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CERF Report
Regional Economic Analysis
North State, Eastern Sierra and Redwood Coast

Summary Report

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Executive Summary

This report on data for the Redwood Coast, Eastern Sierra and North State Community Economic Resilience Fund or CERF regions. These data provide benchmarking, current context and forecasting for economic development, workforce development and recommendations for future funding placement. These three regions comprise 21 counties, geographically similar in that these are rural counties. The Eastern Sierra counties connect Sacramento to the southern portions of the Central Valley along the foothills and mountain areas east of Interstate 5. The North State region are counties north of Nevada and Colusa counties to the Oregon border, including Butte and Shasta counties as regional hubs. The Redwood Coast counties include Del Norte, Humboldt, Mendocino, and Lake counties, connecting to the North State region on its eastern border. We considered each region since 2010 or 2011 to 2022 or 2023 as data allow.

Key Findings

Each region has unique assets and challenges that shape regional industry mix and also make the individual counties in each region slightly different in terms of industry mix and potential business and worker forecasts. Our criteria provides a filter to assess industries that provide economic development opportunities to 2030. Innovative clusters are described in the report, and are summarized here. The opportunity industries support these clusters.

The industries may exist or need to be developed to support growth in each cluster. These regions still rely on large employers in healthcare, government, and manufacturing for jobs and relatively-high wages. Low-wage jobs persist in these areas in personal services and leisure and hospitality. Such jobs may be at threat as technology changes, including jobs growth as a result of the pandemic in transportation and warehousing.

Our industry and cluster choices include an assessment of relative environmental concerns as there are more workers and more “value-added” dollars coming to these local areas due to more local products and services. We consider these changes in relative terms using 2022 technology and assessments; these should be reduced over time through technological change, some of which may be developed in these regions.

Economic Development Opportunities: Innovative Clusters

North State	Redwood Coast	Eastern Sierra
Construction	Construction	Construction
Healthcare	Healthcare	Healthcare
Craft Food and Beverage Manufacturing	The Blue Economy	Data and Energy Storage
Energy Products and Services	Forestry products and science	Recreation and Mountain Experiences

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Economic Development Opportunities: Industries with Regional Competitive Advantages

North State	Redwood Coast	Eastern Sierra
Hospitals	Nursing and Residential Care Facilities	Hospitals
Nursing and Residential Care Facilities	Agriculture & Forestry Support Activity	Couriers and Messengers
Museums, Parks and Historical Sites	Construction of Buildings	Warehousing and Storage
Agriculture & Forestry Support Activity	Food Manufacturing	Nursing and Residential Care Facilities
Construction	Hospitals	Food Services and Drinking Places
Repair and Maintenance	Animal Production and Aquaculture	Construction of Buildings
Food Manufacturing	Food and Beverage Stores	Heavy and Civil Engineering Construction
Forestry and Logging	Waste Management and Remediation Service	Specialty Trade Contractors
Scenic and Sightseeing Transportation	Utilities	Social Assistance
Social Assistance	Real Estate	Food and Beverage Stores
Animal Production and Aquaculture	Amusement, Gambling & Recreation Ind	Accommodation
	Nonmetallic Mineral Product Mfg	Scenic and Sightseeing Transportation
	Social Assistance	ISPs, Search Portals, & Data Processing
	Beverage & Tobacco Product Manufacturing	Amusement, Gambling & Recreation Industries
	Administrative and Support Services	Crop Production

Opportunities come from recent trends, such as working from home may help provide local talent to these counties and regions not there before the pandemic. Housing prices have increased due to such migration, however, and changed local costs of doing business. Workforce development needs to utilize local universities and community colleges as partners with regional employers as a major opportunity. Rural areas, due to a smaller population and lower per-capita incomes, may lack the educational breadth and depth of larger areas throughout California. Partnerships that link high-school students to local and regional community-college programs, university programs, and finally job opportunities can help shape local residents into local workers and reduce “brain flight” and search costs for local employers.

Clusters are also considered with respect to driving income from outside sources, with less dependence on local residents and more of a viewpoint on national and global markets. Visitor strategies and driving more tourism to these regions is a major part of utilizing current “brand” equity and assets. Cannabis farming to retail may also be an expanding partner in regional tourism, but also in agricultural-based manufacturing and distribution. The North State region is less burdened by logistics and transportation constrains as the Redwood Coast and Eastern Sierra regions. However, less dependence on physical transportation and more on virtual networks and connectivity can help most current and nascent industries. The clusters are also based on rising-wage, high-road industries and potential growth per recent forecasts for the American economy.

The data we show here suggest inequities have increased. The regional snapshots below show that since 2019 poverty has increased in the North State and Eastern Sierra region, while falling slightly in the Redwood Coast. Per capita and median household incomes have both increased since 2019. Changing industry conditions and workforce development focused on households at or close to poverty can help lift up those local residents toward higher income levels and reduce housing burden and economic

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uncertainty. Housing supply and mix complement these efforts. Our regional comparisons provide some insight as to how these counties and regions could become more dominant in respective marketplaces. Figure 1 below provides a snapshot for each region.

Figure 1: Data Snapshots, North State, Redwood Coast and Eastern Sierra Regions

North State Census Data Snapshot			Redwood Coast Census Data Snapshot		
Statistic	2022	2019	Statistic	2022	
POPULATION			POPULATION		
Population Estimate (#)	453,478.0	464,350.0	Population Estimate (#, 5yr)	322,763.0	314
Veterans (#)	28,886.0	29,051.0	Veterans (#, 5yr)	18,303.0	21
Foreign born persons (% , 5yr)	7.1	7.0	Foreign born persons (% , 5yr)	8.5	
Population age 25+ (#)	307,556.0	317,070.0	Population age 25+ (#, 5yr)	227,392.0	220
AGE AND SEX			AGE AND SEX		
Persons under 5 years (%)	5.2	5.5	Persons under 5 years (% , 5yr)	5.2	
Persons under 18 years (%)	21.1	21.3	Persons under 18 years (% , 5yr)	20.2	
Persons 65 years and over (%)	20.0	19.8	Persons 65 years and over (% , 5yr)	21.1	
Female persons (%)	50.3	50.4	Female persons (% , 5yr)	49.9	
INCOME AND POVERTY			INCOME AND POVERTY		
Median household income (\$)	191,586.0	179,129.0	Median household income (\$, 5yr)	236,624.0	191
Per capita income in past 12 months (\$)	102,231.0	94,048.0	Per capita income in past 12 months (\$, 5yr)	131,381.0	108
Persons in poverty (%)	16.2	15.0	Persons in poverty (% , 5yr)	17.7	
Children age less than 18 in poverty (#)	14,888.0	15,003.0	Children age less than 18 in poverty (#, 5yr)	12,881.0	14
Children age less than 18 in poverty (%)	15.9	15.7	Children age less than 18 in poverty (% , 5yr)	20.3	
RACE AND ETHNICITY			RACE AND ETHNICITY		
White alone (%)	73.2	83.1	White alone (% , 5yr)	73.2	
African American alone (% , 5yr)	1.7	1.6	African American alone (% , 5yr)	1.5	
American Indian or Alaska Native alone (% , 5yr)	1.7	2.2	American Indian or Alaska Native alone (% , 5yr)	4.0	
Asian alone (%)	2.6	2.2	Asian alone (% , 5yr)	2.5	
Native Hawaiian and Other Pacific Islander alone (% , 5yr)	0.3	0.2	Native Hawaiian and Other Pacific Islander alone (% , 5yr)	0.2	
Two or More Races (%)	15.6	4.7	Two or More Races (% , 5yr)	10.7	
Hispanic or Latino (%)	17.5	12.2	Hispanic or Latino (% , 5yr)	19.5	
White alone, not Hispanic or Latino (%)	68.7	73.5	White alone, not Hispanic or Latino (% , 5yr)	67.1	
HOUSING			HOUSING		
Housing units (#)	200,141.0	192,681.0	Housing units (#, 5yr)	149,102.0	150
Owner-occupied housing units (%)	62.3	62.9	Owner-occupied housing units (% , 5yr)	61.5	
Median value of owner-occupied housing units (\$)	1,109,900.0	859,300.0	Median value of owner-occupied housing units (\$, 5yr)	1,423,500.0	1,128
Median selected monthly owner costs-with a mortgage (\$)	5,423.0	4,962.0	Median selected monthly owner costs-with a mortgage (\$, 5yr)	7,554.0	6
Median selected monthly owner costs-without a mortgage (\$)	1,815.0	1,438.0	Median selected monthly owner costs-without a mortgage (\$, 5yr)	2,374.0	1
Median gross rent (\$)	3,545.0	3,153.0	Median gross rent (\$, 5yr)	4,783.0	3
FAMILIES AND LIVING ARRANGEMENTS			FAMILIES AND LIVING ARRANGEMENTS		
Households (#)	178,332.0	175,675.0	Households (#, 5yr)	125,069.0	124
Persons per household (#)	7.5	7.7	Persons per household (#, 5yr)	10.2	
Living in same house 1 year ago, % of persons age 1+	84.9	81.6	Living in same house 1 year ago, % of persons age 1+ (5yr)	84.8	
EDUCATION			EDUCATION		
High school graduate or higher, % of persons age 25+	91.3	89.6	High school graduate or higher, % of persons age 25+ (5yr)	88.3	
Bachelor's degree or higher, % of persons age 25+	27.5	24.9	Bachelor's degree or higher, % of persons age 25+ (5yr)	25.1	
HEALTH			HEALTH		
With a disability, under age 65 years (#)	46,467.0	48,409.0	With a disability, under age 65 years (#, 5yr)	34,667.0	31
Persons without health insurance, under age 65 years (%)	7.1	6.2	Persons without health insurance, under age 65 years (% , 5yr)	6.8	
LABOR FORCE			LABOR FORCE		
In civilian labor force, persons age 16+ (%)	57.7	56.8	In civilian labor force, persons age 16+ (% , 5yr)	55.8	
In civilian labor force, women age 16+ (%)	54.6	53.8	In civilian labor force, women age 16+ (% , 5yr)	52.5	
Employed, persons age 16+ (%)	52.9	51.3	Employed, persons age 16+ (% , 5yr)	48.4	
Self employed (%)	12.4	12.6	Self employed (% , 5yr)	15.0	
TRANSPORTATION			TRANSPORTATION		
Mean travel time to work, workers age 16+ (Mins.)	21.2	23.9	Mean travel time to work, workers age 16+ (Mins., 5yr)	19.5	
Using public transportation (%)	0.7	1.1	Using public transportation (% , 5yr)	1.4	
Drive alone in private vehicle (%)	74.7	79.6	Drive alone in private vehicle (% , 5yr)	70.9	
Source: American Community Survey, Summary Files			Source: American Community Survey, Summary Files		
Note: Data are from the 1-year files unless indicated by the notation 5yr.			Note: Data are from the 1-year files unless indicated by the notation 5yr.		

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Figure 1: (Cont.)

Eastern Sierra Census Data Snapshot		California Snapshot?
Statistic	2022	2019
POPULATION		
Population Estimate (#)	198,136.0	191,226.0
Veterans (#)	15,526.0	16,790.0
Foreign born persons (% 5yr)	6.8	6.7
Population age 25+ (#)	152,125.0	148,810.0
AGE AND SEX		
Persons under 5 years (%)	3.8	3.2
Persons under 18 years (%)	16.8	16.0
Persons 65 years and over (%)	26.5	27.3
Female persons (%)	48.4	47.9
INCOME AND POVERTY		
Median household income (\$)	69,757.0	65,239.0
Per capita income in past 12 months (\$)	40,138.0	34,299.0
Persons in poverty (%)	12.7	10.9
Children age less than 18 in poverty (#)	4,652.0	4,782.0
Children age less than 18 in poverty (%)	14.6	16.3
RACE AND ETHNICITY		
White alone (%)	76.8	84.7
African American alone (% 5yr)	1.2	1.4
American Indian or Alaska Native alone (% 5yr)	2.4	2.6
Asian alone (% 5yr)	1.7	1.5
Native Hawaiian and Other Pacific Islander alone (% 5yr)	0.3	0.2
Two or More Races (%)	11.5	5.8
Hispanic or Latino (%)	17.1	14.2
White alone, not Hispanic or Latino (%)	72.6	76.3
HOUSING		
Housing units (#)	112,476.0	117,887.0
Owner-occupied housing units (%)	76.5	76.8
Median value of owner-occupied housing units (\$)	438,100.0	322,900.0
Median selected monthly owner costs-with a mortgage (\$)	2,118.0	1,783.0
Median selected monthly owner costs-without a mortgage (\$)	753.0	574.0
Median gross rent (\$)	1,239.0	1,131.0
FAMILIES AND LIVING ARRANGEMENTS		
Households (#)	79,679.0	76,616.0
Persons per household (#)	2.3	2.4
Living in same house 1 year ago, % of persons age 1+	89.1	89.3
EDUCATION		
High school graduate or higher, % of persons age 25+	92.4	90.4
Bachelor's degree or higher, % of persons age 25+	24.1	22.0
HEALTH		
With a disability, under age 65 years (#)	18,219.0	17,021.0
Persons without health insurance, under age 65 years (%)	5.7	7.1
LABOR FORCE		
In civilian labor force, persons age 16+ (%)	52.7	49.8
In civilian labor force, women age 16+ (%)	53.4	48.0
Employed, persons age 16+ (%)	47.0	44.8
Self employed (%)	14.4	15.2
TRANSPORTATION		
Mean travel time to work, workers age 16+ (Mins.)	24.9	27.1
Using public transportation (%)	1.5	0.8
Drive alone in private vehicle (%)	70.8	75.8

Source: American Community Survey, Summary Files
 Note: Data are from the 1-year files unless indicated by the notation 5yr.

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Introduction

The data we provide in this report focus on regional employment and workforce, industry mix and forecasting nascent, diverse industries for these regions. The three regions considered here are:

- Eastern Sierra;
- North State;
- Redwood Coast.

The counties in each region are summarized as follows:

North State	Redwood Coast	Eastern Sierra
Butte	Del Norte	Alpine
Glenn	Humboldt	Amador
Lassen	Lake	Calaveras
Modoc	Mendocino	Inyo
Plumas		Mariposa
Shasta		Mono
Sierra		Tuolumne
Siskiyou		
Tehama		
Trinity		

Our focus will be on industries and occupations and incomes for the regions as ways to provide an overview of how we use the data to provide recommendations for new and growing industries as well as workforce development opportunities. What these snapshots provide are comparative data as a benchmark looking forward to 2030 with the pandemic shock also included. We include detailed reports on each of these counties and the regions in sum and on average when the data are available and allow such aggregations. Figure 1 shows data snapshots for each region as an overview of those reports and what data are included, as well as a way to see recent change (2019 compared to 2021, where 2019 acts as the pre-pandemic benchmark year and 2021 is the year of latest data) and the data variables included.

The main outcome of this study is to provide data as benchmarking and forecasting to the CERF planning efforts in these regions and for the included counties. We begin with a look at the industry mix by employment level.

Recent industry mix and employment trends provide a foundation: industries the county/region supported since 2010 to 2023

In each of the regions, we show the recent growth by major industry sector. Patterns emerge for each region in terms of industries supported, where construction and manufacturing are key foci for looking forward as additions to local agriculture as “goods-producing” industries. Such industries have a combination of external markets and larger multiplier effects on the local economy when employment growth takes place. Scientific jobs under professional services also has external markets, especially when there is a large employer that

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services a global market. These tables provide historic perspective looking at the first quarter of each year shown back to 2010.

Agricultural jobs have yet to cover cannabis cultivation. Such farming is a large part of the Redwood Coast region’s agricultural labor demand and also the associated demand for services businesses, such as fencing, plumbing, electricians, greenhouse installers, etc. We discuss cannabis in more detail below.

For each region, based on the larger data files attached to this summary report, Table 5 provides an industry mix overview as a way to understand recent and current (as of 2023) industry strengths. One of the key concerns of this report is what industries have been supported historically (since 2010) and shifts in some industries.

