



Valley CERF

Central San Joaquin Valley

August 31, 2023

REGIONAL PLAN PART 1



Submitted by the Central Valley Community Foundation



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Introduction

In 2022, California's Governor's Office of Planning and Research (OPR), Office of Business and Economic Development (GO-Biz), and the California Labor Workforce Development Agency (LWDA) launched the \$600 million Community Economic Resilience Fund (CERF). The aim of CERF is to support the development of new plans and strategies that advance competitive and resilient economies that center equity and climate action in each of the state's 13 regions. To achieve CERF's desired outcomes for long-term economic resilience in the transition to a carbon-neutral economy across California, regional backbone organizations are being funded to convene and engage diverse stakeholders in a highly participatory planning process. The Central Valley Community Foundation (CVCF) is leading the effort for the Central San Joaquin Valley CERF (Valley CERF), in partnership with four local conveners – the Office of Community and Economic Development (OECD) at Fresno State, United Way Fresno and Madera Counties, the Workforce Investment Board (WIB) of Tulare County, and Fresno DRIVE (Local Conveners) - and a coalition of more than 120 organizations (HRTC Stakeholders) in the region's four counties of Fresno, Kings, Madera, and Tulare.

The Regional Plan Part 1 is a critical resource to our Valley CERF Coalition because it empowers and informs our HRTC Stakeholders with the baseline data needed to co-create an inclusive economic development plan that delivers real, measurable results for the people and communities of the Central San Joaquin Valley. An executive summary of key findings of the Regional Plan, Part 1, can be found within our Baseline Assessment, included below.

Vision and Values

The Valley CERF Coalition established a vision ***“to foster an inclusive, resilient, and sustainable economy that creates quality jobs and provides equitable economic access to all across the Central San Joaquin Valley.”*** Guided by our vision, we remain unwaveringly anchored to our core values – equity and inclusion; data driven; collaboration and co-creation; and transparency and accessibility.

Our coalition sees the CERF process as the opportunity of a lifetime – to add the capacity and resources that will help us build a regional vision while still serving immediate community needs. Through a community-driven process grounded in data that challenges biases and invites diverse viewpoints and experiences, we seek to answer this question, ***“What will it take to fundamentally transform our region and foster an inclusive, resilient, and sustainable economy?”***

Guiding Principles

To guide the development of the Regional Plan, Part 1, the Valley CERF Coalition drew on its values of equity and inclusion; data driven; collaboration and co-creation; and transparency and accessibility. In practice, this manifested as open and accessible meetings and materials, with a multilingual, clearly communicated process, offering multiple opportunities and platforms for participation, so that HRTC Stakeholders could provide input and engage at every step.

Research Partners

The Valley CERF Regional Plan, Part 1, was developed by the Urban Institute, Sierra Resource Conservation District (Sierra RCD), and the Yosemite Sequoia Resource Conservation & Development Council (Yosemite Sequoia RC&DC), hereafter referred to as “Research Partners” through a process that identified and analyzed relevant data sources as well as provided multiple opportunities and avenues for stakeholder review and engagement. The SWOT analysis was co-developed by the Regional Convener and Local HRTCs.

The Valley CERF coalition identified Research Partners for the Regional Plan Part 1 during the submission phase of the CERF Grant. The Regional Convener was intentional in partnering with research organizations, both at the national and local level, that could review, synthesize, analyze, and digest complex data.

The Urban Institute is a national research partner with a history of producing high-quality work characterized by objectivity, non-partisanship, depth, breadth, and innovation; strong data collection and analytic capabilities; and partnerships with experts.

Sierra RCD, and the Yosemite Sequoia RC & DC are key local Research Partners with expertise in climate and the environment as well as closely connected to the needs and challenges of foothill mountain communities. Sierra RCD coordinates resources “to meet the present and future natural resource needs of the local land user.” YSRCDC serves the rural and foothill communities of Fresno, Madera, Mariposa, and Tulare counties. Council members include Tribal entities, resource conservation districts, counties, Fire Safe Councils, community and economic development councils, education, and other community groups. YSRCDC has led successful projects that include wildfire reforestation, park development biomass, fuels reduction, community housing, and Agri- and nature-tourism.

Data Sources & Quality

Our Research Partners gathered and analyzed federal, state, and local data sources to complete the Baseline and Climate reports. Data sources were evaluated for inclusion based on the availability of recent data, data quality, and ability to disaggregate data to a county level to ensure data could be meaningfully used for short- and long-range economic development planning. To complement available data, Research Partners completed a literature review, identified plans and programs at the State and regional level, and conducted interviews with key local informants, organizations, and local department leaders.

Engagement

Initial Review & Engagement Opportunities

The Regional Convener, Local Conveners, and HRTC Stakeholders reviewed research conducted by our Research Partners and established multiple opportunities and avenues for input and feedback.

In early July, the Urban Institute provided an initial draft of the Baseline Reports which included the Regional Summary, Stakeholder Mapping, Labor Market Analysis, and Industry Cluster. Sierra RCD

and Yosemite and Sequoia RC&DC also provided an initial draft of the Climate Report. Regional and Local Conveners conducted an initial *sensitivity reading* to highlight and address any areas of concern. Upon completion of this sensitivity read, Research Partners implemented changes and finalized materials which were shared with HRTC Stakeholders in advance of the July Local HRTC meetings. HRTC Stakeholders were sent an executive summary on the baseline reports, a PowerPoint presentation, and an interactive SWAY Climate presentation, see Appendix A.

Throughout the month of July, our Local Conveners and Research Partners held data-focused virtual meetings to present the baseline and climate data. The format and messaging of these meetings was intentionally co-developed by the Regional and Local Conveners, Research Partners, and Facilitation team to ensure that data were presented clearly and there were numerous opportunities for meaningful participant engagement. Information was shared regarding the Research Partners' methodology and data sources, and the State guidelines that guided the research topics. Participants were encouraged to ask questions; consider what data were missing from the analysis, beyond the required topics; raise concerns; provide nuance; and interrogate the data based on their local knowledge and lived experiences.

All Local HRTC meetings were held virtually, with the exception of the Kings-Tulare Local HRTC, that held a hybrid meeting:

- Madera Local HRTC met virtually on July 11th from 9am – 11:30am
- Kings Tulare Local HRTC held a hybrid meeting on July 17th from 9am – 11:30am
- DRIVE Local HRTC met virtually on July 19th from 1pm – 3:30pm, Spanish interpretation and translation was provided for Spanish speaking HRTC Stakeholders.
- Fresno County Local HRTC met virtually on July 21st from 9am – 11:30am, Spanish interpretation and translation was provided for Spanish speaking HRTC Stakeholders.

Throughout the virtual meetings, HRTC Stakeholders were provided various opportunities to provide input and feedback. For example, Research Partners leveraged technology and administered survey questions via SLIDO to gather and share individual reflections in real time. Jamboard was also used to capture and share feedback offered during breakout room discussions. After each meeting, recordings of the meetings and links to the Jamboard were shared with HRTC Stakeholders, who were encouraged to continue reflecting and adding comments. Lastly, to ensure accessibility, we provided Spanish interpretation and translation of materials to our Spanish speaking HRTC Stakeholders.

Our Research Partners synthesized input and feedback that was shared during the Local HRTC meetings and conducted additional research to address comments.

