, innovative areas where businesses and employees can benefit from their proximity to one another. Industry clusters often result in increased patent generation, high levels of economic activity, increased start-up activity, above-average wages and a variety of other benefits. Examples of industry clusters include Hollywood's Entertainment sector and Silicon Valley's Information Technology sector.

Industry clusters typically have five primary characteristics:

- Critical Mass: a large number of similar and support businesses, resulting in specialized labor pools, reduced logistical costs, and the promotion of both healthy competition and collaboration between those firms.
- Regional Specialization: businesses refine their processes and become more efficient, which leads to increased consumer spending and a high demand of exports, increasing general cash flow into the region.
- High Multiplier Effect: reflects the overall impact the industry has on the regional economy and its ability to spur job creation in other area industries.

- High Growth Rates: industry clusters' ability to attract new businesses and workers into the region, they dramatically boost their ability to grow and overall economic growth.
- World-Class, Industry-Leading Companies: the rapid growth of companies, high density of competitors and collaborators, and the increased specialization both creates and attracts world-class organizations which help to define the region as a center for that industry cluster.

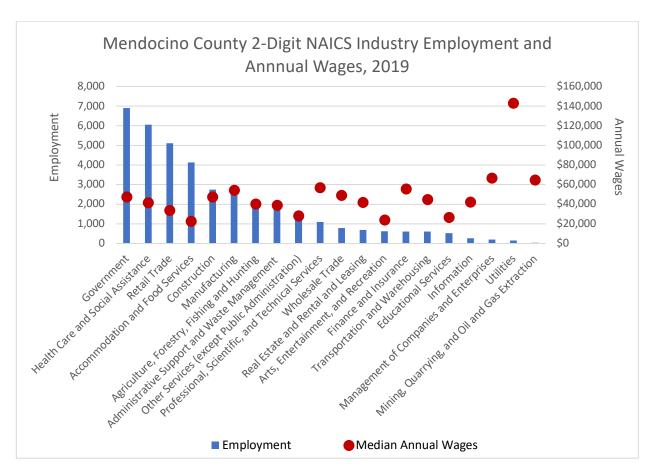
#### **Employment Multipliers**

Employment multipliers are a method of measuring how important one industry is to other industries in the region. An employment multiplier indicates how important an industry is in regional job creation. An employment multiplier of 3, for example, would mean that for every job created by that industry, 2 other jobs would be created in other industries (for a total of 3 jobs).

In general, a higher employment multiplier for a set of one or more industries in an added-jobs scenario means that attracting businesses in those industries to the region is the best viable option for regional economic growth.

#### Mendocino Industry Employment Clusters

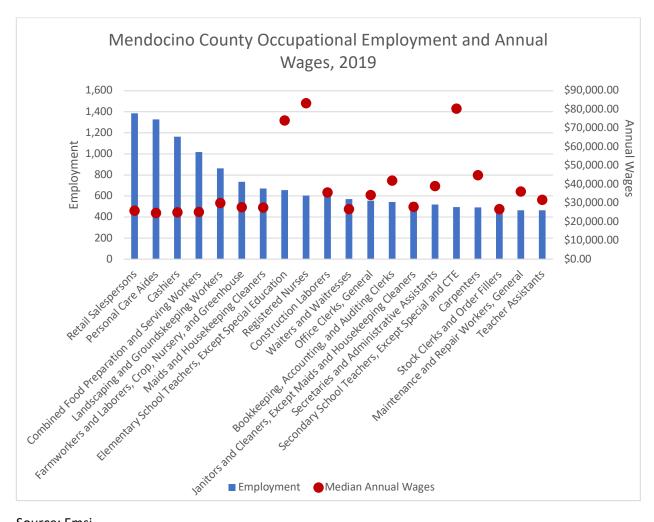
38,624 Mendocino County residents were employed in 2019. Government accounted for 17.9 percent of total employment, the largest share, followed by Health Care and Social Assistance (15.7 percent) and Retail Trade (13.2 percent). The highest paying industries included Utilities at \$142,953 followed by Management of Companies (\$66,626), Mining, Quarrying and Extraction (\$64,646) and Professional, Scientific and Technical Services (\$56,950).



Source: TCCG LLC and Emsi

Within these industries, the largest occupations include retail salespersons, personal care aides, cashiers, combined food preparation and serving workers, including fast food, and landscaping and groundskeeping workers. Together, these five occupations represent 5,757 jobs or 15 percent of total Mendocino County

employment. They vary widely in terms of average annual salary, with the highest being Registered Nurses at \$83,339, followed by Secondary School Teachers, Except Special and Career/Technical Education (\$80,370) and Elementary School Teachers, Except Special Education (\$74,063).

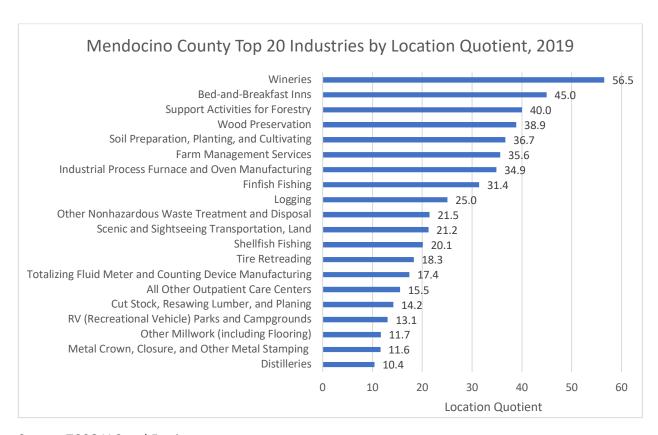


Source: Emsi

As seen in the chart below, Mendocino County's most specialized industries include Wineries (57 times more than the national, one of the highest location quotients in the country.) The chart below provides the top 20 industries by regional specialization (location quotient) in Mendocino in 2020. Reflecting the region's history and reputation with wine production and tourism, the Wineries industry had the highest location quotient at 57, followed by Bed-and-Breakfast Inns at 45.

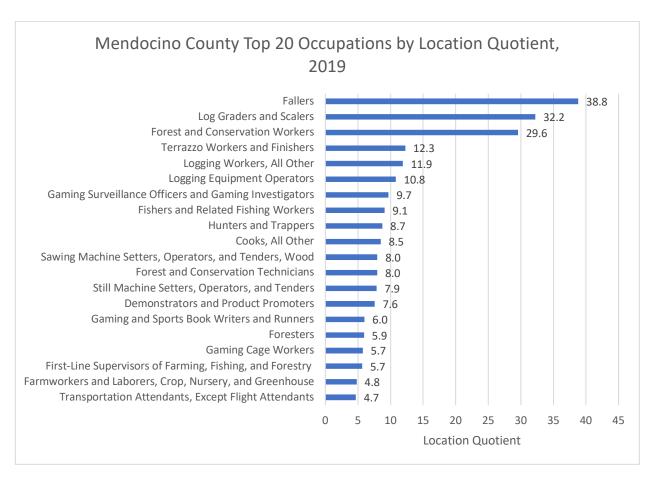
Mendocino County also has a significant number of highly concentrated forestry sectors. In general, Mendocino exhibits some of the highest industry and occupational concentrations in our professional experience.

Looking at employment within these industries, Wineries employed 863 individuals, followed by 157 at Bed-and-Breakfast Inns, and 183 in Support Activities for Forestry. All Other Outpatient Care Centers, which had a location quotient of 16, employed 604 individuals while Soil Preparation, Planting and Cultivating, which had a location quotient of 37, employed 268 individuals.



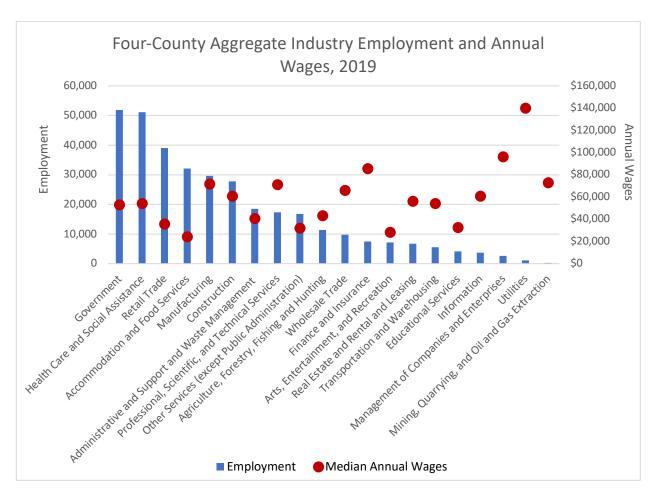
Source: TCCG LLC and Emsi

While Mendocino County's largest occupations are in retail and healthcare, most concentrated specific occupations included Fallers (38.8), followed by Log Graders and Scalers (32.2), and Forest and Conservation Workers (29.6). All three of these occupations reflect the crucial important of forestry in this heavily forested county; five of the county's six most concentrated occupations are in the forestry sector.



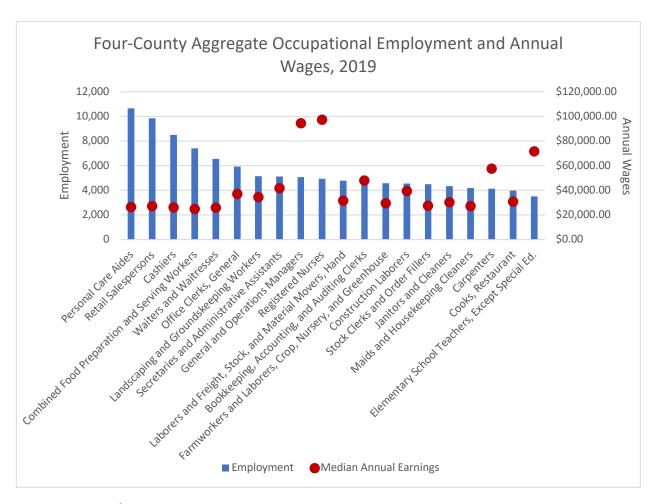
#### Four-County Aggregate Industry Clusters

The four-county region's largest industries included Government (51,826 jobs), Health Care and Social Assistance (51,095), and Retail Trade (39,032). Industries with the highest 2019 wages included Utilities (\$139,929), Management of Companies (\$96,223), and Finance and Insurance (\$85,752). Overall, the four counties had a total employment of 344,074 in 2019, with an average weighted salary of \$50,860.



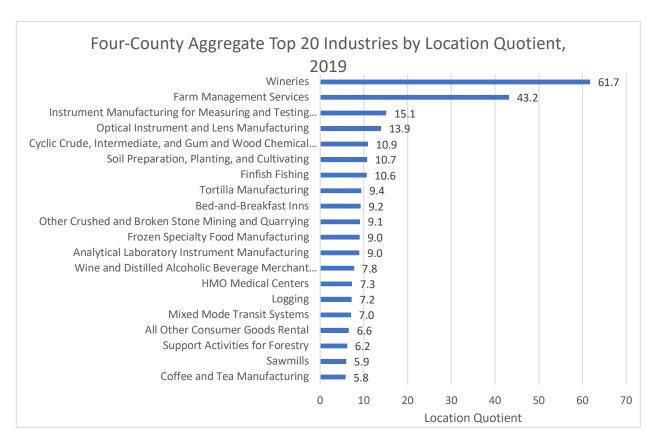
Personal Care Aides was the four-county region's largest occupation and paid a median annual wage of \$26,406, followed by Retail Salespersons and Cashiers both with similar median annual wages of \$27,134 and \$26,094.

Of the region's largest occupations, the highest annual average salaries belonged to Registered Nurses (\$97,314), General and Operations Managers (\$94,380), and Elementary School Teachers, Except Special Education (\$71,543).

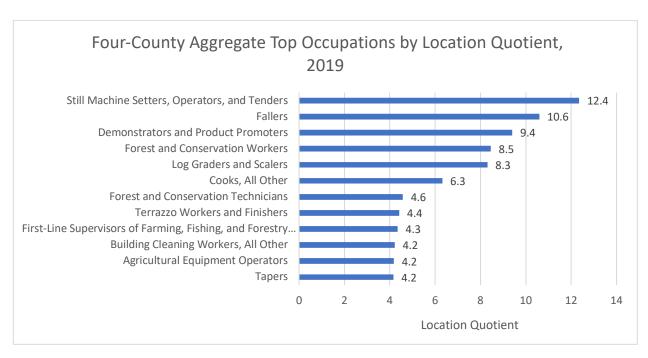


The overall four-county region has similar industry specialization as Mendocino County. Geographic similarities in between Mendocino county and the four-county aggregate region are reflected in the industry clusters with high location quotients. In the aggregate, the most concentrated industry sector was Wineries with a location quotient of 61.7 followed by Farm Management Services (43.2) and Instrument Manufacturing for Measuring and Testing Electricity (15.1).

One noticeable difference is that Mendocino County does not yet have the manufacturing concentration seen elsewhere in the region, which creates an excellent economic development opportunity in a high employment multiplier sector



The four-county region exhibits 12 highly concentrated clusters with a threshold above four. The largest cluster in 2019 was Still Machine Setters, Operators, and Tenders, with a location quotient of 12.4, followed by Fallers (10.6) and Demonstrators and Product Promoters (9.4). As in Mendocino County, the region's largest occupations were in retail while its most concentrated occupations were in agriculture and forestry.



#### **Growth Clusters**

While previous sections of this report focused on currently highly concentrated industries, it is equally important to understand how these industries will increase or decrease in concentration over time. Understanding these trends allows strategic and actionable strategies to be put in place to provide support in potentially struggling areas. Ensuring a region can protect its industry specializations while also simultaneously creating an environment which enhances growth for emerging sectors is crucial to securing a diversified, successful future economy.

Mendocino County industries expected to see the highest absolute change in their location quotients are provided below. Soil Preparation, Planting, and Cultivating are expected to see their location quotient increase by 21.4 points or by 58.2 percent, reaching 58 by 2029. Many of the highest growth sectors in Mendocino revolve around agricultural activities, suggesting a growth in agricultural exports.

Nascent industries in Mendocino County include Fish and Seafood Merchant Wholesalers, Investigation Services, Trusts, Estates and Agency Accounts, and

Siding Contractors; all of which are expected to see their location quotients grow by over 70 percent between 2019 and 2029. The significant expected concentration in these sectors could be accelerated if these sectors are properly supported further driving the expected economic activity in these sectors and throughout the regional economy. Additionally, the growth of these industries represents an increasing diversification of regional specializations.