Eastern Sierra

Table 5. Nonfarm Employment Growth by 2-Digit NAICS Category (Q2 of each year, to 2023)

Region	Current Employment	Year over Year Change (#)	Annual Rate of Growth (%)							
			Over last: Year	2 Years	3 Years	5 Years	Since: 2010	2000	1990	
Ag, For, Fish, & Hunting	593	59	11.1	10.1	109.9	2.6	0.9			
Mining	344	20	6.2	10.9	128.0	22.4	2.4	0.8	-1.1	
Utilities	819	87	11.9	9.1	11.8	7.8	8.3	13.8	11.3	
Construction	3,493	63	1.8	4.0	9.6	4.6	6.9	0.3	0.3	
Manufacturing	2,491	-27	-1.1	3.2	9.5	0.7	2.1	-0.3	-0.4	
Wholesale Trade	436	72	19.7	6.6	6.6	2.3	0.4	-0.9	-1.0	
Retail Trade	6,974	-169	-2.4	-1.0	3.3	-0.4	1.0	0.1	0.6	
Trans. & Ware.	1,192	61	5.4	19.8	23.0	10.8	4.3	4.0	3.2	
Information	491	44	9.9	13.6	8.1	0.9	-1.9	-1.7	-1.2	
Fin & Ins.	563	-45	-7.4	-3.5	-4.7	-4.2	-2.3	-1.6	-1.7	
RE, Rental, Leasing	867	-85	-8.9	-1.7	4.5	-0.9	0.7	0.0	0.8	
Prof., Sci, & Tech.	489	-50	-9.2	-6.4	-2.5	-2.6	-3.3	-2.4	-0.9	
Mgmt of Companies	41	41					-2.0	-4.0	-2.9	
Admin, Support, & Waste	1,424	13	0.9	8.7	7.8	7.3	6.1	2.9	21.9	
Educ. Services	4,554	278	6.5	81.2	61.3	27.9	10.4	20.9	16.9	
Health Care & Soc. Asst.	7,955	1,808	29.4	25.1	17.7	12.7	9.6	18.0	18.2	
Arts, Ent., & Rec	3,103	-338	-9.8	29.7	44.4	8.0	-0.0	1.4	3.3	
Accom. & Food Svcs	12,589	-266	-2.1	12.6	37.2	3.1	2.4	2.8	2.8	
Other Svcs	1,844	129	7.5	11.0	14.2	0.1	-0.2	-0.3	0.3	
Public Admin	9,995	276	2.8	7.9	6.5	4.1	2.8	2.6	2.5	
Other	64	64		754.2	2,111.1	-13.4	-0.6	-4.3	-3.0	

Source: BLS, QCEW; Calculations by NEED

Redwood Coast

Table 5. Nonfarm Employment Growth by 2-Digit NAICS Category (Q2 of each year, to 2023)

Region	Current Employment	Year over Year Change (#)	Annual Rate of Growth (%)							
			Over last: Year	2 Years	3 Years	5 Years	Since: 2010	2000	1990	
Ag, For, Fish, & Hunting	1,609	-2,293	-58.8	-15.3	-6.8	-9.7	-3.6			
Mining	0	-38	-100.0	-50.0	-33.3	-20.0	-7.7	-4.3	-3.0	
Utilities	972	35	3.8	5.7	7.7	3.0	1.9	9.3	8.5	
Construction	5,154	141	2.8	5.8	8.5	4.3	5.4	1.5	0.7	
Manufacturing	5,489	-13	-0.2	1.6	7.4	2.4	1.4	-2.0	-1.6	
Wholesale Trade	1,826	-192	-9.5	-1.8	0.0	-0.9	0.4	6.1	3.6	
Retail Trade	13,916	-530	-3.7	-1.6	1.6	-1.5	-0.1	-0.1	0.2	
Trans. & Ware.	1,549	-69	-4.3	-7.4	4.1	1.0	1.4	-1.8	-1.3	
Information	787	-38	-4.6	14.6	9.7	-0.1	-2.5	-1.9	-1.3	
Fin & Ins.	1,816	-85	-4.5	-0.2	-1.1	-1.8	-0.9	-0.7	-0.7	
RE, Rental, Leasing	1,341	-79	-5.6	1.5	4.4	-1.0	0.0	-0.1	0.5	
Prof., Sci, & Tech.	2,184	-108	-4.7	-4.7	-0.8	-1.8	-1.5	0.2	1.0	
Mgmt of Companies	717	99	16.0	8.3	9.1	12.0	1.9	-1.9		
Admin, Support, & Waste	2,704	-20	-0.7	-2.7	-1.2	-0.9	1.5	-0.6	1.9	
Educ. Services	12,191	736	6.4	67.2	41.7	20.0	1.4	5.9	4.5	
Health Care & Soc. Asst.	20,313	1,020	5.3	5.8	3.8	0.4	3.7	3.8	4.0	
Arts, Ent., & Rec	2,695	215	8.7	23.8	83.0	10.6	2.8	0.2	5.6	
Accom. & Food Svcs	11,171	-225	-2.0	5.0	25.9	-0.0	1.7	0.2	0.9	
Other Svcs	3,371	88	2.7	6.1	9.4	1.3	-3.4	-1.5	-0.3	
Public Admin	12,145	156	1.3	8.2	5.8	3.3	0.2	1.4	2.4	
Other	78	76	3,783.3		2,555.6	-15.5	-4.4	-4.3	-3.0	

Source: BLS, QCEW; Calculations by NEED

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North State

Table 5. Nonfarm Employment Growth by 2-Digit NAICS Category (Q2 of each year, to 2023)

Region	Current Employment	Year over Year Change (#)	Over last: Year	Annual Rate of Growth (%)					
				2 Years	3 Years	5 Years	Since: 2010	2000	1990
Ag, For, Fish, & Hunting	5,694	-385	-6.3	-2.0	-6.0	-1.7	127.8		
Mining	76	-2	-3.0	-3.3	-19.4	2.5		-4.3	-3.0
Utilities	2,327	57	2.5	8.9	6.5	5.9	6.0	2.6	1.5
Construction	11,219	105	0.9	2.2	3.6	3.9	6.8	1.8	0.7
Manufacturing	11,038	-336	-3.0	0.4	3.0	0.0	1.5	-0.8	-1.0
Wholesale Trade	4,767	-172	-3.5	-4.9	-0.6	1.3	0.7	0.6	0.2
Retail Trade	25,510	-1,029	-3.9	-1.4	2.6	-0.8	0.5	0.0	0.3
Trans. & Ware.	6,440	-159	-2.4	3.3	3.5	3.2	2.7	-0.5	0.8
Information	1,574	1	0.0	2.2	2.6	-3.1	-1.9	-2.1	-1.4
Fin & Ins.	3,768	-198	-5.0	-6.6	-4.7	-3.4	-2.8	-0.5	-0.6
RE, Rental, Leasing	2,744	-93	-3.3	7.0	5.7	0.9	0.7	-0.5	0.5
Prof., Sci. & Tech.	5,354	41	0.8	-0.0	1.7	-1.4	0.1	0.5	0.7
Mgmt of Companies	1,062	-28	-2.6	-1.9	-3.6	-2.6	-0.2	-1.2	13.4
Admin, Support, & Waste	6,752	-89	-1.3	-1.6	1.6	-3.7	1.4	-0.6	1.8
Educ. Services	22,540	1,193	5.6	81.0	57.0	27.0	10.3	2.9	3.3
Health Care & Soc. Asst.	42,819	2,499	6.2	4.9	4.4	1.0	3.4	4.4	5.8
Arts, Ent., & Rec	4,629	186	4.2	26.3	46.9	6.3	4.0	0.7	2.6
Accom. & Food Svcs	19,624	-443	-2.2	1.3	12.9	-0.9	1.5	1.2	1.2
Other Svcs	7,435	301	4.2	7.7	11.4	0.6	-2.3	-0.8	0.7
Public Admin	20,328	-287	-1.4	-2.5	-1.4	-0.8	-0.8	1.0	1.6
Other	117	114	3,410.0	1,900.0		-4.0	-3.5	-4.3	-3.0

Source: BLS, QCEW; Calculations by NEED

Summary

Regional strengths, as shown later when considering industry clusters, can be seen in Table 5 for each region. The Eastern Sierra region saw growth in goods-producing industries and some reduction in financial and professional services. Private education and health care increased steadily, with some reduction in government jobs (including public education). The Redwood Coast region lost agricultural jobs (though cannabis jobs are not officially tracked), gained construction and manufacturing employment, and lost services similar to the Eastern Sierra region. The North State saw growth across almost all major industry sectors since 2010, with financial and information (publishing and software) jobs as key differences. Construction and transportation jobs increased steadily, as did jobs in utilities, with government jobs fading a bit. As part of this data overview, we now want to consider where diversity may be found in terms of industrial changes and growth to 2030. Combinations of new and current industries can “cluster” to form regional competitive advantages and also to close supply-chain gaps that may regionally exist. We now try and identify potential industry clusters.

Industry Cluster Analysis

Economic development in the last two decades has focused on the creation of “clusters” or groupings of industries that may have long-term connections to the area in which they are located (Amador County and wine), connections to specific infrastructure or unique employers otherwise that support that cluster (agricultural science and equipment around almond farming in Butte and Tehama counties), or a local workforce and industries that already exist (restaurants and retail centered on tourism along the Mendocino and Humboldt coastal areas).

Identify economic development opportunities and driving forces in the region, such as emerging industries or innovative sectors.

The frontier of cluster development is based on manufacturing, technology or businesses that are seen as injecting innovation into a local area. For these three regions, the lack of a larger, urban area

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(the Sacramento region has Sacramento in contrast but neighboring all three regions) is a challenge.

Data should answer two key questions:

- In what industries have jobs grown since 2011 (which acts as our baseline year of post-Great Recession (2007-10) and pre-pandemic (2020-22))?
- What industries can these counties and regions support to 2030?

We will use a mix of criteria to rank key industries (at the NAICS-3 code level or the “industry” level of the North American Industrial Classification System or NAICS) based on their ability to grow and become “niche” industries in these regions. One criterion we consider is supply-chain relationships and how each of these regions may be able to development industry growth that creates vendor relationships regionally and (may) reduce local needs for goods and services from outside the region. Our snapshot of current major industries as well as industry trends and projections. Include an in-depth analysis of potential growth clusters based on the region’s comparative advantages, market trends, workforce, infrastructure assets, policy trends, aligned state/federal investments, supply chain, and innovation ecosystem.

Criteria: To help determine industries that may emerge or growth from the current mix, we use the following criteria and consider industry sectors of focus at the NAICS-3 level (see Appendix 3 for list of NAICS-3 level industries, where construction is seen as its own industry sector in sum):

1. Forecasted jobs growth to 2030;
2. Avg Wage of industry to statewide average wage of all jobs and regional average;
3. Multiplier effects of jobs on other jobs (IMPLAN);
4. Output per worker (productivity);
5. Environmental impact;
6. Qualitative assessment of infrastructure support;
7. Workforce readiness risk (3 choices for each region: workforce readiness either detracts, adds or no real effects regionally on the industry in question).

Based on our assessment of the industries in each region, the following “clusters” have emerged based on a weighted average of the criteria above:

Redwood Coast:

Top Industries (NAICS 3) for Economic Development Activities, Redwood Coast

NAICS 3	Industry
622	Hospitals
623	Nursing and Residential Care Facilities
712	Museums, Parks and Historical Sites
115	Agriculture & Forestry Support Activity
23	Construction
811	Repair and Maintenance
311	Food Manufacturing
113	Forestry and Logging
487	Scenic and Sightseeing Transportation
624	Social Assistance
112	Animal Production and Aquaculture

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Redwood Coast, DRAFT Industry Clusters to 2030

- **Construction**
 - Homes and commercial spaces that link to below industry clusters
- **Healthcare**
 - An aging and relatively isolated population means more specialty care and independence from larger areas that are some distance from population centers
 - Nursing and residential care centers combining places to live with care
- **The Blue Economy**
 - Support activities for aquaculture and science concerning the ocean or Clear Lake
 - Manufacturing of sea-based ingredients into packaged raw food or new food products
 - Construction and maintenance of new port and utility facilities
 - Support activities for enhanced tourism using the ocean as a place to visit (science learning centers, guided undersea tours, etc.
- **Forestry products and science**
 - Fire resilience science (what have recent fires taught about how to fight and prevent fires)
 - Carbon capture science/engineering using the forests
 - Forest maintenance

Caveats and Opportunities, Redwood Coast

Because the Redwood Coast has a mix of counties that are both coastal and central California, economic development around the ocean and Clear Lake should be seen as similar pursuits in terms of supporting science. Manufacturing is less likely to expand in this region unless tied to forestry or ocean-borne products. Healthcare and construction (which we see in other regions for this CERF funding also) are likely to see support from rising forecasts (construction) and also shifts to an older population (healthcare) and one that may be able to afford a wide array of specialty care. Recruitment of healthcare professionals to these rural areas may be one of the biggest challenges in supporting healthcare changes. This is a major opportunity to utilize CalPoly Humboldt for more healthcare professionals, science, and expand south into Mendocino and Lake counties as part of a regional change in all these industries. Cannabis is likely to remain a core industry in this region, as Humboldt and Mendocino counties remain historical centers of that industry, but unlikely to see a “cluster” expansion in terms of integrating supply chains.

Eastern Sierra

Top Industries (NAICS 3) for Economic Development Activities, Eastern Sierra

NAICS 3	Industry
622	Hospitals
492	Couriers and Messengers
493	Warehousing and Storage
623	Nursing and Residential Care Facilities
722	Food Services and Drinking Places
23	Construction
624	Social Assistance
445	Food and Beverage Stores
721	Accommodation
487	Scenic and Sightseeing Transportation
518	ISPs, Search Portals, & Data Processing
713	Amusement, Gambling & Recreation Ind
111	Crop Production

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Eastern Sierra, DRAFT Industry Clusters to 2030

- **Construction**
 - Homes and commercial spaces that link to below industry clusters
- **Healthcare**
 - An aging and relatively isolated population means more specialty care and independence from larger areas that are some distance from population centers
 - Nursing and residential care centers combining places to live with care
- **Data and Energy Storage**
 - Available space allows for these areas to be a place of storage for electrons versus goods
 - New residents that have jobs from home in technology businesses may act as conduits for new data-center decisions and provide for satellite campuses of current employers based on server and data storage
- **Recreation and Mountain Experiences**
 - Using access to Yosemite, ski resorts and other mountain areas, create year-round outdoor experiences and link with local food, beverage, cannabis, and other lifestyle goods
 - Utilize current infrastructure to package with regional partners, and consider ways to work across county lines to expand overnight stays of visitors and also expand the corporate retreat market.

Caveats and Opportunities, Eastern Sierra

Because the Eastern Sierra region is rural and faces seasonal and structural logistics issues in terms of transporting goods and services, industry clusters here should focus on moving people versus goods and data/energy storage as was to expand technology footprints versus attracting manufacturing that may need warehousing and dependable logistics. Construction and healthcare will remain foundational industries, especially if residential real estate demand continues, as well as work-from-home residents that migrate to these counties. Tourism, due to the natural resources in these counties, remain core “export” industries and match current strengths to growth over the remainder of the decade. Investments in transportation infrastructure and broadband connectivity would help education, healthcare, “information” (think software) and professional services employees and new businesses mix lifestyle and work in the Eastern Sierra region.

North State:

- **Construction**
 - Homes and commercial spaces that link to below industry clusters
- **Healthcare**
 - An aging and relatively isolated population may imply more specialty-care and additional services only available from larger areas that are some distance from this region’s population centers
 - Nursing and residential care centers combining places to live with care
- **Craft Food and Beverage Manufacturing: Resilient Ag and Food**
 - Link more local farmers to local entrepreneurs in manufacturing and distribution to larger areas in California and beyond
 - Think a center of excellence for agricultural practices combined with energy resilience and carbon capture
 - Can be linked to tourism in terms agricultural tours, food tours, outdoor recreation/food/beer/wine/spirits/olive oils as examples

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- **Energy Products and Services**
 - Biomass and solar: using space, infrastructure and natural resources to create energy
 - Regional resilience if natural disaster
 - Testing ground for the use of energy storage

Caveats and Opportunities

The North State region has larger cities and towns and better logistics than the Redwood Coast and eastern Sierra, even though Sacramento is close to the Eastern Sierra region. Agriculture and raw materials remain a use of the North State’s natural resource endowments. Linking to craft entrepreneurship in food and beverage manufacturing, as well as wood products from recycled wood or from waste due to natural disasters combine new techniques with entrepreneurship. The links to southern Oregon and Sacramento provide a wide array of markets and distribution points, especially along interstates 5 and 70 and State HWY 99. Construction and healthcare remain as critical, foundation industries for continued rebuilding but also providing access to more remote populations.

Top Industries (NAICS 3) for Economic Development Activities, North State

NAICS 3	Industry
623	Nursing and Residential Care Facilities
115	Agriculture & Forestry Support Activity
23	Construction of Buildings
311	Food Manufacturing
622	Hospitals
112	Animal Production and Aquaculture
445	Food and Beverage Stores
562	Waste Management and Remediation Service
221	Utilities
531	Real Estate
713	Amusement, Gambling & Recreation Ind
327	Nonmetallic Mineral Product Mfg
624	Social Assistance
312	Beverage & Tobacco Product Manufacturing
561	Administrative and Support Services

Changes to provide support for different or more-diverse industries and employment opportunities

Asset assessment

Each of these regions has unique industries and workforce elements, where assets include infrastructure, entrepreneurial support and educational possibilities for a wide array of industries. Local area industries tend to grow based on local assets, including climate, land availability, major employers, local natural resources, university locations, railroad or logistics hubs, demographic shifts, and current/forecasted population characteristics.

Our work would look at each of the 21 counties as how their industry and occupational mix shows asset utilization **regionally** through local workforce and economic development. For example,

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agricultural industries may exist in each region such that a regional strategy for food and beverage manufacturing can: (1) connect supply-chain partners and logistics opportunities to create jobs and to diversify local economies; (2) create jobs tied to unique regional assets that have higher-than-regional average wages and long-term prospects for regional residents. Such change can also support managerial jobs and other professional services across a wide array of educational levels.

Local universities can provide workforce through degrees, certificates and other training and support these regions becoming centers of excellence for products or industries where the region holds advantages. It is important, from an industry-diversification standpoint, that these counties also consider other (perhaps closely-related) industries to the 2022 industry mix or the status-quo forecasted mix to 2030.

Economic development assets generally have four categories:

- Infrastructure and natural resources
- Workforce availability and scope locally and regionally
- Industry mix locally and regionally
- Housing mix

Our focus here is on a set of options where the state of California can make investments and have them support changes in these regional economies to have long-term impacts on local residents and businesses. We are not recommending changes to local politics or zoning or permit systems and staffing, regardless of how local areas may view their relationship with city and county government. This section addresses:

- The impacts of recent trends, changes, and forces on the region's labor market;
- Factors such as technological advancements, globalization, or policy shifts and their effects on job availability, skill requirements, and industry competitiveness; and
- Emerging opportunities or challenges resulting from these impacts.

Transportation options where possible

Different from urban or larger suburban California areas, transportation options are a key issue for moving goods, services and people to and from many of the counties in these three regions. As discussed below, there may be major challenges in some counties versus others in expanding current transportation infrastructure. One of the ways new funding could help these counties diversify and retain new industries would be more options; broadband with faster speeds helps some industries, but not necessarily all, especially when tourism-based.

Broadband expansion using private-sector and municipal partners

Broadband expansion, especially to speeds that rivaled and stayed with those found in urban areas, would expand healthcare, education, technology, and many other professional services industries where a barrier to opening an office or cluster of workers within an industry living and working in these counties is an inability to have fast, reliable internet.

Wireless will not be as reliable as a fiber-optic connection, but the infrastructure necessary for cable internet is much more expensive than wireless. However, for many communities, an expansion of wireless networks

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that may be local public utilities, would provide more possibilities and chances to engage in education or healthcare remotely that would not be possible before. Industry attraction, retention and expansion efforts without broadband availability may mean the difference between landing a new employer or not versus another community in California or in another state with better internet assets.