Second Review & Engagement Opportunities

After all Local HRTC meetings were completed, and the Research Partners had integrated feedback into the reports, updated versions of the Baseline and Climate Reports were shared with our HRTC Stakeholders for an additional opportunity to review and provide feedback.

The Regional Convener held a one-week comment period to gather input via a google survey form in English and Spanish. The survey was shared with our HRTC Stakeholders and published on our Valley CERF website. The survey included items on what stood out, what was missing, what needed further analysis, and welcomed any suggestions and comments from our HRTC Stakeholders. Overall, we gathered thoughtful feedback from across the region, with strong participation from our CBO and Community Voice, Local Government, Tribal Entities, and DRIVE Stakeholder groups. The feedback was shared with our Research Partners for integration into the reports.

Shortly after this comment period, we held three optional Q&A sessions throughout August. These were additional optional opportunities for our HRTC Stakeholders to virtually meet with our Research Partners and ask any clarifying questions or share comments. We held these sessions throughout the week, at various times of the day, to ensure accessibility.

- Session 1 was a Q&A on the Climate Report and was held on Monday, August 7th from 2:00 – 3:00pm
- Session 2 was a Q&A on the Baseline Report and was held on Friday, August 11th from 10:00 – 11:00am
- Session 3 was an all-Spanish Q&A on the Climate and Baseline Reports and was held on Wednesday, August 16th from 12:00 – 1:00pm

Though we had a number of HRTC Stakeholders register for these Sessions, attendance was low for Session 2 and 3. To ensure our HRTC Stakeholders have the tools necessary to make data-informed decisions, we will facilitate additional opportunities for HRTC Stakeholders to connect with our Research Partners.

Third Review & Engagement Opportunities

In August, the Valley CERF Coalition held a Regional Congress in Visalia, CA. This gathering brought together HRTC Stakeholders across the region and was open to members of the public. As part of the agenda for this gathering, we held a data walk where we displayed baseline and climate data posters throughout the venue. Participants walked around the room and reviewed key findings on posters. Some participants used this as a time for individual learning and reflection, while others discussed the information with others. The data walk was followed by a small group (8 participants) table discussion, led by a designated and trained facilitator, where HRTC Stakeholders were asked to analyze the data through a regional lens. During these table discussions, HRTC Stakeholders also provided valuable input and feedback that was captured on large posters and index cards.

SWOT Analysis & Stakeholder Engagement

HRTC Stakeholders played a pivotal role in crafting the Regional SWOT analysis. During the July Local HRTC meetings, Local Conveners introduced and contextualized the Regional and Local SWOT analysis, highlighting its significance in the Regional Plan and the essential contribution of our HRTC Stakeholders.

In preparation for the SWOT brainstorming session at the August Local HRTC meetings, a concise questionnaire covering Strengths, Weaknesses, Opportunities, and Threats was shared with HRTC Stakeholders. Their valuable input was collected through Qualtrics, Jamboard, and email, before, during, and after HRTC meetings. Local Conveners then synthesized this input into a final document, which was duly endorsed and approved by HRTC Stakeholders. These insights, derived from Local HRTC SWOT analyses, were meticulously distilled via thematic analysis to shape our comprehensive Regional SWOT analysis.



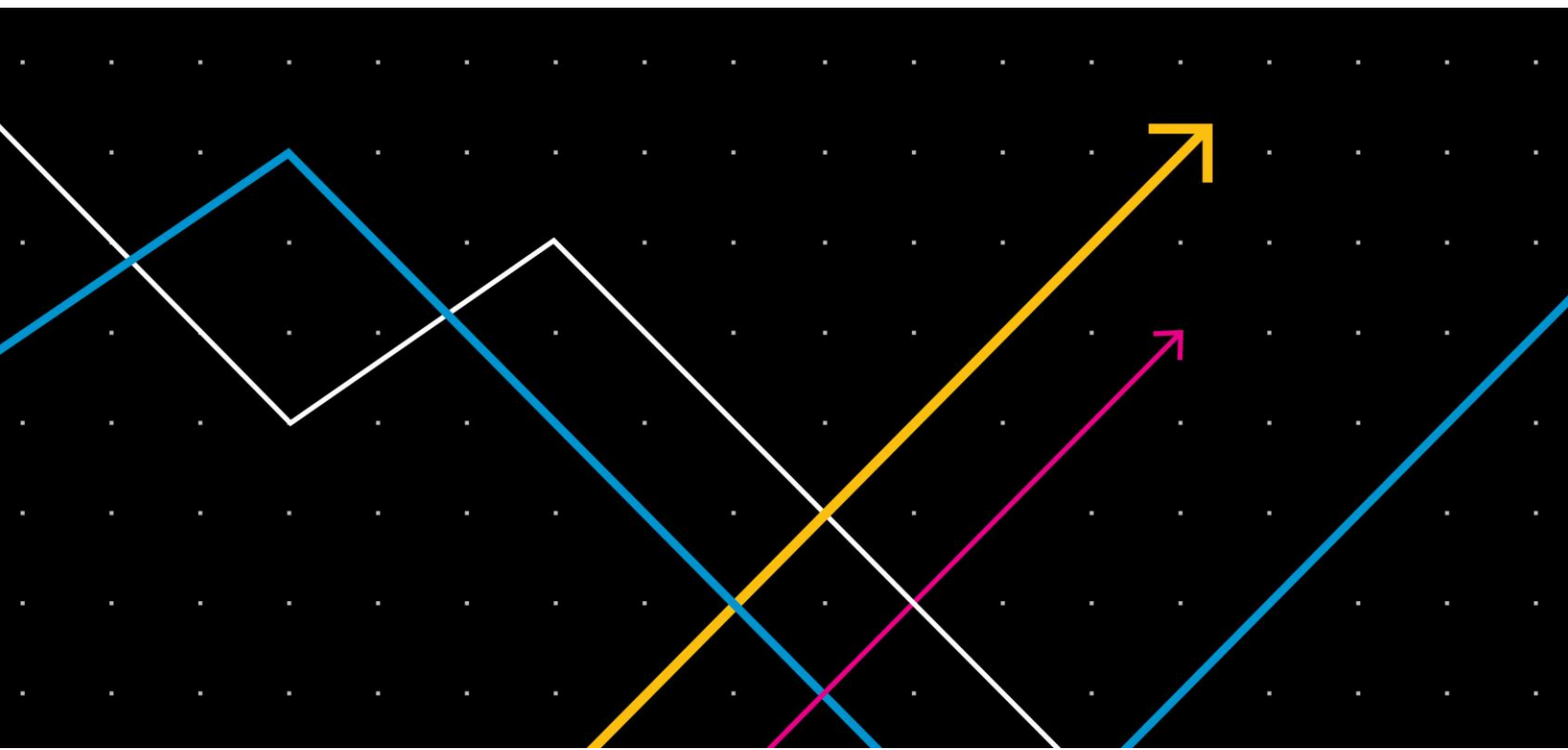
Valley CERF

Baseline Assessment for the Central San Joaquin Valley

Urban Institute



CENTRAL
VALLEY
COMMUNITY
FOUNDATION



BASELINE ASSESSMENT

Understanding Needs and Opportunities in California's Central San Joaquin Valley

Baseline Assessment for the Community Economic Resilience Fund

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August 2023



ABOUT THE URBAN INSTITUTE

The Urban Institute is a nonprofit research organization that provides data and evidence to help advance upward mobility and equity. We are a trusted source for changemakers who seek to strengthen decisionmaking, create inclusive economic growth, and improve the well-being of families and communities. For more than 50 years, Urban has delivered facts that inspire solutions—and this remains our charge today.