Mendocino County Top 20 Industries Based on Location Quotient Change, 2019-2029					
				Absolute	Percent
	Locat	<u>ion Quo</u>	tients	Change	Change
Industry	2019	2024	2029	2019-2029	2019-2029
Soil Preparation, Planting, and Cultivating	36.7	50.8	58.0	21.4	58.2%
Wood Preservation	38.9	43.0	45.0	6.1	15.8%
Scenic and Sightseeing Transportation, Land	21.2	24.8	26.6	5.4	25.5%
Totalizing Fluid Meter Manufacturing	17.4	20.5	22.4	5.0	28.5%
Other Nonhazardous Waste Treatment	21.5	24.6	26.4	4.9	22.9%
Fish and Seafood Merchant Wholesalers	5.6	8.4	10.0	4.4	79.0%
Trusts, Estates, and Agency Accounts	4.1	6.1	7.1	3.0	72.4%
Distilleries	10.4	12.3	13.3	2.9	27.8%
Heavy Duty Truck Manufacturing	4.2	6.2	7.1	2.9	68.1%
Other Automotive Mechanical and Electrical	4.1	5.8	6.9	2.8	69.2%
All Other Traveler Accommodation	7.7	9.6	10.5	2.8	36.7%
Investigation Services	3.5	5.2	6.1	2.6	74.2%
Nature Parks and Other Similar Institutions	6.0	7.7	8.5	2.5	41.3%
Solid Waste Landfill	5.1	6.5	7.4	2.3	45.5%
Metal Crown and Other Metal Stamping	11.6	13.0	13.9	2.3	19.8%
Fuel Dealers	5.0	6.3	7.2	2.2	44.5%
Other Millwork (including Flooring)	11.7	12.9	13.6	1.9	16.4%
Lessors of Other Real Estate Property	8.8	9.9	10.6	1.8	21.0%
Siding Contractors	2.2	3.4	4.0	1.8	83.5%
Petroleum Bulk Stations and Terminals	8.2	9.3	9.9	1.7	21.3%

Source: TCCG LLC and Emsi

Industrial Process Furnace/Oven is projected to shrink more than any other industry cluster between 2019 and 2029. Many of the other industry sectors expected to shrink the most are also within the agricultural sector, a development that further suggests the area is diversifying its agricultural exports and specializations. While Wineries is currently the most concentrated sector in Mendocino County, Soil Preparation, Planting, and Cultivating will replace it by 2029, reaching a location quotient of 58 as Wineries drop to 47.2.

The declining concentration of wineries, forestry, and fishing operations is likely due to increased regional and even global competition in these sectors. While most of these industries are already more concentrated than at the national level, properly supporting them and ensuring they can continue to grow and expand at a healthy rate will help to support existing as well as new business owners. Additionally, preserving this economic concentration will ensure that Mendocino can retain its regional specializations allowing for better collaboration, competition and innovation between businesses.

Mendocino County Bottom 20 Industries Based on Location Quotient Change, 2019-2029					
•		tion Quot		Absolute Change	Percent Change
Industry	2019	2024	2029	2019-2029	2019-2029
Household Appliance Stores	2.3	1.8	1.4	-0.9	-39.5%
Coin-Operated Laundries and Drycleaners	2.2	1.6	1.3	-1.0	-43.2%
Other Prepared Sauce Manufacturing	3.9	3.2	2.9	-1.1	-26.9%
Petroleum Products Merchant Wholesalers	7.9	7.0	6.5	-1.4	-17.8%
Lumber/Wood Panel Merchant Wholesalers	3.1	2.1	1.5	-1.6	-51.3%
Nursery, Garden Center/Farm Supply Stores	5.9	4.9	4.3	-1.6	-27.7%
Support Activities for Forestry	40.0	39.0	38.3	-1.7	-4.3%
Crop Production	6.2	4.8	4.0	-2.3	-36.4%
Sawmills	12.1	10.5	9.4	-2.7	-22.3%
Video Tape and Disc Rental	5.4	4.0	2.3	-3.1	-57.8%
Breweries	4.5	2.3	1.3	-3.2	-70.7%
Support Activities for Nonmetallic Minerals	6.9	2.2	0.8	-6.1	-88.8%
Seafood Product Preparation and Packaging	9.5	5.1	2.1	-7.4	-78.0%
Farm Management Services	35.6	30.2	27.3	-8.3	-23.4%
Finfish Fishing	31.4	26.2	22.7	-8.7	-27.8%
Wineries	56.5	50.5	47.2	-9.3	-16.5%
Cut Stock, Resawing Lumber, and Planing	14.2	7.1	2.8	-11.3	-80.1%
Tire Retreading	18.3	7.9	2.7	-15.5	-85.0%
Shellfish Fishing	20.1	10.2	3.8	-16.4	-81.3%
Industrial Process Furnace/Oven	34.9	18.0	6.8	-28.0	-80.4%

Source: TCCG LLC and Emsi

On the whole, the four-county region will see increasing concentration in manufacturing. Intermediate Wood Chemical Manufacturing, for example, is expected to grow by 5.1 points, while Heating Equipment Manufacturing (+1.3 points) and Food Product Manufacturing (+0.4 points) are also predicted to grow; the increased concentration of manufacturing-related operations suggests increasing manufacturing exports. Alongside Intermediate/Wood Chemical

Manufacturing, nascent industries to foster in the four-county region include Chartered Air Transportation, All Other Consumer Goods Rental and General Rental Centers as these comparatively less focused industries are expected to see the higher percent increase in their location quotients over the next decade.

While some manufacturing sectors are also expected to decline by 2029, a number of agricultural sectors including Wineries are expected to decline in concentration. Reflecting a diversifying regional economy, these shifts in industry concentrations show which sectors may need additional support in the future. While the concentration of Wineries is expected to shrink from 61.7 in 2019 to 53 in 2029, it will remain highly concentrated and an extremely important part of the regional economy.

Four-County Aggregate Top 20 Industries Based on Location Quotient Change, 2019-2029					
	Loca	ition Quo	tients	Absolute Change	Percent Change
Industry	2019	2024	2029	2019-2029	2019-2029
Intermediate/ Wood Chemical Manufacturing	10.9	14.5	16.0	5.1	46.7%
Farm Management Services	43.2	45.6	46.6	3.4	8.0%
All Other Consumer Goods Rental	6.6	8.6	9.8	3.2	49.4%
Soil Preparation, Planting, and Cultivating	10.7	12.5	13.4	2.7	25.0%
Chartered Air Transportation	5.0	6.7	7.6	2.7	54.0%
General Rental Centers	4.7	5.9	6.6	1.9	40.9%
Analytical Laboratory Instrument Manufacturing.	9.0	10.1	10.8	1.8	20.5%
Totalizing Fluid Meter/Counting Device Manu.	4.1	5.2	5.9	1.8	43.2%
Book Stores	4.0	4.6	5.3	1.3	34.1%
Heating Equipment Manufacturing	5.2	6.1	6.6	1.3	25.7%
Tortilla Manufacturing	9.4	10.2	10.6	1.2	12.7%
Fruit and Vegetable Canning	4.1	4.6	4.9	0.8	19.8%
Fats and Oils Refining and Blending	4.8	5.3	5.5	0.7	15.0%
Phosphatic Fertilizer Manufacturing	4.1	4.5	4.7	0.6	14.4%
Dairy Product Merchant Wholesalers	4.6	5.0	5.2	0.6	12.4%
Wood Preservation	4.3	4.6	4.8	0.6	13.1%
All Other Leather Good Manufacturing	4.7	5.0	5.2	0.6	11.9%
Tile and Terrazzo Contractors	4.0	4.4	4.6	0.6	13.8%
Food Product Machinery Manufacturing	4.9	5.1	5.3	0.4	8.8%
Logging	7.2	7.5	7.6	0.4	5.2%

Source: TCCG LLC

Four-County Aggregate Bottom 20 Industries Based on Location Quotient Change, 2019-2029

	Location Quotients			Absolute Change	Percent Change
Industry	2019	2024	2029	2019-2029	2019-2029
Mixed Mode Transit Systems	7.0	6.9	6.8	-0.2	-3.5%
Coffee and Tea Manufacturing	5.8	5.5	5.4	-0.4	-6.9%
Breweries	4.9	4.6	4.4	-0.4	-9.0%
Other Nonhazardous Waste Treatment	5.5	5.2	5.0	-0.4	-8.1%
Other Traveler Accommodation	6.0	5.5	5.2	-0.9	-14.4%
Scenic and Sightseeing Transportation, Land	4.7	3.9	3.5	-1.2	-24.8%
Optical Instrument and Lens Manufacturing	13.9	13.1	12.6	-1.3	-9.3%
Support Activities for Forestry	6.2	5.1	4.6	-1.5	-25.2%
Finfish Fishing	10.6	9.6	9.0	-1.6	-15.0%
Beverage and Tobacco Product Manufacturing	16.9	15.7	15.1	-1.9	-11.0%
Bed-and-Breakfast Inns	9.2	8.0	7.3	-2.0	-21.2%
Fishing, Hunting and Trapping	6.2	4.9	4.2	-2.0	-32.1%
Sawmills and Wood Preservation	5.8	4.5	3.7	-2.1	-36.4%
Beverage Manufacturing	17.6	16.2	15.4	-2.2	-12.5%
Fishing	7.9	6.5	5.6	-2.3	-29.4%
Sawmills	5.9	4.4	3.5	-2.4	-41.0%
Industrial Furnace and Oven Manufacturing	4.9	3.0	1.8	-3.0	-62.3%
Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals	15.1	13.3	12.0	-3.1	-20.5%
Shellfish Fishing	5.3	3.3	1.9	-3.4	-63.9%
Wineries	61.7	56.0	53.0	-8.7	-14.2%

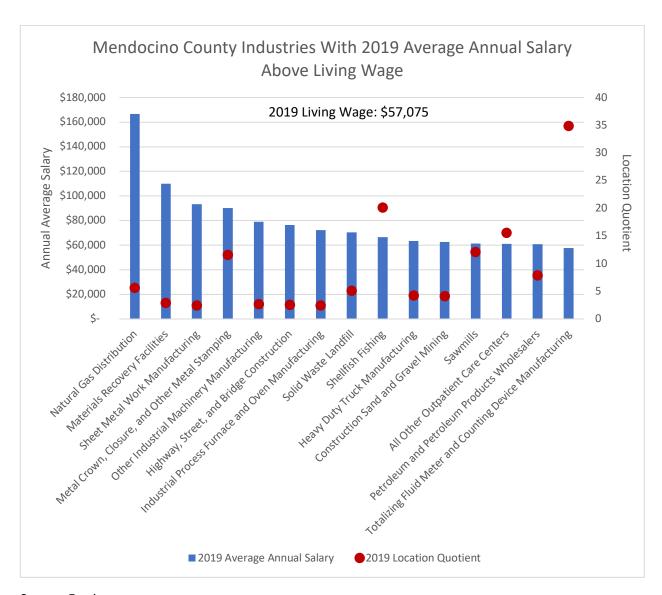
## **Industry Clusters and Living Wage**

The Massachusetts Institute of Technology (MIT) estimates that Mendocino County's living wage for a family consisting of two adults, one working, and 2 children in 2019 was \$27.44 per hour for an annual salary of \$57,075. The table below provides the top 20 industry by location quotient in Mendocino County alongside their annual averages wages from 2009 and 2019. The rows highlighted in bold indicate industries whose 2019 average annual wage was higher than the living wage.

Top 20 Mendocino Industry Cluster Salaries and Growth, 2009-2019					
	2009 Average Annual Salary	2019 Average Annual Salary	Change	Percent Change	
Wineries	\$37,736	\$49,934	\$12,198	32.3%	
Bed-and-Breakfast Inns	\$13,961	\$18,070	\$4,109	29.4%	
Support Activities for Forestry	\$49,888	\$54,705	\$4,817	9.7%	

Wood Preservation	\$33,138	\$47,727	\$14,588	44.0%
Soil Preparation, Planting, and Cultivating	N/A	\$36,173	N/A	N/A
Farm Management Services	\$24,389	\$34,016	\$9,627	39.5%
Totalizing Fluid Meter and Counting Device Manu.	\$29,549	\$57,745	\$28,196	95.4%
Finfish Fishing	\$92,273	\$56,909	(\$35,365)	-38.3%
Logging	\$35,117	\$48,524	\$13,408	38.2%
Other Nonhazardous Waste Treatment and Disposal	\$45,586	\$53,807	\$8,220	18.0%
Scenic and Sightseeing Transportation, Land	\$8,356	\$23,039	\$14,682	175.7%
Shellfish Fishing	\$47,290	\$66,562	\$19,273	40.8%
Tire Retreading	\$32,332	\$42,383	\$10,050	31.1%
All Other Outpatient Care Centers	\$46,625	\$61,151	\$14,526	31.2%
Cut Stock, Resawing Lumber, and Planing	\$34,422	\$37,908	\$3,486	10.1%
RV (Recreational Vehicle) Parks and Campgrounds	\$15,874	\$23,441	\$7,567	47.7%
Sawmills	\$44,546	\$61,234	\$16,688	37.5%
Other Millwork (including Flooring)	\$33,857	\$44,649	\$10,792	31.9%
Metal Crown, Closure, and Other Metal Stamping	\$41,366	\$90,176	\$48,810	118.0%
Distilleries	\$0	\$50,237	N/A	N/A

The graph below highlights all the industries in Mendocino County which provided average annual salaries above the living wage in the region. The table following the chart highlights specific occupations which met the threshold 2 for location quotients and had average annual salaries above the living wage in Mendocino County.