Utilizing scientific and professional communities

Community colleges and universities provide an educated workforce and workforce development in one place. For these regions, universities are widespread, but have regional (in some cases inter-regional) reach. Providing incentives for satellite campuses of public higher education provides an investment in local communities to gain access to lower-cost education, provides a local investment in assets that include high-speed internet (see above) and spaces where entrepreneurship may be fostered and embraced.

A lean toward science also considers how each of these regions have some specializations that may be a good partnership with a scientific community. For example, in the Redwood Coast region, using the ocean or regional lakes as scientific laboratories, raw materials of entrepreneurship concerning climate change technology, both of which can enhance medium-term tourism of a scientific community to this region provides the world with a marketing signal of investments made to become a place of best practices.

The North State is an agricultural area with a wide array of crop farming and animal ranching. There are also forestry options that lie between the coastal areas and the foothills that could be places of carbon capture science, fire-resiliency science and entrepreneurship toward goods and services to address global concerns where these counties and the North State region has first-hand experience.

The Eastern Sierra counties are a blend of the above. There are lakes, forests, rivers, some agriculture. Logistics are an issue as many of the cities and towns in these counties are remote and linked to larger areas by one or two, two-lane roads.

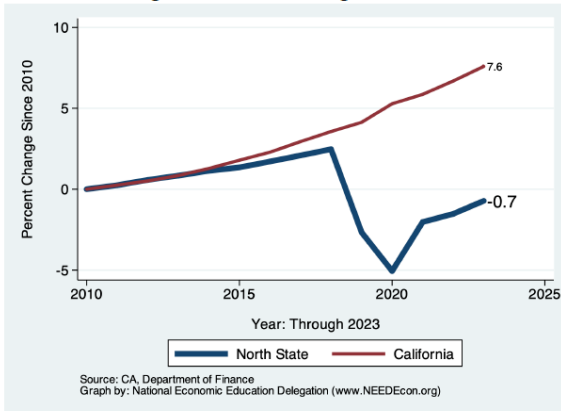
For the Redwood Coast, the “Blue” economy links to programs at CalPoly Humboldt and various community-college campuses across multiple disciplines. The primary focus is on science an innovation, where using the ocean as a place to generate energy, new products, and also to engage in climate-change mitigation all can bring new ideas, firms and industries to the North Coast counties. Lake County can provide a complementary asset in terms of lake science (limnology) and extend the use of biomass and other energy and climate-addressing technologies and opportunities.

Continued Concerns over Housing Stock and Wildfire Effects

Counties in each of these three regions have experienced wildfires since 2015 that reduced housing stock local to the wildfire. For counties such as Butte, Lake, Shasta, and Mendocino lost hundreds of homes, but each region has some effects. Figure 32 from the data files provides that view in each of the regions.

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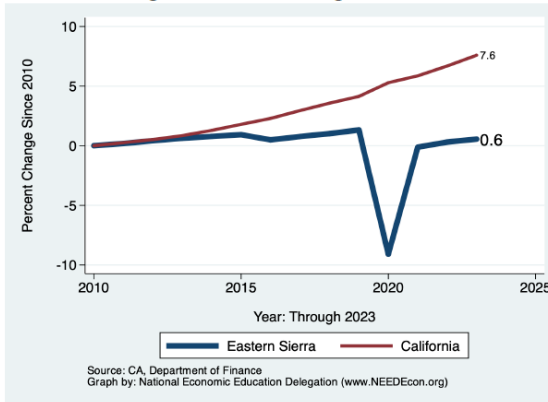
Figure 32: Housing Growth



North State:

The Camp Fire in 2018 shocked the housing stock and it may be 2030 before the stock is completely replenished.

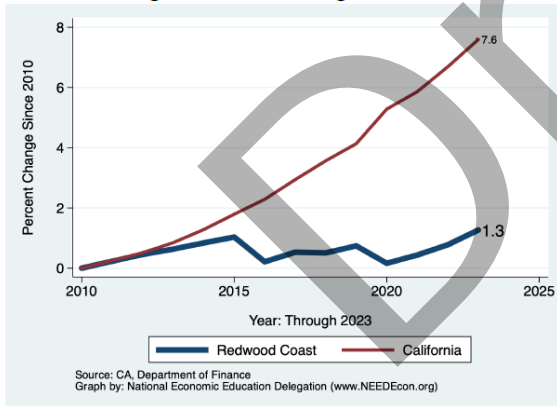
Figure 32: Housing Growth



Eastern Sierra:

The loss of housing stock was temporary, and came back quickly with new construction. Otherwise, the supply of homes in these counties has been relatively constant and see little change.

Figure 32: Housing Growth



Redwood Coast:

A mix of wildfires (Lake and Mendocino counties is most years between 2015 and 2021) and new construction has slightly increased the housing stock in sum since 2010.

For each region, new construction (in many counties) is simply filling gaps left by losses of housing stock. As these communities build and re-build, there needs to be some considerations of what mix of housing best fits nascent and growing industries to fit employer and employee needs.

The Cannabis Conundrum and Broader Thinking

When recreational adult-use for cannabis became legal in 2018, there was a large amount of optimism about the economic and social benefits of that change. An increase in the supply of cannabis reduced prices and

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shifted economic outcomes for many traditional farmers that may have been part of the medicinal and others in the illegal (now known as the unregulated) market. For the Redwood Coast counties, as well as some in the North State, the shift was primarily on cultivation; distribution and manufacturing increased in a regulated form for larger areas around California with links but not large amounts of investments in rural parts of California. Retail is also focused on population centers as customers are there versus rural areas. The Eastern Sierra counties do not have as much of a current footprint (or industry history) as the coastal and forested areas of northwestern California. The lower wholesale prices and increased cost of doing business in the pandemic's aftermath have acted as two problems for smaller, craft farmers and businesses to remain as going concerns. See Table XX below for the most recent, active license list for perspective on current, regulated cannabis businesses and their distribution in these regions.

However, from an industry-cluster perspective, cannabis should be seen as here to stay. For each region, primarily the Redwood Coast and North State (based on historic advantages and current industry investments), there are likely some ways to better integrate and expand the cannabis supply-chain partners, – especially manufacturing distribution and tourism. Retail may expand as tourism expands; economic development centered on cannabis should use the California wine industry as a model, combining lifestyle, tourism and products into one point of sale.

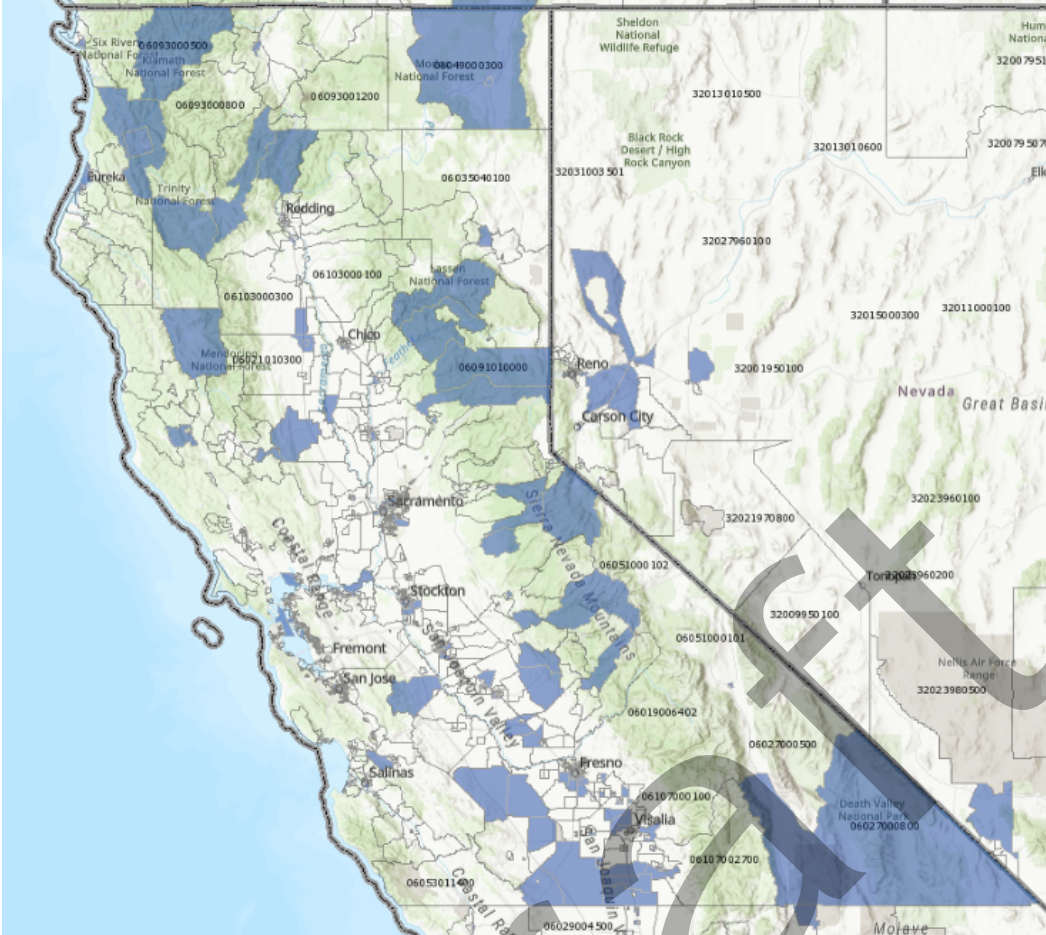
This broader thinking could help support local, craft farming and manufacturing, provide place-based marketing that tells a story about the medicinal and recreational use of cannabis in one place, and integrates local products and revenues from dirt to consumer. Such integration means partnering on different ways to look at logistics, warehousing, freight, retail, and local regulatory environments to augment continued conversion of unregulated farming (which likely supports unregulated manufacturing, distribution and sales), as well as providing incentives for local entrepreneurship in the cannabis space. Such outcomes could also shift agriculture and manufacturing for the Eastern Sierra counties over time.

Local government and its business friendliness is almost an infrastructure category for site selectors and business owners when considering a location. Opportunity Zones exist throughout the region, now known as “Qualified” opportunity zones (QOZs).

If the QOF investment is held for at least 5 years, there is a 10% exclusion of the deferred gain. If held for at least 7 years, the 10% exclusion becomes 15%. If the investor holds the investment in the QOF for at least 10 years, the investor is eligible for an adjustment in the basis of the QOF investment to its fair market value on the date that the QOF investment is sold or exchanged. As a result of this basis adjustment, the appreciation in the QOF investment is never taxed. A similar rule applies to exclude the QOF investor's share of gain and loss from asset sales.

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Figure XX: Map of QOZs, 2023



Source: [CDFI Fund](#)

Because this is a federal program, utilizing opportunity zones as a place for outside investment to come in needs to target businesses that most likely need federal tax liability relief. Because the tax relief is specific to the assets in the QOZ, the business or the assets must create a federal tax liability to take advantage of the tax relief.

1. **Profitability:** what industries have the best profit potential regionally?
2. **Brand equity:** how do certain industries make the region unique nationally and globally?
3. **Distribution network:** are the logistics and broadband assets in place for industries and workers to grow and be more productive?
4. **Employee productivity:** are higher education assets in place for training and new workforce?
5. **Market growth rate:** what industries are poised to grow both in market revenue and jobs?

Wages and High-Road Jobs

A snapshot of labor and workforce dynamics in the region, including an overview of major employers, occupations, and wages, the impacts of the recent trends, changes, and forces on the labor market, and projected labor trends in existing key industries. Figures 18 and 19 in the regional data files provide a summary of average wage changes for weekly wages since 1990 in inflation-adjusted terms for each region, California and the United States and a look at recent wage growth by region.

Redwood Coast

Figure 18: Average Weekly Wages

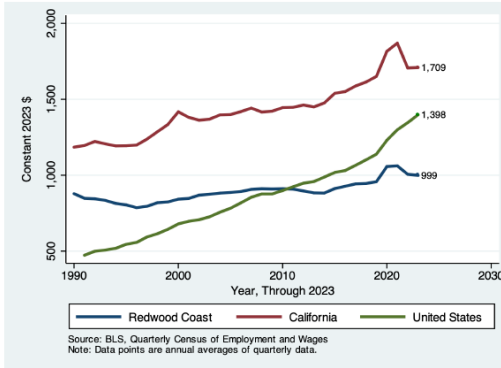
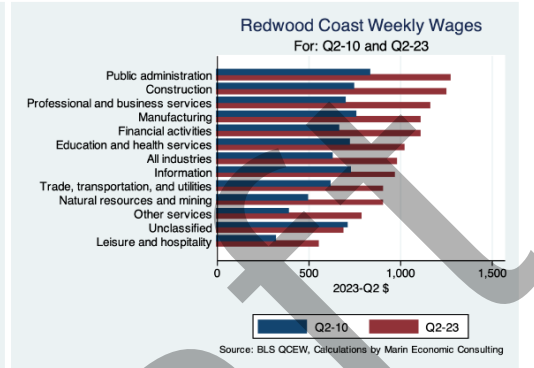


Figure 19: Wage Growth Since the Recession



North State

Figure 18: Average Weekly Wages

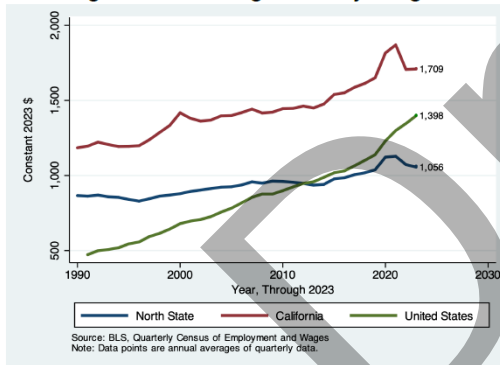
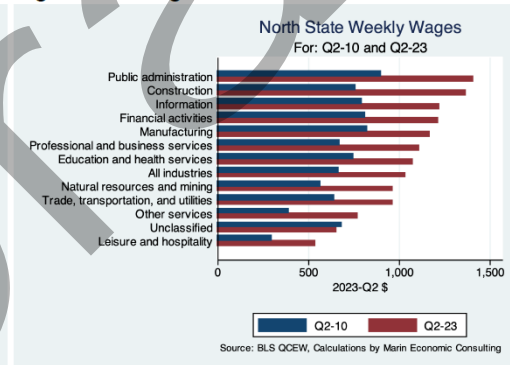


Figure 19: Wage Growth Since the Recession



Eastern Sierra

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Figure 18: Average Weekly Wages

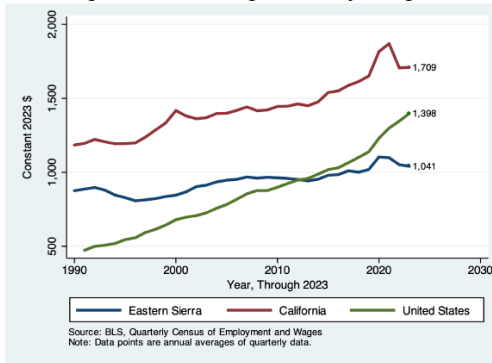
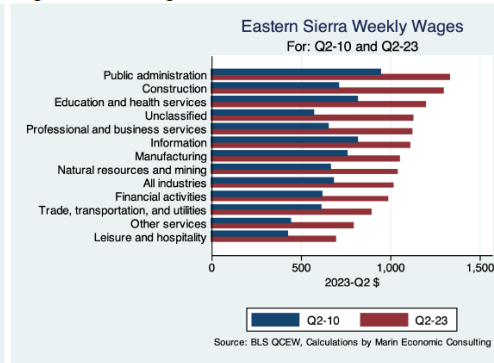


Figure 19: Wage Growth Since the Recession



We should expect wages rising across most industries in these regions due to three major factors:

1. Lingering inflation at higher levels than experienced since before 2010;
2. Labor supply concerns, especially in healthcare and personal services;
3. New union contracts where there is a large union presence (higher education, public safety, construction).

Housing affordability is tied to household incomes. Increasing wages is a key goal of most economic development planning efforts as linked to regional workforce development. As wages rise, housing tenure (home ownership versus rental) becomes a concern in terms of wages keeping up with local housing prices. For more remote areas, as we see later, housing prices tend to be lower and wages follow. Rental prices are less easy to assess, but regionally will provide comparisons. Wage workers are now getting returns from employers due to higher prices, changing work conditions, and general political support for workers. The opportunity cost of those changes will be pressure on local costs of living, including rental prices. Rising wages alone is not a cure-all for local cost of living rising faster than wages can chase. Links to housing policy and general community development are also critical.

Mapping state and national employment trends (also occupations) to regionals and comparing to each

Identify major low-wage and high-wage industries and occupations in the region.

These rural areas are not unique to having a mix of low-wage and high-wage industries and occupations. The data below show for each region how some industry sectors and occupations have changed over time in terms of their wage level versus the industry averages or occupational median respectively since Quarter 2 2010. Data shown here are in 2023 dollars. All three regions have seen inflation adjusted wages rise since 2010, even with increased inflation. In all three regions, high wage jobs are primarily working for government or construction; other personal services (such as hair/nail salons, fitness centers, non-profits outside healthcare) and leisure and hospitality jobs (hotels, events and restaurants).

