

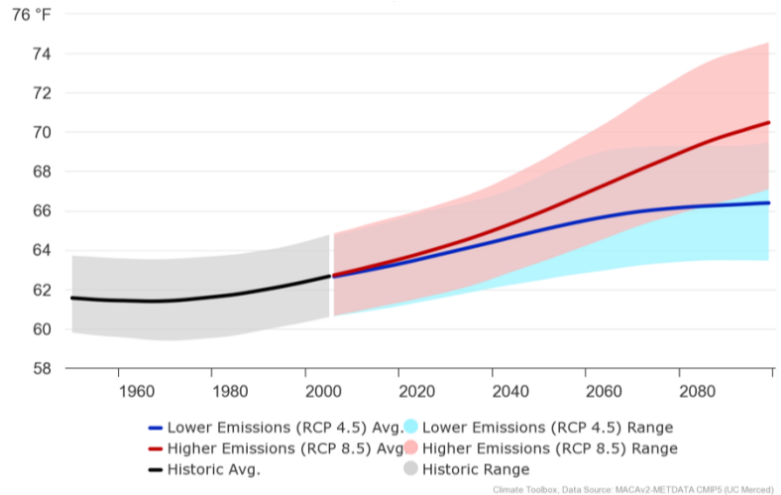


# **Climate and Environment**

# Climate and Environmental Handout

## Extreme Heat and Rising Temperatures in the NSJV

- The number of annual extreme heat days (temperatures greater than 101.6 degrees) is predicted to increase dramatically from a historical average of 4 days annually to 18 days annually under medium emissions modeling, and as many as 52 days annually under high emissions modeling.
- Region wide, the annual average maximum daily temp will increase by a minimum of 3.8 to 5 degrees by 2050 under medium emissions modeling, and between 8.1 and 8.5 degrees under high emissions end of century modeling.
- Warm nights will increase from a historical average of 4 nights annually to up to 20 nights annually under medium emissions modeling and up to 60 nights by end of century under high emissions modeling.



### Key Considerations:

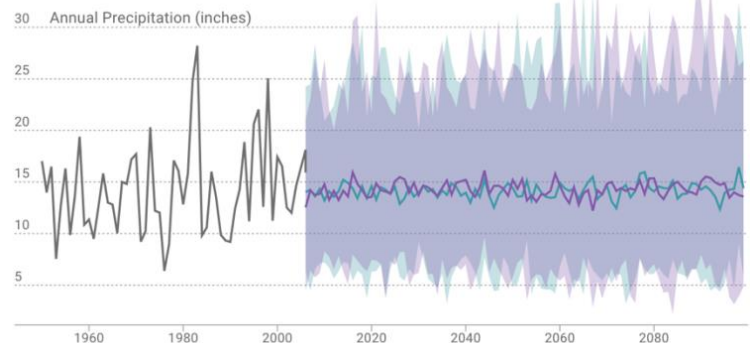
- Urban tree canopy and accessibility of safe green spaces
- Heat island reduction strategies: green or cool roofs, pavements.
- Availability of local cooling centers
- Protections for outdoor and warehouse workers
- Development of heat adapted infrastructure
- Electrical grid resilience

## Drought and Changing Precipitation Cycles

No drastic changes to annual precipitation is expected in the NSJV. However, both wet and dry years in the NSJV are projected to become more extreme through end of century.

### This will cause:

- Increased dust will decrease air quality, and can exacerbate rates of Valley Fever and respiratory illness.
- Increased vulnerability of ground to cracking and subsidence.
- Reduced surface water availability for agriculture; unintended land fallowing.
- Increased groundwater basin overdraft
- Further drying of domestic wells and water supply risk for unincorporated communities
- Drought will increase risk of wildfire, and smoke will contribute to declining air quality.

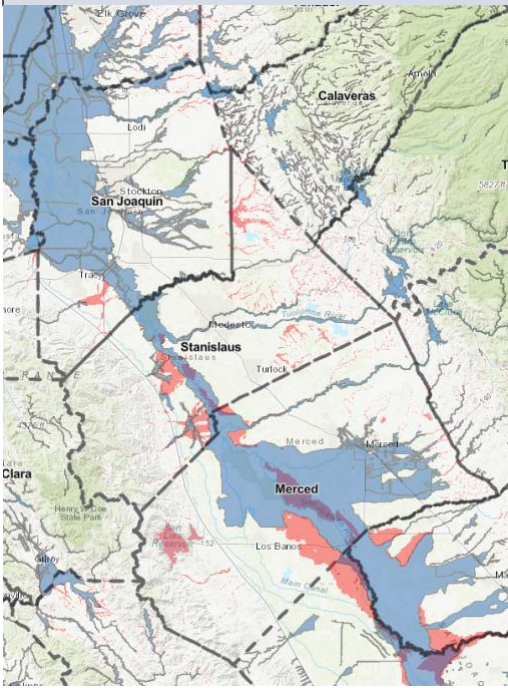


### Key Considerations:

- Managing existing groundwater reserves
- Expanding useable water supplies: local runoff in groundwater basins, reusing water, improved water conveyance.
- Reduce water demand: crop choice and management, water trading within/across basins.
- Exploring multi-benefit strategies: manage groundwater recharge via tailoring irrigation systems and crop choices to maximize recharge in key areas.