Source: Emsi

Mendocino Occupation Location Quotients Ranked by Salaries Above Living Wage, 2019				
	Location Quotient	Average Annual Salary*		
Obstetricians and Gynecologists	2.4	\$126,853		
Internists, General	2.7	\$119,683		
Clinical, Counseling, and School Psychologists	2.3	\$109,722		
Psychologists	2.3	\$106,565		
First-Line Supervisors of Correctional Officers	2.1	\$105,310		
Kindergarten Teachers, Except Special Education	4.0	\$98,703		
Psychologists, All Other	2.3	\$91,785		
Adult Basic and Secondary Education and Literacy Teachers and Instructors	2.0	\$90,040		

Fence Erectors	2.4	\$89,701
Conservation Scientists	3.0	\$81,335
Conservation Scientists and Foresters	3.8	\$79,008
Preschool, Primary, Secondary, and Special Education School Teachers	1.7	\$77,631
Foresters	5.9	\$77,381
Special Education Teachers, Secondary School	2.4	\$76,857
Legal Occupations	0.6	\$75,615
Urban and Regional Planners	3.3	\$75,489
Healthcare Practitioners and Technical Occupations	0.8	\$75,256
Social and Community Service Managers	2.9	\$73,633
Special Education Teachers, All Other	3.5	\$72,470
Management Occupations	1.0	\$70,843
Postmasters and Mail Superintendents	3.4	\$66,023
Life, Physical, and Social Science Occupations	1.2	\$64,888
Education, Training, and Library Occupations	1.2	\$64,063
Logging Workers, All Other	11.9	\$63,643
Protective Service Occupations	0.9	\$60,638

<sup>\*</sup>Reflects 2018 Occupational Salaries

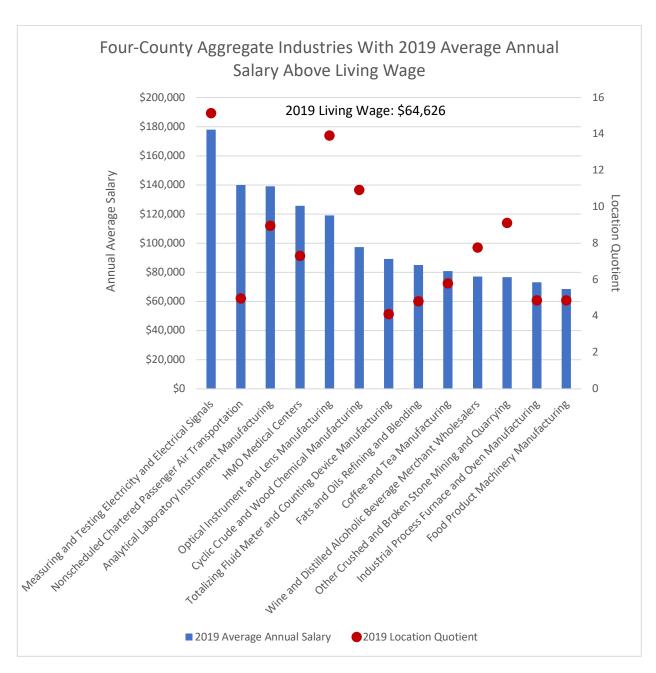
The four-county region has an estimated weighted living wage of \$31.07 per hour or a salary of \$64,626, with the highest living wage in Sonoma County. Seven of the top 20 industries by location quotient in the four-county aggregate region provided average annual salaries above the estimated 2019 living wage; these sectors are bolded in the table below.

Top 20 Four-County Aggregate Industry Cluster Salaries and Growth, 2009-2019				
	2009 Average Annual Salary	2019 Average Annual Salary	Change	Percent Change
Wineries	\$45,607	\$59,205	\$13,598	23.0%
Farm Management Services	\$25,312	\$40,045	\$14,733	36.8%
Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals	\$103,800	\$177,928	\$74,128	41.7%
Optical Instrument and Lens Manufacturing	\$63,619	\$119,017	\$55,398	46.5%
Cyclic Crude, Intermediate, and Gum and Wood Chemical Manufacturing	\$0	\$97,431	\$97,431	100.0%
Soil Preparation, Planting, and Cultivating	\$31,382	\$44,375	\$12,993	29.3%
Finfish Fishing	\$59,899	\$56,669	(\$3,230)	-5.7%
Tortilla Manufacturing	\$41,838	\$51,597	\$9,759	18.9%
Bed-and-Breakfast Inns	\$16,794	\$15,968	(\$826)	-5.2%
Other Crushed and Broken Stone Mining and Quarrying	\$55,279	\$76,666	\$21,388	27.9%
Frozen Specialty Food Manufacturing	\$38,097	\$62,919	\$24,821	39.4%

Analytical Laboratory Instrument Manufacturing	\$103,853	\$139,079	\$35,226	25.3%
Wine and Distilled Alcoholic Beverage Merchant Wholesalers	\$60,878	\$77,080	\$16,202	21.0%
HMO Medical Centers	\$67,598	\$125,690	\$58,092	46.2%
Logging	\$38,727	\$55,991	\$17,264	30.8%
Mixed Mode Transit Systems	\$37,997	\$57,967	\$19,971	34.5%
All Other Consumer Goods Rental	\$26,652	\$56,626	\$29,974	52.9%
Support Activities for Forestry	\$30,126	\$50,554	\$20,427	40.4%
Sawmills	\$43,679	\$62,522	\$18,843	30.1%
Coffee and Tea Manufacturing	\$41,467	\$80,963	\$39,496	48.8%

Source: Emsi

The graph below highlights all the industries in the four-county aggregate region which provided average annual salaries above the living wage in the region. The table following the chart highlights specific occupations which met the threshold 4 for location quotients and had average annual salaries above the region's living wage.



Unfortunately, no regional occupation with a location quotient over 4 had a salary above the region's living wage.

Four-County Aggregate Occupation Location Quotients Ranked and Salaries						
	2019 Location Average And Quotient Salary*					
Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	12.35	\$39,699.64				
Fallers	10.59	\$44,624.65				
Demonstrators and Product Promoters	9.40	\$35,775.18				

Forest and Conservation Workers	8.45	\$22,901.30
Log Graders and Scalers	8.31	\$36,109.63
Cooks, All Other	6.32	\$22,922.77
Forest and Conservation Technicians	4.58	\$33,964.90
Terrazzo Workers and Finishers	4.41	N/A
First-Line Supervisors of Farming, Fishing, and Forestry Workers	4.35	\$47,892.17
Building Cleaning Workers, All Other	4.22	N/A
Agricultural Equipment Operators	4.18	\$33,213.10
Tapers	4.16	N/A

Source: Emsi

### **Employment Multipliers**

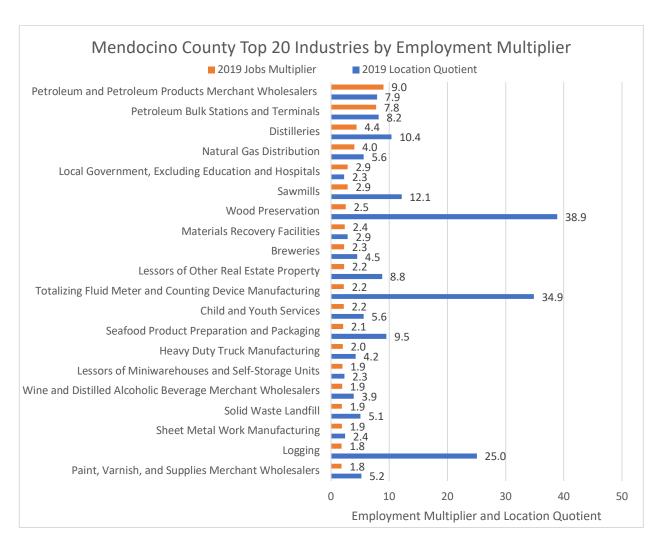
As previously discussed, industry and occupational multipliers indicate the potential impact the loss or gain of one job will across the economy. Similarly, earnings and sales multipliers estimate the impact of earnings and sales. These indicates served to inform stakeholders of the importance of certain industries or occupations to the overall regional economy. In other works, not all industries are created equally in terms of their overall economic impact on Mendocino County.

Mendocino County's most concentrated industry, Wineries, has an employment multiplier of 1.77, which means that creating one wineries job creates 0.77 jobs in other county sectors. Distilleries had the highest employment multiplier at 4.4 within Mendocino County's top 20 most concentrated sectors as well as an earnings multiplier of 3.42 suggesting that properly this sector could provide significant economic benefits for the region. Supporting industries with the highest employment multipliers will help to drive employment across the entire county economy.

Industry Multipliers for Top 20 Industry Clusters in Mendocino County, 2019				
	Employment Multiplier	Earnings Multiplier	Sales Multiplier	
Wineries	1.77	1.50	1.39	
Bed-and-Breakfast Inns	1.33	1.54	1.49	
Support Activities for Forestry	1.27	1.17	1.38	
Wood Preservation	2.52	2.21	1.68	
Soil Preparation, Planting, and Cultivating	1.19	1.17	1.37	
Farm Management Services	1.18	1.17	1.37	

Totalizing Fluid Meter and Counting Device Manufacturing	2.21	1.68	1.50
Finfish Fishing	1.27	1.31	1.39
Logging	1.83	1.62	1.48
Other Nonhazardous Waste Treatment and Disposal	1.67	1.43	1.45
Scenic and Sightseeing Transportation, Land	1.23	1.34	1.38
Shellfish Fishing	1.37	1.31	1.39
Tire Retreading	1.52	1.43	1.27
All Other Outpatient Care Centers	1.79	1.39	1.51
Cut Stock, Resawing Lumber, and Planing	1.71	1.68	1.54
RV (Recreational Vehicle) Parks and Campgrounds	1.37	1.54	1.49
Sawmills	2.86	2.21	1.68
Other Millwork (including Flooring)	1.82	1.68	1.54
Metal Crown, Closure, and Other Metal Stamping	1.81	1.30	1.27
Distilleries	4.40	3.42	1.61

The following graph show the top 20 industry sectors by employment multipliers and provides their location quotients. Petroleum and Petroleum Products Merchant Wholesalers had the highest employment multiplier in 2019 at 9.0, followed by Petroleum Bulk Stations and Terminals (7.8) and Distilleries (4.4). Considering the high employment multiplier and high location quotients, programs to increase employment in these key industries are an important strategy for increasing overall employment. While the energy industry is currently undergoing significant challenges due to international market fluctuations and decreased demand due to quarantine mandates, it remains an important economic driver.

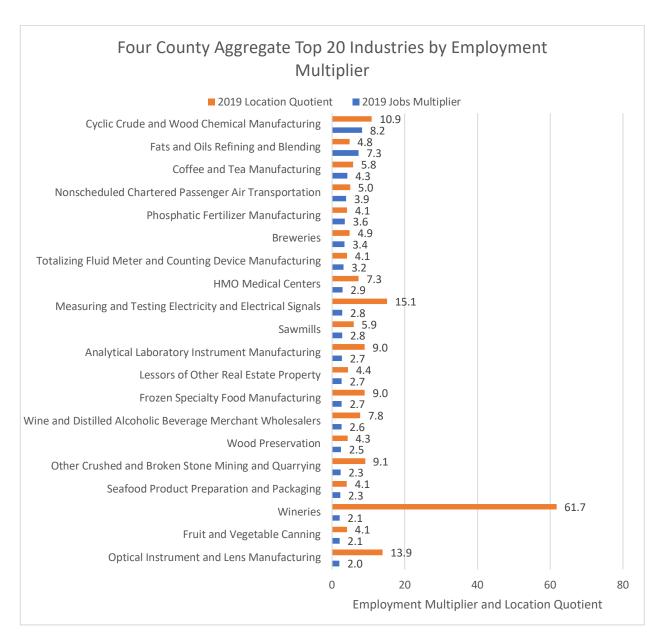


Employment multipliers for the four-county aggregate region were slightly higher than that of Mendocino County, with Cyclic Crude and Wood Chemical Manufacturing at 8.24 and Coffee and Tea Manufacturing at 4.25. These sectors represent areas of significant opportunities for the four-county aggregate region due to their high concentration and significant positive effect on the rest of the economy. Manufacturing operations typically have high employment multipliers as their supply chains require additional employees.

Some concentrated industries such as Soil Preparation, Planting and Cultivation or Support Activities for Forestry have relatively low multipliers. While still of significant importance to the regional economies, industries with lower employment multipliers are less effective as avenues of economic growth.

Industry Multipliers for Top 20 Industry Clusters in Four-County Aggregate Region, 2019				
	Employment Multiplier	Earnings Multiplier	Sales Multiplier	
Wineries	2.08	1.75	1.54	
Farm Management Services	1.26	1.26	1.59	
Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals	2.83	1.49	1.59	
<b>Optical Instrument and Lens Manufacturing</b>	2.03	1.38	1.47	
Cyclic Crude and Wood Chemical Manufacturing	8.24	4.25	1.47	
Soil Preparation, Planting, and Cultivating	1.27	1.26	1.57	
Finfish Fishing	1.32	1.41	1.5	
Tortilla Manufacturing	2.00	1.82	1.46	
Bed-and-Breakfast Inns	1.42	1.73	1.65	
Other Crushed and Broken Stone Mining and Quarrying	2.33	1.77	1.58	
Frozen Specialty Food Manufacturing	2.67	2.16	1.74	
Analytical Laboratory Instrument Manufacturing	2.72	1.59	1.60	
Wine and Distilled Alcoholic Beverage Merchant Wholesalers	2.63	1.95	1.71	
HMO Medical Centers	2.88	1.59	1.74	
Logging	1.93	1.69	1.59	
Mixed Mode Transit Systems	1.53	1.41	1.67	
All Other Consumer Goods Rental	1.70	1.58	1.65	
Support Activities for Forestry	1.29	1.25	1.55	
Sawmills	2.80	2.30	1.72	
Coffee and Tea Manufacturing	4.25	2.73	1.65	

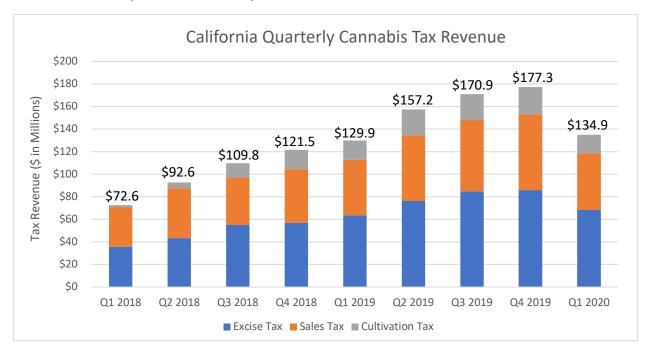
Four-county aggregate industry sectors with the highest employment multipliers were largely focused in manufacturing, with the highest multipliers being in Cyclic Crude and Wood Chemical Manufacturing (8.2), Fats and Oils Refining and Blending (7.3) and Coffee and Tea Manufacturing (4.3).



#### Legal Cannabis Industry Highlight

In today's economy environment, marked by near record levels of unemployment and significant business uncertainty, the legal cannabis market has emerged as a beneficial growth industry in California, from an employment, economic impact, and municipal finance perspective. If properly supported, it may provide significant economic relief to state and county coffers, local cities, existing workers, and those

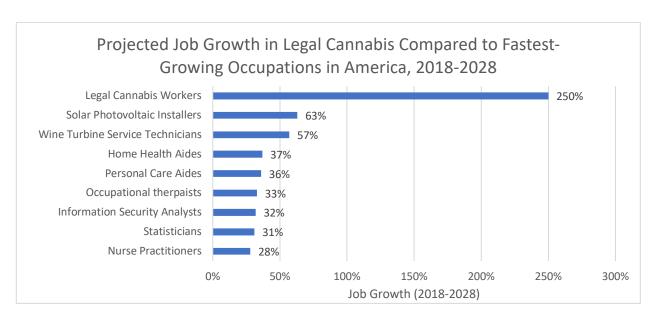
who have recently lost employment. The chart below highlights the growth of cannabis tax revenues in the state, which reached nearly \$180 million in Q4 2019 or \$635 million for the whole calendar year. The drop in tax revenue in Q1 2020 is related to disruptions caused by COVID-19.