Figure XX: Average Wages by Region, 2010 and 2023 Quarter 2, 2023 \$

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Figure 19: Wage Growth Since the Recession

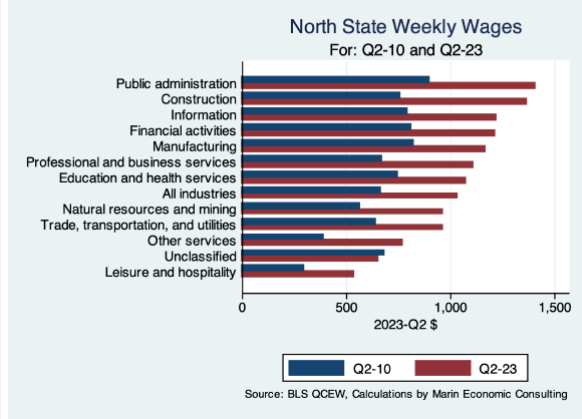


Figure 19: Wage Growth Since the Recession

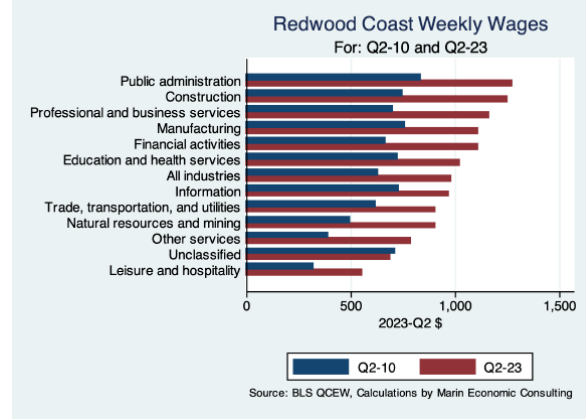
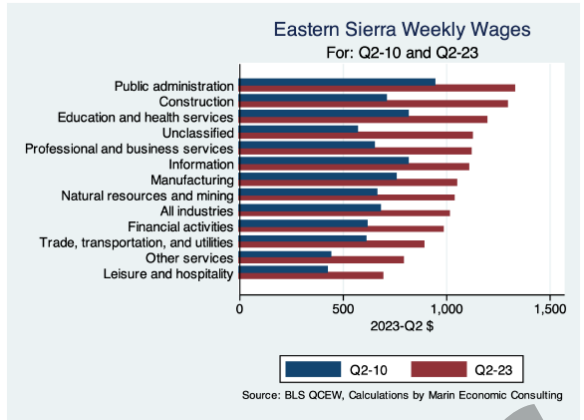


Figure 19: Wage Growth Since the Recession



Note: Source reports available from CERF Team on each region; these are Figure 19 from those reports.

Figure XX: Average Wages by Region, 2010 and 2023 Quarter 2, 2023 \$

North State					Redwood Coast				
Table 7. Quarterly Summary for Q 2 – 2023					Table 7. Quarterly Summary for Q 2 – 2023				
Sector	Levels in Q 2 – 2023			Relative to: Bay U.S.	Sector	Levels in Q 2 – 2023			Relative to: Bay U.S.
	Employment	Wages				Employment	Wages		
Public administration	20,328	1,406.3	0.7	0.9	Public administration	12,145	1,275.2	0.7	0.8
Construction	11,219	1,367.2	0.9	1.0	Construction	5,154	1,247.5	0.8	0.9
Information	1,574	1,220.2	0.3	0.4	Professional and business services	5,683	1,159.2	0.5	0.7
Financial activities	6,512	1,212.1	0.5	0.6	Manufacturing	5,489	1,110.3	0.5	0.7
Manufacturing	11,038	1,164.6	0.5	0.8	Financial activities	3,157	1,108.1	0.5	0.6
Professional and business services	13,416	1,110.4	0.5	0.6	Education and health services	34,061	1,023.7	0.8	0.8
Education and health services	67,701	1,071.9	0.8	0.9	Information	787	970.0	0.2	0.4
Natural resources and mining	10,261	961.0	1.1	0.8	Trade, transportation, and utilities	19,416	906.3	0.7	0.8
Trade, transportation, and utilities	39,166	960.3	0.7	0.8	Natural resources and mining	4,852	902.4	1.0	0.7
Other services	7,435	772.0	0.8	0.8	Other services	3,371	789.1	0.8	0.8
Unclassified	117	654.6	0.5	0.5	Unclassified	78	688.1	0.5	0.5
Leisure and hospitality	24,471	538.0	0.7	0.9	Leisure and hospitality	13,866	554.8	0.8	0.9
Total	213,263	1,034.0	0.6	0.8	Total	108,058	982.1	0.6	0.7
Source: BLS, QCEW; Calculations by NEED					Source: BLS, QCEW; Calculations by NEED				
Eastern Sierra									

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Sector	Levels in Q 2 – 2023		Relative to:	
	Employment	Wages	Bay	U.S.
Public administration	9,995	1,333.8	0.7	0.9
Construction	3,493	1,298.6	0.8	0.9
Education and health services	13,006	1,194.6	0.9	1.0
Unclassified	64	1,126.7	0.8	0.8
Professional and business services	3,060	1,119.9	0.5	0.6
Information	491	1,110.6	0.3	0.4
Manufacturing	2,491	1,053.1	0.4	0.7
Natural resources and mining	1,272	1,037.5	1.2	0.8
Financial activities	1,429	985.0	0.4	0.5
Trade, transportation, and utilities	9,474	890.3	0.7	0.8
Other services	1,844	794.9	0.8	0.8
Leisure and hospitality	16,039	692.3	0.9	1.2
Total	62,718	1,018.1	0.6	0.8

Source: BLS, OCEW; Calculations by NEED

The top and bottom seven (7) occupations are shown in terms of average wages per hour (using a 2,000-hour year) and occupational median wages per hour. Because of the lack of consistency of occupational wage data at the regional level, we look at main counties within each region as a regional benchmark for wages.

For the regional considered here, there are five data “areas” to show:

- Eastern Sierra and Mother Lode region (our Eastern Sierra region counties in sum);
- North Coast region (our Redwood Coast regions in sum);
- Chico MSA (Butte County);
- Redding MSA (Shasta County); and
- North Valley-Northern Mountains region (our North State region less Butte and Shasta counties but including Colusa and Nevada counties).

Because there are consistency problems with the data, we will show changes between 2019 and 2023 and show high-wage to low-wage occupational categories based on median wages.

Table XX: Median Wages and Dollar Changes 2019 to 2023, Selected Regions and California, 2023\$

Occupations	2023 Median Wages						2019-2023 Change in \$, Inflation Adjusted					
	Chico	Redwood Coast	Redding	Eastern Sierra	North State	CA	Chico	Redwood Coast	Redding	Eastern Sierra	North State	CA
Total all	\$21.42	\$21.90	\$21.84	\$22.22	\$22.99	\$24.73	\$1.07	\$1.05	\$1.03	\$1.01	\$1.04	\$1.01
Management	\$46.51	\$46.45	\$47.97	\$45.55	\$44.93	\$63.90	\$1.00	\$1.04	\$0.98	\$0.96	\$0.97	\$0.93
Business and Financial Operations	\$32.75	\$31.85	\$34.58	\$33.48	\$33.04	\$39.64	\$1.03	\$1.00	\$0.99	\$0.97	\$0.95	\$0.93
Computer and Mathematical	\$40.87	\$36.60	\$42.42	\$37.62	\$36.04	\$64.25	\$1.09	\$1.03	\$1.10	\$0.89	\$0.91	\$1.08
Architecture and Engineering	\$41.13	\$41.27	\$47.78	\$42.13	\$39.20	\$51.73	\$0.95	\$0.98	\$0.90	\$0.91	\$0.96	\$0.94
Life, Physical, and Social Science	\$34.42	\$35.25	\$33.05	\$28.29	\$27.92	\$44.09	\$1.08	\$1.01	\$0.92	\$0.94	\$1.07	\$0.97
Community and Social Services	\$24.70	\$24.41	\$24.15	\$29.21	\$24.51	\$29.09	\$0.99	\$0.95	\$0.89	\$1.10	\$0.91	\$0.98
Legal	\$30.53	\$46.92	\$39.72	\$39.67	\$46.15	\$63.21	\$0.96	\$1.12	\$0.68	\$0.75	\$0.97	\$1.09
Education, Training, and Library	\$29.11	\$30.98	\$29.92	\$30.32	\$30.00	\$31.51	\$1.08	\$0.93	\$0.95	\$0.94	\$0.92	\$0.97
Arts, Design, Entertainment, Sports, and Media	\$23.47	\$23.47	\$22.85	\$21.95	\$23.67	\$38.35	\$1.07	\$1.03	\$0.94	\$0.93	\$1.01	\$1.13
Healthcare Practitioners and Technical	\$51.32	\$51.04	\$50.20	\$53.01	\$52.17	\$52.77	\$1.09	\$1.19	\$0.99	\$1.03	\$1.06	\$1.04
Healthcare Support	\$15.32	\$15.00	\$15.00	\$16.37	\$15.50	\$16.86	\$0.81	\$0.75	\$0.76	\$0.80	\$0.77	\$0.82

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Protective Service	\$28.30	\$31.15	\$30.41	\$38.16	\$33.19	\$23.54	\$0.89	\$0.88	\$1.03	\$1.03	\$0.90	\$0.86
Food Preparation and Serving-Related	\$15.69	\$16.85	\$15.92	\$16.96	\$16.87	\$17.39	\$1.11	\$1.15	\$1.13	\$1.16	\$1.15	\$1.18
Building and Grounds Cleaning and Maintenance	\$18.11	\$17.98	\$17.74	\$17.93	\$18.35	\$18.82	\$1.16	\$1.13	\$1.17	\$1.06	\$1.06	\$1.05
Personal Care and Service	\$15.92	\$17.16	\$16.11	\$17.04	\$17.49	\$17.57	\$1.14	\$1.21	\$1.14	\$1.16	\$1.22	\$1.20
Sales and Related	\$17.16	\$17.50	\$16.97	\$17.56	\$17.55	\$19.04	\$1.05	\$1.16	\$1.09	\$1.09	\$1.05	\$1.05
Office and Administrative Support	\$21.08	\$21.44	\$21.10	\$21.80	\$22.00	\$23.58	\$1.05	\$1.04	\$1.03	\$1.04	\$1.02	\$1.04
Farming, Fishing, and Forestry	\$16.60	\$18.09	\$22.23	\$20.23	\$16.98	\$16.65	\$1.11	\$1.04	\$1.02	\$1.15	\$1.16	\$1.19
Construction and Extraction	\$28.32	\$30.30	\$29.61	\$30.77	\$29.92	\$30.75	\$1.11	\$1.07	\$1.00	\$1.02	\$1.02	\$0.97
Installation, Maintenance, and Repair	\$27.84	\$24.80	\$25.92	\$24.31	\$25.35	\$29.50	\$1.19	\$1.07	\$1.00	\$0.94	\$0.95	\$1.03
Production	\$20.65	\$22.11	\$20.69	\$23.08	\$22.38	\$21.20	\$1.07	\$1.06	\$1.01	\$1.06	\$1.09	\$1.07
Transportation and Material Moving	\$18.35	\$18.90	\$18.48	\$19.06	\$20.31	\$20.05	\$1.05	\$0.92	\$0.94	\$0.97	\$0.93	\$1.05

Source: California EDD, Changes are positive unless signified by a negative (-) sign.

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Multiplier Effects: Once Clusters form and Grow

Industry clusters can be seen in two ways:

- A set of employers that all come from a similar industry and use regional workers that are trained for such work (scientific community, technology workers, tourism); or
- A set of employers that support vertical integration of an industry's supply chain, where core industries are surrounded by vendors, distributors, and potentially retailers (tourism, agriculture, construction, light manufacturing (food and beverage)).

Some clusters exist in these three regions, primarily in the support of vertical integration. Such a strategy is likely the best possible outcome for these rural regions due to a lack of an urban center.

Because these counties are rural to suburban cities and towns, classic industries are based on agriculture or natural resources.

The two key assets for these counties would be an expansion of broadband internet (moving toward gigabit speeds as possible) and transportation. Broadband would allow expansions of many industries, especially in professional services for works that wanted to live in a rural area and had an ability to work remotely. Such a change would allow for telehealth and an expansion of what regional healthcare could offer, higher education would have a reach to more remote areas.

The second asset is transportation options. More remote areas have few options other than two-lane roads coming in or through their county. Some of those roads may be restricted in terms of use by specific types of vehicles or be unsafe during some parts of the year. Rail as both a passenger and freight option may be an option for mountainous counties (eastern North State and Eastern Sierra counties). Interstate 5 connects many of these counties to the Oregon Border north of

An analysis of pre-pandemic trends and recent changes to labor markets and business mix provides a foundation for the forecast and industry/occupation recommendations, but also shows where older, classic industries may be restricting growth in others. The utilization of local universities and community colleges as training engines is critical on the workforce development side throughout these regions.

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Table XX: Multiplier Effects, \$1,000,000 of new Revenue in these industries create additional regional revenues, Largest Multipliers in 2022 Dollars and Economic Relationships Regionally

Industry	Redwood Coast	Industry	North State
Textile Product Mills	9.29	Oil and Gas Extraction	2.96
ISPs, Search Portals, & Data Processing	3.31	ISPs, Search Portals, & Data Processing	3.31
Petroleum & Coal Products Manufacturing	3.00	Support Activities for Mining	2.43
Oil and Gas Extraction	2.96	Insurance Carriers & Related Activities	2.13
Financial Investment & Related Activity	2.49	Museums, Parks and Historical Sites	1.70
Support Activities for Mining	2.43	Funds, Trusts & Other Financial Vehicles	1.72
Insurance Carriers & Related Activities	2.13	Financial Investment & Related Activity	2.49
Performing Arts and Spectator Sports	2.07	Water Transportation	1.83
Apparel Manufacturing	1.89	Internet Publishing and Broadcasting	1.84
Internet Publishing and Broadcasting	1.84	Administrative and Support Services	1.81
Water Transportation	1.83	Performing Arts and Spectator Sports	2.07
Membership Organizations & Associations	1.81	Membership Organizations & Associations	1.81
Administrative and Support Services	1.81	Animal Production and Aquaculture	1.74
Truck Transportation	1.75	Food Manufacturing	1.44
Industry	Eastern Sierra		
Petroleum/Coal Products Manufacturing	3.00		
Water Transportation	1.83		
Financial Investment & Related Activity	2.49		
Museums, Parks and Historical Sites	1.70		
ISPs, Search Portals, & Data Processing	3.31		
Management of Companies and Enterprises	1.51		
Insurance Carriers & Related Activities	2.13		
Performing Arts and Spectator Sports	2.07		
Oil and Gas Extraction	2.96		
Membership Organizations & Associations	1.81		
Telecommunications	1.70		
Merchant Wholesalers, Nondurable Goods	1.48		
Funds, Trusts & Other Financial Vehicles	1.72		
Administrative and Support Services	1.81		

Sources: IMPLAN® and EFA. Note: \$1 million of revenue growth in “Industry” means \$1 million x associated multiplier for each region. This suggests there are supply-chain partners that could experience revenue growth based on focused economic development activities.

Challenge: Climate Change and Industries that

Mitigating and supporting adaptation to climate change; increasing environmental sustainability; building community and economic resilience. We show data here (and also in Appendix 2) that ranks the estimated environmental detriment of worker growth by major industry group (NAICS 3). Table XX provides the industries that have better “scores” on emissions, water use, and other metrics in each

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region versus the state on average. Manufacturing tends to be “cleaner” in these regions than the state overall.

Table XX: Industries and Environmental Effects versus California on Average

Eastern Sierra	North State	Redwood Coast
Oil and Gas Extraction	Mining (except Oil and Gas)	Oil and Gas Extraction
Scenic and Sightseeing Transportation	Oil and Gas Extraction	Scenic and Sightseeing Transportation
Hospitals	Wood Product Manufacturing	Hospitals
Museums, Parks and Historical Sites	Petroleum & Coal Products Manufacturing	Museums, Parks and Historical Sites
Crop Production	Leather and Allied Product Manufacturing	Crop Production
Construction	Chemical Manufacturing	Construction
Educational Services	Nonmetallic Mineral Product Mfg	Educational Services
Repair and Maintenance	Fabricated Metal Product Manufacturing	Repair and Maintenance
Forestry and Logging	Beverage Manufacturing	Forestry and Logging
Motor Vehicle and Parts Dealers	Utilities	Motor Vehicle and Parts Dealers
Food and Beverage Stores	Primary Metal Manufacturing	Food and Beverage Stores

Table XX+1: Industries With Largest Environment Effects per Value Added Income

Eastern Sierra	North State	Redwood Coast
Oil and Gas Extraction	Mining (except Oil and Gas)	Oil and Gas Extraction
Scenic and Sightseeing Transportation	Oil and Gas Extraction	Scenic and Sightseeing Transportation
Hospitals	Wood Product Manufacturing	Hospitals
Museums, Parks and Historical Sites	Petroleum & Coal Products Manufacturing	Museums, Parks and Historical Sites
Crop Production	Leather and Allied Product Manufacturing	Crop Production
Construction	Chemical Manufacturing	Construction
Educational Services	Nonmetallic Mineral Product Mfg	Educational Services
Repair and Maintenance	Fabricated Metal Product Manufacturing	Repair and Maintenance
Forestry and Logging	Beverage Manufacturing	Forestry and Logging
Motor Vehicle and Parts Dealers	Utilities	Motor Vehicle and Parts Dealers
Food and Beverage Stores	Primary Metal Manufacturing	Food and Beverage Stores

Challenge: workers and sectors at risk of displacement

Three trends exist that may affect the long-term stability of some jobs and industry sectors:

- A lack of full return to office and commercial spaces in downtown/urban areas;
- Automation that has become more human-like in its ability to perform tasks;
- Shifting demographics and skills of available workers.