## Flooding Vulnerability



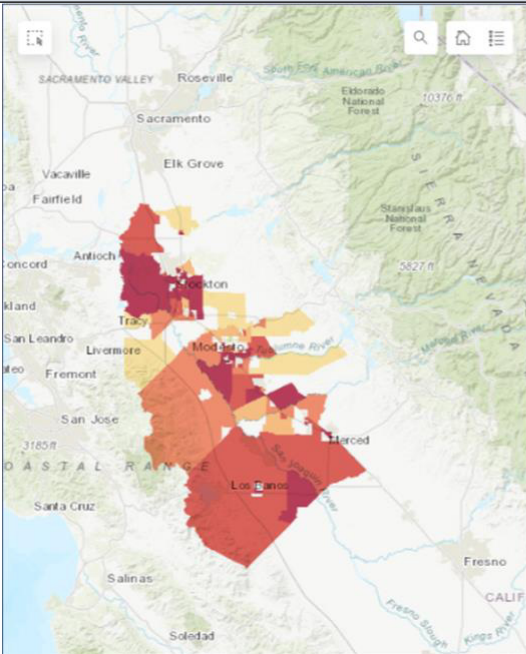
County	Property Vulnerability
San Joaquin	30,287 properties that have a greater than 26% chance of being severely affected by flooding in the next 30 years.
Stanislaus	29,289 properties that have a greater than 26% chance of being severely affected by flooding in the next 30 years.
Merced	28,065 properties that have a greater than 26% chance of being severely affected by flooding in the next 30 years.

- The NSJV is not expected to see drastic changes in annual average precipitation in the next 50-70 years.
- However, both wet and dry years are projected to become increasingly more extreme through end of century.
- This increases the risk of both longer drought periods and severe flooding events region wide.

### Key Considerations:

- Floodplain restoration funding
- Levee repair and restoration
- Channel and river clearing to prevent flood damage
- Infrastructure investments to prevent surface runoff

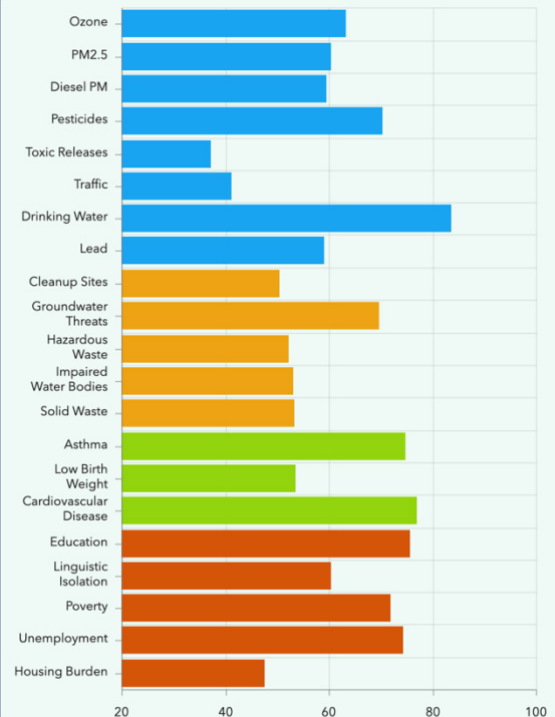
## Overall Pollution Burden



Average CalEnviroScreen 4.0 Percentile



Average Pollution Burden Percentile



Of the 266 total census tracts in the San Joaquin Valley identified as experiencing the highest 25% pollution burden, Cal EnviroScreen 4.0 identifies 66.25% of these tracts are located within the three county NSJV region.

The CalEnviroScreen percentile formula considers the presence of various types of pollution, the prevalence of health problems that can be worsened by pollution, and population data.

### Key Considerations:

- Phasing out agricultural open burning
- Targeting and addressing ammonia emissions
- Addressing rules on residential wood burning
- Tightening rules related to natural gas flaring
- Continuing cleanup of identified contamination sites