Source: California Department of Tax and Fee Administration, Cannabis Tax Revenues

An industry with roots dating back to the 1960's, Mendocino County is part of the "Emerald Triangle" – the nation's largest cannabis-producing region – along with Trinity and Humboldt counties. The region's history, combined with the existing regional specializations of agriculture and farming, make Mendocino County and the broader region including Humboldt, Sonoma, and Trinity counties ground zero for the legal cannabis market.

According to Leafly's 2020 Cannabis Jobs Report, cannabis jobs in the nation have grown from 122,800 in 2017 to 243,700 in 2020, an increase of 120,900 jobs or 98 percent, with 33,700 jobs added in the last year alone. In 2020, California had the most cannabis jobs at 39,804, followed by Colorado (34,705) and Washington (23,756); the state's legal cannabis sales totaled \$2 billion in 2019. Overall, the industry is expected to continue its rapid growth, denoted by the expected 250 percent increase in cannabis workers between 2018 and 2028.



Source: Leafly 2020 Cannabis Jobs Report

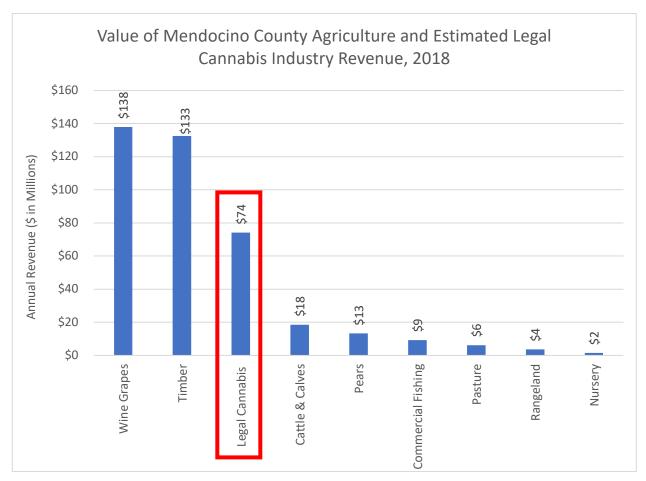
This shifting job market is readily apparent in Mendocino, Humboldt, Trinity, and Sonoma counties, where wineries and other farmers are starting to lose workers to this growing industry. As the regulatory environment has improved, workers have been increasingly attracted to the industry as it offers year-round employment with livable wages and benefits compared to the more seasonal and uncertain wine sector. A February 2020 *Sun Gazette* article profiles former vineyard worker Maria Vilchis, who "...now makes more money and has more time to spend with here family. She is paid \$15 an hour and works Monday to Friday, eight hours a day – an improvement from the 60-hour work week tending vineyards Monday to Saturday. Soon she'll be a regular employee, which comes with \$17-an-hour pay, full benefits and a 401K." This highlights the projected decline in concentration of Wineries in the broader four-county region and increased diversification of specialized industries.

According to the 2018-2019 Mendocino County Economic Assessment created by the Economic Development & Financing Corporation, the value of agricultural commodities in Mendocino County increased from approximately \$140 million in 2015 to well over \$160 million by 2017. Mendocino County currently has an estimated 277 cannabis facility licenses and has issued approximately 265 cannabis cultivation permits with an additional 800 permits currently in the application

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<sup>&</sup>lt;sup>1</sup> https://thesungazette.com/article/news/2020/02/05/wine-grape-growers-are-losing-labor-to-commercial-cannabis-farms/

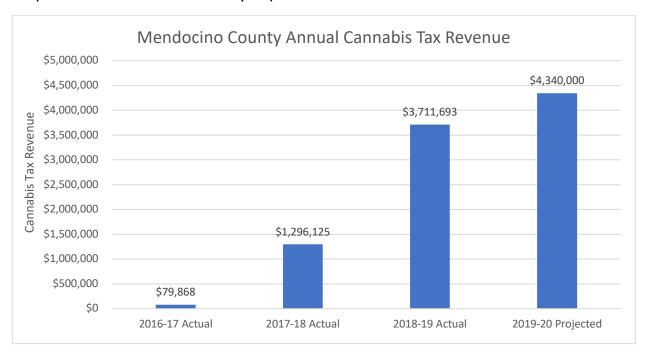
process. Overall, 80 percent of state issued cannabis licenses in Mendocino County were in cultivation, 17 percent in sales and distribution and the remaining 3 percent in manufacturing. It is estimated that cannabis industry revenue totaled over \$74 million in 2018-19 and that it is projected to grow to over \$86 million by 2019-20. According to the 2018 Mendocino Crop Report, this puts cannabis as the third most valuable commodity in the region.



Source: TCCG; Mendocino County 2018 Crop Report

Mendocino County cannabis tax revenue increased from \$79,868 in 2016-17 to over \$3.7 million in 2018-19 and is expected to surpass \$4 million by 2019-20. Cannabis tax revenues have become increasingly important contributors to county and municipal budgets, especially as aging populations put a strain on retirement and health insurance costs. Humboldt County expects a negative general fund

balance to develop in FY 2020-21 but indicates that potential cannabis sales may help to offset increased county expenditures.



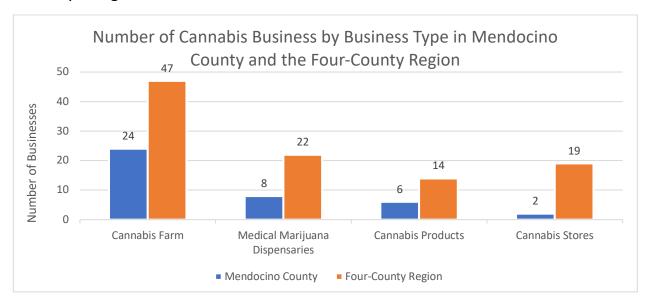
Source: County of Mendocino FY 2020-21 Proposed Budget, June 2020

Demonstrating Mendocino County's regional specialization in the legal cannabis industry, several agro-industrial parks — areas of designated for intensive agricultural production which also integrate all services within the value chain from planting to marketing — exist in the region including Flow-Kana and Boxcar Supply Company.

Flow-Kana, a family-run, small-batch, independent farm ecosystem provides local growers with the ability to scale their brands using sustainable practices. Flow-Kana also serves as a processing and distribution point through which dispensary owners can purchase tested and graded products for their customers while also allowing qualified consumers to purchase directly from them. On top of these services, Flow-Kana also created a branded content platform, Flow Talks, to support conversations with stakeholders across a number of occupations and industries in how best to leverage cannabis for positive change. This integrated approach to cultivation, harvesting, processing, marketing and sales alongside a community driven discussion platform effectively creates a collaborative and potentially competitive environment indicative of industry clusters; which, in turn, further drives regional economic growth.

Other notable organizations in Mendocino County include Henry's Original, a small batch cannabis cultivator using sustainable and organic methods (Clean Green Certified) to grow certified cannabis on seven proprietary farms in Mendocino County. Root One Botanicals is a processing, storage, and distribution organization which, through extensive relationships with local farmers, brings local products to California customers. Emerald Sun, located in Ukiah, is a processing, manufacturing, and distribution company which focuses on sun grown cannabis and, as recently as February 2020, had been approved for more space to expand its storage capacity<sup>2</sup>. The broad range and variety of legal cannabis businesses in Mendocino County, from family-run farms to technical manufacturing operations and corporate branding, and their ability to work collaboratively serves as a major competitive advantage for the area and the broader Emerald Triangle region.

While business data remains somewhat elusive due to the industry's infancy, below are two charts showing the number of businesses in the cannabis sector by type of business in Mendocino County and the four-county region helping to highlight the current state of the industry and regional specializations. These business types are based on recently established Standard Industry Classification (SIC) codes providing further evidence that the industry is better established than in prior years when no industry designation existed.



Source: TCCG; Dun and Bradstreet Market Insight

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<sup>&</sup>lt;sup>2</sup> https://www.ukiahdailyjournal.com/2020/02/19/emerald-sun-cannabis-facility-expansion-in-ukiah-approved-pending-inspection/

Due to the nascent history of the industry, government data is almost nonexistent, which means that calculating total sales, industry concentration, employment and impacts in this sector remains a challenge. Overall, the cannabis market is expected to continually grow and potentially drive significant economic activity across the state, so much so that Mendocino County recently announced an award of more than \$2 million from the Governors' Office of Business and Economic Development to support local cannabis businesses

#### Conclusion

Both Mendocino County and the four-county aggregate region are highly specialized in agricultural, forestry and certain manufacturing operations. Wineries were the most focused industry in both Mendocino County and the four-county aggregate, reflecting a long history of winemaking. While the region's largest occupations were in retail, the most concentrated occupations were largely in forestry, with Fallers being the most concentrated occupation in Mendocino county and the second most concentrated across the four-county region. The significant concentration of forestry related workers helps to highlight the geographic landscape of the region, which consists of dense forests and timberland.

Over the next decade, Mendocino County will see a diversifying economy, with its most concentrated industries declining slightly in concentration. This is a natural progression which will help to diversify regional strengths protecting the region from potential market disruptions. Overall, a diverse economy, constructed of a number of sectors of strength, is most ideal in terms of weathering economic downturns and capturing upside when times are good. The four-county region will see smaller shifts, with increasing concentration in several manufacturing sectors and small declines in others.

While supporting industry clusters will provide significant economic benefits, it is to support clusters that pay livable wages and support jobs in other parts of the economy. While Mendocino County has several highly concentrated occupations with average annual salaries above the regional living wage, no occupation in the

four-county region has both a location quotient of at least four and an average annual salary above the living wage. In order to best support industry and occupational growth across both Mendocino County and the four-county aggregate region, special attention should be placed on occupations with high employment multipliers as they help generate additional jobs in other sectors across the economy; Manufacturing-related services and activities provided some of the highest employment multipliers for both regions.

Overall, Mendocino County and the four-county aggregate region's labor markets and industry clusters are largely a product of the geographic region — heavy timberland and forests and arable farming land. Manufacturing related operations are also major sources of economic activity and provide significant employment multiplier effects. While many of the highly concentrated industry clusters in these regions will experience contractions over the next decade, others will see increased concentration indicating increased sub-sector diversification. While ensuring existing industry clusters remain strong, local stakeholders should also support growing sectors with high multipliers, such as Manufacturing, so as not to forfeit any increased collaboration or innovation and an industry sector that generates more additional jobs for every job created.

### **Appendix**

# COVID-19 Impact on Occupational Demand in Mendocino County, Four-County Aggregate Region, California and the United States

The COVID-19 economic downturn will likely accelerate some trends that were already occurring, while also creating new trends that will become the "next normal". The pandemic's many uncertainties make it difficult to predict what an economic recovery will look like and how long it will take.

However, there are some things we do know:

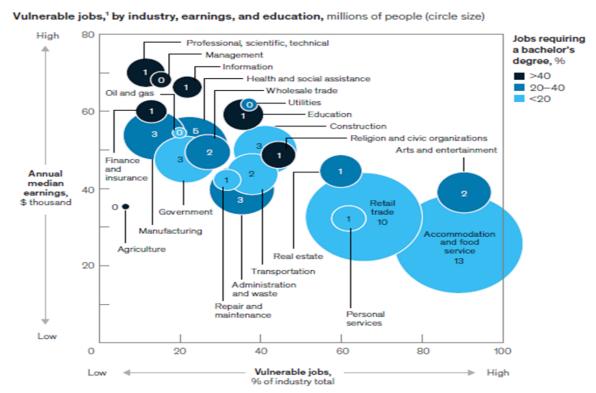
- The economy and business operations will not suddenly flip a switch back to normal. Restrictions on non-essential businesses will likely be relaxed over time, meaning impacts on industries and jobs will vary, and look different depending on the locale.
- While some industries and companies will rehire laid off workers, some likely
  will not, at least at pre-COVID levels. This means workers will need to
  determine how to transfer their existing skills or reskill into a new career.
- Economic development has changed for good. Some of the fundamentals of both fields will remain, but it will not be business as usual.
- Adaptability will be vital. Advanced labor market data and economic analysis
   will be the key to anticipating workforce needs and measuring impacts.

COVID-19 is truly a unique event. It is impacting each industry differently, and those impacts are also unique depending on the region and the containment and reopening measures taken by local and state government.

#### **National Level: Analyzing Hardest Hit Industries and Occupations**

Understanding which industries have been hit hardest in the short-term and which will experience long-term unemployment will help determine the pivot that needs to take place. One place to start is with the industries identified by Brookings and McKinsey as being at immediate risk, near-term risk, and long-term risk due to COVID-19. In assessing the economic impact regionally in these categories, particular businesses and occupations will begin to emerge as priorities. Some likely won't be those which were obvious at the start of the pandemic. There will also be stark differences between those industries which were deemed essential versus non-essential. In general, industries hardest hit by the COVID-19 recession have workers with the lowest wages and lowest education attainment.

Exhibit 6
Industries with the lowest wages and the lowest educational attainment are being hit hardest.



<sup>&</sup>quot;Vulnerable" jobs are subject to furloughs, layoffs, or being rendered unproductive (eg, kept on payroll but not working) during periods of high physical distancing

Examining pre-pandemic industry reports or snapshots will provide a good baseline of which industries saw steep job and revenue declines in early 2020. Initial unemployment claims by industry provides an early indicator, and monitoring job posting and profile activity will provide early details on employment trends.

For example, McKinsey estimates that two service sectors, Retail and Accommodation and Food Services, account for 42 percent of all vulnerable jobs; more than 80 percent of all customer-service and sales roles are at risk. A recent *New York Times* analysis of credit card data saw the largest drops in consumer spending in the following sectors:

- Movie Theaters (-99%);
- Airlines (-92%);
- Discount Department Stores (-91%);
- Lodging (-88%);
- Fine Dining (-81%);
- Shoe Stores (-76%); and
- Apparel Stores (-69%).

Food Service, Entertainment and Accommodation were hardest hit in mid-March, while a subsequent decline in consumer spending has led to job losses in Retail, Business Services, Manufacturing and non-essential Healthcare.

Our analysis shows that the following industries have the highest proportions of vulnerable workers:

- Food Service and Drinking Places (93%);
- Traveler Accommodation (80%);
- Other Services (73%);
- Construction (69%);

- Retail Trade (68%);
- Arts, Entertainment and Recreation (61%);
- Mining, Quarrying, Gas and Oil Extraction (56%);
- Temp Agencies, Guards, Janitorial (56%);
- Transportation and Warehousing (55%); and
- Nondurable Manufacturing (50%).