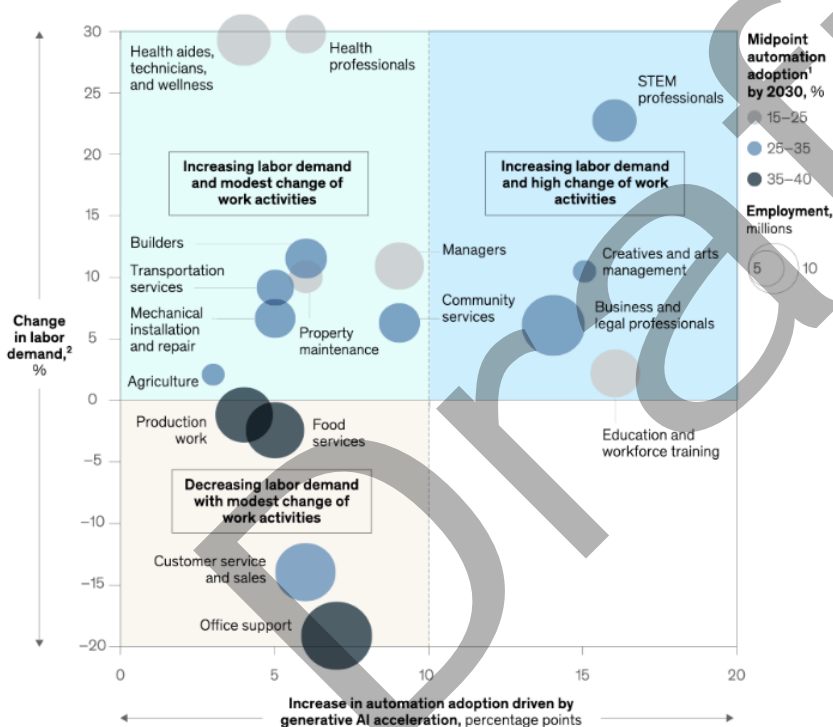
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There is a large amount of debate in economic and social policy circles about the importance of recent technological developments, such as artificial intelligence or AI (which is not new, just suddenly leaping forward into a more refined and potentially worrying state). Autonomous vehicles are a way to see AI moving beyond mobile phone and personal/office computer applications, such as chatbots. These changes have started thinking about where jobs may be displaced and what industries are more at risk. A consensus of thinking suggests the following industries may be most at risk, some of which may have already happened. For each industry, our team provides rationale and application to our three regions of study. Notice a central theme is the perceived repetition of tasks; if tasks can be converted to an algorithm, AI has a better chance of displacing workers.

Figure XX provides a graphic from a recent report by McKinsey and Co. on labor demand to 2030 and what sectors are most at risk¹. The bottom-left quadrant is the highest risk.

Figure XX

Estimated labor demand change and generative AI automation acceleration by occupation, US, 2022–30



¹Midpoint automation adoption is the average of early and late automation adoption scenarios as referenced in *The economic potential of generative AI: The next productivity frontier*, McKinsey & Company, June 2023.
²We consider multiple drivers affecting demand: rising income, aging populations, technology investment, infrastructure investment (including Bipartisan Infrastructure Law), rising education levels, net-zero transitions, marketization of unpaid work, creation of new occupations, automation (including generative AI), increased remote working and virtual meetings, and e-commerce and other virtual transactions.
 Source: US Bureau of Labor Statistics; Current Population Survey, US Census Bureau; McKinsey Global Institute analysis

Customer service across industries

For years, new technology applications such as chatbots have slowly replaced workers such as administrative assistants or call center employees with a self-thinking chat service. Using data from call centers and customer interactions, these chatbots are refined with a larger database of answers to

¹ See McKinsey and Co., [“Generative AI and the future of work in America,”](#) July 26, 2023.

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customer questions where a mobile or web-based interface can answer needs versus an employee. Automated responses to frequently asked questions is a critical aspect of such services to date; as AI “learns” more quickly, the responses will be more dynamic and wider in scope. This will be true in all industries that otherwise would have workers answering phones or e-mails or walk-in customers. Healthcare may be the one industry where this is less likely, but coming nonetheless.

Bookkeepers/Data Entry Specialists

Using AI for bookkeeping and data entry . AI-powered bookkeeping services provide an efficient accounting system and flexibility and security, considering that they are available as cloud-based services. Using ai algorithms, AI will ensure the data is collected, stored, and analyzed correctly. Using an AI accounting service is significantly less costly than paying an employee’s salary to do the same job.

Salespeople and the “Traveling” Sales Representative

The more AI can use data from social media, industry trends and myriad other data sources to learn buying tendencies, the more targeted marketing can become and the less direct sales leads will be needed to draw in customers and clients. It is in this area where shaping of marketing campaigns and the “art” of marketing will likely remain with humans versus technology; emotional intelligence may not be as easily learned by algorithms versus spending by category, click-through rates, and other search engine optimization (SEO) metrics. However, the more social media (from Instagram to Linked In) can generate sales leads, the less a person needs to travel, bring lunch to an office with a product demonstration, and all the classic tactics of supporting accounts.

Education and Research

How teaching is done and research is compiled have already begun to use AI. For education, bespoke education based on expertise programming the learning experience for current and potential students have ways to completely revolutionize training and teaching. On the student side, AI is now able to provide editing, first drafting, and answers to homework and (potentially) exam questions. On the research side, AI acts as an extension of search-engine capabilities; its ability to find specific types of research that acts as background for a practitioner or academic may make the research process more efficient. Further, finding datasets that may take days or weeks to find in a library or database otherwise, may now be found and complied with just a few sentences. These developments are likely to threaten the size of faculty and research teams in both the private and public sectors.

Warehousing/Logistics/Transportation

Autonomous trucking, buses, taxis, and other Online sales is a steadily growing industry and comes with an increasing need for processes and automated systems that efficiently get orders onto trucks for delivery. One area of focus for streamlining the process has been the use of automation. Basic automation and artificial implementation in a warehouse allow for easy access to computerized systems to locate packages and direct staff, and future AI may even perform mechanized retrieval and loading to increase shipping capacities.

Banking and Insurance: New and Current Clients

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The tasks of assessing risk for borrowers at banks and insured clients can be formulaic, while somewhat different from firm to firm. Once the algorithm is set, underwriting for loan approval or insurance approval can be repetitive. Competition over borrowers and clients can lead to more investments in fast-decision making and completing tasks quickly. We have already seen some beginnings of these movements in two ways: (1) we have seen finance and insurance jobs be reduced across California, some of which has to be due to technology replacing workers; and (2) for years, mobile technology has been evolving in such a way to reduce the flow of people into bank branches and also making “pre-approval” decisions on lending using a borrower’s phone. More functions like these will continue to change finance, banking and insurance.

Retail and Hospitality

Self-checkout at grocers and other retailers are meant to reduce the retailer’s use of workers through technology. Those points-of-sale have become more sophisticated and act as extensions of marketing and the consumer experience. The key is the repetitive aspects of the checkout experience; customers now scan their items and all have that skill that is repeated thousands of times per day by classic “checkers”.

Customers having retail experiences that are classically human interactions with fewer salespeople on the sales floor are coming; car purchases are more virtual now as well, as dealers are reducing the number of cars and trucks on the lot and working with potential buyers to shape their new car at the factory. This reduces the number of sales staff people needed, especially when the sales experience can be unnerving for customers.

For hospitality businesses, the pandemic created a shock from which the hotel and event industry is unlikely to return. Check-in and check-out at hotels is becoming more automated, thus the number of staff needed is being reduced. However, the “experience” aspect of the overnight stay may keep workers in place for some properties; the more the customer pays for an overnight stay, the more human experience may be needed to provide a better experience. Events have become more automated; this is true from movie theaters to concerts and conferences. Tickets are virtual and a QR code is scanned to retrieve badges or entrance credentials into an event. This is not a short-term trend.

Why is this important for these regions?

Wage growth is a concern for new and growing industries for two key reasons:

1. Wage growth should reflect regional scarcity of labor resources or policy changes to minimum wage laws or a mix, which signals the cost of doing business changing for local employers; and
2. Wage growth should reflect the local cost of living in terms of rental or ownership costs for housing.

When new and current business consider location or growth choices respectively, local cost of living will influence those decisions, especially if the workers to be hired are wage workers versus salaried and renting versus owning a home.

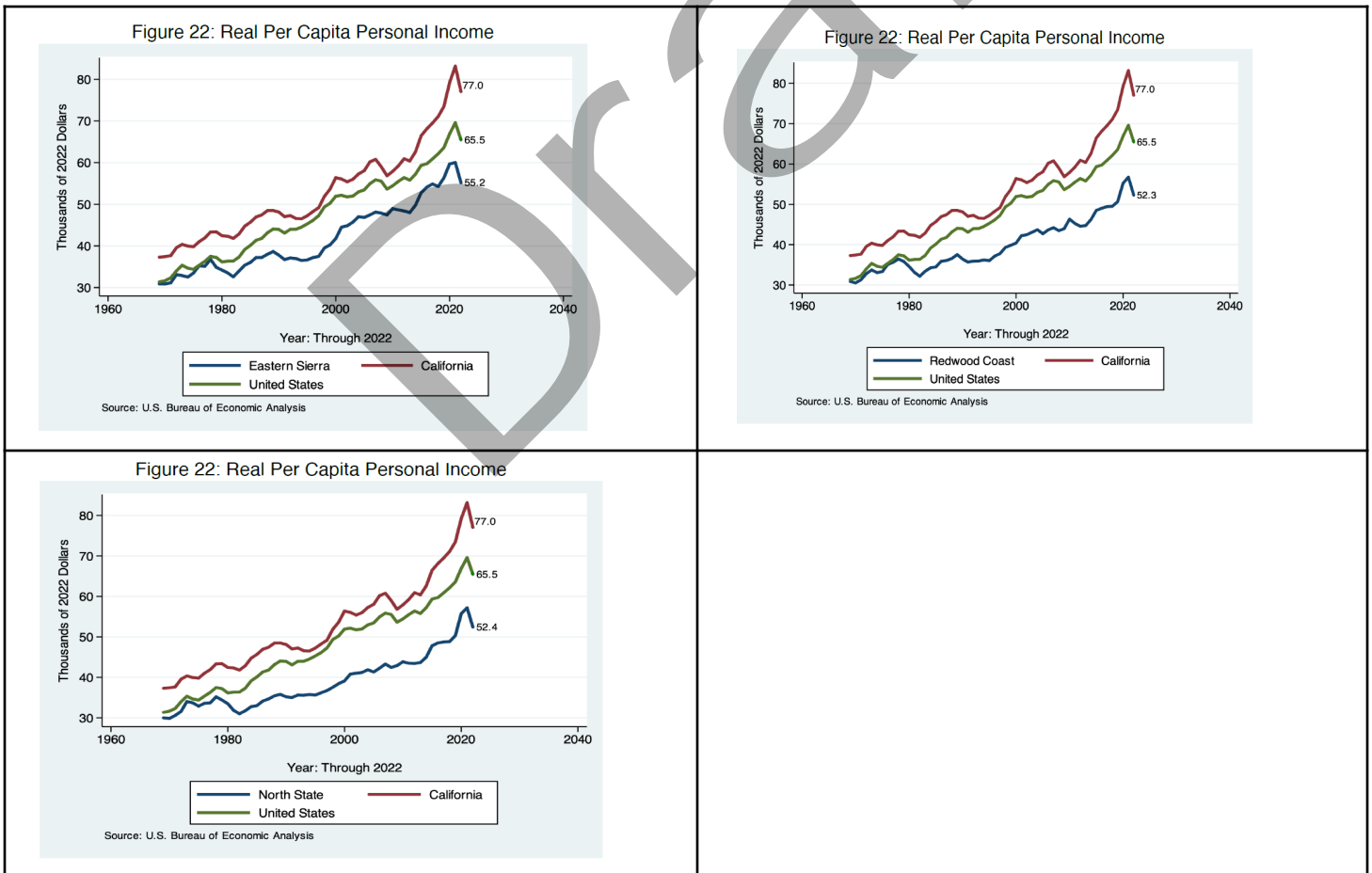
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Economic Well-Being and Cost of Living

Median household income (MHI) and per-capita income are ways to measure economic well-being in communities. Comparing these normalized measures to their past and also to other places can show progress in a county or region for local residents. Such measure should reflect changes in local industry mix toward high-wage jobs when rising or toward low-wage jobs when falling. Changes can also reflect demographic shifts.

Cost of living changes in local economies are generally driven by housing costs, where the costs of other goods and services are likely moving due to broader economic forces (costs of food, gasoline, clothing, utilities as examples) outside the region. We show two ways to consider costs of living changes here. First is a general measure for California and the US, the Consumer Price Index (CPI). We also show a regional index called the Gross Regional Product (GRP) deflator, or how nominal GRP is converted to real GRP. At the state or national levels, economist use similar measures to consider changes in prices; we will do the same here to look at differences within the three regions; housing prices are considered in a later section. Notice how recent changes in inflation reduced real (inflation-adjusted income levels).

Figure XX: Per Capita Personal Income, 1985 to 2022, 2022 Dollars, Selected Regions, California and United States



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Table XX: Median Household Income, 2023 Dollars, and Change in GRP Deflator (Cost of Living), Selected Counties, California and the United States

	2010	2019	2022	% Chg 2010-2 2	% Chg 2019-2 2	Inflatio n 2019-22
US	\$69,632	\$74,577	\$77,907	11.9%	4.5%	13.4%
California	\$83,706	\$88,299	\$94,780	13.2%	7.3%	11.2%
Eastern Sierra						
Alpine County	\$64,221	\$74,819	\$104,288	62.4%	39.4%	9.1%
Amador County	\$71,878	\$73,672	\$77,195	7.4%	4.8%	14.6%
Calaveras County	\$73,662	\$74,125	\$79,951	8.5%	7.9%	14.2%
Inyo County	\$64,607	\$67,268	\$65,401	1.2%	-2.8%	15.5%
Mariposa County	\$61,290	\$57,297	\$61,899	1.0%	8.0%	14.8%
Mono County	\$76,599	\$73,071	\$84,604	10.5%	15.8%	15.1%
Tuolumne County	\$64,961	\$70,545	\$72,635	11.8%	3.0%	16.2%
North State						
Butte County	\$59,760	\$61,659	\$68,152	14.0%	10.5%	16.6%
Glenn County	\$59,311	\$58,251	\$66,036	11.3%	13.4%	26.1%
Lassen County	\$72,716	\$66,137	\$61,377	-15.6%	-7.2%	14.8%
Modoc County	\$50,195	\$53,409	\$56,681	12.9%	6.1%	31.3%
Plumas County	\$60,127	\$64,971	\$70,009	16.4%	7.8%	18.8%
Shasta County	\$59,600	\$64,159	\$70,485	18.3%	9.9%	16.6%
Sierra County	\$62,129	\$61,203	\$63,020	1.4%	3.0%	12.3%
Siskiyou County	\$52,260	\$53,097	\$55,584	6.4%	4.7%	21.3%
Tehama County	\$55,434	\$52,243	\$60,876	9.8%	16.5%	21.9%
Trinity County	\$51,107	\$47,938	\$48,797	-4.5%	1.8%	20.2%
Redwood Coast						

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Del Norte County	\$51,442	\$53,146	\$63,062	22.6%	18.7%		14.0%
Humboldt County	\$55,530	\$56,383	\$59,692	7.5%	5.9%		16.2%
Lake County	\$52,133	\$55,208	\$58,019	11.3%	5.1%		16.3%
Mendocino County	\$58,557	\$60,344	\$63,254	8.0%	4.8%		16.2%

Sources: Census Bureau, Bureau of Economic Analysis and EFA

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What do the 2030 state and national forecasts say and why?

The national and state forecasts to 2030 are as follows in terms of four major variables:

1. Income generation: what will economic growth look like to 2030 and when should we expect recession?
2. Labor market changes: what industries are expected to hire more workers and which ones will hire less?
3. Changes in interest rates and housing markets: medium-term demand for housing
4. Changes in commercial real estate utilization: threats and opportunities.

Table XX: National Forecast, Fastest Growing Industries (NAICS-3), 2022-30, % Change

NAICS 3	Industry	2022	2030	% Change
519	Other Information Services	189,200	225,800	19.3%
492	Couriers and Messengers	1,129,000	1,331,600	17.9%
624	Social Assistance	4,256,100	4,903,500	15.2%
518	ISPs, Search Portals, & Data Processing	466,300	531,700	14.0%
493	Warehousing and Storage	1,936,800	2,191,100	13.1%
621	Ambulatory Health Care Services	8,121,900	9,182,900	13.1%
335	Electrical Equipment and Appliances	403,200	446,500	10.7%
312	Beverage & Tobacco Product Manufacturing	324,000	358,300	10.6%
562	Waste Management and Remediation Service	476,700	509,200	6.8%
713	Amusement, Gambling & Recreation Ind	1,643,700	1,740,400	5.9%
531	Real Estate	1,819,000	1,925,900	5.9%
512	Motion Picture & Sound Recording Ind	458,700	485,300	5.8%

Source: Bureau of Labor Statistics and EFA, see Appendix 3 for more on NAICS-3 Industries

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What industries are work-from-home (WFH) and can these counties continue to attract such talent through low-cost housing, broadband and relative access to an urban area + quality of life?

The Census data on commuting and how people get to work include data on working from home. While these data are one to two years old, they show what has happened since the pandemic and the shifts in remote work. Combined with mobility data (where people moved from these regions and also who came to these regions), we can conclude new residents to these regions (and individual counties) that moved from other places and worked remotely once they arrived. Rural California saw an increase in its population in 2020 and 2021, which then shifted down again in recent California Department of Finance estimates.

We consider such migration opportunities for these regions: (1) there are new industries in technology businesses that would not have come to these regions otherwise; (2) the earning power of those new residents should provide large multiplier effects on the local economy; (3) there are potential workforce development and economic development opportunities using these new residents as a “cluster” of new industries.

The caveats are that we need to think in “net” terms: if people left these regions, what are the net gains and how do those net changes shift long-term economic opportunities if the changes are relatively large. Smaller, rural areas have more risk exposure.

Eastern Sierra					North State				
Table 17. Eastern Sierra Migration and Telecommuting (Share of the Working Population that Works From Home (%).)					Table 17. North State Migration and Telecommuting (Share of the Working Population that Works From Home (%).)				
Year	All Workers	Migrated Into Region	Intra-State Migrants	Inter-State Migrants	Year	All Workers	Migrated Into Region	Intra-State Migrants	Inter-State Migrants
2015	9.3	1.7	10.6		2015	6.2	4.2	3.1	1.1
2016	6.2	5.6	6.5		2016	6.7	6.6	15.1	10.3
2017	7.2	5.1	9.0		2017	6.7	5.4	10.0	4.4
2018	7.8	6.2	6.2	16.5	2018	8.8	7.1	12.5	6.8
2019	10.4	4.3	5.2		2019	7.8	3.9	5.9	1.8
2020	13.9	13.6	16.4	15.2	2020	14.1	15.7	17.5	24.4
2021	14.4	14.7	27.4	7.5	2021	14.6	17.5	31.3	12.9
2022	13.6	15.4	21.6	18.3	2022	12.9	10.9	13.9	18.6
Source: ACS Public Use Microdata Sample (PUMS), various years.					Source: ACS Public Use Microdata Sample (PUMS), various years.				
Redwood Coast									
Table 17. Redwood Coast Migration and Telecommuting (Share of the Working Population that Works From Home (%).)									
Year	All Workers	Migrated Into Region	Intra-State Migrants	Inter-State Migrants					
2015	6.2	4.2	3.1	1.1					
2016	6.7	6.6	15.1	10.3					
2017	6.7	5.4	10.0	4.4					
2018	8.8	7.1	12.5	6.8					
2019	7.8	3.9	5.9	1.8					
2020	14.1	15.7	17.5	24.4					
2021	14.6	17.5	31.3	12.9					
2022	12.9	10.9	13.9	18.6					
Source: ACS Public Use Microdata Sample (PUMS), various years.									