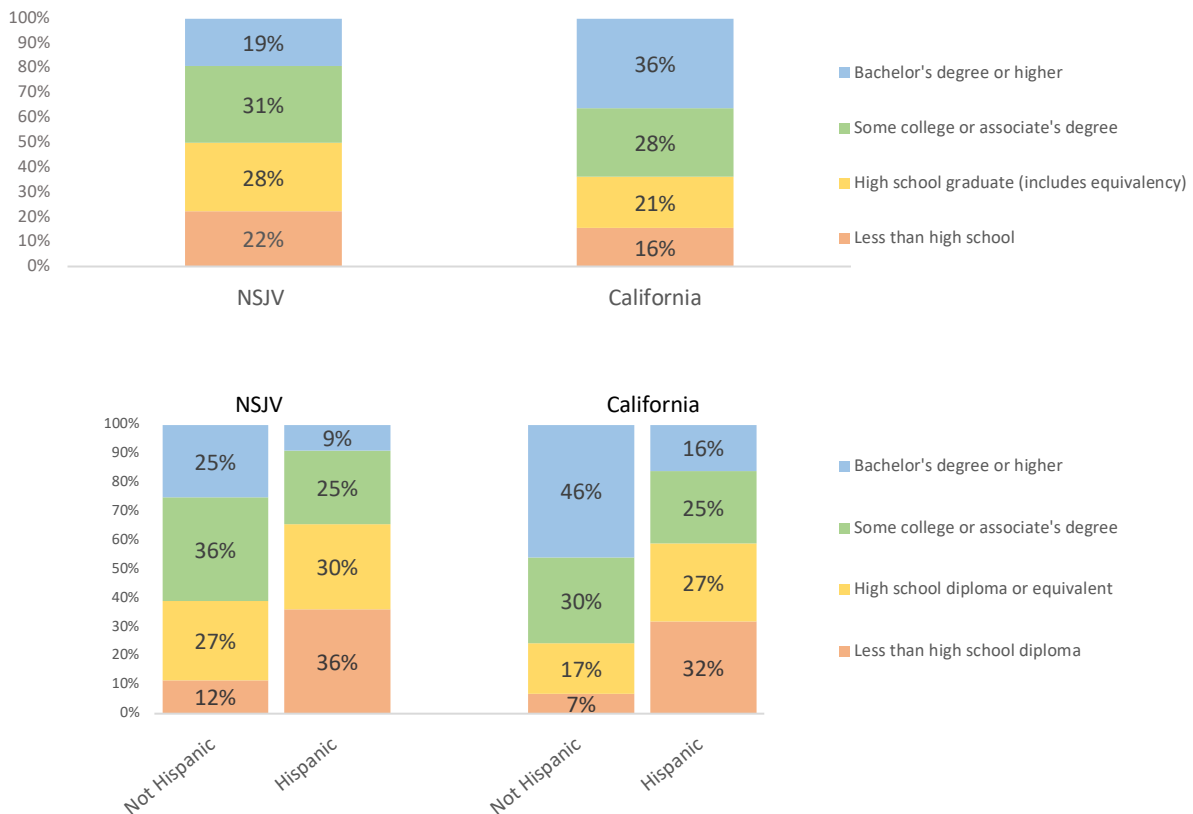
# **Workforce Development**



Large shares of the North San Joaquin Valley’s working-age population have a high school diploma or below. The region has much lower rates of bachelor’s degree attainment compared to the state. The issue is particularly acute for the Latinx community.

- Half of the NSJV’s total working age population has a high school education or less compared to 36% for the state.
- The share of the working age Latinx population with a high school diploma or lower is 66% in the NSJV and 59% in the state.
- Just 19% of the NSJV’s total working age population has a bachelor’s degree or higher compared to 36% in the state.
- Bachelor’s and above attainment is 9% for the Latinx community in the NSJV compared to 16% in the state.

**Educational attainment, Population 25 Years and Older, overall and by ethnicity  
North San Joaquin Valley and California, 2021**