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The views expressed are those of the authors and should not be attributed to the Urban Institute, its trustees, or its funders. Funders do not determine research findings or the insights and recommendations of Urban experts. Further information on the Urban Institute's funding principles is available at urban.org/fundingprinciples.

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Executive Summary

In 2022, California's Governor's Office of Planning and Research (OPR), Office of Business and Economic Development (GO-Biz), and the California Labor Workforce Development Agency (LWDA) launched the \$600 million Community Economic Resilience Fund (CERF). The aim of CERF is to support the development of new plans and strategies to advance competitive and resilient economies that center equity and climate action in each of the state's 13 regions. To achieve CERF's desired outcomes for long-term economic resilience in the transition to a carbon-neutral economy across California, regional backbone organizations are being funded to convene and engage diverse stakeholders in a highly participatory planning process. The Central Valley Community Foundation (CVCF) is leading the effort for the Central San Joaquin Valley CERF (Valley CERF), in partnership with three local conveners – the Office of Community and Economic Development (OECD) at Fresno State, United Way Fresno and Madera Counties, and the Workforce Investment Board (WIB) of Tulare County - and a coalition of more than 100 organizations in the region's four counties of Fresno, Kings, Madera, and Tulare.

Effective strategic planning efforts must be grounded in evidence, including data about the region's current circumstances and the major forces shaping those circumstances. The Urban Institute (Urban) has been contracted by CVCF to support Valley CERF with some of the evidence it needs to consider to achieve CERF's desired outcomes. As part of this initial baseline assessment, Urban has gathered information on the socio-demographic profile of the four-county region (Valley CERF region); key aspects of the region's business community, workforce, and industries; the public health profile of the region; dominant and marginalized stakeholder groups; as well as the landscape of local, regional, and state plans most relevant to CERF's goal of simultaneously advancing economic resilience, equity, and climate action. A summary of our findings is outlined below in five main categories: Demographics and Profile of Disinvested Communities; Economy, Industries, and Workforce; Public Health; Stakeholder Mapping; and Landscape Analysis of Relevant Planning Efforts; each is explored in more detail in our full report.

Our report is intended to be used in combination with the Climate and Environmental Analysis completed by the Sierra Resource Conservation District and the Yosemite Sequoia Resource Conservation and Development Council, as well as a SWOT analysis completed by the HRTCs. The combination of all findings is intended to inform the Valley CERF coalition's High Road Economy Transition Plan and Road Map, which will contain the coalition's recommendations to the state of California for the strategic investments the region is prioritizing to advance climate-forward industries, diversify regional economies, and ensure equitable access to high quality jobs. Our report may also be of use to the state's CERF program partners in evaluating the recommendations in Valley CERF's High Road Economy Transition Plan and Road Map for funding in the Implementation Phase.

Key Findings

PROFILE OF DISINVESTED COMMUNITIES IN THE CENTRAL SAN JOAQUIN VALLEY

- The Valley CERF region is diverse, but the majority of residents in the region are Latinx. Compared to the state, the region has a younger population, fewer immigrants, and more adults with less formal education. Compared to the state, households in the Valley CERF region are more likely to have children, be larger in size, have lower incomes and higher rates of poverty, use public insurance and other public assistance at higher rates, and have less access to the internet and broadband.
- Roughly two-thirds of the Valley CERF region is designated as disinvested according to the state. Compared to the rest of the region, residents living in these disinvested areas tend to be even younger, more likely to be Latinx or an immigrant, and have less formal education. Compared to the rest of the region, households in these disinvested areas are even more likely to have children, be even larger in size, have even lower incomes and higher rates of poverty, use public insurance and other public assistance at higher rates, and have even less access to the internet and broadband. More than half of the people living in the Valley CERF region's disinvested areas speak a language other than English at home, but not all indicate they speak English well. People living on Tribal lands, all of which are designated as disinvested areas, experience even more acute and unique challenges; for example, fewer access public assistance despite having higher rates of poverty.
- Generally, housing cost burdens are slightly lower in the Valley CERF region than in California, except in disinvested areas where housing cost burdens are comparable to the state. Almost all residents in the Valley CERF region have access to a vehicle and commute in a car.

ECONOMY, WORKFORCE, AND INDUSTRIES IN THE CENTRAL SAN JOAQUIN VALLEY

- Compared to the total volume of investments flowing into other regions in the US, the amount of investment flowing into the Valley CERF region's largest counties lags behind.
- The region's labor force shows seasonal fluctuations but dipped below normal seasonal patterns during peak pandemic years; Kings County is the only county in the region whose labor force has not yet fully rebounded. Unemployment rates have remained consistently higher in the Valley CERF region than in California over the last 10 years, with some variance by county.
- The region has seen a consistent rise in the number of businesses year-over-year, even during peak pandemic years. The majority of businesses in the Valley CERF region have fewer than 20

employees, are concentrated in Fresno and Tulare Counties, and are disproportionately owned by people who are White and male.

- The highest number of jobs in the Valley CERF region are in government, agriculture, and the social sectors; and management and service positions are most prominent.
- At a minimum, working people in the Valley CERF region need to make about \$21 an hour to ensure the cost of renting or owning a 2-bedroom home doesn't exceed 30% of their annual income; but more income may be needed for people to thrive, especially if they are sole breadwinners or have children. However, achieving this wage is difficult for many because housing-wage jobs make up less than half of all jobs in the Valley CERF region, are concentrated in management occupations, and often require a 4-year degree. Many people in the Valley CERF region don't have the formal education to meet these requirements, especially those living in disinvested areas.
- The largest share of currently forecasted new jobs in the Valley CERF region is expected to be in education, health care, and social services. Of the forecasted new jobs with the greatest number of opportunities, many have lower barriers to entry - such as only needing a high school diploma or equivalent - but do not pay the current 2-bedroom housing wage. Of the forecasted new jobs that will likely meet or exceed the current the current 2-bedroom housing wage, many will have higher barriers to entry – such as needing a bachelor's degree or higher.
- Roughly half of the job losses currently projected in coming years will be in sales and office occupations.

PUBLIC HEALTH IN THE CENTRAL SAN JOAQUIN VALLEY

- Intensive (industrial) agricultural practices and the petrochemical industry in the Central San Joaquin Valley are significant contributors to environmental degradation, such as air and water pollution and soil degradation, which have negative implications for public health equity and environmental justice.
- Localized impacts from climate change are causing additional public health and equity challenges in the region and can worsen pre-existing conditions; for example, more frequent and extreme high temperature days, water shortages, and exposure to wildfire smoke pose significant health threats to residents of the Valley CERF region.