While most job losses so far have been in the private sector, the shutdown will likely begin affecting the public sector as well. Financial institutions, non-profits and education could all see waves of job losses.

Relatively low-risk sectors, on the other hand, include Government, Professional Occupations, Healthcare, Education, Financial Services and Social Services. Some sectors are in fact seeing economic growth and significant new job opportunities, such as the grocery sector, pharmacies, convenience stores and fast food, some parts of healthcare, call-center, and information- and communication-technology (ICT) sectors.

McKinsey estimates "that up to 3 million workers could find short-term employment as community health workers, warehouse staff, delivery drivers, and other critical roles." Contact tracing and large-scale testing could also fuel some employment growth in the near future.

Exhibit 3

# Overall job postings have declined, but there have been small increases in COVID-19-related occupations.

## Top 15 occupations by absolute increases in job postings

#### Top 15 occupations by absolute decreases in job postings<sup>1</sup>

	Number	%		Number	%
Interpreters and translators	19,902	268	Retail supervisors	-51,593	-15
Respiratory therapists	10,587	52	Childcare workers	-45,165	-36
Family and general practitioners	9,189	18	Retail salespersons	-42,551	-12
Physicians and surgeons	6,281	9	App-software developers	-33,583	-11
Registered nurses	5,510	1	Food-prep supervisors	-32,196	-22
Manual laborers and warehouse stockers	4,420	9	Light-truck delivery drivers	-30,820	-21
Internists	4,301	12	Customer-service representatives	-29,817	-12
Psychiatrists	3,469	13	Office and administrative supervisors	-28,425	-18
Obstetricians and gynecologists	1,878	13	Food-prep workers	-25,583	-20
Writers and authors	1,707	51	Personal-care aides	-24,926	-25
Loan interviewers and clerks	1,673	19	Restaurant cooks	-24,160	-30
Surgeons	1,502	7	Accountants and auditors	-20,895	-15
Chemistry and biology R&D managers	1,343	6	Heavy- and tractor-trailer truck drivers	-20,517	-3
Anesthesiologists	1,207	19	Maintenance and repair workers	-20,367	-16
Heating and air-conditioning installers <sup>2</sup>	962	63	Restaurant servers	-16,556	-30

Note: Unidentified occupations were removed from chart; only occupations with at least 500 job postings in February 2020 were analyzed; names of occupations adjusted for clarity; occupations shown do not represent the full one-million decline.

Source: Emsi job-posting data; McKinsey Global Institute analysis

While we are still learning about how employment is going to change in the post-COVID-19 reality, several key priorities should be considered as we rebuild communities in Mendocino County:

#### Analyze Industries Poised for Growth and that will Rebound Most Quickly

While the economic impact is broad and far reaching, not all industries will take a hit. Some will come through unscathed and others are well positioned for growth. It is just as important to understand these industries and the firms that comprise them. Driver industries before the pandemic will likely remain, but perhaps look different. Analyzing how they have changed (altered supply chains, new talent needs, etc.) and being ready to help them find necessary solutions will support their growth potential coming out of the pandemic.

The key to rapid economic recovery is getting people back to work as quickly as possible after physical distancing measures are relaxed. It is critical to track

<sup>&</sup>lt;sup>1</sup>Mar 18-Ap 16, 2020.

<sup>&</sup>lt;sup>2</sup>Military-only occupations excluded from chart.

whether growing industries will continue to grow for workers who will continue to be impacted, such as leisure and hospitality. Just as important is to identify the industries and occupations poised for a quick bounce back – with a particular focus on those jobs that can be accomplished while maintaining some physical distancing measures.

- Healthcare
- Education
- Information Technology
- Financial Services
- Social Services
- Logistics/Distribution

According to Glassdoor, at the national level the following occupations have the healthiest growth trends since the onset of COVID-19:

- Grocery Manager
- Order Selection
- Warehouse Manager
- Forklift Operator
- Public Health Advisor
- IT Specialist
- Warehouse Worker
- Material Handler

During the first quarter of 2020, the COVID-19 global pandemic disrupted labor markets across the nation as stay-at-home orders and social distancing measures forced many employers to furlough or layoffs their workers. According to the Bureau of Labor Statistics, the United States unemployment rate increased from

3.6 percent in January 2020 to 14.7 percent in April 2020 before retreating slightly to 13.3 percent in May 2020.

While several economists expected a "V-shaped" recovery with a rapid re-opening of the economy, a prolonged "L-shaped" or "Nike Swoosh" type recovery is becoming more likely, similar to the post-Great Recession recovery. This recovery's speed will likely be dictated by how effective current reopening strategies are at mitigating additional potential COVID-19 spread. Many have already been critical of current reopening efforts, suggesting that these openings have happened too quickly. This partial opening —combined with several ongoing, highly attended protest marches happening in major cities across the nation —may result in a second spike of infections within the first wave, followed by a second wave of infections likely to hit in later parts of the year.

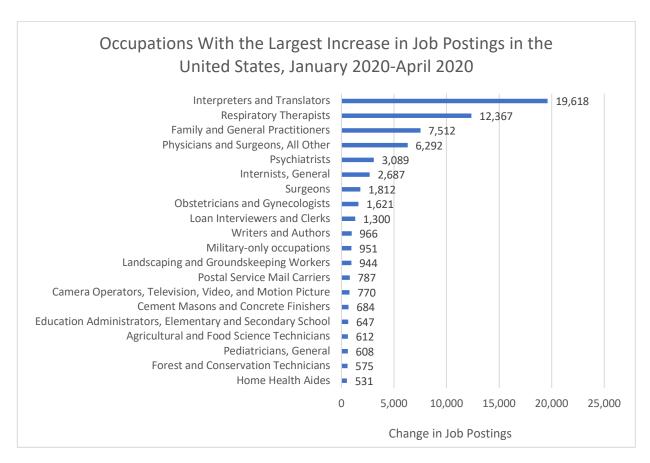
Many expected the unemployment rate to continue to increase, as the number of jobless claims surpassed 40 million at the end of May 2020. One hopeful sign of the potential start of the recovery has been seen in continuing jobless claims, which decreased from just under 25 million to 21.1 million for the week ending May 16. One major concern - furloughed workers being eventually fired due to limited and often mismanaged financial support - have proven not to be the case thus far.

The United States had 13.2 million unique job postings in January 2002 but only 10.1 million in April 2020, a decline of over 3.1 million job postings or 23.4 percent. The hardest hit occupations included heavy and tractor-trailer truck drivers, whose job postings declined by 335,608, followed by Retail Salespersons (-105,953), and First-Line Supervisors of Retail Workers (-95,263). While online retailers were more insulated from COVID-19 impacts and primarily dealt with supply chain disruptions, physical retailers had to close stores for several weeks resulting in significant losses.

Accommodation and Food Service sectors were also dramatically impacted as closures limited their ability to generate revenue, leading to layoffs. While more innovative businesses are able to leverage delivery and take-out services, more traditional restaurants and bars which rely on consumer spending at physical locations continued to struggle. The chart below highlights the occupations which experienced the largest decline in job postings between January 2020 and April 2020 in the nation.



Over the same time period, the occupations which saw the largest increase in job postings were largely focused in healthcare, reflecting the current pandemic. While Interpreters and Translators saw the largest increase in job postings at 19,618 between January 2020 and April 2020, Respiratory Therapists, Family and General Practitioners, and Physicians and Surgeons, All Other saw job postings increase by 12,367, 7,512 and 6,292, respectively. However, the overall decline of over 3,000,000 job postings between January 2020 and April 2020 overshadows these bright spots.

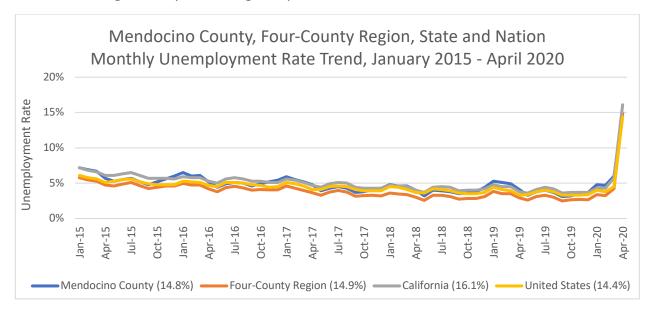


#### Mendocino County

In Mendocino County, the unemployment rate increased from 6.0 in March 2020 to 14.8 percent in April 2020. The number of unemployed individuals shot up to 5,520 while the labor force simultaneously dropped from 38,640 in March 2020 to 37,250 in April 2020. Mendocino County's unemployment rate is well-above its recessionary peak, which was 12.8 percent in February and March 2020. This suggests that the economic impacts from COVID-19 will likely surpass those of the Great Recession.

Overall, Mendocino County's April 2020 unemployment rate was below the state and four-county aggregate region by 1.3 percentage points and 0.1 percentage points, respectively, but above the national unemployment rate by 0.4 percentage points. As at the state and national level, employment losses were largely focused in the Leisure and Hospitality industries — Mendocino County employment in Leisure and Hospitality decline from 4,270 in January 2020 to 2,600 by April 2020, a decline of nearly 40 percent.

The chart below highlights the unemployment rate trends in Mendocino County, the four-county region, California and the United States. The impacts of COVID-19 on each labor market are significant, as can be seen below, with unemployment rates in all regions skyrocketing in April 2020.



Source: TCCG LLC; Emsi; California Employment Development Department

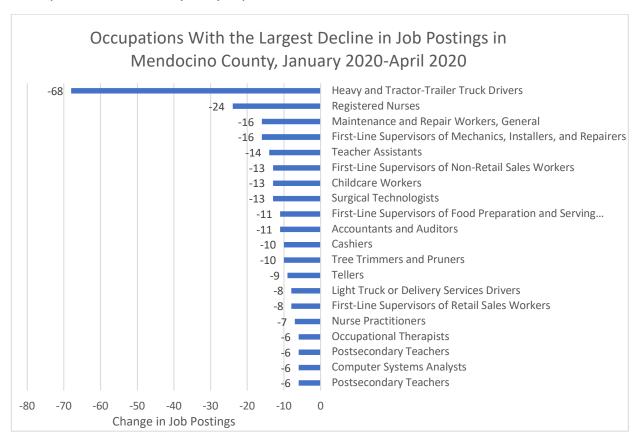
While many of the most in-demand occupations in Mendocino County mirrored those of the four-county aggregate region, it had a smaller drop in job postings with most of the top 20 in-demand occupations actually seeing increases.In fact, Mendocino County only had 56 less job postings in April 2020 (3,046 job postings) than in January 2020 (3,102 job postings), a reduction of less than 2 percent, significantly lower than the broader four-county aggregate region, state or nation. This indicates that the county's economy has been more insulated from the impacts of COVID-19.

Change in Job Postings for Most In-Den January 202	nand Occupa 20-April 2020		idocino Cou	nty,
	Jan-20 Job Postings	Apr-20 Job Postings	Jan. 2020-Apr. 2020 Absolute Change	Jan. 2020-Apr. 2020 Percent Change
Registered Nurses	588	564	-24	-4%
Heavy and Tractor-Trailer Truck Drivers	170	102	-68	-40%
Family and General Practitioners	76	73	-3	-4%
Retail Salespersons	71	69	-2	-3%
First-Line Supervisors of Retail Sales Workers	64	56	-8	-13%
Social and Human Service Assistants	43	56	13	30%
Physical Therapists	38	56	18	47%
Merchandise Displayers and Window Trimmers	37	55	18	49%
Radiologic Technologists	40	48	8	20%
Stock Clerks and Order Fillers	31	45	14	45%
Customer Service Representatives	45	44	-1	-2%
Driver/Sales Workers	26	43	17	65%
Medical and Health Services Managers	27	41	14	52%
Cashiers	49	39	-10	-20%
First-Line Supervisors of Office and Administrative Support Workers	24	36	12	50%
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	26	34	8	31%
Pharmacy Technicians	31	33	2	6%
Physicians and Surgeons, All Other	30	33	3	10%
Light Truck or Delivery Services Drivers	40	32	-8	-20%
Respiratory Therapists	11	32	21	191%

Source: TCCG LLC and Emsi

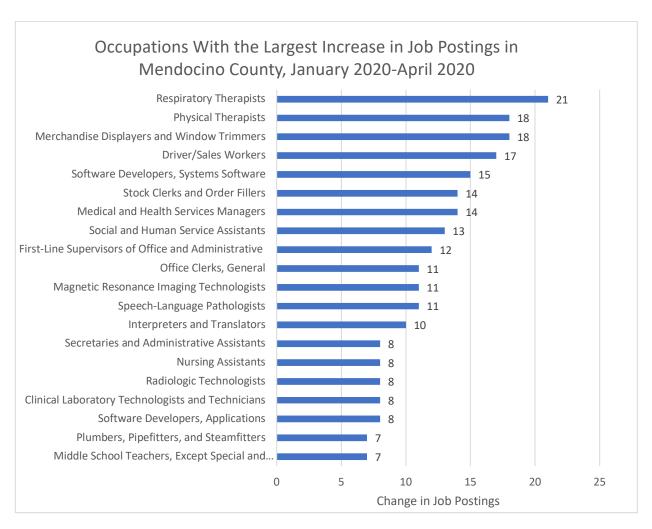
Many of the occupations in Mendocino County with the largest declines and increases job postings between January 2020 and April 2020 were similar to that of the four-county aggregate region, state and nation, with the exception of retail-

related occupations, which seemed largely insulated. Job postings for Retail Salespersons shrank by only 3 percent.



Source: TCCG LLC and Emsi

Mendocino County occupations with the largest increase in job postings included Respiratory Therapists (21), Physical Therapists (18), and Merchandise Displayers and Window Trimmers (18). Software Developers, Applications, which saw dramatic job posting declines at the state and national level, actually added 8 job postings for a 200 percent increase.



While many of the economic impacts brought on by COVID-19 have yet to be fully captured and understood, it is important to note that Mendocino County may be slightly more insulated from these impacts than the larger four-county aggregate region or the state. This is due to the region's occupational composition and its relatively low rate of COVD-19 infection and indicates Mendocino County may be well-positioned to recover more rapidly.

Most Mendocino County occupations affected by the pandemic are similar to those in the larger region, state and nation while occupations with higher degrees on concentration in the region were seemingly unaffected. Thus, these industry clusters represent not only areas of economic activity and growth during time of economic expansion, but also areas of resilience in the face of economic

downturns. Despite their comparative strength to more disruption-prone industries, it is important to support key industry clusters, especially during recessions, as they can aid in accelerating a region's economic recovery. While a significant number of uncertainties remain regarding the totality of economic impacts from COVID-19, understanding regional and local labor markets and the real-time occupational supply and demand fluctuations will allow stakeholders and policymakers to quickly respond and minimize negative impacts while maximizing potential economic opportunity.