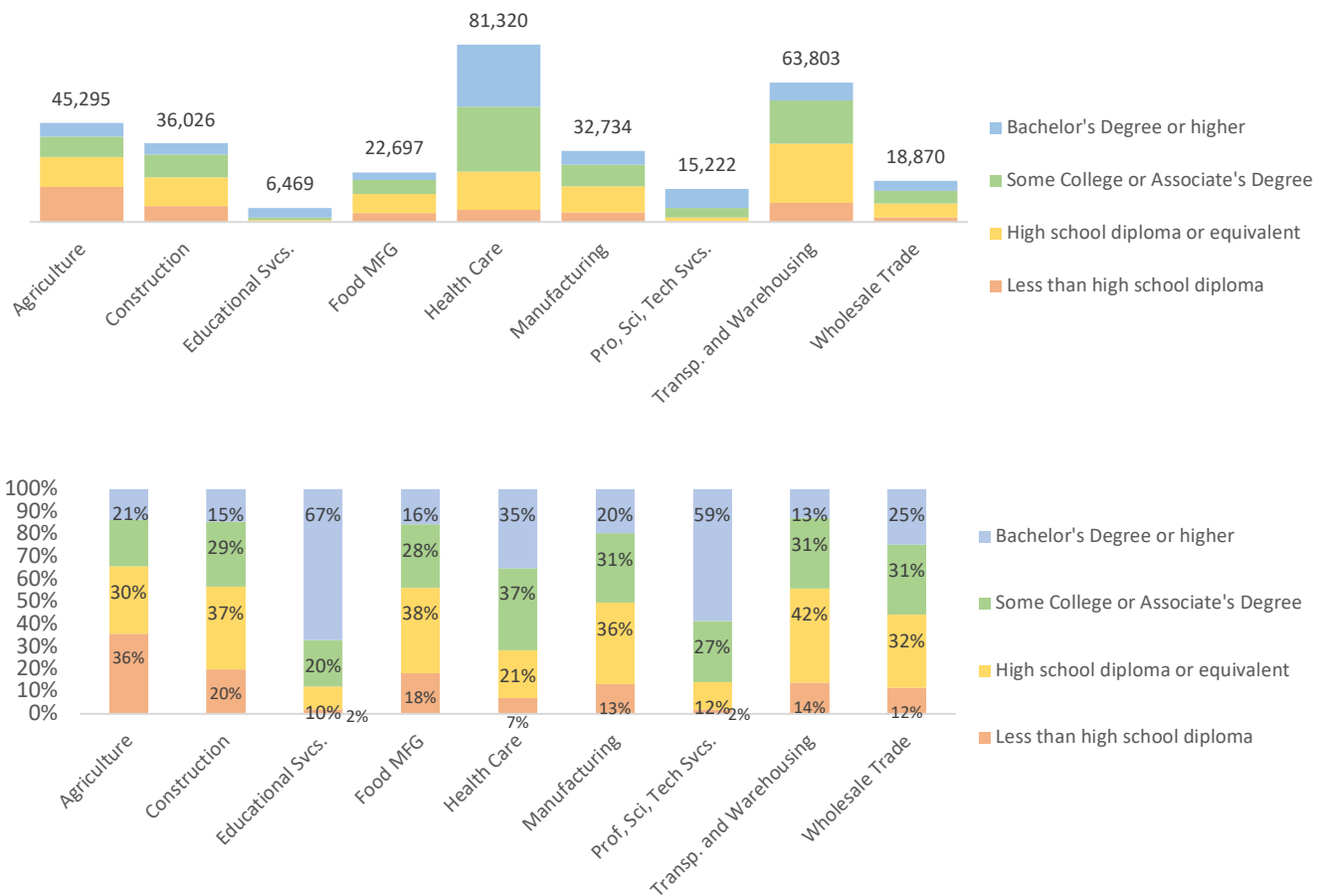


Source: U.S. Census Bureau American Community Survey, 1-year estimates



In key industries in the NSJV, 29.1% of the workforce has at least a bachelor’s degree. Another 28.4% possess some college or an associate’s degree. But not all industries have the same educational profile. Nearly 7 out of 10 workers in educational services has a bachelor’s degree (6 out of 10 in professional services). In agriculture, 66% of the workforce has a high school diploma or less. The figure is 57% in construction; 56% in food processing; 49% in manufacturing; and 56% in transportation and warehousing.

**Jobs totals and industry shares by educational attainment, selected industry staffing patterns  
North San Joaquin Valley, 2022**



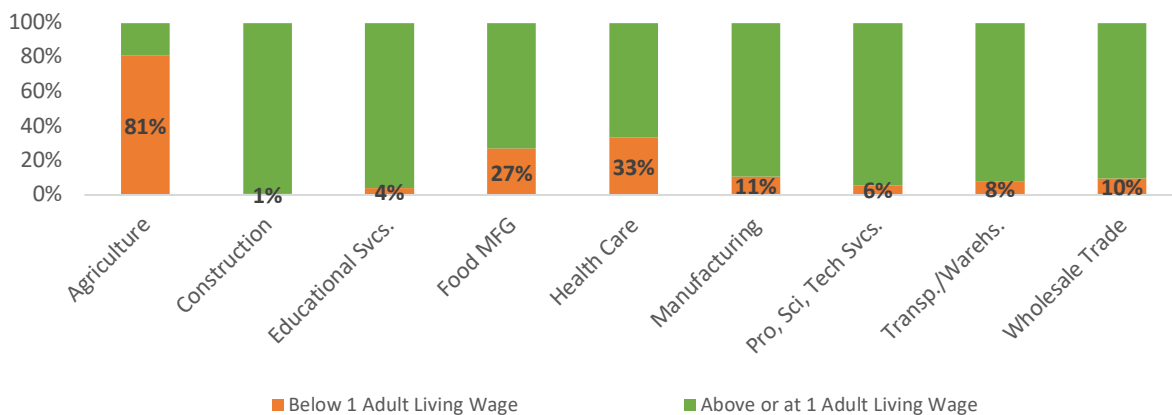
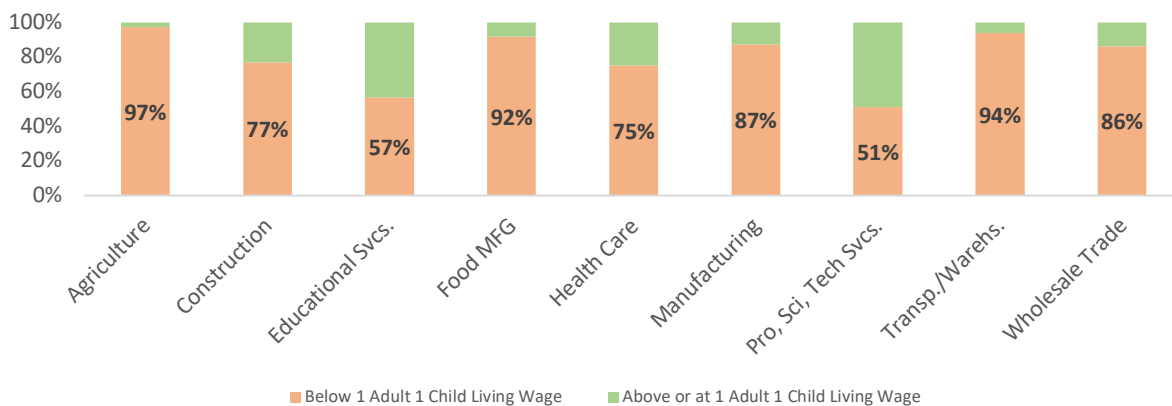
Source: Lightcast, 2023.3; Bureau of Labor Statistics, Educational Attainment for Workers 25 and over  
 Note: NAICS 311 Food Manufacturing split out from NAICS 31-33 Manufacturing due to regional concentration



Considering the share of the workforce earning living wages in key industries provides some context for workforce strategy that might strengthen pathways for advancement or build pipelines to higher wage industries.

- About 8 out of 10 workers in these key industries in the NSJV earn below the living wage for a 1-adult, 1-child household (\$36.49) but only 20% fall below the lower-wage threshold (\$17.41).
- Agriculture has the largest shares of jobs that pay below the living wage threshold.
- About a third of healthcare and food processing workers make less than the living wage for a 1-adult household.
- Educational services and professional and scientific services have the most jobs that pay above the higher wage threshold.