- The population in the Valley CERF region, which is predominantly low income and Latinx, is at higher risk than the rest of the state for respiratory illness, cancer, cardiovascular disease, birth complications, and other public health concerns. Compared to other California counties, the counties of Fresno, Kings, Madera, and Tulare also have higher rates of chronic conditions including asthma, chronic kidney disease, chronic obstructive pulmonary disease, diabetes, high blood pressure, depression, and Valley Fever. These diseases are correlated with and exacerbated by industry-caused environmental degradation and localized impacts from climate change.
- The health care landscape in the Valley CERF region has critical shortages and points to the urgent need for strategic interventions to enhance health care access. Two key indicators are the relatively high number of both Health Professional Shortage Areas (HPSAs) and Medically Underserved Areas (MUAs) compared to other counties in the state.
- Who is most exposed to environmental risks and the resulting health disparities in the region is closely tied to who has low wages, poor working conditions, low educational attainment, limited access to health care, and low-quality housing. These data showcase the intersection of structural racism, economic disparities, and environmental and climate injustice.
- Limitations in existing estimates of climate-related health outcomes at the county and sub-county level create the need for additional research. For example, analyses of existing data resources that include race and ethnicity information as well as administrative claims data could help create a more comprehensive understanding of climate-related health challenges and disparities in the region. Additional data gaps could be addressed by collecting new data and developing tools that integrate climate and environmental data into tracking public health and social determinants of health.

VALLEY CERF STAKEHOLDERS IN THE CENTRAL SAN JOAQUIN VALLEY

- Effective strategic planning to advance economic health and resilience, increase economic and racial equity, and advance climate action significantly benefits from robust engagement with diverse stakeholders. Governance structures that support trust-building and stewardship as well as procedural equity and equitable outcomes are critical for effective stakeholder engagement and coalition work.
- Valley CERF has several key strengths. It has been designed for diverse stakeholder representation, such as labor and worker voice; business voice and economic development; education and workforce development; local government; Tribes; environment and environmental justice; and

community voice. Robust engagement among this mix of dominant and marginalized groups is supported by a democratic governance structure.

- The Valley CERF coalition can be further strengthened by including more balanced representation from environmental and environmental justice groups as well as across counties; additional representation of the voice of unions, Black residents, and people who live in rural and unincorporated areas in the regions; and the engagement of several additional groups across some of the stakeholder categories.

LANDSCAPE SCAN OF LOCAL, REGIONAL, AND STATE PLANNING EFFORTS AND INITIATIVES RELEVANT TO CERF GOALS

- While there are a number of active planning efforts in the region, the majority of existing plans focus on economic and workforce development. There seems to be a high degree of consensus on the economic challenges facing the region, with three interrelated challenges cited by most plans: concentrated poverty and low incomes across the region, low educational attainment resulting in the lack of a skilled workforce, and an insufficient number of quality jobs.
- Relatively few local or regional plans reference climate challenges. Of those that do, poor air quality and threats to water supply are the two most frequently mentioned. With a couple of notable exceptions, few local or regional plans prioritized climate action, and most lacked a strong equity focus.
- Fresno plays a prominent role in many of the relevant planning conversations, as leader of three of the six regional efforts and five of the 10 local efforts.
- There are a large number of state plans, policies, and programs relevant to CERF goals. A review of ten of these plans suggests that there is a high degree of alignment with, and support for, the CERF goals of economic resilience, equity, and climate action at the state level. This suggests an opportunity for the Valley CERF region to secure additional state funding that will allow it to achieve CERF goals.

IMPLICATIONS

- The economic, equity, public health, and climate change challenges facing Central San Joaquin Valley are intersecting and interdependent, and have many implications for the well-being of residents and vitality of the region as a whole – now and into the future.

- Climate change poses a threat – and presents an opportunity – for the economic stability and vitality of the Valley CERF region.
- The significant mismatch between available housing-wage jobs in the region and the profile of workers living in disinvested communities, as well as “business as usual” industry growth, create the need and opportunity for intentional intervention.
- Investing in public health in the region can not only help meet current and future healthcare needs of residents in the region’s disinvested areas, but can also create new and quality jobs in those communities.
- Poverty and inequality in the region are persistent, and families and communities continue to lack basic needs necessary for them to thrive; housing affordability, increasing wages, and broadband for all are important places to focus.

Profile of Disinvested Communities in the Central San Joaquin Valley

Located in California south of Sacramento, the Central San Joaquin Valley (Valley CERF region) is composed of four counties: Fresno, Kings, Madera, and Tulare. Across almost all measures, there are disparities between the people who live in the Valley CERF region and those who live in the rest of California. There are further disparities between the people living in the areas of the Valley CERF region designated as disinvested and those who live in the rest of the region.

The profile of the Central San Joaquin Valley that follows summarizes existing data on people living in disinvested areas, such as age, gender, race and ethnicity, immigration, household composition, education, income and poverty, use of public assistance, language, housing, and connectivity such as through transportation and internet access. Data utilized for this analysis are described in Box 1.1.

BOX 1.1

Data and Methods for the Profile of Disinvested Communities in the Valley CERF region

This section uses data from two major sources:

- **American Community Survey:** Produced by the US Census Bureau, the American Community Survey (ACS) is a nationally representative household survey that releases new data every year. Its primary domains are demographic, social, economic, and housing characteristics of the US population. This analysis uses the 2017–2021 5-Year Data. Each year a random sample of 3.5 million households across the country are contacted to participate in the American Community Survey. Responding to the Survey is voluntary. Therefore, ACS data are estimates and not exact. ACS data are especially limited for small geographies and populations. There is also likely an undercount of immigrant populations.
- **CalEnviroScreen:** CalEnviroScreen is a tool used to help identify communities disproportionately burdened by multiple sources of pollution and with population characteristics that make them more sensitive to environmental burdens. More information on CalEnviroScreen 4.0, including a detailed description of indicators and methodology, is available at the OEHHA website.²

“Disinvested” is the term the State of California is using for CERF, which is why that term is being used in this report. CERF’s definition of “disinvested communities” includes: i) Census tracts identified

as “disadvantaged” by the California Environmental Protection Agency (CalEPA); ii) Census tracts with median household incomes at or below 80 percent of the statewide median income; iii) “High poverty area” and “High unemployment area” as designated by the California Governor’s Office of Business and Economic Development California Competes Tax Credit Program; and iv) California Native American Tribes as defined by the Native American Heritage Commission (NAHC) Tribal Consultation Policy.

For the purpose of Senate Bill 535, the California Environmental Protection Agency (CalEPA) identifies census tracts as “disadvantaged” based on several criteria, including census tracts representing the 25 percent highest scoring tracts in CalEnviroScreen 4.0, census tracts previously identified in the top 25 percent in CalEnviroScreen 3.0, census tracts with high amounts of pollution and low populations, and federally recognized Tribal areas as identified by the Census in the 2021 American Indian Areas Related National Geodatabase.

In order to apply the State of California’s criteria of “disinvested” to the Valley CERF region, we used the following methodology. First, we transformed the 2010 census tracts included in CalEnviroScreen to the 2020 tracts in order to allow us to review most current ACS data (2017-2021 5-year estimates). The transformed 2020 tracts classified as disadvantaged under CalEnviroScreen overlapped with Census tracts with median household incomes at or below 80 percent of the statewide median income. As a result, this criterium did not add any areas to the “disinvested tracts.” Applying the third criterium for “disinvested,” under California Governor’s Office of Business and Economic Development California Competes Tax Credit Program three of the four counties in the Valley CERF region are designated as a ‘High poverty areas’ or a ‘High unemployment areas.’ As a result, this criterium was excluded from the analysis as it did not support goals to look at within-county differences. Applying the fourth CERF criterium for disinvested, we did not identify any non-Federally recognized Tribes in the Valley CERF region. All Federally recognized Tribal areas are designated as “disadvantaged.” We independently looked at trends on Tribal lands, some of which are located outside of disadvantaged tracts.