Source: Table 17 in regional reports, 2022 data

Brief overview of each county and regional assessment

Each of these regions have unique industries and workforce elements (local universities, community colleges, demographics), but the assets are more about infrastructure and entrepreneurial and educational cultures. Local area industries tend to grow based on local assets, including climate, land availability, major employers, local natural resources, university locations, railroad or logistics hubs, etc.

Our work would look at each of the 21 counties as how their industry and occupational mix shows how they have utilized certain assets **regionally** through local workforce and economic development. For example, what agricultural mix exists in each region such that a regional strategy for food and beverage production can connect supply-chain partners and logistics opportunities to create jobs and to diversify local economies.

Further, what cities or parts of each region have shown an ability to grow and retain manufacturing helps tell which areas could begin to develop more and expanding businesses that make agricultural products retain a larger dollar level of value-added services regionally. Further, local universities could provide a workforce and also new technologies to agriculture where these regions could become centers of excellence for farm products where they hold competitive or comparative advantages.

Eastern Sierra

A theme of the Eastern Sierra region is foothill or mountainous towns and cities, rural populations and economies that rely on tourism.

Alpine County

Alpine is one of the smallest counties in California in terms of population, and is driven primarily by tourism. Kirkwood Ski Resort and Bear Valley are key economic drivers for Alpine County, and then summer hiking and camping as a seasonal trade-off. Hotels and restaurants that complement these visitors also serve the small county population. Wildfires have affected Alpine County as with other counties in the CERF regions (see more below).

Forecasts from CalTrans and California Department of Finance predict little change or decline of Alpine County's population to 2030. We should view Alpine County like a small, rural town where the assets are visitor-based and seasonal; the population is relatively older and thus labor force participation is relatively low (54 percent). As our data snapshot shows in Appendix 1, labor force participation has increased since before the pandemic (2019), suggesting new residents of Alpine County may be working more than previous residents.

Amador County

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Just south of El Dorado County, Amador is set of communities in the Sierra foothills, where manufacturing remains a large part of the county economy. This spans from food and beverage manufacturing to lumber-based goods production. Amador is a center of “foothills wine”, with wineries sprinkled throughout the western portion of Amador County. This adds a tourism element to Amador that is beyond its mountain/ski access and hiking. Government employment remains a foundation of Amador County with a local state prison and city/county/state employment otherwise from education to public works. Amador County is aging more quickly than the state average, as many other communities in the Eastern Sierra region.

Calaveras County

Similar to Amador County, Calaveras is a gateway to the Sierras and ski resorts during the winter and then hiking and camping during the summer. Agriculture has been a large part of Calaveras County; wineries, cattle and poultry are key farm industries. Healthcare and tourism are the large employers, and similar to Alpine County, Calaveras has a small and aging population.

When considering new industries or ways Calaveras can provide assets for the Eastern Sierra region, closing supply-chain gaps that exist for agriculture, which means an expansion of roadway or rail infrastructure. Further, we can consider the changing population and work-from-home residents where expanded broadband can help provide more diversity in terms of technology workers and perhaps more start-ups that want to live in the foothills and mountains but work global. The nearest, international airport is Sacramento.

Inyo County

Inyo County is another small county in the foothills of the Sierras. The dominant industries beyond personal and professional services are manufacturing and utilities/natural resources. Geothermal energy and spring water are two key industries tied to Inyo County. Similar to other Eastern Sierra region counties, Inyo has access to ski resorts and camping in winter and summer respectively. Inyo is also an aging community and population change likely provided small change in work-from-home residents.

Tourism is a key aspect of Inyo County’s economy, as Death Valley National Park is in Inyo, as well as access to Mammoth ski resorts areas. From a land area standpoint, Inyo stretches from the southern portion of Sacramento Valley’s reach down Interstate 5 to the northern portion of the Los Angeles basin, albeit with much of the county unpopulated and unlikely to see change soon short of current communities. This concentrates any new activity in places such as Bishop and Independence.

Mariposa County

Yosemite as a place to camp and hike and enjoy winter activities is a large part of Mariposa County’s economy. We consider this an asset and has likely led to change in terms of Mariposa’s population over the last three years (2020 to 2023). Because of tourism, leisure and hospitality and healthcare are two key industries in Mariposa County for its residents.

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Like other parts of the Eastern Sierra region, Mariposa County has an aging population, which affects its labor force outlook and the way its industries evolve. The evolution and permanence of work-from-home residents and how local economic and workforce development may build on those new residents is a key factor in leaning Mariposa County toward new or expanding industries.

Mono County

Over the last five years, Mono County has had a strategy of community and economic development simultaneously with gigabit internet and selling the idea of mountain living and recreation while working remotely. The pandemic shifted the way workers considered and were allowed to work from home, shifting Mono County's population and economic opportunities.

Because of its geography and proximity to multiple tourism destinations, Mono County's workforce is primarily based on hospitality jobs (hotels, restaurants). This leaves Mono County somewhat vulnerable to seasonality in terms of revenue generation for its employers and support for residents (Mammoth ski resort as an example, with some hiking in summer). Construction is Mono County's goods-producing industry. Since 2020, home building has increased to welcome more residents; there should be slower growth of construction toward 2030.

Tuolumne County

Like other counties between the Lake Tahoe region and Yosemite, Tuolumne County acts as a gateway to winter and summer tourism based on skiing and hiking. Similar to other communities in the Eastern Sierra, residents are older on average and jobs are primarily to serve visitors. The Hetch Hetchy reservoir and associated facilities also act as a job center for government workers and utilities. Healthcare, as with other rural areas of California, is an important job center for relatively large wages and providing infrastructure for support the local population.

Construction of new homes in the post-pandemic environment continues for Tuolumne County. Much like other parts of the Eastern Sierra region, changes in population shifted work-from-home residents. How much of this change can become an expansion of specific industries remains to be seen, but could be seen as part of a larger regional strategy. A key aspect is broadband access (preferable an expansion of gigabit internet similar to Mono County) and how that acts as an incentive for local workers in global industries to remain in place.

Summary for Eastern Sierra

The counties in this region have common themes from an economic and demographic standpoint, reflections of rural and mountainous counties and cities in the North State and Redwood Coast regions:

- Agriculture and tourism and healthcare are key, private-sector industries that support both incomes for local employers from outside the region and also support local residents;
- Residents are aging, as local housing prices have attracted older residents looking for lower costs and less need to have an urban setting close for labor-market choice;

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- Access to larger markets (Sacramento, Fresno, Stockton) critical to driving more visitors and gaining access to customers for new and expanding businesses.

North State

This region is a mix of foothills communities north of the Eastern Sierra region, but also north of the Sacramento region. These counties are generally rural counties, where tourism, government employment, healthcare, and agriculture (especially for Butte, Glenn, Tehama counties) are dominant industries.

Butte County

From a statewide and national standpoint, the Camp Fire in 2018 shifted economic, demographic, housing, and planning for Butte County far into the 2030s. Paradise, a city of almost 27,000 people in 2018, lost most of its housing stock and its population migrated. Chico, Butte County's largest city, absorbed most of those residents, with many moving around regionally including the county seat of Oroville. That shift changed the demand for housing, pricing, permit activity, construction demand, and Butte County's focus on recovery versus expansion in 2019. The pandemic further changed Butte County's direction in 2020, especially with the reduced number of students at Chico State University; Butte County, in 2023, remains under its 2019 level of employment.

Butte County is a regional hub, as is Shasta County (see more below) for the foothill/mountain communities to the north and east and the agricultural communities in Tehama, Glenn (see more below) and Colusa counties. Butte County has a diverse economy, with some manufacturing and professional services and healthcare due to its regional reach and the university's presence. Housing will remain one of the larger economic and community development issues for Butte County to 2030.

Glenn County

Agriculture is a large part of Glenn County. Ties to regional agriculture and Interstate 5 running along the western border of Glenn County have also expanded manufacturing and logistics/warehousing in the county economy. Migration from Butte County after the Camp Fire of 2018 changes the county's workforce and demand for housing. The pandemic expanded these changes, especially as migration patterns throughout California drew new residents to Glenn County. Toward 2030, we should expect that growth to slow as housing development fades and population change begins to match regional demand and competition.

Healthcare and public education provide some workforce balance in Glenn County and also essential services. There is not much employment in professional services versus what is available regionally. Rice and walnut production should remain the main agricultural outputs, alongside of cattle, in Glenn County. Planning for Glenn County for new manufacturing should consider regional agricultural links for food and beverage manufacturing as a first step.

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Lassen County

The primary employer for Lassen County is government. This suggests a lack of diverse choice for county residents and labor force outside the public sector. Government jobs stretch from prison employment to military base employees and service people to teachers to city and county staff. There has been a long-term threat of base reductions, prison closures, and other shocks due to state and national budget concerns. However, average wages and salaries in Lassen County are somewhat higher than the state average while home prices remain relatively low due to the large government employment footprint. Tourism provides some balance to Lassen County, related to the Sierra mountains or to prison or military visitors.

Lassen County exposure to government employment can draw from economic development lessons in other communities that faced a base realignment and closure or BRAC. While a recent court ruling may have kept California Correctional Center open for now, using the original date as a reason to reconsider long-term economic diversity and development can use lessons drawn and build Lassen County toward 2030. Like other rural parts of California, Lassen County also has climate-change issues (wildfire threats, for example) and an aging population that could restrict economic development in many ways.

Modoc County

As the most remote county in this region, Modoc County relies primarily on personal services and construction activity as its drivers (healthcare, utilities and construction are industries that provide relatively-high wages). Tourism is also an industry for Modoc County that provides services to both visitors and local residents and may not be as diverse without those visitors. Agriculture and government remain the largest industry employers.

Modoc County National Forest and local agriculture provide links to the North State region in terms of carbon capture, alternative energy, and other science-based businesses and residents. Logistics to and from Modoc County remain somewhat primitive, as there is a minimum of 2.5 hours to a regional airport from Alturas, the county seat.

Plumas County

In the foothills east of Butte and Shasta counties, Plumas is much like its neighbors north and south where tourism, government employment, and some agriculture and natural resource employment define the regional economy. Wildfires in 2021 affected Plumas County and a large amount of the forest to its and north and west. This could provide construction employment during a relatively-light rebuilding phase, but Plumas County should assume not all housing units will be rebuilt and there will be some migration pattern that changes the regional workforce.

Healthcare, education and government employment are the county's driver. Manufacturing has historically been based on lumber products. Visitors do come to Lake Almanor, via State Highway 32 from Chico and its regional airport otherwise. Communities such as Chester could become a place where a mix of lake science, local workers and regional education can form a community of grant-driven

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support. Data suggests that residents of Plumas County access labor markets in Redding and Chico. Because of its geography, Plumas County has three small areas of activity, all somewhat isolated from Chester in the north toward Quincy and smaller communities closer to Nevada County.

Shasta County

As a regional hub, Shasta County has many of the elements of the surrounding counties and is a center for professional services from Solano County to the Oregon border. Mount Shasta and Lake Shasta both act as regional tourism draws during winter and summer respectively. Wildfires in 2018 also affected Shasta County, the Carr Fire. The Camp Fire in Butte County was more devastating, but Shasta County lost over 1,600 structures. Subsequent years of fires chipped away at housing units; the pandemic provided a positive change in demand for housing that motivated an increase in construction employment.

Forestry and natural resource related jobs are more the focus of Shasta County than agriculture. Shasta County is a place where farmers find goods and services regionally. Healthcare and government employment (including education), and as a regional hub, Shasta County (specifically Redding) does not want to lose that regional strength. Redding has been undergoing a downtown revitalization project that has provided more spacing for entrepreneurial activities and also a more vibrant center of activity for Shasta County.

Sierra County

This county is one of the smallest labor markets in California. Proximity to both Nevada County and to Reno provide some outbound commuting historically from Sierra County. Like other small counties, healthcare and government employment are foundations for both providing services to local residents and also providing job opportunities. Agriculture is another major industry, but also relatively small versus other counties. Cattle and cattle feed from crops (hay and alfalfa as examples) are main farm industries. There are some tourism assets also exist, with some locally-owned restaurants and hotels, but very few.

Siskiyou County

Running north from Shasta County, Siskiyou County is a mix of its surrounding counties: a mix of agriculture and natural resources employment with healthcare and government jobs. Mount Shasta is in Siskiyou County, where some tourism spending for visitors to that site becomes spending in Siskiyou County. Wildfires have also menaced this county, with similar effects to Shasta County in terms of residential home losses and subsequent changes to construction demand. The pandemic changed the county population and potentially provided some change in the entrepreneurial possibilities in Siskiyou County looking forward. Interstate 5 goes through the county toward Oregon, providing that asset in terms of logistics and warehousing.

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Between Shasta and Butte County, Tehama has its identity with being bisected by Interstate 5, providing a community where people live that utilize Redding and Chico as places to work. Tehama is an agricultural county, with Red Bluff as its county seat. Corning plays a large role in olives and olive oils in the North State, adding to Tehama as an agricultural place. Almonds and walnuts are also important crops in Tehama County. Healthcare and government employment are again key industries for Tehama and regional residents within Tehama County. Construction has increased since the pandemic, as well as a reaction to the fires throughout the region that displaced residents of adjacent counties. Tehama County has not been absent from fire damage, but has avoided large, devastating fires since 2015 to 2023.

Trinity County

Trinity County is a mix of its western and eastern neighbors and have connections to Shasta County in terms of where its population lives proximate to Shasta County and potential job centers. Lumber (like Shasta and Mendocino counties) has a long history in Trinity County, from raw lumber to manufactured products. Healthcare and government employment, including US Forest Service, are also large employers. Cannabis farming is also important as demanding agricultural workers, an export product, and a customer to vendors regionally. Being a smaller county, visitor-supporting and professional services employers are located but sparsely in Trinity County. Fires have also created losses of homes and construction demand more for replacement than for expansion of housing units.

Summary

The North State region represents a diverse set of communities. With strong roots in agriculture and forestry from almonds and walnuts, to olives and dairies, closing supply-chain gaps and continuing to be a place with harvesting world-class commodities remains a critical part of this region's future. This includes manufacturing and transportation, especially with US Interstate 5 going through many of the region's counties and close to main population centers. Healthcare is likely to see demand growth as these counties age and as more remote cities and towns need access to more healthcare options. Continued recovery of housing stock after the 2018 Camp Fire remains an issue in terms of housing choice and complementing workforce development.

Redwood Coast

This region is dominated by ties to agriculture and natural resources, from dairies to cannabis to lumber to fishing. Lake County is more like its central California neighbors (Colusa and Yolo and Napa counties), though ties to Mendocino County exist because the two counties' largest cities are relatively close (Ukiah and Lakeport).

Del Norte County

Del Norte County is a rural, coastal county on the Oregon border, where employment is primarily tourism

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or government or healthcare based. Manufacturing and construction do exist in limited ways; natural resources jobs are focused primarily on forestry and a small amount of cannabis is grown in a regulated way. Del Norte's population is aging, a reflection of rural California, and jobs are concentrated in government at all levels. Tourism provides some diversity to complement healthcare and government employment (approximately 65 percent of jobs in Del Norte County). Transportation infrastructure is a major challenge; the airport in Crescent City currently flies to Oakland International Airport. US Highways 101 and 190 are the main roadways to and through Del Norte County. Expanding manufacturing in Del Norte may be costly due to that lack of logistics, even for cannabis-based products. The connection to changes in Humboldt County, especially those coming in terms of the "Blue Economy" (see more below), could be an extension of scientific and aqua-agriculture efforts to come.

Humboldt County

The continued growth of CalPoly Humboldt based on new investment from the state of California and economic development activity aimed at creating a "Blue Economy" for the Redwood Coast region with Arcata and Eureka at the center. Such efforts should stretch to Mendocino and Del Norte counties; Lake County may also find ways to complement those efforts through biomass and wind energy efforts and perhaps lake science (limnology) becoming connected to efforts along the coast. Cannabis will remain a large part of Humboldt County's image and economic diversity, as it is also (along with Mendocino County) seen as a centerpiece of harvesting cannabis. How that supply chain and craft commodities and products can use Humboldt as a brand to expand both cultivation and supply-chain partnerships in Humboldt County, including tourism, are major opportunities.

The Blue Economy is based on specific industries where the coastline and ocean are places to do science, visit, and grow agricultural commodities. For growth across subindustries to come, there will need to be expanded ways to get to and stay in Humboldt County, as well as move goods to and from the coastline.

Lake County

Lake County has Clear Lake dominating its geographic center and representing a unique asset. Along with Humboldt County's Blue Economy initiatives, Lake County can use Clear Lake as a scientific asset alongside of classic tourism. Energy production from the lake, whether it is biomass or wind energy or other source, is another angle for Lake County to seek some economic diversity. Historically, Lake County has been a place where a nascent wine industry with similar terroir and locations to Napa County. Cannabis has also expanded in Lake County, adding to agriculture there that has wide breadth and history. Major employers are all levels of government and healthcare, much like rural California counties to the east of Lake County (Colusa, Glenn, e.g.).