**Share of workforce earning below living wage levels by industry, North San Joaquin Valley, 2022 (1 adult household- \$17.41, 1-adult, 1-child household- \$36.49)**





Source: Lightcast, 2023.3; MIT Living Wage calculator

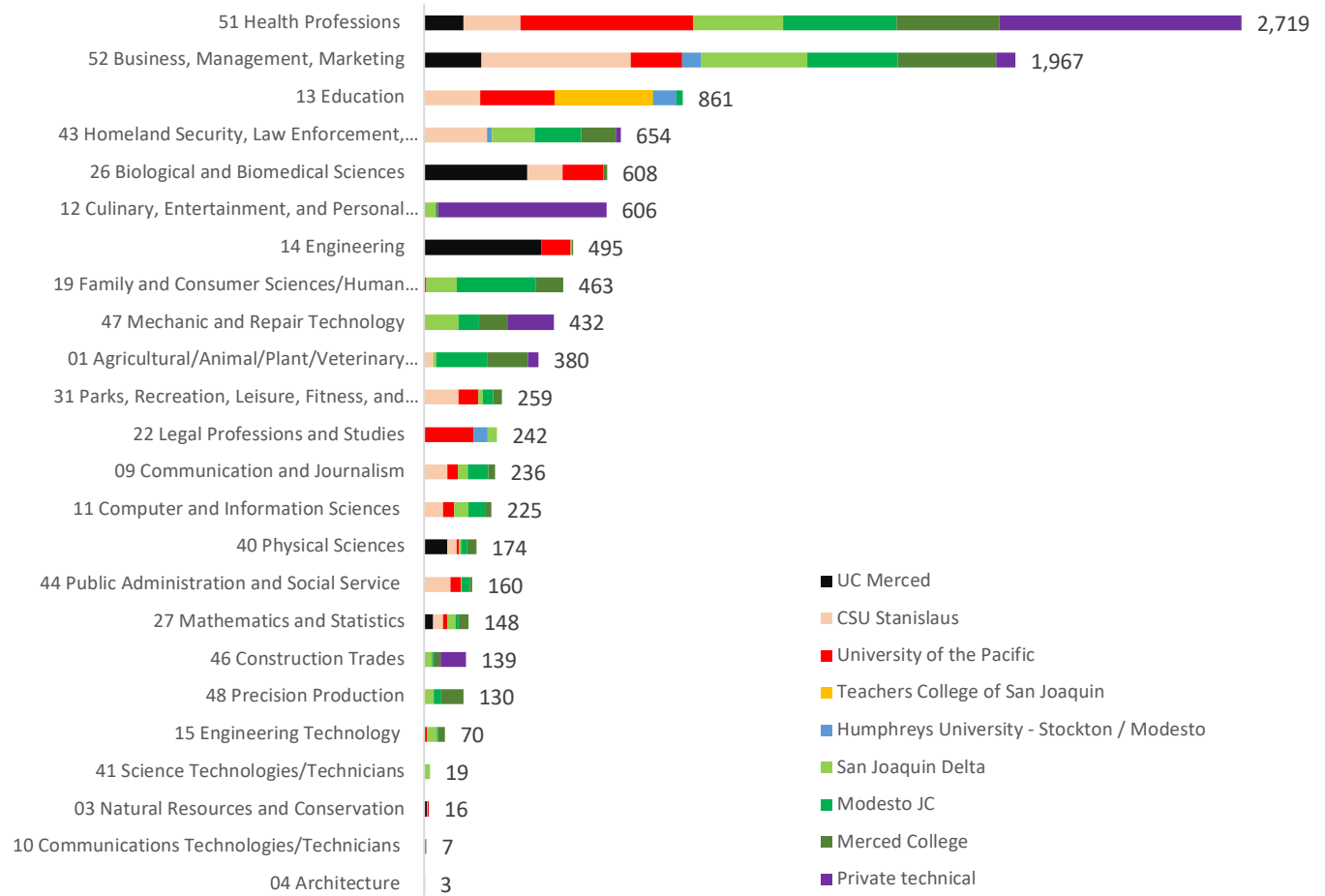
Note: NAICS 311 Food Manufacturing split out from NAICS 31-33 Manufacturing due to regional concentration

The NSJV's education portfolio and workforce governance (access/coordination) will play a vital role in business competitiveness and community prosperity.

- The region possesses robust university and college assets across STEM and CTE fields.
- At a glance, there appear to be opportunities to grow programs in key areas that would serve residential community and business needs.
- The private sector produces about a third of the region's health and industrial maintenance awards, and 60% of construction awards.
- There are just over 200 awards annually issued in ICT-related fields, and fewer than 150 awards in construction fields.

**Annual average CTE and STEM awards (not including liberal arts) by institution and school  
North San Joaquin Valley postsecondary institutions and technical schools  
2018-2019 through 2020-2021 academic years**





Source: Lightcast, 2023.3 based on NCES IPEDS

**Questions for consideration:**

What sectors represent the biggest challenges for building workforce pipelines and pathways? Why?

What key workforce and education initiatives are tackling educational attainment, job quality (high road), and building pipelines into key industries and pathways for advancement ?

What education and training supports are missing in the region to better connect residents and students to jobs locally? And especially in what industries?

What types of training and education programs in (e.g. program types, industry connections) are missing from the region’s current portfolio?