Thus, census tracts identified as “disadvantaged” by the California Environmental Protections Agency (CalEPA) are what were used to determine the “disinvested” areas for this analysis.

A census tract is a statistical subdivision of a county uniquely numbered with a numeric code. On average, census tracts are home to around 4,000 people. The minimum population is 1,200 people and the maximum is 8,000.³

The analysis that follows allows comparisons between California as a whole, the Central San Joaquin Valley as a region, and each of the four Valley CERF counties, as well as descriptions of how the experiences of people living in disinvested tracts may differ from the experiences of those who don’t.

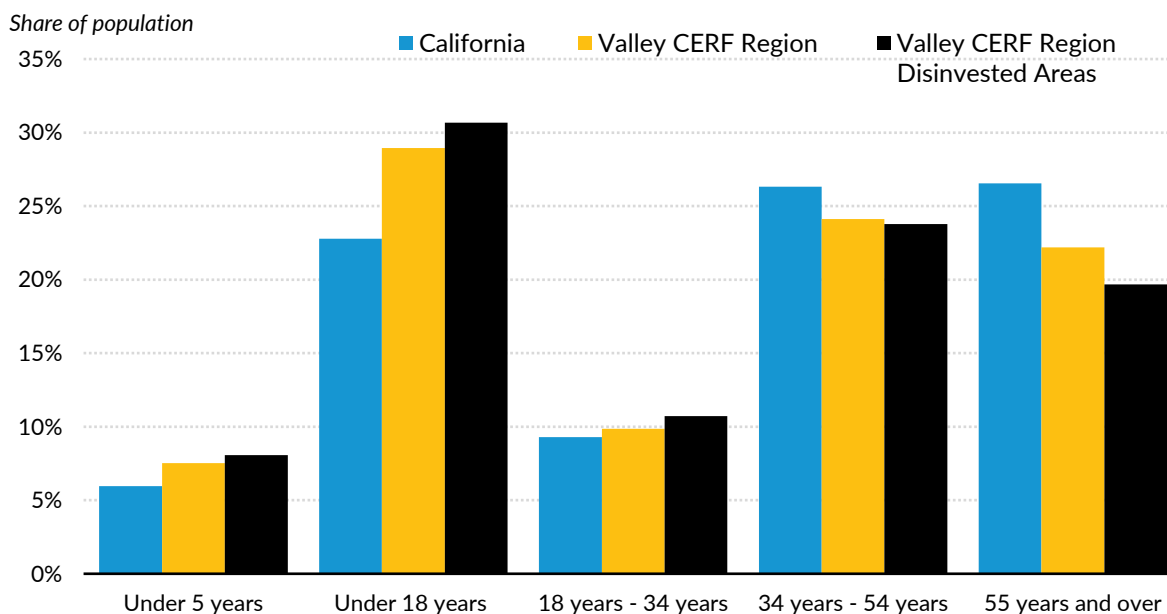
Residents of the Central San Joaquin Valley, particularly those living in disinvested areas, tend to be younger than other California residents

The Valley CERF region has a much younger population than California as a whole. Less than a quarter (23 percent) of California residents are under the age of 18; by comparison, 29 percent of the Valley CERF region's residents, and 31 percent of those living in the region's disinvested areas are minors (figure 1.2). Children under the age of 5 also make up a slightly larger share of the population in the Valley CERF region than in the state. Tulare County is the youngest of the Central San Joaquin Valley counties, with 31 percent of the population under the age of 18, and 8 percent under the age of 5.

In contrast, adults over the age of 55 account for a more significant share of the population in California than in the Central San Joaquin Valley. In California, more than a quarter of residents (27 percent) are age 55 or older; by comparison, only about 22 percent of those living in the region, and 20 percent of the population in its disinvested areas, are age 55 or older.

FIGURE 1.2

Central San Joaquin Valley residents, particularly those in disinvested areas, tend to be younger than other California residents



Source: 5-year ACS data from 2017-2021

Notes: All ages ranges are shares of the total population.

There is a gender imbalance in Kings County, especially in disinvested areas

Unlike in other counties in the Central San Joaquin Valley and in California as a whole, where the populations of men and women are roughly equal, men outnumber women 55 to 45 percent in Kings County. The margin is even greater in Kings County's disinvested areas, where 58 percent of residents are men and only 42 percent are women. A possible contributor to this difference may be the eight jails located in Kings County.

The Central San Joaquin Valley is diverse, but Latinx people make up the largest share of the population and are highly concentrated in disinvested areas

Latinx residents make up the largest share of the residents (58 percent) in the Valley CERF region, a share much larger than in California as whole (40 percent) (figure 1.3). Kings County has the largest Latinx population (67 percent) in the Valley CERF region. The Valley CERF region is home to other racial groups as well, and at lower rates than the rest of California. The White, non-Hispanic population in the region (28 percent) is smaller than California's (36 percent); the Asian or Pacific Islander population (8 percent) is also smaller than California's (15 percent); and so is the Black population (4 percent compared to 6 percent). However, "All Other" races account for 33 percent of the population in the region, which is higher than in California (27 percent).

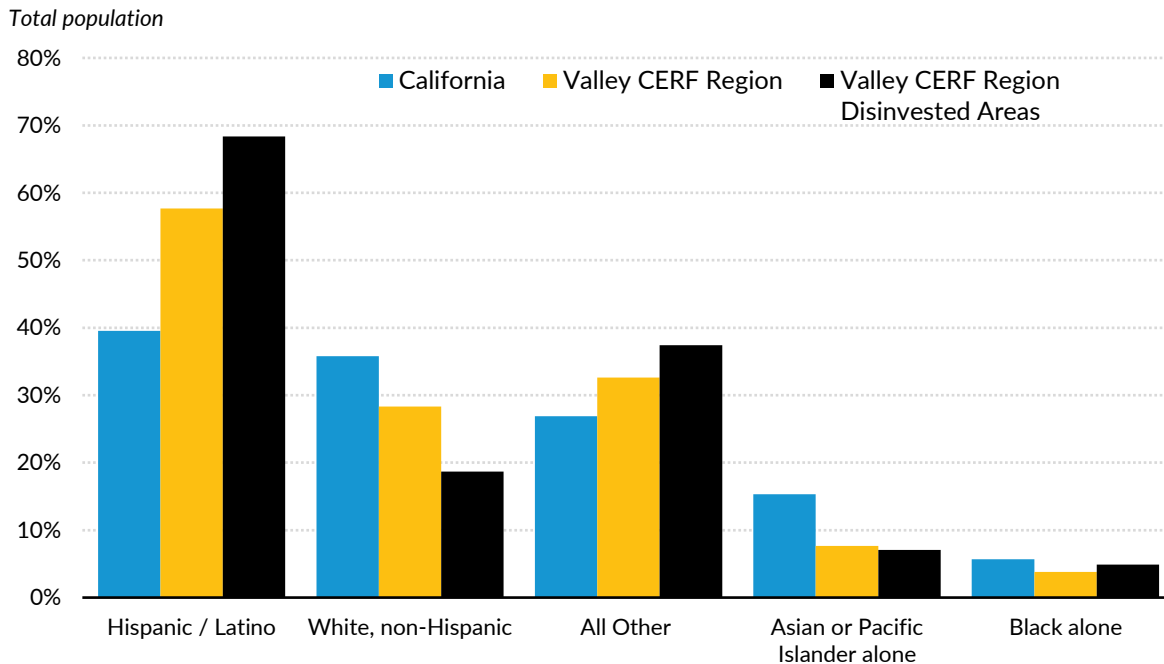
The White non-Hispanic population is largest in Madera County (32 percent). The Asian or Pacific Islander population is largest in Fresno County (11 percent) and smallest in Madera County (2 percent). The largest Black population is in Kings County (7 percent) and the smallest is in Tulare (2 percent). Madera County has the largest share of people in the "All Other" races category (40 percent).