Mendocino County

Also a coastal county, Mendocino County has many ties to Sonoma County in terms of providing a place for local residents to work. Between Humboldt and Sonoma counties, Mendocino County is somewhat split between an interior (agriculture and manufacturing and forestry) economy like rural Sonoma County and a coastal community (Fort Bragg and the village of Mendocino to Point Arena) that is a

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microcosm of Humboldt County. Cannabis is also a major part of economic and social life in Mendocino County, especially after forestry and fishing changed their economic importance in the 1990s. Mendocino County also did not recover the total number of workers lost in the Great Recession (2007-10) period when the pandemic hit (2020), and has recovered somewhat since 2020.

Mendocino County's main assets are its location, having access to Sonoma County's population and supply-chain relationships. There is a long history of tourism in Mendocino County also; industries such as cannabis can use the current infrastructure and potential partnerships to expand how travel and cannabis can be more complementary and Mendocino County can be a more complete gateway to such experiences throughout northern California. Connections to Humboldt County and the Blue Economy are critical ways for forging more complete partnerships in the Redwood Coast region.

Summary

A movement toward new industries are likely to be based on this region's coastal communities through the "Blue Economy". This mix of new commodity harvests and product manufacturing, and energy generation that uses the ocean as a farm and also as a place for science as related to efforts at CalPoly Humboldt. Lake County may complement those efforts using Clear Lake and Lake County's geography to attract a worldwide audience for energy generation and science. Cannabis is and will remain a large part of these counties' cultures and economic future; enhancing how these counties can integrate supply chains and become a place where the world comes to experience entrepreneurship and history around cannabis is the interior of this region's next step. Agriculture, forestry and ocean-based products are ways to take advantage of the wide array of spaces in this region. Healthcare will also see more growth as this region ages and also tries to reach more remote areas.

Conclusion: What are the main opportunities and threats to the identified industry clusters?

Each region has specific opportunities and threats. Below we provide conclusions from the national, state and regional data as well as general trends happening that may affect industry choice in terms of economic development and workforce development in terms of jobs and links to education. The North State, Redwood Coast and the Eastern Sierra regions represent most of rural California. Each of the counties within these regions face similar jobs and industry challenges and opportunities through the 2020s and beyond. Our analysis shows that the key industries in these three regions have changed little since 2000, through three recessions and volatile housing and equity markets.

Opportunities: due primarily to the assets these counties and regions possess:

- Natural resources and land for agriculture;
- Lack of proximity to an urban center, thus smaller hub cities and towns exist in certain counties;
- Climate that supports specific types of agriculture;
- Some basic road transportation and rail infrastructure;
- Some basic internet options, focused on neighborhoods and town/city centers or government/education/healthcare facilities.

Threats: Lack of assets and statewide, national and international competition

- Rural communities without direct access to local markets;
- Natural-resource based communities, which tend to lag national trends and depend on weather and global markets as factors in revenues and costs;
- Roadway and internet access limited when compared to larger suburban or urban areas;
- Competition rising for tourism dollars;
- Aging populations based on lower-cost housing and cost of living.

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Appendix 1 Main Employers by County by Region

Data Courtesy of NorTEC in Chico, California, as of 2022 (latest data available)

Business names are, in some cases, “doing business as” names and may not match local business fronts.

Eastern Sierra

Alpine	Employees	Amador	Employees
Kirkwood Meadows Public Util Dist	27	Sutter Health	1,636
Sorensen's Resort, LLC	25	State of California	1,038
Mountain Springs Kirkwood, LLC	19	County of Amador	472
Mad Dog Cafe	17	Amador County Unified School District	433
Alpine County Office of Education	16	Specialty Granules LLC	245
Woodfords Fire Department	16	Urban Park Concessionaires	216
Cj's Woodfords Station, Llc.	15	PG&e Corporation	176
Kirkwood Ski Education Foundation	15	Volcano Communications Company	110
ARI Makinen Enterprises, Inc	13	Walmart Inc.	103
Kirkwood Meadows Public Utility District Public Facilities Corporation	13		

Calaveras	Employees	Inyo	Employee s
Meridian Gold Inc.	474	City of Los Angeles	1,986
County of Calaveras	417	State of California	616
Commonspirit Health	329	County of Inyo	513
Bear Valley Ski Co.	325	Bishop Unified School District	376
Calaveras Unified School District	232	County of Los Angeles	372
East Bay Municipal Utility District, Water System	220	Government of The United States	316
Mark Twain Union Elementary School District	194	Frontier Communications Parent, Inc.	291
State of California	186	Xanterra Holding Corporation	215
Vallecito Union School District	122	Inyo County Office of Education	184
Calaveras County Special Education (selpa)	107	Edison International	170
Kautz Vineyards, Inc.	100	Lone Pine Unified School District	133
Avalon Health Care, Inc.	100	Albertsons Companies, Inc.	132
		Cg Roxane LLC	100

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Mariposa	Employee s	Mono	Employee s
John C Fremont Healthcare District	265	Southern Mono Healthcare District	350
Pioneer Market	50	Snowcreek Property Management	50
35-A District Agricultural Association	50	Double Eagle Resort	45
John C Fremont Hospital Foundation	43	Mammoth Community Water District	42
Recology Mariposa	30	Skadi, Incorporated	39
Yosemite Bug Hostel LLC	24	Convict Lake Resort, Inc.	38
Devoe Enterprises	24	Cerro Coso Community College	37
Yosemite Mountain - Sugar Pine Amusement Company	24	The Village At Mammoth Community Association	35
Wawona Property Management, Inc.	22	Westin Monache	35
Dieter H. Dubberke, Incorporated	22	Footloose, Incorporated	35
Mariposa Lodge	22	Mammoth Lakes Fire Protection District	35
Mercy Medical Transportation Inc	22		
The Grizzlies Den LLC	20		
Haztech Systems, Inc.	20		

Tuolumne	Employee s
Adventist Health System/West, Corporation	1,099
County of Tuolumne	1,030
Walmart Inc.	271
Tuolumne ME-Wuk Tribal Council	250
Government of The United States	226
State of California	219
Yosemite Community College District	200
United States Postal Service	169
J. S. West and Company	161
Sonora Union High School District	141
Sierra Pacific Industries Inc.	138
Save Mart Supermarkets LLC	118
Avalon Health Care, Inc.	102
Sonora School District	100

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North State

Butte	Employees	Glenn	Employees
Welltower Inc. (Senior Living)	5,162	Walmart Inc.	489
State of California	2,896	Willows Unif School District	381
Enloe Medical Center	2,851	Glenn County Office of Education	300
County of Butte	1,514	County of Glenn	245
Oroville Hospital	1,453	State of California	200
Chico Unified School District	1,226	Orland Unified School District	174
Orohealth Corporation A Nonprofit Healthcare System	1,164	PG&e Corporation	122
Walmart Inc.	613	Chedraui Usa, Inc.	110
Associated Students of California State University, Chico	602	Rumiano Cheese Co.	106
PG&e Corporation	501	Government of The United States	105
Sierra Nevada Brewing Co.	477	United States Postal Service	83
Butte-Glenn Community College District	426	Lake Elementary School District	75
		Select Harvest Usa, LLC	65
		Sierra Nevada Cheese Company, Inc.	58

Lassen	Employee s	Modoc	Employee s
County of Lassen	462	Atlas Operations Group	85
Sierra-Cascade Nursery, Inc.	400	Surprise Valley Health Care District	72
Government of The United States	382	Teach Inc	34
State of California	287	Super 8 Motel	32
Big Valley Joint Unified School District	220	Shasta View Academy, Inc.	31
Lassen Union High School District	215	I'Sot (inc)	30
Lassen Community College	180	Pizza & Pasta Place, Inc.	29
Susanville School Dist	150	Surprise Valley Electrification Corp.	27
City of Susanville	141	California Property Owners Association	24
United States Postal Service	107	Alturas Rural Fire Protection District	24
Walmart Inc.	95	Antonios Cucina Italiana	23
Fall River Joint Unified School District	75	Strong Family Health Center	23
D-M-L-S Corporation	75	Likely Volunteer Fire Protection District	23
		Tulelake Basin Joint Union School District	22
		Alturas Ranches, LLC	20

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Plumas	Employee s	Shasta	Employee s
United States Postal Service	481	County of Shasta	1,700
Waste Management, Inc.	308	State of California	1,115
Eastern Plumas Health Care Foundation, Inc.	270	Phoenix Parent Holdings Inc.	1,056
County of Plumas	268	Ocadian Care Centers, LLC	899
Sierra Pacific Industries Inc.	227	Prime Healthcare Foundation, Inc.	850
Feather River Community College District	223	Commonspirit Health	843
State of California	213	City of Redding	834
Plumas Hospital District	200	Shasta-Tehama-Trinity Joint Community College District	716
Plumas Unified School District	189	Global Medical Response, Inc.	639
Government of The United States	139	Knauf Insulation, Inc.	624
Seneca Healthcare District	130	Redding Rancheria	599
North State Grocery, Inc.	111	Peterson Holding Company	586
Collins Pine Company	107	Enterprise Elementary School District	579
R Joy Inc	100	PG&e Corporation	554
		Walmart Inc.	548
		Vibra Healthcare, LLC	503

Sierra	Employee s	Siskiyou	Employee s
United States Postal Service	89	County of Siskiyou	723
County of Sierra	83	Siskiyou Hospital, Inc.	560
Eastern Plumas Health Care	68	State of California	419
City of Loyalton	28	Government of The United States	358
Government of The United States	25	Siskiyou Joint Community College District	250
Sierra County Office of Education	19	Yreka Union School District	178
Sierra City Fire District	15	Walmart Inc.	164
Rhonda's Lil' Frosty	14	Lake Siskiyou Golf Resort Inc	140
Herrington's Sierra Pines	13	United States Postal Service	130
Tahoe Heating	10	C & K Market, Inc.	129
Sierra Valley Cogen LLC	10	Siskiyou Union High School District	101
Incorporated Senior Citizens of Sierra County	10	Siskiyou Development Company, Inc.	100
		Siskiyou Opportunity Center Inc	100

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Tehama	Employee s	Trinity	Employee s
Walmart Inc.	1,673	County of Trinity	294
The County of Tehama	708	State of California	222
Sierra Pacific Industries Inc.	555	United Parcel Service, Inc.	158
Paskenta Band of Nomlaki Indians	493	Trinity River Lumber Company	145
Urban Park Concessionaires	373	Mountain Communities Health Care District	142
Crain Walnut Shelling, LP	369	Government of The United States	132
Red Bluff Union Elementary School District	368	Trinity County Office of Education	111
State of California	321	Tops Industries	73
Roman Catholic Bishop of Sacramento	313	Weaverville Elementary School	65
Bell-Carter Olive Packing Company, Inc.	300	Mountain Valley Unified School District	61
Sunsweet Growers Inc.	300	Ninja Credit Consultants LLC	39
Corning Union Elementary School District	241	Douglas City Elementary School District	36
Commonspirit Health	228	Ace Hardware Corporation	34
Outback Contractors, Inc.	221		
Red Bluff Joint Union High School District	208		
Rolling Hills Casino	203		

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Redwood Coast

Mendocino	Employee s	Lake	Employee s
State of California	1,008	County of Lake	645
Adventist Health System/West, Corporation	936	Adventist Health System/West, Corporation	605
County of Mendocino	867	Sutter Health	463
City of Ukiah	701	State of California	426
Ukiah Unified School District	684	Konocti Unified School District	296
Mendocino Forest Products Company LLC	336	Walmart Inc.	261
Mendocino-Lake Community College District	321	Kelseyville Unified School District	246
Mendocino Coast District Hospital	320	Lakeport Unified School District	181
The Ensign Group Inc	315	Middletown Unified School District	158
Fort Bragg Unified School District	270	Heart Consciousness Church, Inc.	110
Willits Unified School District	251	United States Postal Service	103
Walmart Inc.	250	Evergreen At Lakeport, L.L.C.	100
Fetzer Vineyards	245		
Mendocino Community Health Clinic, Inc.	235		
Avista Corporation	205		
Hopland Band of Pomo Indians Inc.	201		

Humboldt	Employee s	Del Norte	Employee s
County of Humboldt	1,685	Del Norte County Unified School District	580
State of California	1,512	County of Del Norte	543
St. Joseph Hospital	847	Sutter Health	530
Providence St. Joseph Health	623	State of California	292
American Hospital Management Corporation	513	Walmart Inc.	171
Eureka Unified School District	485	Yurok Tribe	144
Government of The United States	457	Del Norte County Regional Occupational Program	118
Southern Humboldt Joint Usd	409	United States Postal Service	91
The Sun Valley Group Inc	350	City of Crescent City	85
The Hoopa Valley Tribe	325	Vista Remi Inc	78
Redwoods Community College District	289	The Home Depot Inc	71
Bear River Casino	286	Snoozie Shavings, Inc.	51
PG&e Corporation	285		
City of Eureka	270		

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Appendix 2: Environmental Measures per Dollar of Value-Add (Gross Regional Product)

The tables in the Appendix can be used as a way to estimate environmental changes as an industry expands, contracts or comes to these regions. We show the state of California here also in Table AXX.X + 4.

1. Estimate Value Added by Industry Growth or Decline
2. Find Industry NAICS 3 Code on Table for specific region below
3. Multiply Value-Added Change by environmental measure to estimate change to local area from economic growth or decline.

Table A2.1: Eastern Sierra Environmental Metrics per \$1 Million of Dollars of Value Added, 2022

	Non-Hazardous Waste	Greenhouse Gases		Non-Hazardous Waste	Greenhouse Gases
Industry	kg	kg	Industry	kg	kg
Construction	828,551	272,654	Truck Transportation	20,482	2,039,321
Crop Production			Transit and Ground Passenger Transport	11,786	40,028
	8,566	719,927	Pipeline Transportation	1,993	1,561,738
Animal Production and Aquaculture	3,030	631,133	Scenic and Sightseeing Transportation	7,139	31,675
Forestry and Logging	21,060	777,761	Postal Service	25,892	68,065
Fishing, Hunting and Trapping	4,167	916,610	Couriers and Messengers	20,254	303,603
Agriculture & Forestry Support Activity	13,472	27,428	Warehousing and Storage	22,350	5,062
Oil and Gas Extraction	3,132	1,774,507	Motion Picture & Sound Recording Ind	6,652	1,427
Mining (except Oil and Gas)	3,897	1,766,750	Broadcast and Telecomm	12,430	3,252
Support Activities for Mining	18,191	890,861	Internet Publishing and Broadcasting	6,230	308
Utilities	235,998	5,986,795	Telecommunications	6,525	3,394
Food Manufacturing	49,313	824,165	ISPs, Search Portals, & Data Processing	7,832	3,304
Beverage & Tobacco Product Manufacturing	3,078	30,639	Monetary Authorities - Central Bank	9,218	9,769
Textile Mills	19,804	427,705	Credit Intermediation & Related Activity	19,298	21,968
Textile Product Mills			Financial Investment & Related Activity	21,858	23,808
	35,964	298,448	Insurance Carriers & Related Activities	16,034	1,033
Apparel Manufacturing	13,966	10,124	Funds, Trusts & Other Financial Vehicles	394	223,194
Leather and Allied Product Manufacturing	53,801	140,977	Rental and Leasing Services	12,419	44,801
Wood Product Manufacturing			Lessors, Nonfinancial Intangible Assets	2,788	6,232
	77,557	1,231,865	Professional and Technical Services	20,250	2,272
Paper Manufacturing	533,483	13,743,908	Management of Companies and Enterprises	14,511	12,461
Printing and Related Support Activities	15,541	193,675	Administrative and Support Services	43,707	13,078
Petroleum & Coal Products Manufacturing	86,155	97,184,854	Waste Management and Remediation Service	7,651	258,018
Chemical Manufacturing			Educational Services	27,228	54,971
	14,928	1,432,621	Ambulatory Health Care Services	6,449	2,775
Plastics & Rubber Products Manufacturing	26,146	351,249	Hospitals	9,438	16,829
Nonmetallic Mineral Product Mfg			Nursing and Residential Care Facilities	19,969	8,953
	15,867	4,860,387	Social Assistance	40,740	7,064
Primary Metal Manufacturing	34,924	6,571,062	Performing Arts and Spectator Sports	32,263	4,456
Fabricated Metal Product Manufacturing	44,546	333,446	Museums, Parks and Historical Sites	164,628	19,264
Machinery Manufacturing	9,633	55,321	Amusement, Gambling & Recreation Ind	281,767	80,908
Computer and Electronic Product Mfg	8,798	27,630	Accommodation	95,784	53,740
Electrical Equipment and Appliances	10,582	68,150	Food Services and Drinking Places	47,689	10,441
Transportation Equipment Manufacturing	(13,094)	(84,105)	Repair and Maintenance	6,801	1,396
Furniture and Related Product Mfg	51,182	155,385	Personal and Laundry Services	22,261	15,158
Miscellaneous Manufacturing			Membership Organizations & Assocs	17,860	38,202
	17,444	46,832			
Motor Vehicle and Parts Dealers	42,939	12,088			
Food and Beverage Stores	120,655	4,699			
General Retailers	46,990	1,780			
Air Transportation	5,987	1,911,766			
Rail Transportation	15	588,715			
Water Transportation	45,223	13,175,465			

Sources: IMPLAN® and EFA, Negative numbers means waste is exported to another region or captured or recycled in net

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Table A2.2: North State Environmental Metrics per Millions of Dollars of Value Added, 2022