# Public Health

**NSJV Public Health Services Structure:**

- The **California Department of Public Health (CDPH)** is the state department responsible for public health throughout California.
  - CDPH functions include the following aspects of public health:
    - infectious disease control and prevention,
    - food safety,
    - environmental health,
    - laboratory services,
    - patient safety,
    - emergency preparedness,
    - chronic disease prevention and health promotion,
    - family health,
    - health equity, and
    - vital records and statistics.
  - CDPH works in partnership with local health departments, as well as other state, federal, and private partners, to protect the public’s health and help shape positive health outcomes for individuals, families and communities.
- Northern San Joaquin Valley (NSJV) counties of Merced, San Joaquin, and Stanislaus each house a county Public Health Department, which work with regional, state, federal, private, and community partners.

<ul style="list-style-type: none"> <li>• <b>Merced County Dept. of Public Health</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>San Joaquin County Public Health Services</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Stanislaus County Health Services Agency</b></li> </ul>
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- County health services often include the following services:
  - County Hospitals and Health Services in Detention Facilities
  - Emergency Medical Services
  - Environmental Health
  - Indigent Medical Care and Services for Medically Indigent Adults
  - Mental Health Services and Substance Abuse Services
  - Public Health Services (prevention, early intervention, education, and treatment)

**NSJV Public Health Community Consultations and Resources:**

- Local health departments and organizations typically complete a Community Health Needs Assessment (CHNA) to understand a community’s health status, needs, and issues, which helps justify how and where resources should be allocated with a Community Health Improvement Plan (CHIP):

Community Health Needs Assessment (CHNA)	Community Health Improvement Plan (CHIP)
<ul style="list-style-type: none"> <li>• <b>Merced County 2016 Community Health Assessment (CHA)</b></li> <li>• <b>2022 Community Health Needs Assessment (sponsored by Dignity Health Mercy Medical Center Merced)</b></li> </ul>	<ul style="list-style-type: none"> <li>• Merced County Community Health Improvement Plan (2017-2022)</li> <li>• Merced Medical Center 2022 Community Health Implementation Strategy</li> </ul>
<ul style="list-style-type: none"> <li>• <b>San Joaquin County 2022 Community Health Needs Assessment</b></li> </ul>	<ul style="list-style-type: none"> <li>• Community Health Improvement Plan for San Joaquin County (2023-2025)</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Stanislaus County Community Health Assessment 2020</b></li> </ul>	<ul style="list-style-type: none"> <li>• Stanislaus County Community Health Improvement Plan (2020-2025)</li> </ul>

**Overlapping Public Health Challenges in NSJV CHNAs/CHIPs**



Issue and Indicators	Rank Among 13 CERF Regions
<b>1) Behavioral/Mental Health, Including Substance Abuse</b>	
Drinking Water Contaminant	13
Asthma ER Visits	13
<b>2) Environmental</b>	
Pesticides	12
Extreme Heat (# of Daily Maximum Temps Above 100 F)	11
Air- Diesel Particulate Matter	10
Valley Fever (Coccidioidomycosis)	10
<b>3) Health and Safety</b>	
Breast Cancer Deaths	13
Violent Crime	13
Stroke Deaths	12
Congenital Syphilis Incidence	12
Cardiovascular Disease ER Visits	11
Chronic Kidney Disease Diagnosis	11
Colorectal Cancer Deaths	11
Diabetes Deaths	11
Low Birth Weight Infants (3 Years)	11
Coronary Heart Disease Deaths	10
Stroke Diagnosis	10
Lung Cancer Deaths	10
Prostate Cancer Deaths	10
Suicides (3-year data)	10
Obesity	10
Diabetes Diagnosis	10
Lack of Physical Activity	10
Total Tooth Loss	10
Social Associations	10
Years of Potential Life Lost	10
Social Vulnerability Index	10
<b>4) Healthcare Access and Transportation</b>	
Other Primary Care Providers	13
Mental Health Providers	12
Dental Visit (Self-Report)	11
<b>5) Income, Education, &amp; Employment</b>	
Real Cost Measure (amount required to meet basic needs)	(Merced 41 <sup>st</sup> (last), San Joaquin 27 <sup>th</sup> , and Stanislaus 26 <sup>th</sup> of 41 ranked county regions for % of households below real cost measure)
Some College	12
High School Completion	11
Homeownership	11
Unemployment	10
Not Proficient in English	10
Children Living in Poverty	10