Disinvested areas in the Valley CERF region have disproportionately higher populations (68 percent) of Latinx people than in the rest of the region or state. This is most pronounced in Madera County, where more than 70 percent of residents in disinvested areas are Latinx compared to about a quarter of residents in the rest of the county.

Meanwhile, the White non-Hispanic population makes up a disproportionately low rate of the population in the region's disinvested areas (19 percent) compared to the rest of the Valley CERF region (45 percent). This inequity is again most pronounced in Madera County, where 21 percent of residents in disadvantaged areas are White non-Hispanic compared to 65 percent of the population in the rest of the county.

FIGURE 1.3

Latinx people make up the largest share of the population in the Valley CERF region



Source: 5-year ACS data from 2017-2021

Notes: Hispanic / Latino is the terminology used in the ACS data. Although some data sources Urban relies on throughout this report use the term "Hispanic or Latino" to refer to people of Latin American origin, Urban uses the term "Latinx" throughout this report to be more gender inclusive. ACS survey questions ask about race and ethnicity separately. Data related to both race and ethnicity are represented in this figure. The race groups that add to 100% in ACS data are White Alone, Black or African American Alone, American Indian and Alaska Native Alone, Asian Alone, Native Hawaiian and Other Pacific Islander Alone, Some Other Race Alone, and Two or More Races. "Alone" means only one race (versus two or more); it does not indicate whether someone is ethnically Latinx or not. The "American Indian and Alaskan Native" and the "Two or More Races" populations are included in "All Other," and the "Asian Alone" and "Native Hawaiian and Other Pacific Island Alone" populations are combined in this graph. We do not include the "White Alone" population in this graph, so the race categories do not add to 100%. We chose to display the White, non-Hispanic population instead of "White alone", which is the only race where ACS provides combined race/ethnicity counts. In addition to race groups, the figure shows the ethnic Hispanic / Latino population. Individuals included in race categories other than "White, non-Hispanic" may or may not also be ethnically Hispanic / Latino.

The Central San Joaquin Valley is home to a smaller share of immigrants than in California as a whole and most are from Latin America

Immigrants—those born outside of the United States—make up a smaller share of the residents in the Central San Joaquin Valley (20 percent) than in California overall (27 percent). Most immigrants in the region (75 percent) are from Latin America, which is far more than in California as a whole (50 percent). The remaining foreign-born population in the Valley CERF region comes from Asia (20 percent) and other continents (5 percent).

Like the region’s Latinx residents, the region’s immigrant population is also more likely to live in disinvested areas of the Valley CERF region. Overall, immigrants represent about a quarter of the

population in the region's disinvested areas, and about 14 percent of those living in non-disinvested areas.

The region has a significant number of undocumented immigrants with unique needs and experiences. County-level estimates from the Migration Policy Institute estimate that there are approximately 77,000 unauthorized immigrants in Fresno County, 39,000 in Tulare County, 15,000 in Madera County, and 12,000 in Kings County as 2019.⁴ These estimates total to 143,000 people in the region, or 8 percent of the region's population of 1.78 million.

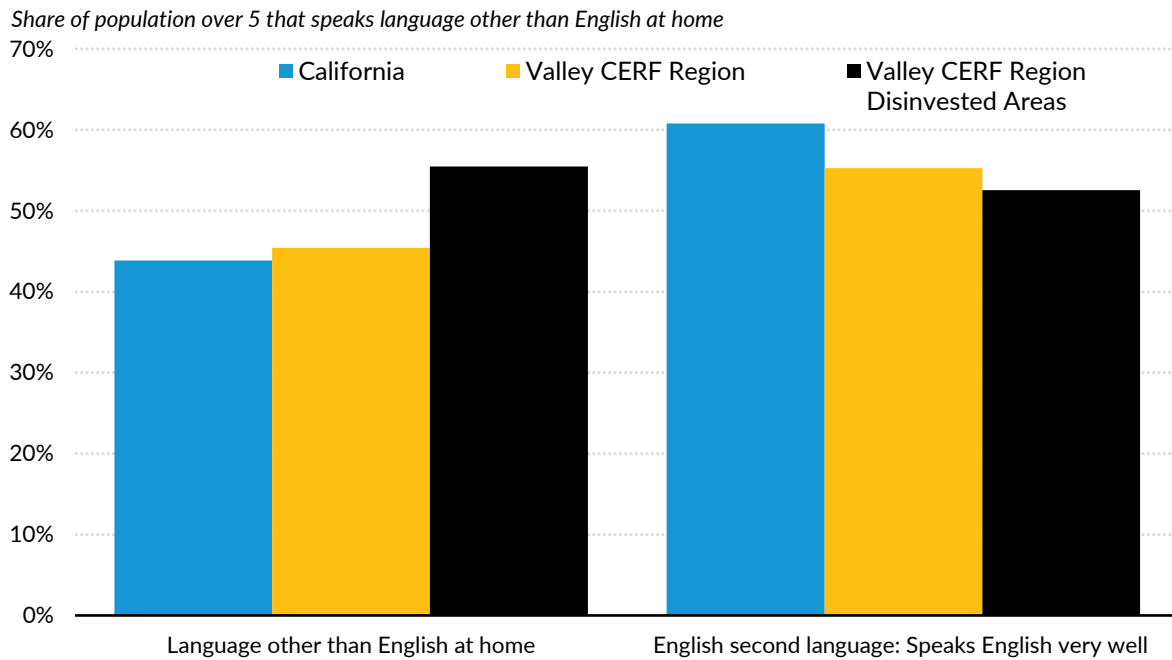
More than half of Central San Joaquin Valley residents living in a disinvested area speak a language other than English at home

While residents in the Valley CERF region are only slightly more likely (45 percent) to speak a language other than English at home than other California residents (44 percent), speakers of other languages disproportionately live in disinvested areas (figure 1.4). More than half (56 percent) of people living in the region's disinvested areas speak a language other than English at home compared to people living in other areas of the Valley CERF region (29 percent).

Compared to the state, the Valley CERF region has a lower rate of people who speak English as a second language with advanced English proficiency. In the region, about 55 percent of people who speak a language other than English at home indicate they speak English "very well" as compared to about 61 percent statewide. The rate of advanced English proficiency is even lower among residents of disinvested areas in the region who speak a language other than English at home (53 percent).

FIGURE 1.4

A large share of the people in the Central San Joaquin Valley speaks a language other than English at home, but not all of them indicate they speak English very well



Source: 5-year ACS data from 2017-2021

Notes: "Language other than English at home" is a share of the population 5 years of age and over. "English second language: Speak English Very Well" is a share of "Language other than English at home."