	Non-Hazardous Waste	Greenhouse Gases		Non-Hazardous Waste	Greenhouse Gases
Industry	kg	kg	Industry	kg	kg
Construction	747,295	242,962	Truck Transportation	17,331	1,725,611
Crop Production	8,653	758,358	Transit and Ground Passenger Transport	13,638	46,319
Animal Production and Aquaculture	3,032	629,023	Pipeline Transportation	862	675,795
Forestry and Logging	26,284	970,692	Scenic and Sightseeing Transportation	7,535	33,430
Fishing, Hunting and Trapping	4,755	1,058,724	Postal Service	27,369	71,949
Agriculture & Forestry Support Activity	12,347	25,137	Couriers and Messengers	17,822	267,149
Oil and Gas Extraction	3,723	2,109,133	Warehousing and Storage	31,798	7,203
Mining (except Oil and Gas)	2,242	476,140	Motion Picture & Sound Recording Ind	7,492	1,580
Support Activities for Mining	21,123	1,043,502	Broadcast and Telecomm	13,100	4,054
Utilities	135,325	4,204,091	Internet Publishing and Broadcasting	11,662	1,631
Food Manufacturing	36,934	708,964	Telecommunications	14,303	7,748
Beverage & Tobacco Product Manufacturing	4,245	47,816	ISPs, Search Portals, & Data Processing	32,147	13,561
Textile Mills	28,580	617,254	Monetary Authorities - Central Bank	7,889	8,361
Textile Product Mills	63,365	449,384	Credit Intermediation & Related Activity	16,185	18,425
Apparel Manufacturing	125,527	92,059	Financial Investment & Related Activity	10,125	11,062
Leather and Allied Product Manufacturing	111,775	292,889	Insurance Carriers & Related Activities	13,169	848
Wood Product Manufacturing	52,879	413,114	Funds, Trusts & Other Financial Vehicles	376	213,068
Paper Manufacturing	5,892	78,958	Rental and Leasing Services	11,402	47,687
Printing and Related Support Activities	20,125	250,809	Lessors, Nonfinancial Intangible Assets	1,496	3,345
Petroleum & Coal Products Manufacturing	1,259	2,572,377	Professional and Technical Services	17,172	2,078
Chemical Manufacturing	8,620	2,641,185	Management of Companies and Enterprises	9,467	8,129
Plastics & Rubber Products Manufacturing	11,850	122,343	Administrative and Support Services	32,931	12,179
Nonmetallic Mineral Product Mfg	13,973	1,866,889	Waste Management and Remediation Service	9,017	304,093
Primary Metal Manufacturing	77,869	8,430,165	Educational Services	35,023	71,030
Fabricated Metal Product Manufacturing	36,094	203,597	Ambulatory Health Care Services	5,972	2,150
Machinery Manufacturing	13,570	67,076	Hospitals	8,222	14,662
Computer and Electronic Product Mfg	6,452	36,126	Nursing and Residential Care Facilities	11,923	5,343
Electrical Equipment and Appliances	6,409	33,191	Social Assistance	36,275	6,195
Transportation Equipment Manufacturing	25,525	107,916	Performing Arts and Spectator Sports	32,108	4,554
Furniture and Related Product Mfg	34,654	67,261	Museums, Parks and Historical Sites	273,062	31,953
Miscellaneous Manufacturing	19,311	53,174	Amusement, Gambling & Recreation Ind	299,262	86,828
Motor Vehicle and Parts Dealers	39,875	11,226	Accommodation	93,526	52,470
Food and Beverage Stores	119,872	4,669	Food Services and Drinking Places	52,526	11,465
General Retailers	47,440	1,797	Repair and Maintenance	6,845	1,496
Air Transportation	3,106	991,975	Personal and Laundry Services	19,251	11,779
Rail Transportation	30	1,206,080	Membership Organizations & Associations	14,527	27,919
Water Transportation	1,857	540,986			

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Sources: IMPLAN® and EFA, Negative numbers means waste is exported to another region or captured or recycled in net

Table A2.3: Redwood Coast Environmental Metrics per \$1 Million of Dollars of Value Added, 2022

	Non-Hazardous Waste	Greenhouse Gases		Non-Hazardous Waste	Greenhouse Gases
Industry	kg	kg	Industry	kg	kg
Construction	1,265,215	416,669	Truck Transportation	23,270	12,321,268
Crop Production	8,074	9,770,657	Transit and Ground Passenger Transport	15,220	146,175
Animal Production and Aquaculture	3,038	3,876,715	Pipeline Transportation	3,461	14,586,905
Forestry and Logging	15,771	1,212,313	Scenic and Sightseeing Transportation	7,165	85,138
Fishing, Hunting and Trapping	4,549	16,438,565	Postal Service	26,345	146,409
Agriculture & Forestry Support Activity	11,277	121,811	Couriers and Messengers	23,383	848,522
Oil and Gas Extraction	2,544	998,394	Warehousing and Storage	27,345	7,312
Mining (except Oil and Gas)	8,173	37,576	Motion Picture & Sound Recording Ind	9,299	2,007
Support Activities for Mining	28,281	2,176,015	Broadcast and Telecomm	9,151	5,897
Utilities	388,011	4,857,974	Internet Publishing and Broadcasting	7,300	1,154
Food Manufacturing	60,941	12,391,568	Telecommunications	10,792	8,765
Beverage & Tobacco Product Manufacturing	4,537	70,611	ISPs, Search Portals, & Data Processing	33,344	2,207
Textile Mills	340,757	255,918	Monetary Authorities - Central Bank	8,067	32,831
Textile Product Mills	424,961	89,486	Credit Intermediation & Related Activity	11,961	172,854
Apparel Manufacturing	283,691	6,061,175	Financial Investment & Related Activity	14,246	28,206
Leather and Allied Product Manufacturing	(3,594,066)	33,582	Insurance Carriers & Related Activities	14,390	2,068
Wood Product Manufacturing	42,748	3,071,329	Funds, Trusts & Other Financial Vehicles	281	209,786
Paper Manufacturing	115,530	13,652,281	Rental and Leasing Services	14,597	162,425
Printing and Related Support Activities	14,529	1,018,683	Lessors, Nonfinancial Intangible Assets	11,014	16,465
Petroleum & Coal Products Manufacturing	31,560	79,170,293	Professional and Technical Services	15,906	2,785
Chemical Manufacturing	21,293	10,319,479	Management of Companies and Enterprises	11,175	31,975
Plastics & Rubber Products Manufacturing	26,045	7,419	Administrative and Support Services	64,272	26,364
Nonmetallic Mineral Product Mfg	10,525	93,951	Waste Management and Remediation Service	10,570	579,087
Primary Metal Manufacturing	20,482	28,910,279	Educational Services	54,212	86,398
Fabricated Metal Product Manufacturing	22,141	800,360	Ambulatory Health Care Services	6,014	4,667
Machinery Manufacturing	14,186	358,524	Hospitals	7,949	38,315
Computer and Electronic Product Mfg	1,700	-	Nursing and Residential Care Facilities	11,453	15,302
Electrical Equipment and Appliances	9,172	27,437	Social Assistance	37,271	22,469
Transportation Equipment Manufacturing	5,859	(63,029)	Performing Arts and Spectator Sports	48,240	3,721
Furniture and Related Product Mfg	24,964	604,937	Museums, Parks and Historical Sites	82,903	91,028
Miscellaneous Manufacturing	35,627	46,620	Amusement, Gambling & Recreation Ind	535,426	60,454
Motor Vehicle and Parts Dealers	41,772	26,643	Accommodation	77,195	32,997
Food and Beverage Stores	116,952	8,731	Food Services and Drinking Places	47,016	15,321
General Retailers	48,847	4,195	Repair and Maintenance	7,122	2,608
Air Transportation	768	1,849,808	Personal and Laundry Services	21,229	64,617
Rail Transportation	33	1,554,333	Membership Organizations & Associations	19,099	56,560

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Water Transportation	3,054	41,998,110		
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Sources: IMPLAN® and EFA, Negative numbers means waste is exported to another region or captured or recycled in net

Table AXX.4: Statewide for California Environmental Metrics per Millions of Dollars of Value Added, 2022

	Non-Hazardous Waste	Greenhouse Gases		Non-Hazardous Waste	Greenhouse Gases
Industry	kg	kg	Industry	kg	kg
Construction	704,175	227,096	Truck Transportation	23,764	2,366,116
Crop Production	10,362	921,447	Transit and Ground Passenger Transport	15,546	52,799
Animal Production and Aquaculture	4,472	940,438	Pipeline Transportation	1,853	1,451,828
Forestry and Logging	24,868	918,210	Scenic and Sightseeing Transportation	8,699	38,593
Fishing, Hunting and Trapping	4,410	997,999	Postal Service	25,325	66,576
Agriculture & Forestry Support Activity	14,450	29,420	Couriers and Messengers	22,247	333,472
Oil and Gas Extraction	3,200	1,812,831	Warehousing and Storage	30,755	6,966
Mining (except Oil and Gas)	43,266	14,106,053	Motion Picture & Sound Recording Ind	5,151	1,057
Support Activities for Mining	17,509	862,387	Broadcast and Telecomm	12,505	3,847
Utilities	1,036,096	6,585,573	Internet Publishing and Broadcasting	6,054	1,039
Food Manufacturing	52,832	1,133,381	Telecommunications	6,937	2,807
Beverage & Tobacco Product Manufacturing	57,188	600,337	ISPs, Search Portals, & Data Processing	6,692	2,823
Textile Mills	72,183	1,253,454	Monetary Authorities - Central Bank	8,919	9,452
Textile Product Mills	42,556	204,491	Credit Intermediation & Related Activity	8,003	9,110
Apparel Manufacturing	141,369	105,005	Financial Investment & Related Activity	6,615	6,961
Leather and Allied Product Manufacturing	40,034	108,609	Insurance Carriers & Related Activities	9,739	627
Wood Product Manufacturing	52,598	461,173	Funds, Trusts & Other Financial Vehicles	283	160,300
Paper Manufacturing	7,834	608,564	Rental and Leasing Services	11,485	43,248
Printing and Related Support Activities	12,938	106,375	Lessors, Nonfinancial Intangible Assets	579	1,295
Petroleum & Coal Products Manufacturing	1,234	2,572,010	Professional and Technical Services	13,078	1,437
Chemical Manufacturing	7,564	2,165,095	Management of Companies and Enterprises	7,516	6,454
Plastics & Rubber Products Manufacturing	13,994	162,786	Administrative and Support Services	34,520	10,882
Nonmetallic Mineral Product Mfg	23,354	3,841,803	Waste Management and Remediation Service	9,833	331,583
Primary Metal Manufacturing	19,896	3,067,494	Educational Services	29,053	58,367
Fabricated Metal Product Manufacturing	33,746	279,180	Ambulatory Health Care Services	6,550	2,329
Machinery Manufacturing	20,344	92,537	Hospitals	8,208	14,636
Computer and Electronic Product Mfg	4,939	13,128	Nursing and Residential Care Facilities	14,888	6,710
Electrical Equipment and Appliances	7,479	61,687	Social Assistance	37,490	6,303
Transportation Equipment Manufacturing	8,793	43,875	Performing Arts and Spectator Sports	34,293	5,213
Furniture and Related Product Mfg	47,387	82,926	Museums, Parks and Historical Sites	90,627	10,605
Miscellaneous Manufacturing	82,660	278,343	Amusement, Gambling & Recreation Ind	231,254	64,982
Motor Vehicle and Parts Dealers	45,955	12,937	Accommodation	71,845	40,303
Food and Beverage Stores	135,761	5,288	Food Services and Drinking Places	52,312	11,482
General Retailers	46,791	1,773	Repair and Maintenance	7,436	1,594
Air Transportation	4,143	1,323,131	Personal and Laundry Services	21,486	12,919
Rail Transportation	33	1,321,306	Membership Organizations &	13,609	28,045

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			Associations		
Water Transportation	3,823	1,113,833			

Sources: IMPLAN® and EFA, Negative numbers means waste is exported to another region or captured or recycled in net

Appendix 3: NAICS-3 Industries

Table A3.1 is a list of industries that represent regional employers for each region. The North American Industry Classification System (NAICS) codes industries from 2-digit (industry sectors) to 6-digit (business types) codes, where 3-digit codes represent industries with associated sectors of the economy. The recommended industry clusters are based on our assessment of forecasts and current mixes and other criteria based on 3-digit NAICS code industries.

Table A3.1: NAICS-3 Code Industries, 2022

NAICS 3	Industry	NAICS 3	Industry
111	Crop Production	483	Water Transportation
112	Animal Production and Aquaculture	484	Truck Transportation
113	Forestry and Logging	485	Transit and Ground Passenger Transport
114	Fishing, Hunting and Trapping	486	Pipeline Transportation
115	Agriculture & Forestry Support Activity	487	Scenic and Sightseeing Transportation
211	Oil and Gas Extraction	488	Support Activities for Transportation
212	Mining (except Oil and Gas)	491	Postal Service
213	Support Activities for Mining	492	Couriers and Messengers
221	Utilities	493	Warehousing and Storage
23	Construction	512	Motion Picture & Sound Recording Ind
311	Food Manufacturing	516	Internet Publishing and Broadcasting
312	Beverage & Tobacco Product Manufacturing	517	Telecommunications
313	Textile Mills	518	ISPs, Search Portals, & Data Processing
314	Textile Product Mills	519	Other Information Services
315	Apparel Manufacturing	521	Monetary Authorities - Central Bank
316	Leather and Allied Product Manufacturing	522	Credit Intermediation & Related Activity
321	Wood Product Manufacturing	523	Financial Investment & Related Activity
322	Paper Manufacturing	524	Insurance Carriers & Related Activities
323	Printing and Related Support Activities	525	Funds, Trusts & Other Financial Vehicles
324	Petroleum & Coal Products Manufacturing	531	Real Estate
325	Chemical Manufacturing	532	Rental and Leasing Services
326	Plastics & Rubber Products Manufacturing	533	Lessors, Nonfinancial Intangible Assets
327	Nonmetallic Mineral Product Mfg	541	Professional and Technical Services
331	Primary Metal Manufacturing	551	Management of Companies and Enterprises
332	Fabricated Metal Product Manufacturing	561	Administrative and Support Services
333	Machinery Manufacturing	562	Waste Management and Remediation Service
334	Computer and Electronic Product Mfg	611	Educational Services
335	Electrical Equipment and Appliances	621	Ambulatory Health Care Services
336	Transportation Equipment Manufacturing	622	Hospitals
337	Furniture and Related Product Mfg	623	Nursing and Residential Care Facilities
339	Miscellaneous Manufacturing	624	Social Assistance
423	Merchant Wholesalers, Durable Goods	711	Performing Arts and Spectator Sports
424	Merchant Wholesalers, Nondurable Goods	712	Museums, Parks and Historical Sites
425	Electronic Markets and Agents/Brokers	713	Amusement, Gambling & Recreation Ind
441	Motor Vehicle and Parts Dealers	721	Accommodation
444	Building Material & Garden Supply Stores	722	Food Services and Drinking Places
445	Food and Beverage Stores	811	Repair and Maintenance

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481	Air Transportation	812	Personal and Laundry Services
482	Rail Transportation	813	Membership Organizations & Associations
		814	Private Households

Regional and County Overviews

The data analysis files provide snapshots of each region using economic and social and demographic data from 2021 as compared to 2019 (pre-pandemic). This give us the latest data and a benchmark as of October 2023 (the time of this writing). Each snapshot provides an overview of major data categories to be considered from here, including:

- Demographics:
 - Age and gender mix of population;
 - Income and poverty levels of the population;
 - Race and Ethnicity mix of regional population;
 - School enrollment (as a way to consider labor force to come);
 - Educational attainment of population (regional labor force “skills” level assessment based on education);
- Employment
 - Labor force data (employment, unemployment of regional residents);
 - Industry employment of regional employers (private-sector, non-profits, and government);
 - Location Quotients;
 - Occupations worked by regional residents;
 - Low-wage and high-wage industries and occupations are contrasted;
 - Status Quo Forecasts for Employment and Occupations;
- Household Income and earnings
 - Per-capita income growth (change in spending capacity for local businesses) in both current dollars and inflation-adjusted terms over time.
 - Poverty and Inequality measures (how local households are doing, and also as an indicator of government services demand);
 - These data help provide perspective and review of inequities in economic development across different areas of the region.
- Housing characteristics and utilization
 - Housing costs and affordability measures;
 - Permits to build new residential units;
 - Age of current housing stock;
 - Housing stock and mix;
 - Household composition (families versus single users of housing units);
- Work-from-Home and Commute Patterns;
 - Migration patterns from population change;
 - Use of intra-region and areas outside the region for work for households;
- Gross Regional Product (GRP)
 - Regional rank for growth of GRP after inflation in 2022 for all 14 regions in California
 - Composition of GRP in each region.

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Our team has included the county-specific and regional files for each region.

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Data Sources

The majority of the data presented in this report are from the American Community Survey (ACS). For larger geographies, the 1-year Summary Files provide the data. For smaller communities, roughly those with less than 65,000 in population in 2021, the 5-year Summary Files provide the data.

The ACS data are supplemented by building permit data from the U.S. Census Bureau, population and housing data from the California Department of Finance, and home price and rental rates from Zillow.

U.S. Census Bureau. American Community Survey 1-year and 5-year Summary Files. <https://www.census.gov/programs-surveys/acs/data/data-via-ftp.html>. The 1-year data are released in September each year and the 5-year data are released in January.

Zillow Research Data <https://www.zillow.com/research/data/>

U.S. Census Bureau. Building Permits Data, updated annually in February. <https://www.census.gov/construction/bps/current.html>

State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State — January 1. Sacramento, California, May. <https://dof.ca.gov/forecasting/demographics/estimates/>

State of California, Department of Finance, E-2. California County Population Estimates and Components of Change by Year, July 1, 2010-2021. Sacramento, California, December. <https://dof.ca.gov/forecasting/demographics/>

State of California, Department of Finance, E-1 Population Estimates for Cities, Counties and the State with Annual Percent Change — January 1. Sacramento, California, May. <https://dof.ca.gov/forecasting/demographics/>

About Economic Forensics and Analytics, Inc. (EFA)

Economic Forensics and Analytics, Inc. (EFA) is an independent research and consulting firm located in Sonoma County, California. EFA has a wide range of clientele in the private and public sectors throughout the state of California. EFA provide clients with economic impact reports for economic development support. For government and businesses alike, EFA can also provide economic impact analysis using the latest data and a proven method of describing the effects of decisions. EFA's president, Robert Eyster, PhD, has a doctorate in economics from the University of California at Davis. See more at www.econforensics.com.

EFA would like to thank Marin Economic Consulting for their extensive work and partnership on the data assembled for this project, the CERF teams in each region, and NorTEC in Chico, California for their partnership on data for current employers in each region by county.