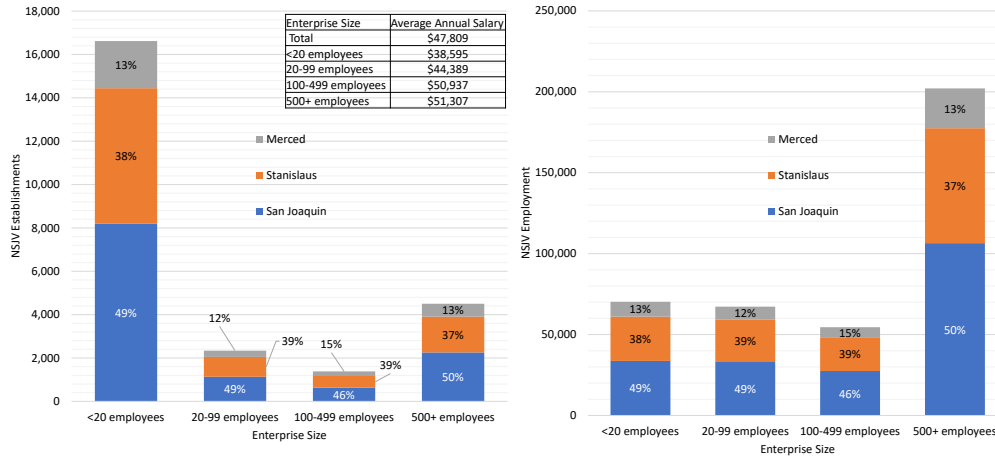


<b>CERF Region</b>	<b>Counties</b>
Southern Border	• San Diego • Imperial
Inland Empire	• Riverside • San Bernardino
Los Angeles County	• Los Angeles
Orange County	• Orange
Central Coast	• Monterey • San Benito • Santa Barbara • Santa Cruz • San Luis Obispo • Ventura
Northern San Joaquin Valley	• San Joaquin • Stanislaus • Merced
Central San Joaquin Valley	• Madera • Fresno • Kings • Tulare
Kern County	• Kern
Eastern Sierra	• Alpine • Amador • Calaveras • Inyo • Mariposa • Mono • Tuolumne
Bay Area	• Alameda • Contra Costa • Marin • Napa • San Francisco • San Mateo • Santa Clara • Solano • Sonoma
Sacramento	• Colusa • El Dorado • Placer • Sacramento • Sutter • Yolo • Yuba
Redwood Coast	• Del Norte • Humboldt • Mendocino • Lake
North State	• Lassen • Modoc • Plumas • Nevada • Shasta • Sierra • Siskiyou • Trinity • Glenn • Butte • Tehama



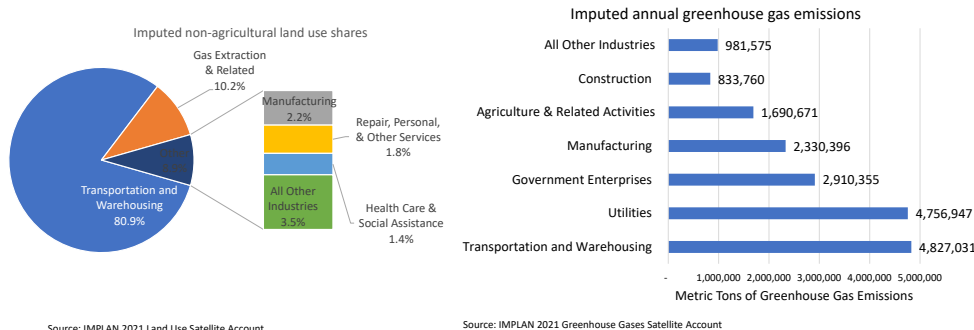
# Industry

## What does industry look like in the Northern San Joaquin Valley (NSJV)?



- Businesses with less than 20 employees account for 2/3rds of all firms in the NSJV
- Businesses with 500 or more employees account for over half of all employment in the NSJV
- On average salaries in businesses with 500 or more employees were 33% higher than salaries in businesses with less than 20 employees

## What is the environmental footprint of industry in the NSJV?



- Growth in the transportation and warehousing sector in the past decade has been accompanied by a steady rise in its share of industrial land use

## Where do NSJV's employees reside?

	% In Commute for Work	% Out Commute for Work	Ratio Out-to-In Commuters
SF Peninsula	50%	32%	0.63
Santa Clara	40%	31%	0.76
Sacramento Area	24%	25%	1.06
SSJV	18%	21%	1.16
East Bay	39%	46%	1.17
Monterey Bay Area	28%	34%	1.21
North Bay Area	33%	40%	1.23
NSJV	28%	40%	1.43

Source: 2015-2019 5-Year ACS Commuting Flows, US Census Bureau, American Community Survey

- 72% of employees in the NSJV reside in the region
- High share of inter-regional commuting links the NSJV to other parts of the Northern California Megaregion
  - As a result of its proximity, businesses within NSJV have indirect (and direct) competition for talent.
- Retention and skills development challenges and opportunities as a result

## How do business costs in the NSJV compare to other regions?

Rank	Metropolitan Statistical Area	Total
2	San Francisco-Oakland-Hayward, CA (MSA)	126.4
3	San Jose-Sunnyvale-Santa Clara, CA	123.5
4	San Diego-Carlsbad, CA	121.7
7	Los Angeles-Long Beach-Anaheim, CA (MSA)	117.2
8	Salinas, CA	116.6
9	Santa Maria-Santa Barbara, CA	116.4
10	Oxnard-Thousand Oaks-Ventura, CA	116.1
12	Santa Cruz-Watsonville, CA	115.7
13	Napa, CA	115.3
15	Santa Rosa, CA	114.3
17	San Luis Obispo-Paso Robles-Arroyo Grande, CA	113.7
19	Vallejo-Fairfield, CA	113.5
20	Sacramento--Roseville--Arden-Arcade, CA	111.8
24	Riverside-San Bernardino-Ontario, CA	109.1
26	Stockton-Lodi, CA	108.2
27	Modesto, CA	108.1
34	Chico, CA	107.0
37	Yuba City, CA	106.1
39	Redding, CA	105.9
43	Bakersfield, CA	105.3
44	Fresno, CA	105.2
45	Merced, CA	105.0
50	Visalia-Porterville, CA	104.4

Source: 2020 Metro Business Cost Index, S&P Global (2022)

- Challenge
  - Compared to the US Average (=100) business costs in California are high.
  - Out of 381 MSA in which business costs have been estimated, 23 of the 50 most expensive were in California.
  - Compared to the US Average, the NSJV is five to eight percent more expensive.
- Opportunity
  - Compared to the Bay Area, the NSJV is 12% to 17% less expensive
  - Compared to Greater Sacramento. The NSJV is three to six percent less expensive.