More of the population speaks Spanish at home in the Central San Joaquin Valley compared to the state overall (38 percent compared to 28 percent) but a smaller share speaks a non-English language other than Spanish in the region compared to California (7 percent versus 16 percent). Other languages spoken by residents in the Valley CERF region include Tagalog (0.8 percent), Arabic (0.5 percent), a Chinese language (Cantonese or Mandarin) (0.4 percent), Vietnamese (0.2 percent) and Korean, French, German, or Russian (less than 0.2 percent each). About 3 percent of the population speaks a different Asian language (*data not shown*).

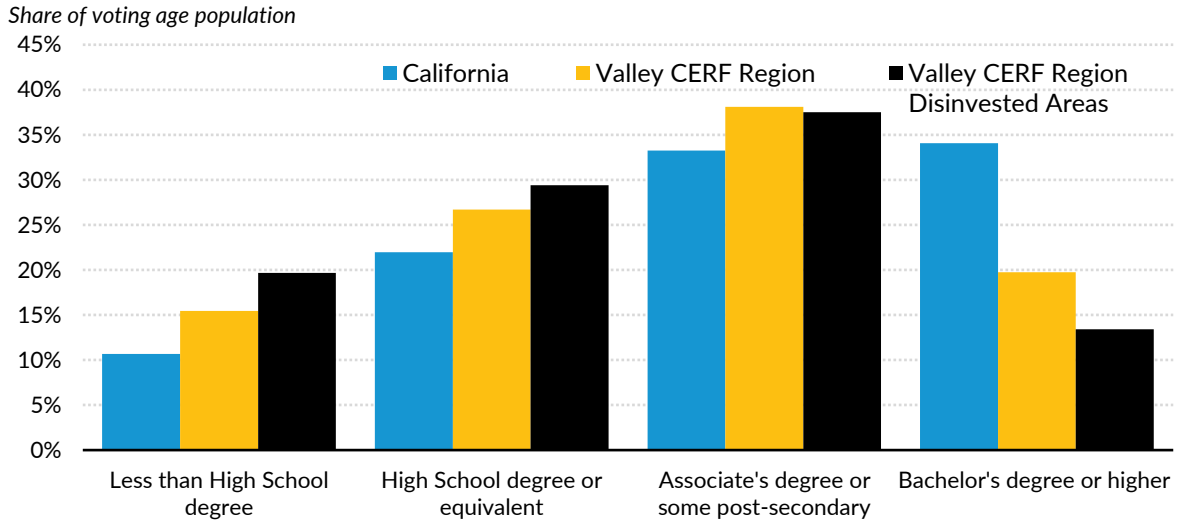
Adults in disinvested areas tend to have less formal education than adults in other parts of the region and state

Twenty percent of adults living in the Valley CERF region's disinvested areas have less than a high school diploma, compared to 15 percent of adults in the region overall and 11 percent of all adults in California (figure 1.5). Following a similar pattern, California as a whole has a higher share of college

graduates (34 percent) than in the Valley CERF region (20 percent), which is substantially higher than in the region’s disinvested areas (13 percent). Fresno County has the highest disparity between the percentage of people who do and do not have at least a bachelor’s degree.

FIGURE 1.5

Adults in the Central San Joaquin Valley and its disinvested areas tend to have less formal education than adults in the rest of California



Source: 5-year ACS data from 2017-2021

Notes: All figures are out of the voting age population. ACS does not ask about vocational training.

Households in the Central San Joaquin Valley—particularly those in disinvested areas—are more likely to have children and be larger than other California households

The Central San Joaquin Valley is home to a larger share (29 percent) of households with children under the age of 18 than in California as a whole (23 percent). Households in the Valley CERF region also tend to be slightly bigger (an average household size of 3.3 people) compared to households in California as a whole (an average household size of 3.0 people). Households in the region’s disinvested areas are slightly larger as well. This is most evident in Madera County, where the average household size is about 3.7 people per household in its disinvested areas compared to 2.8 in its other areas.

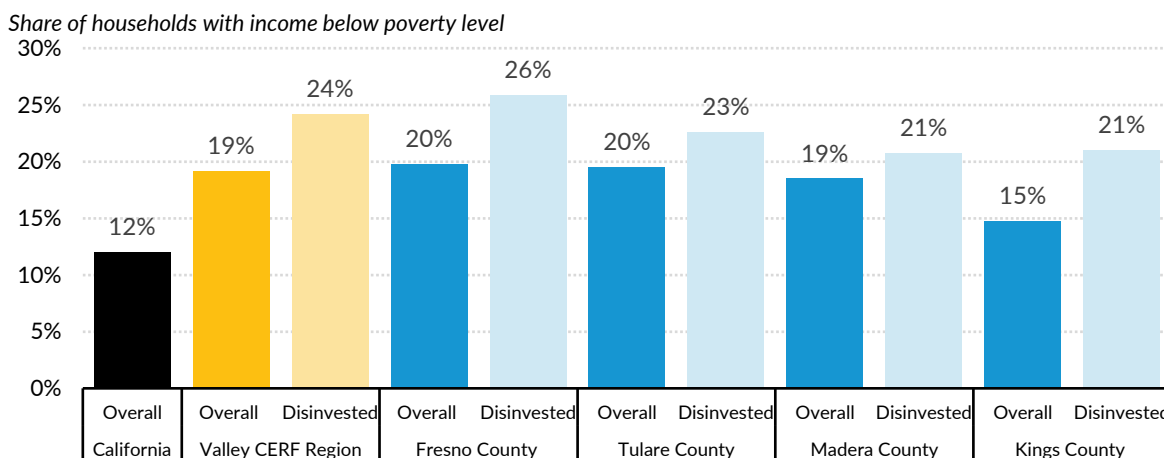
Central San Joaquin Valley residents have lower household incomes and higher rates of poverty than other California residents

Average household income tends to be lower in the region than in California. In the Central San Joaquin Valley, the average household income (\$63,200) is more than 30 percent lower than California’s average (\$91,300), and 44 percent lower in disinvested areas (\$51,300). There is a prominent earnings gap between men and women in all of California, but its slightly less in the Valley CERF region. Women make 71 percent of male earnings in California but 75 percent in the Valley CERF region and 76 percent in the region’s disinvested areas.

As previously discussed, about two-thirds of the Valley CERF region has been designated as disinvested due to a number of factors, including rates of poverty. In line with this, the region has relatively high rates of poverty. Nearly 1 of every 5 (19 percent) people lives below the poverty line in the region, compared to about 1 in 8 (12 percent) statewide. The poverty rate in the region’s disinvested areas is double that of California overall, with nearly 1 in 4 people (24 percent) living in poverty (figure 1.6). In 2021, the federal poverty line was \$12,880 for a household of one and \$26,500 for a household of four.⁵

FIGURE 1.6

Poverty rates are highest in the Valley CERF region’s disinvested areas



Source: 5-year ACS data from 2017-2021

Notes: The Central San Joaquin Valley has higher poverty rates than the rest of California. Rates are highest in the disinvested areas of each of the regions’ four counties and most pronounced in Fresno County where more than a quarter of the households have incomes below the poverty line. Within the region, Kings County has the lowest overall rate of poverty (15 percent) while the other three counties are in the 19 to 20 percent range.