COVID-19 is likely to plunge the nation into a steep with uncertain long-term impacts. A potential second spike in infections, the threat of second wave of infections later in the year, increased global tensions, domestic political instability, and a decoupled stock market all add to this uncertainty. With statewide unemployment numbers already surpassing previous Great Recession peaks, additional negative impacts are expected to be reported in the coming weeks and months.

#### Four-County Aggregate Region

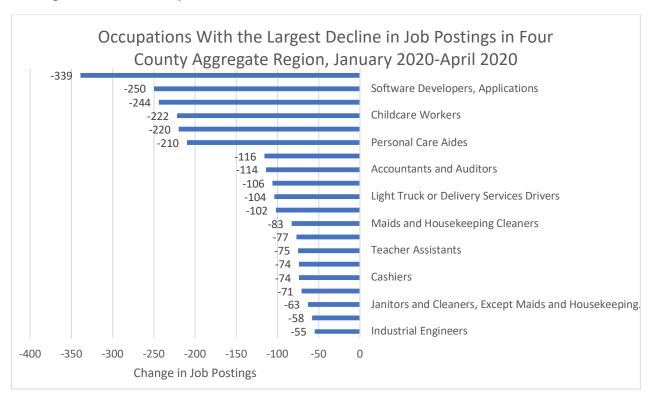
As of April 2020, the four-county region's labor force totaled 340,200, a decline of 22,540 or 6.2 percent of workers since January 2020. This decline was largely due to Sonoma County – the county with the largest labor market in the region – which lost 50,800 jobs from January to April 2020, accounting for 83 percent of losses in the four-county aggregate region.

Meanwhile the number of unemployed individuals skyrocketed by 313 percent – driven largely by Sonoma County - from 12,260 in January 2020 to 38,320 by April 2020. Overall, the four-county region had an unemployment rate of 14.9 in April 2020, lower than the state unemployment rate of 16.1 percent but above the national rate of 14.4 percent and well above its previous recessionary peak. The four-county region's most in-demand occupations as of April 2020 included Registered Nurses, Heavy and Tractor-Trailer Truck Drivers and Retail Salespersons, occupations which also saw some of the largest reductions in job postings since January 2020. Following national and statewide trends, a decline in consumer spending at brick-and-mortar retail locations lead to hiring declines in this sector. Additionally, while more broad medical professions saw hiring declines, other more specific fields involved in treating COVID-19-related cases saw increases. Overall, the four-county aggregate region saw total job postings drop by 4,981 or by 19.8 percent from January 2020 (25,181 job postings) to April 2020 (20,200) job postings. The table below highlights the change in job postings for the most indemand occupations in the region as of April 2020.

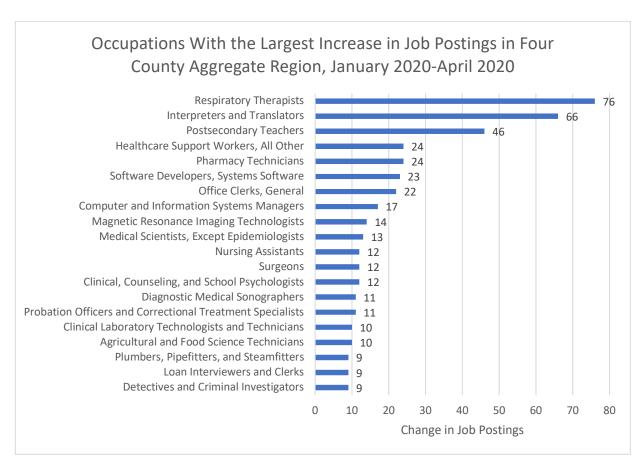
	Change in Job Postings for Most In-Demand Occupations in Four County Aggregate Region, January 2020-April 2020												
	Jan-20 Job Postings	Apr-20 Job Postings	Jan. 2020-Apr. 2020 Absolute Change	Jan. 2020-Apr. 2020 Percent Change									
Registered Nurses	2,051	1,945	-106	-5.2%									
Heavy and Tractor-Trailer Truck Drivers	968	629	-339	-35.0%									
Retail Salespersons	815	595	-220	-27.0%									
First-Line Supervisors of Retail Sales Workers	801	557	-244	-30.5%									
Customer Service Representatives	466	350	-116	-24.9%									
Software Developers, Applications	574	324	-250	-43.6%									

Speech-Language Pathologists	337	320	-17	-5.0%
Stock Clerks and Order Fillers	352	318	-34	-9.7%
Physicians and Surgeons, All Other	267	270	3	1.1%
Medical and Health Services Managers	252	253	1	0.4%
Family and General Practitioners	280	249	-31	-11.1%
Cashiers	315	241	-74	-23.5%
Maintenance and Repair Workers, General	313	239	-74	-23.6%
First-Line Supervisors of Office and Administrative Support Workers	335	233	-102	-30.4%
Personal Care Aides	442	232	-210	-47.5%
Postsecondary Teachers	186	232	46	24.7%
Light Truck or Delivery Services Drivers	330	226	-104	-31.5%
Social and Human Service Assistants	221	193	-28	-12.7%
First-Line Supervisors of Food Preparation and Serving Workers	234	187	-47	-20.1%
Physical Therapists	238	184	-54	-22.7%

The following charts highlight occupations which saw the largest declines and increases in job postings during the four-month period. In the medical field, Personal Care Aides and Registered Nurses saw declines in job postings of 210 and 106, respectively, while Respiratory Therapists saw an increase of 76 job postings during the same time period.



Source: TCCG LLC and Emsi

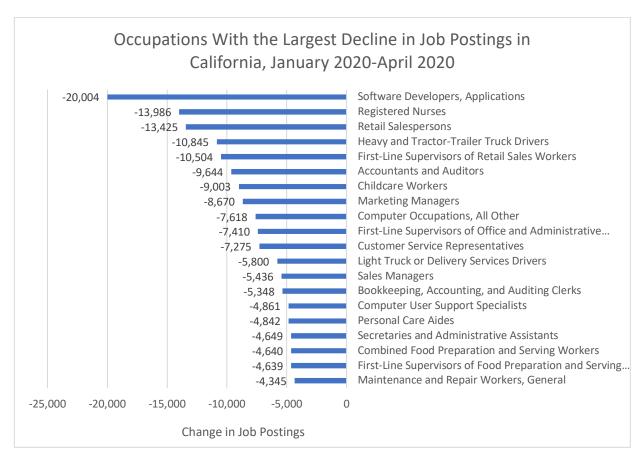


#### California

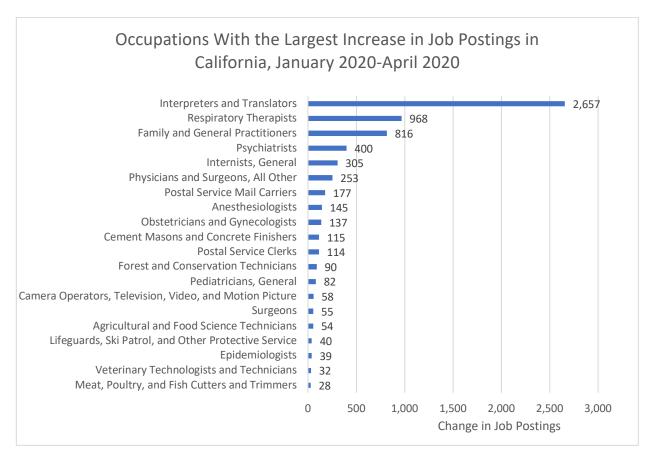
California's unemployment rate increased from 4.3 percent in January 2020 to 16.1 percent by April 2020, well above the previous Great Recessionary peak of 12.6 percent. The number of unemployed individuals increased by 255.9 percent, from 840,000 to a staggering 2,989,200, 672,700 more than at the peak of the Great Recession in July 2010.

In California, the number of job postings between January 2020 (1,316,534 job postings) and April 2020 (928,593 job postings) declined by 387,941 or by 29.5 percent — a higher percentage than the nation as a whole, suggesting California was more susceptible to market shocks caused by the pandemic. Software Developers, Applications saw the largest decline in job postings, losing just over 20,004. Additionally, Registered Nurses saw a decline in job postings of 13,986 followed by Retail Salespersons which dropped by 13,425. The drop in demand for Software Developers, Application is largely due to the early outbreaks experienced in the Bay Area, which required many IT-related businesses to slow hiring as demand for their services declined.

The decline in job postings for Registered Nurses, may seem contradictory due to the increased demand for healthcare but is likely due to providers prioritizing care over hiring strategies. Demand for medical professionals was unevenly distributed across the nation due to varying infection rates by geography; the healthcare bottleneck was largely due to a lack of hospital beds and respirators, rather than a lack of healthcare professionals.



Following national trends, California occupations with the largest gain in job postings between January 2020 and April 2020 included Interpreters and Translators, with 2,657 additional job postings, followed by Respiratory Therapists (968) and Family and General Practitioners (816).



## Mendocino County Location Quotient Hierarchy

#### Industries with Location Quotient Above "2"

NAICS	Description	2019	2020	2021	2022	2023	2024	2025
11	Agriculture, Forestry, Fishing and Hunting	5.80	5.73	5.67	5.62	5.57	5.53	5.48
111	Crop Production	6.24	5.84	5.51	5.22	4.98	4.82	4.61
1110	Crop Production	6.24	5.84	5.51	5.22	4.98	4.82	4.61
11100	Crop Production	6.24	5.84	5.51	5.22	4.98	4.82	4.61
111000	Crop Production	6.24	5.84	5.51	5.22	4.98	4.82	4.61
113	Forestry and Logging	23.18	23.00	22.84	22.70	22.57	22.48	22.31
1131	Timber Tract Operations	7.56	7.64	7.70	7.75	7.79	7.82	7.83
1133	Logging	25.05	24.94	24.85	24.77	24.69	24.65	24.55
11311	Timber Tract Operations	7.56	7.64	7.70	7.75	7.79	7.82	7.83
11331	Logging	25.05	24.94	24.85	24.77	24.69	24.65	24.55
113110	Timber Tract Operations	7.56	7.64	7.70	7.75	7.79	7.82	7.83
113310	Logging	25.05	24.94	24.85	24.77	24.69	24.65	24.55
114	Fishing, Hunting and Trapping	19.51	17.81	16.46	15.34	14.36	13.81	12.95
1141	Fishing	25.06	23.04	21.41	20.03	18.84	18.15	17.09
11411	Fishing	25.06	23.04	21.41	20.03	18.84	18.15	17.09
114111	Finfish Fishing	31.42	29.89	28.65	27.61	26.69	26.16	25.35
114112	Shellfish Fishing	20.12	17.26	14.93	12.97	11.24	10.25	8.72
115	Support Activities for Agriculture and Forestry	5.74	6.04	6.27	6.47	6.63	6.71	6.83
1151	Support Activities for Crop Production	4.82	5.14	5.40	5.61	5.78	5.87	6.01
11511	Support Activities for Crop Production	4.82	5.14	5.40	5.61	5.78	5.87	6.01
115112	Soil Preparation, Planting, and Cultivating	36.69	41.02	44.40	47.16	49.49	50.84	52.67
115116	Farm Management Services	35.64	33.94	32.63	31.58	30.71	30.20	29.46
1153	Support Activities for Forestry	40.02	39.68	39.42	39.22	39.05	38.96	38.79
11531	Support Activities for Forestry	40.02	39.68	39.42	39.22	39.05	38.96	38.79
115310	Support Activities for Forestry	40.02	39.68	39.42	39.22	39.05	38.96	38.79

		2019	2020	2021	2022	2023	2024	2025
21	Mining, Quarrying, and Oil and Gas Extraction	0.21	0.21	0.20	0.20	0.20	0.20	0.19
21232	Sand, Gravel, Clay, and Ceramic and Refractory Minerals Mining and Quarrying	2.79	2.79	2.79	2.79	2.78	2.78	2.78
212321	Construction Sand and Gravel Mining	4.11	4.14	4.16	4.18	4.20	4.21	4.22
213115	Support Activities for Nonmetallic Minerals (except Fuels) Mining	6.92	5.29	4.13	3.25	2.55	2.16	1.78
2212	Natural Gas Distribution	5.61	5.64	5.66	5.68	5.70	5.71	5.71
22121	Natural Gas Distribution	5.61	5.64	5.66	5.68	5.70	5.71	5.71
221210	Natural Gas Distribution	5.61	5.64	5.66	5.68	5.70	5.71	5.71
2213	Water, Sewage and Other Systems	2.02	1.90	1.81	1.74	1.67	1.63	1.58
22131	Water Supply and Irrigation Systems	2.20	2.04	1.91	1.81	1.72	1.67	1.60
221310	Water Supply and Irrigation Systems	2.20	2.04	1.91	1.81	1.72	1.67	1.60
2361	Residential Building Construction	2.20	2.25	2.30	2.33	2.36	2.38	2.40
23611	Residential Building Construction	2.20	2.25	2.30	2.33	2.36	2.38	2.40
236115	New Single-Family Housing Construction (except For-Sale Builders)	3.28	3.37	3.45	3.51	3.57	3.60	3.64
2373	Highway, Street, and Bridge Construction	2.57	2.64	2.69	2.74	2.77	2.79	2.82
23731	Highway, Street, and Bridge Construction	2.57	2.64	2.69	2.74	2.77	2.79	2.82
237310	Highway, Street, and Bridge Construction	2.57	2.64	2.69	2.74	2.77	2.79	2.82
23817	Siding Contractors	2.17	2.52	2.80	3.04	3.23	3.35	3.51
238170	Siding Contractors	2.17	2.52	2.80	3.04	3.23	3.35	3.51

		2019	2020	2021	2022	2023	2024	2025
31-33	Manufacturing	0.85	0.84	0.83	0.82	0.81	0.80	0.80
3117	Seafood Product Preparation and Packaging	9.53	8.32	7.29	6.40	5.60	5.11	4.41
31171	Seafood Product Preparation and Packaging	9.53	8.32	7.29	6.40	5.60	5.11	4.41
311710	Seafood Product Preparation and Packaging	9.53	8.32	7.29	6.40	5.60	5.11	4.41
311941	Mayonnaise, Dressing, and Other Prepared Sauce Manufacturing	3.91	3.69	3.53	3.40	3.29	3.23	3.13
312	Beverage and Tobacco Product Manufacturing	15.97	15.41	14.97	14.62	14.33	14.16	13.90
3121	Beverage Manufacturing	16.63	15.99	15.50	15.10	14.77	14.58	14.30
31212	Breweries	4.49	3.77	3.24	2.84	2.51	2.33	2.07
312120	Breweries	4.49	3.77	3.24	2.84	2.51	2.33	2.07
31213	Wineries	56.54	54.66	53.21	52.05	51.07	50.51	49.69
312130	Wineries	56.54	54.66	53.21	52.05	51.07	50.51	49.69