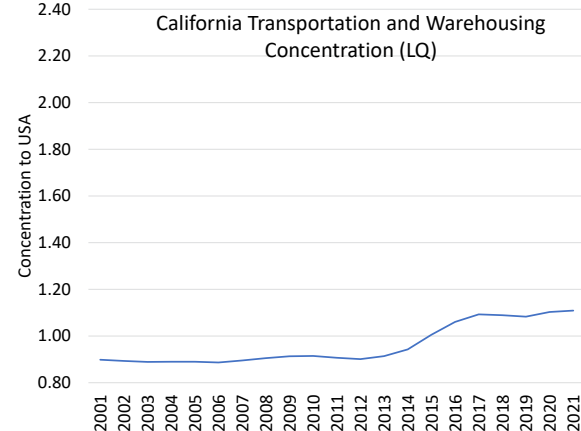
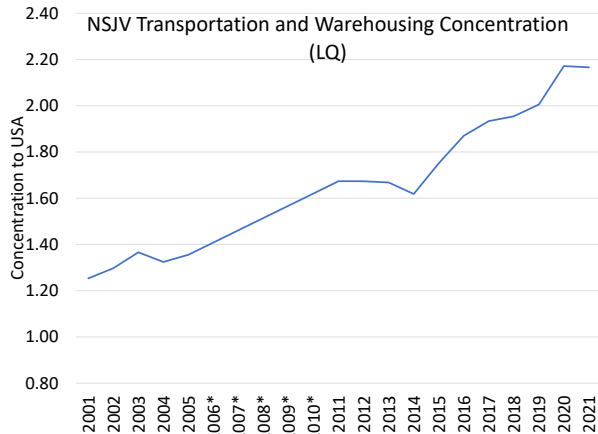
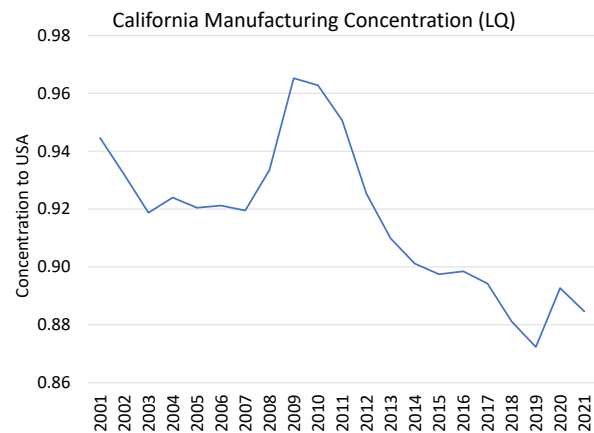
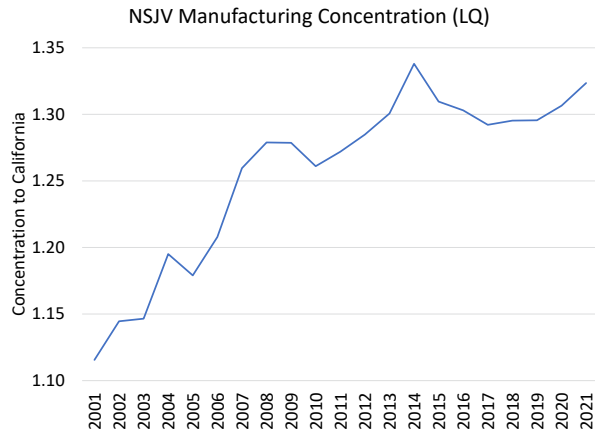
## Top Growing Industries

Industry	2017 Jobs	2022 Jobs	Change in Jobs	% Change in Jobs	2022 Employment Concentration	2022 Earnings Per Worker Per Hour	5-Year Forecast Job Growth Rank
Transportation and Warehousing	35,855	58,977	23,122	64%	2.31	\$33.52	2
Construction	30,530	36,969	6,438	21%	1.10	\$37.25	7
Health Care and Social Assistance	72,807	78,044	5,237	7%	1.05	\$37.14	1
Accommodation and Food Services	41,982	46,756	4,774	11%	0.99	\$13.93	3
Manufacturing	50,633	55,120	4,487	9%	1.21	\$39.89	6

Source: Lightcast Economy Overview, Q2 2023 Data Set, July 2023

- The health care and social assistance sector has seen employment grow by over 5,200 from 2017.
  - With many well-paying jobs and strong employment growth forecast, health care and social assistance is a seemingly important sector in the NSJV's development.

## Comparative advantage



Source: U.S. Bureau of Economic Analysis, CAEMP25N Total full-time and part-time employment by NAICS industry

- The transportation and warehousing industry has led job growth across the NSJV adding some 23,000 jobs since 2017.
  - This growth has added to the NSJV's share/concentration of jobs in the industry.
  - With increased online shopping during the COVID-19 pandemic, regional concentration of employment in the transportation and warehousing industry now exceeds twice the share of the USA as a whole.
  - While similar growth has occurred in other parts of California, the NSJV expansion in the transportation and warehousing industry is distinct from the overall state experience.
- Manufacturing has experienced good job growth as well with nearly 4,500 additional jobs since 2017.
  - If we look at the share/concentration of jobs in manufacturing, we see that compared to the rest of California the NSJV's share of manufacturing employment is over 1.3 times (30%) higher.
  - Significantly, the manufacturing sector in California has been in a general decline over the past couple of decades which suggests that manufacturing growth in the NSJV needs special consideration as a source of industrial development.