31214	Distilleries	10.41	11.04	11.50	11.87	12.17	12.34	12.58
312140	Distilleries	10.41	11.04	11.50	11.87	12.17	12.34	12.58
321	Wood Product Manufacturing	5.49	5.32	5.19	5.09	5.00	4.95	4.88
3211	Sawmills and Wood Preservation	15.01	14.80	14.63	14.49	14.36	14.29	14.16
32111	Sawmills and Wood Preservation	15.01	14.80	14.63	14.49	14.36	14.29	14.16
321113	Sawmills	12.12	11.66	11.27	10.95	10.66	10.49	10.23
321114	Wood Preservation	38.87	40.12	41.10	41.91	42.59	42.99	43.50
3219	Other Wood Product Manufacturing	3.65	3.48	3.33	3.21	3.11	3.05	2.96
32191	Millwork	6.20	6.03	5.89	5.78	5.67	5.61	5.51
321912	Cut Stock, Resawing Lumber, and Planing	14.18	12.09	10.42	9.03	7.82	7.13	6.09
321918	Other Millwork (including Flooring)	11.68	12.03	12.31	12.56	12.77	12.90	13.06
32199	All Other Wood Product Manufacturing	2.14	2.01	1.91	1.82	1.75	1.70	1.64
32621	Tire Manufacturing	2.09	1.77	1.52	1.30	1.11	1.00	0.85
326212	Tire Retreading	18.29	15.07	12.59	10.57	8.86	7.88	6.62
3321	Forging and Stamping	6.13	6.31	6.45	6.58	6.68	6.74	6.83
33211	Forging and Stamping	6.13	6.31	6.45	6.58	6.68	6.74	6.83
332119	Metal Crown, Closure, and Other Metal Stamping (except Automotive)	11.59	12.00	12.33	12.62	12.87	13.01	13.22
332322	Sheet Metal Work Manufacturing	2.41	2.41	2.40	2.40	2.40	2.40	2.39
33399	All Other General Purpose Machinery Manufacturing	2.66	2.27	1.96	1.69	1.47	1.34	1.15
33612	Heavy Duty Truck Manufacturing	4.21	4.85	5.33	5.72	6.04	6.23	6.44
333249	Other Industrial Machinery Manufacturing	2.45	2.61	2.74	2.85	2.94	2.99	3.07
333994	Industrial Process Furnace and Oven Manufacturing	34.87	30.06	26.09	22.70	19.72	17.96	15.35
334514	Totalizing Fluid Meter and Counting Device Manufacturing	17.41	18.30	19.03	19.65	20.20	20.53	20.96
336120	Heavy Duty Truck Manufacturing	4.21	4.85	5.33	5.72	6.04	6.23	6.44

		2019	2020	2021	2022	2023	2024	2025
42	Wholesale Trade	0.62	0.61	0.61	0.61	0.61	0.61	0.61
42331	Lumber, Plywood, Millwork, and Wood Panel Merchant Wholesalers	3.12	2.83	2.59	2.40	2.23	2.13	1.98
423310	Lumber, Plywood, Millwork, and Wood Panel Merchant Wholesalers	3.12	2.83	2.59	2.40	2.23	2.13	1.98
42446	Fish and Seafood Merchant Wholesalers	5.57	6.40	7.06	7.61	8.08	8.36	8.75
424460	Fish and Seafood Merchant Wholesalers	5.57	6.40	7.06	7.61	8.08	8.36	8.75
42447	Meat and Meat Product Merchant Wholesalers	2.66	2.52	2.41	2.32	2.24	2.20	2.14

424470	Meat and Meat Product Merchant Wholesalers	2.66	2.52	2.41	2.32	2.24	2.20	2.14
4247	Petroleum and Petroleum Products Merchant Wholesalers	7.99	7.93	7.88	7.84	7.80	7.78	7.74
42471	Petroleum Bulk Stations and Terminals	8.18	8.52	8.78	9.01	9.20	9.31	9.46
424710	Petroleum Bulk Stations and Terminals	8.18	8.52	8.78	9.01	9.20	9.31	9.46
42472	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	7.90	7.64	7.44	7.27	7.13	7.04	6.91
424720	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	7.90	7.64	7.44	7.27	7.13	7.04	6.91
42482	Wine and Distilled Alcoholic Beverage Merchant Wholesalers	3.92	3.88	3.85	3.83	3.81	3.80	3.78
424820	Wine and Distilled Alcoholic Beverage Merchant Wholesalers	3.92	3.88	3.85	3.83	3.81	3.80	3.78
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	2.61	2.68	2.74	2.80	2.84	2.87	2.91
42491	Farm Supplies Merchant Wholesalers	5.30	5.51	5.68	5.83	5.96	6.04	6.15
424910	Farm Supplies Merchant Wholesalers	5.30	5.51	5.68	5.83	5.96	6.04	6.15
42495	Paint, Varnish, and Supplies Merchant Wholesalers	5.22	5.14	5.08	5.03	4.99	4.96	4.92
424950	Paint, Varnish, and Supplies Merchant Wholesalers	5.22	5.14	5.08	5.03	4.99	4.96	4.92
443141	Household Appliance Stores	2.29	2.16	2.05	1.94	1.85	1.79	1.70
444	Building Material and Garden Equipment and Supplies Dealers	2.38	2.36	2.35	2.34	2.33	2.32	2.31
44413	Hardware Stores	4.78	4.79	4.80	4.81	4.82	4.82	4.82
444130	Hardware Stores	4.78	4.79	4.80	4.81	4.82	4.82	4.82
4442	Lawn and Garden Equipment and Supplies Stores	5.22	4.99	4.80	4.64	4.50	4.42	4.30
44421	Outdoor Power Equipment Stores	2.40	2.44	2.46	2.49	2.51	2.52	2.53
444210	Outdoor Power Equipment Stores	2.40	2.44	2.46	2.49	2.51	2.52	2.53
44422	Nursery, Garden Center, and Farm Supply Stores	5.95	5.64	5.40	5.19	5.01	4.91	4.76
444220	Nursery, Garden Center, and Farm Supply Stores	5.95	5.64	5.40	5.19	5.01	4.91	4.76
445	Food and Beverage Stores	2.08	2.07	2.06	2.05	2.04	2.03	2.02
4451	Grocery Stores	2.18	2.16	2.15	2.13	2.12	2.11	2.10
44511	Supermarkets and Other Grocery (except Convenience) Stores	2.27	2.26	2.25	2.23	2.23	2.22	2.21
445110	Supermarkets and Other Grocery (except Convenience) Stores	2.27	2.26	2.25	2.23	2.23	2.22	2.21
45392	Art Dealers	4.21	4.08	3.98	3.89	3.81	3.76	3.69
4542	Vending Machine Operators	2.45	2.53	2.59	2.65	2.69	2.72	2.76
45421	Vending Machine Operators	2.45	2.53	2.59	2.65	2.69	2.72	2.76
454210	Vending Machine Operators	2.45	2.53	2.59	2.65	2.69	2.72	2.76
4543	Direct Selling Establishments	2.96	3.10	3.22	3.32	3.41	3.46	3.53
45431	Fuel Dealers	4.99	5.36	5.67	5.94	6.17	6.32	6.53
454310	Fuel Dealers	4.99	5.36	5.67	5.94	6.17	6.32	6.53

452319	All Other General Merchandise Stores	3.53	3.88	4.16	4.38	4.57	4.68	4.83
453920	Art Dealers	4.21	4.08	3.98	3.89	3.81	3.76	3.69

		2019	2020	2021	2022	2023	2024	2025
48	Transportation and Warehousing	0.46	0.46	0.45	0.45	0.45	0.45	0.45
487	Scenic and Sightseeing Transportation	9.39	9.78	10.10	10.37	10.59	10.74	10.94
4871	Scenic and Sightseeing Transportation, Land	21.24	22.35	23.21	23.91	24.50	24.84	25.30
48711	Scenic and Sightseeing Transportation, Land	21.24	22.35	23.21	23.91	24.50	24.84	25.30
487110	Scenic and Sightseeing Transportation, Land	21.24	22.35	23.21	23.91	24.50	24.84	25.30
4884	Support Activities for Road Transportation	2.36	2.48	2.57	2.64	2.71	2.74	2.79
48841	Motor Vehicle Towing	3.73	3.90	4.04	4.16	4.25	4.31	4.39
488410	Motor Vehicle Towing	3.73	3.90	4.04	4.16	4.25	4.31	4.39
488991	Packing and Crating	2.26	2.31	2.35	2.39	2.41	2.43	2.45
49319	Other Warehousing and Storage	6.15	6.27	6.36	6.44	6.50	6.54	6.58
493190	Other Warehousing and Storage	6.15	6.27	6.36	6.44	6.50	6.54	6.58

		2019	2020	2021	2022	2023	2024	2025
51	Information	0.35	0.34	0.33	0.32	0.32	0.31	0.31
515112	Radio Stations	2.33	2.38	2.43	2.47	2.51	2.53	2.56

		2019	2020	2021	2022	2023	2024	2025
52	Finance and Insurance	0.42	0.42	0.42	0.41	0.41	0.41	0.41
52592	Trusts, Estates, and Agency Accounts	4.13	4.72	5.18	5.58	5.91	6.11	6.36
525920	Trusts, Estates, and Agency Accounts	4.13	4.72	5.18	5.58	5.91	6.11	6.36

		2019	2020	2021	2022	2023	2024	2025
53	Real Estate and Rental and Leasing	1.05	1.05	1.05	1.04	1.04	1.04	1.04
53113	Lessors of Miniwarehouses and Self-Storage Units	2.31	2.21	2.13	2.07	2.01	1.98	1.94
531130	Lessors of Miniwarehouses and Self-Storage Units	2.31	2.21	2.13	2.07	2.01	1.98	1.94
53119	Lessors of Other Real Estate Property	8.78	9.11	9.38	9.61	9.82	9.94	10.11
531190	Lessors of Other Real Estate Property	8.78	9.11	9.38	9.61	9.82	9.94	10.11
532282	Video Tape and Disc Rental	5.43	5.21	4.96	4.67	4.32	4.04	3.74
5323	General Rental Centers	3.07	3.33	3.55	3.75	3.92	4.03	4.18
53231	General Rental Centers	3.07	3.33	3.55	3.75	3.92	4.03	4.18
532310	General Rental Centers	3.07	3.33	3.55	3.75	3.92	4.03	4.18

		2019	2020	2021	2022	2023	2024	2025
54	Professional, Scientific, and Technical Services	0.27	0.26	0.26	0.25	0.25	0.25	0.25
54132	Landscape Architectural Services	3.61	3.69	3.76	3.82	3.87	3.90	3.93
541320	Landscape Architectural Services	3.61	3.69	3.76	3.82	3.87	3.90	3.93

		2019	2020	2021	2022	2023	2024	2025
56	Administrative and Support and Waste Management and Remediation Services	0.54	0.56	0.57	0.59	0.60	0.60	0.61
561591	Convention and Visitors Bureaus	2.21	2.23	2.25	2.27	2.28	2.29	2.29
561611	Investigation Services	3.49	3.99	4.39	4.72	5.00	5.17	5.39
56173	Landscaping Services	2.19	2.16	2.14	2.12	2.10	2.09	2.07
561730	Landscaping Services	2.19	2.16	2.14	2.12	2.10	2.09	2.07
562	Waste Management and Remediation Services	2.46	2.56	2.63	2.69	2.74	2.76	2.79
5621	Waste Collection	2.02	2.09	2.15	2.20	2.24	2.26	2.29
56211	Waste Collection	2.02	2.09	2.15	2.20	2.24	2.26	2.29
562111	Solid Waste Collection	2.33	2.42	2.49	2.54	2.59	2.62	2.66
5622	Waste Treatment and Disposal	5.87	6.24	6.54	6.79	7.02	7.14	7.32
56221	Waste Treatment and Disposal	5.87	6.24	6.54	6.79	7.02	7.14	7.32
562212	Solid Waste Landfill	5.08	5.50	5.84	6.13	6.38	6.52	6.72

562219	Other Nonhazardous Waste Treatment and Disposal	21.4 6	22.4 0	23.1 4	23.7 6	24.3 0	24.6 0	25.0 2
56292	Materials Recovery Facilities	2.87	2.85	2.84	2.83	2.82	2.82	2.81
562920	Materials Recovery Facilities	2.87	2.85	2.84	2.83	2.82	2.82	2.81
562991	Septic Tank and Related Services	2.60	2.74	2.84	2.92	2.99	3.03	3.09

		2019	2020	2021	2022	2023	2024	2025
61	Educational Services	0.49	0.49	0.49	0.49	0.49	0.50	0.50
611519	Other Technical and Trade Schools	2.26	2.27	2.28	2.28	2.29	2.29	2.29

		2019	2020	2021	2022	2023	2024	2025
62	Health Care and Social Assistance	1.32	1.33	1.34	1.34	1.35	1.35	1.35
6214	Outpatient Care Centers	3.31	3.32	3.34	3.35	3.36	3.36	3.37
62149	Other Outpatient Care Centers	4.33	4.30	4.28	4.26	4.25	4.24	4.23
621498	All Other Outpatient Care Centers	15.53	15.41	15.32	15.26	15.20	15.17	15.13
6239	Other Residential Care Facilities	2.59	2.55	2.51	2.48	2.45	2.43	2.41
62399	Other Residential Care Facilities	2.59	2.55	2.51	2.48	2.45	2.43	2.41
623990	Other Residential Care Facilities	2.59	2.55	2.51	2.48	2.45	2.43	2.41
624	Social Assistance	3.12	3.16	3.20	3.23	3.26	3.28	3.30
6241	Individual and Family Services	4.50	4.52	4.54	4.55	4.57	4.58	4.59
62411	Child and Youth Services	5.60	5.73	5.83	5.92	5.99	6.04	6.11
624110	Child and Youth Services	5.60	5.73	5.83	5.92	5.99	6.04	6.11
62412	Services for the Elderly and Persons with Disabilities	5.11	5.10	5.08	5.07	5.07	5.07	5.06
624120	Services for the Elderly and Persons with Disabilities	5.11	5.10	5.08	5.07	5.07	5.07	5.06
62421	Community Food Services	4.06	4.15	4.22	4.28	4.33	4.36	4.39
624210	Community Food Services	4.06	4.15	4.22	4.28	4.33	4.36	4.39

	2019	2020	2021	2022	2023	2024	2025

71	Arts, Entertainment, and Recreation	0.72	0.73	0.73	0.73	0.74	0.74	0.74
71113	Musical Groups and Artists	2.21	2.24	2.27	2.29	2.31	2.33	2.34
711130	Musical Groups and Artists	2.21	2.24	2.27	2.29	2.31	2.33	2.34
71213	Zoos and Botanical Gardens	3.36	3.41	3.45	3.49	3.51	3.53	3.55
712130	Zoos and Botanical Gardens	3.36	3.41	3.45	3.49	3.51	3.53	3.55
71219	Nature Parks and Other Similar Institutions	6.04	6.57	6.97	7.30	7.57	7.72	7.93
712190	Nature Parks and Other Similar Institutions	6.04	6.57	6.97	7.30	7.57	7.72	7.93

		2019	2020	2021	2022	2023	2024	2025
72	Accommodation and Food Services	1.33	1.32	1.31	1.30	1.30	1.29	1.28
721	Accommodation	2.55	2.53	2.51	2.49	2.48	2.47	2.45
7211	Traveler Accommodation	2.37	2.34	2.32	2.30	2.28	2.26	2.24
72111	Hotels (except Casino Hotels) and Motels	2.32	2.28	2.24	2.21	2.18	2.16	2.14
721110	Hotels (except Casino Hotels) and Motels	2.32	2.28	2.24	2.21	2.18	2.16	2.14
72119	Other Traveler Accommodation	25.88	25.96	26.03	26.09	26.14	26.16	26.17
721191	Bed-and-Breakfast Inns	44.95	45.23	45.46	45.65	45.81	45.90	45.94
721199	All Other Traveler Accommodation	7.68	8.30	8.76	9.13	9.43	9.60	9.83
7212	RV (Recreational Vehicle) Parks and Recreational Camps	8.21	8.24	8.26	8.28	8.29	8.30	8.30
72121	RV (Recreational Vehicle) Parks and Recreational Camps	8.21	8.24	8.26	8.28	8.29	8.30	8.30
721211	RV (Recreational Vehicle) Parks and Campgrounds	13.06	13.16	13.23	13.30	13.35	13.38	13.41
721214	Recreational and Vacation Camps (except Campgrounds)	3.82	3.76	3.70	3.66	3.62	3.60	3.56

		2019	2020	2021	2022	2023	2024	2025
81	Other Services (except Public Administration)	0.67	0.66	0.64	0.63	0.62	0.62	0.61
811113	Automotive Transmission Repair	2.52	2.64	2.75	2.85	2.94	2.99	3.07
811118	Other Automotive Mechanical and Electrical Repair and Maintenance	4.10	4.54	4.92	5.26	5.57	5.76	6.03
81231	Coin-Operated Laundries and Drycleaners	2.24	2.07	1.93	1.81	1.70	1.64	1.55
812310	Coin-Operated Laundries and Drycleaners	2.24	2.07	1.93	1.81	1.70	1.64	1.55
813312	Environment, Conservation and Wildlife Organizations	4.09	3.93	3.80	3.70	3.62	3.57	3.50

		2019	2020	2021	2022	2023	2024	2025
90	Government	1.28	1.28	1.28	1.28	1.28	1.28	1.28
9039	Local Government, Excluding Education and Hospitals	2.27	2.25	2.24	2.22	2.21	2.20	2.19
90399	Local Government, Excluding Education and Hospitals	2.27	2.25	2.24	2.22	2.21	2.20	2.19
903999	Local Government, Excluding Education and Hospitals	2.27	2.25	2.24	2.22	2.21	2.20	2.19

## Four-County Aggregate Location Quotient Hierarchy

Industries with Location Quotient Above "4"

NAICS	Description	2019	2020	2021	2022	2023	2024	2025
11	Agriculture, Forestry, Fishing and Hunting	3.56	3.58	3.6	3.62	3.63	3.63	3.64
113	Forestry and Logging	6.63	6.66	6.68	6.7	6.72	6.72	6.73
1133	Logging	7.23	7.3	7.35	7.4	7.44	7.47	7.5
11331	Logging	7.23	7.3	7.35	7.4	7.44	7.47	7.5
113310	Logging	7.23	7.3	7.35	7.4	7.44	7.47	7.5
114	Fishing, Hunting and Trapping	6.16	5.79	5.49	5.25	5.03	4.92	4.74
1141	Fishing	7.92	7.48	7.14	6.85	6.6	6.46	6.26
11411	Fishing	7.92	7.48	7.14	6.85	6.6	6.46	6.26
114111	Finfish Fishing	10.62	10.31	10.07	9.86	9.68	9.58	9.45
114112	Shellfish Fishing	5.33	4.72	4.23	3.82	3.46	3.26	2.94
115112	Soil Preparation, Planting, and Cultivating	10.73	11.29	11.73	12.08	12.37	12.54	12.77
115116	Farm Management Services	43.2	43.93	44.49	44.95	45.34	45.58	45.85
1153	Support Activities for Forestry	6.15	5.83	5.58	5.38	5.22	5.13	4.99
11531	Support Activities for Forestry	6.15	5.83	5.58	5.38	5.22	5.13	4.99
115310	Support Activities for Forestry	6.15	5.83	5.58	5.38	5.22	5.13	4.99

		2019	2020	2021	2022	2023	2024	2025
21	Mining, Quarrying, and Oil and Gas Extraction	0.16	0.16	0.15	0.15	0.15	0.15	0.15
212319	Other Crushed and Broken Stone Mining and Quarrying	9.11	9.14	9.17	9.19	9.21	9.23	9.23

		2019	2020	2021	2022	2023	2024	2025
23	Construction	1.33	1.37	1.39	1.42	1.44	1.45	1.46
23834	Tile and Terrazzo Contractors	4.02	4.13	4.21	4.28	4.34	4.38	4.43
238340	Tile and Terrazzo Contractors	4.02	4.13	4.21	4.28	4.34	4.38	4.43

	2019	2020	2021	2022	2023	2024	2025

31-33	Manufacturing	1.11	1.11	1.1	1.1	1.1	1.1	1.1
311225	Fats and Oils Refining and Blending	4.8	4.94	5.06	5.15	5.22	5.27	5.33
3114	Fruit and Vegetable Preserving and Specialty Food Manufacturing	4.58	4.62	4.65	4.68	4.71	4.73	4.74
31141	Frozen Food Manufacturing	5.98	5.97	5.97	5.97	5.97	5.97	5.96
311412	Frozen Specialty Food Manufacturing	9	8.96	8.93	8.9	8.88	8.87	8.84
311421	Fruit and Vegetable Canning	4.11	4.25	4.37	4.47	4.56	4.61	4.69
3117	Seafood Product Preparation and Packaging	4.08	4.12	4.16	4.19	4.22	4.24	4.27
31171	Seafood Product Preparation and Packaging	4.08	4.12	4.16	4.19	4.22	4.24	4.27
311710	Seafood Product Preparation and Packaging	4.08	4.12	4.16	4.19	4.22	4.24	4.27
31183	Tortilla Manufacturing	9.43	9.65	9.83	9.98	10.11	10.18	10.29
311830	Tortilla Manufacturing	9.43	9.65	9.83	9.98	10.11	10.18	10.29
31192	Coffee and Tea Manufacturing	5.8	5.71	5.65	5.59	5.55	5.53	5.5
311920	Coffee and Tea Manufacturing	5.8	5.71	5.65	5.59	5.55	5.53	5.5
312	Beverage and Tobacco Product Manufacturing	16.93	16.55	16.26	16.03	15.84	15.73	15.56
3121	Beverage Manufacturing	17.62	17.17	16.83	16.55	16.32	16.19	16
31212	Breweries	4.86	4.75	4.68	4.62	4.58	4.55	4.52
312120	Breweries	4.86	4.75	4.68	4.62	4.58	4.55	4.52
31213	Wineries	61.72	59.93	58.55	57.45	56.53	56.02	55.26
312130	Wineries	61.72	59.93	58.55	57.45	56.53	56.02	55.26
3169	Other Leather and Allied Product Manufacturing	4.14	4.25	4.33	4.4	4.46	4.49	4.54
31699	Other Leather and Allied Product Manufacturing	4.14	4.25	4.33	4.4	4.46	4.49	4.54
316998	All Other Leather Good and Allied Product Manufacturing	4.65	4.76	4.85	4.92	4.98	5.02	5.06
3211	Sawmills and Wood Preservation	5.76	5.38	5.07	4.81	4.59	4.46	4.26
32111	Sawmills and Wood Preservation	5.76	5.38	5.07	4.81	4.59	4.46	4.26
321113	Sawmills	5.94	5.5	5.15	4.85	4.59	4.43	4.21
321114	Wood Preservation	4.26	4.38	4.47	4.54	4.6	4.64	4.68
325194	Cyclic Crude, Intermediate, and Gum and Wood Chemical Manufacturing	10.93	12.1	12.97	13.65	14.21	14.53	14.91
325312	Phosphatic Fertilizer Manufacturing	4.13	4.22	4.29	4.36	4.43	4.47	4.52
333241	Food Product Machinery Manufacturing	4.87	4.95	5.01	5.07	5.11	5.14	5.18
333314	Optical Instrument and Lens Manufacturing	13.92	13.68	13.5	13.34	13.2	13.12	13
333414	Heating Equipment (except Warm Air Furnaces) Manufacturing	5.22	5.47	5.67	5.84	5.98	6.07	6.19
333994	Industrial Process Furnace and Oven Manufacturing	4.85	4.32	3.89	3.52	3.2	3.01	2.73
334514	Totalizing Fluid Meter and Counting Device Manufacturing	4.11	4.43	4.69	4.91	5.1	5.21	5.37

334515	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals	15.14	14.63	14.2	13.83	13.5	13.31	13.01
334516	Analytical Laboratory Instrument Manufacturing	8.96	9.3	9.58	9.81	10	10.12	10.28

		2019	2020	2021	2022	2023	2024	2025
42	Wholesale Trade	0.80	0.81	0.81	0.81	0.81	0.81	0.81
42443	Dairy Product (except Dried or Canned) Merchant Wholesalers	4.60	4.71	4.80	4.87	4.94	4.97	5.02
424430	Dairy Product (except Dried or Canned) Merchant Wholesalers	4.60	4.71	4.80	4.87	4.94	4.97	5.02
4248	Beer, Wine, and Distilled Alcoholic Beverage Merchant Wholesalers	4.36	4.37	4.39	4.40	4.40	4.41	4.41
42482	Wine and Distilled Alcoholic Beverage Merchant Wholesalers	7.76	7.75	7.75	7.75	7.74	7.74	7.74
424820	Wine and Distilled Alcoholic Beverage Merchant Wholesalers	7.76	7.75	7.75	7.75	7.74	7.74	7.74
42493	Flower, Nursery Stock, and Florists' Supplies Merchant Wholesalers	4.07	4.13	4.18	4.22	4.26	4.28	4.31
424930	Flower, Nursery Stock, and Florists' Supplies Merchant Wholesalers	4.07	4.13	4.18	4.22	4.26	4.28	4.31

		2019	2020	2021	2022	2023	2024	2025
44	Retail Trade	1.19	1.19	1.18	1.18	1.18	1.18	1.18
44413	Hardware Stores	4.27	4.34	4.39	4.44	4.48	4.50	4.54
444130	Hardware Stores	4.27	4.34	4.39	4.44	4.48	4.50	4.54
451211	Book Stores	3.96	4.11	4.26	4.40	4.53	4.62	4.75

		2019	2020	2021	2022	2023	2024	2025
48	Transportation and Warehousing	0.44	0.43	0.42	0.41	0.41	0.40	0.40
481211	Nonscheduled Chartered Passenger Air Transportation	4.97	5.49	5.90	6.23	6.52	6.69	6.93
485111	Mixed Mode Transit Systems	7.04	6.99	6.96	6.93	6.91	6.89	6.87
4871	Scenic and Sightseeing Transportation, Land	4.72	4.48	4.29	4.14	4.02	3.95	3.84
48711	Scenic and Sightseeing Transportation, Land	4.72	4.48	4.29	4.14	4.02	3.95	3.84

487110	Scenic and Sightseeing Transportation, Land	4.72	4.48	4.29	4.14	4.02	3.95	3.84
10.10	Coome and digitiodomy manoportation, Land			0			0.00	0.0.

		2019	2020	2021	2022	2023	2024	2025
53	Real Estate and Rental and Leasing	1.14	1.16	1.18	1.19	1.21	1.21	1.22
53119	Lessors of Other Real Estate Property	4.41	4.38	4.36	4.35	4.34	4.33	4.32
531190	Lessors of Other Real Estate Property	4.41	4.38	4.36	4.35	4.34	4.33	4.32
532289	All Other Consumer Goods Rental	6.56	7.18	7.68	8.08	8.43	8.63	8.92
5323	General Rental Centers	4.69	5.01	5.28	5.51	5.73	5.85	6.03
53231	General Rental Centers	4.69	5.01	5.28	5.51	5.73	5.85	6.03
532310	General Rental Centers	4.69	5.01	5.28	5.51	5.73	5.85	6.03

		2019	2020	2021	2022	2023	2024	2025
56	Administrative and Support and Waste Management and Remediation Services	0.77	0.78	0.80	0.81	0.81	0.82	0.83
562219	Other Nonhazardous Waste Treatment and Disposal	5.45	5.38	5.31	5.26	5.22	5.19	5.15

		2019	2020	2021	2022	2023	2024	2025
62	Health Care and Social Assistance	1.21	1.22	1.23	1.23	1.24	1.24	1.24
62149	Other Outpatient Care Centers	4.16	4.19	4.22	4.24	4.26	4.27	4.28
621491	HMO Medical Centers	7.31	7.27	7.24	7.21	7.19	7.18	7.17
621498	All Other Outpatient Care Centers	5.79	5.85	5.89	5.93	5.95	5.97	5.99

		2019	2020	2021	2022	2023	2024	2025
72	Accommodation and Food Services	1.12	1.12	1.11	1.10	1.10	1.10	1.09
72119	Other Traveler Accommodation	6.05	5.87	5.74	5.63	5.54	5.49	5.41
721191	Bed-and-Breakfast Inns	9.23	8.86	8.57	8.33	8.12	8.01	7.82

		2019	2020	2021	2022	2023	2024	2025
81	Other Services (except Public Administration)	0.96	0.95	0.95	0.94	0.93	0.93	0.92
813312	Environment, Conservation and Wildlife Organizations	4.50	4.52	4.54	4.55	4.56	4.57	4.58