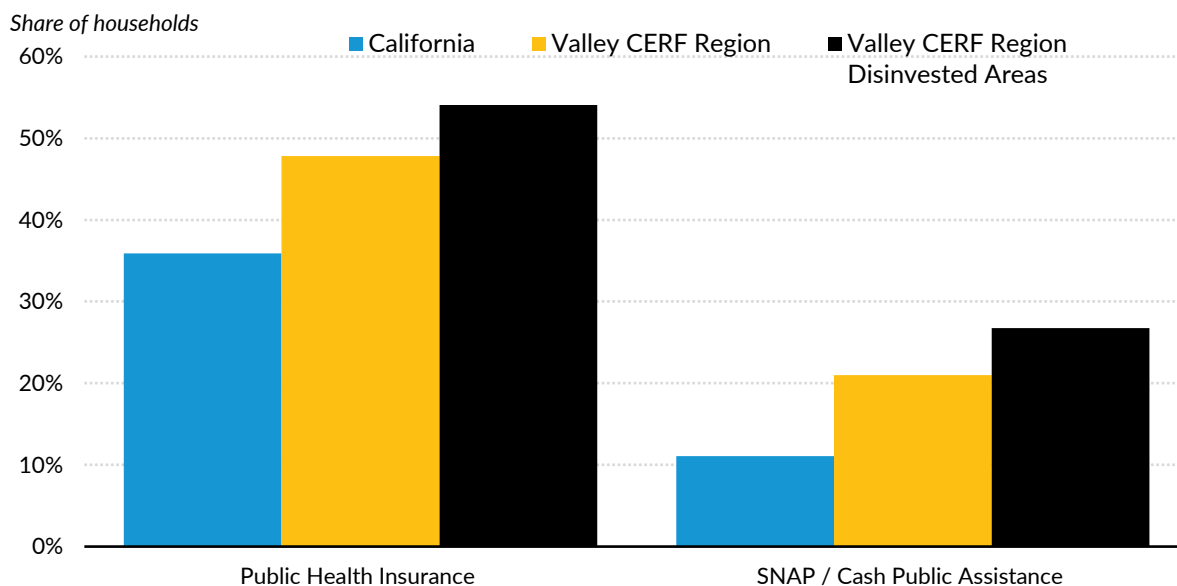
Public programs provide important support to families in the Central San Joaquin Valley

Correlated with its high rates of poverty, residents of the Central San Joaquin Valley receive most forms of public assistance at higher rates than other California residents. In the region, the share of households receiving public assistance in the form of cash assistance or food stamps (21 percent) is nearly twice as high than in California (11 percent); in the region's disinvested areas, the share of households receiving public assistance is nearly 2.5 times higher (27 percent) than it is statewide (figure 1.7).

People living in the Central San Joaquin Valley also use public health insurance programs more frequently (48 percent) than in the state as a whole (36 percent); in the region's disinvested areas, the rate is even higher (54 percent). Within the Valley CERF region, Tulare County has the highest rate of people subscribed to public health insurance (53 percent).

FIGURE 1.7

Central San Joaquin Valley disinvested areas access public health insurance and public assistance at higher rates than in the region and in California



Source: 5-year ACS data from 2017-2021

Notes: Public Health Insurance is a share of people. SNAP/Public assistance is a share of households. SNAP refers to Food Stamps/Supplemental Nutrition Assistance Program Benefits. Cash Public Assistance refers to general assistance and Temporary Assistance to Needy Families (TANF). Separate payments received for hospital or other medical care (vendor payments) are excluded.

Generally, housing cost burdens are slightly lower in the Central San Joaquin Valley than in California, except in disinvested areas where it is comparable

The share of renters in the Central San Joaquin Valley is similar to that of California (both just over 44 percent); this share is higher in disinvested areas (52 percent). Within the region, Fresno County and Kings County have the highest share of renters (46 percent) while Madera County has a renter population (34 percent) that is lower than the state average (figure 1.8).

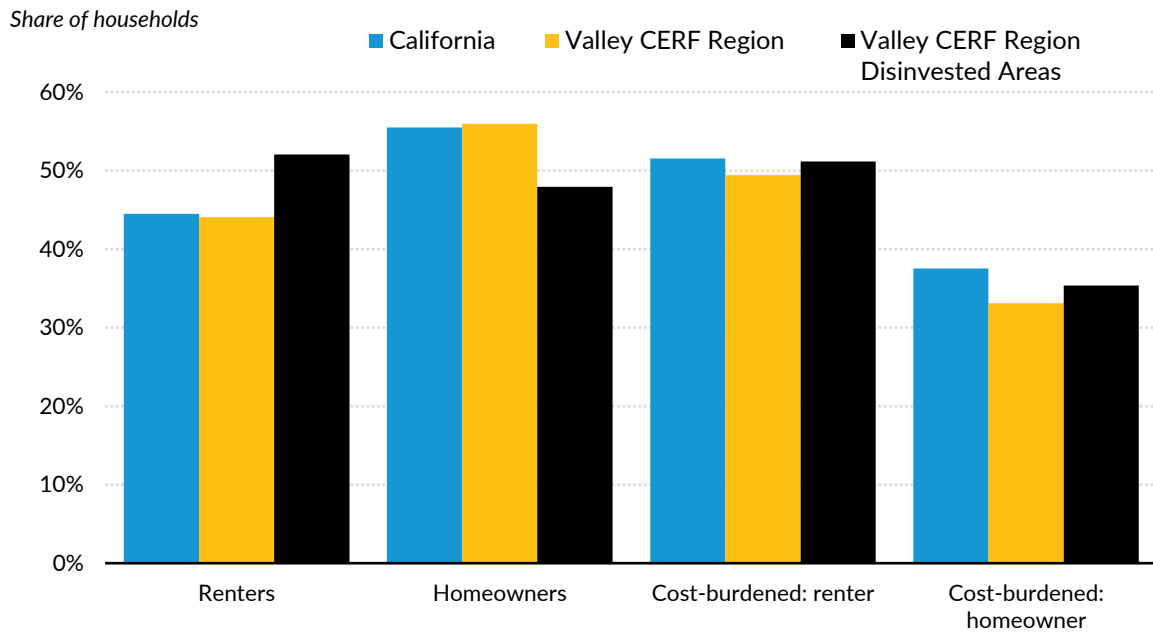
A key indicator of whether someone is financially burdened by their housing is whether they spend 30 percent or more of their incomes on housing costs. In the Valley CERF region, the overall share of the population that is rental cost-burdened (49 percent) is lower than in California (52 percent). In the region's disinvested areas, where household income tends to be lower than in the Central San Joaquin as a whole and households tend to be larger, the share of residents who are rental cost-burdened (51 percent) is comparable to California.

Within the region, Fresno County has the highest share of renters who are cost burdened (51 percent). Fresno County also has the greatest difference in share of cost-burdened households between disinvested areas (53 percent) and the county's other areas (46 percent). Kings County has the lowest rate of cost-burdened renters (44 percent) in the region. In Madera County, there is no difference between renter cost burden rates in disinvested areas and other areas (both 47 percent).

Homeowners with mortgages also experience housing cost burdens, but not at the same rate as renters. In all of California, 38 percent of homeowners with mortgages are paying installments that exceed 30 percent of their income. The rate is lower in the Central San Joaquin Valley (33 percent) and almost as high in disinvested areas (35 percent). Within the region, Madera County has the highest overall share of mortgage-holders who are cost burdened (38 percent). However, Madera's disinvested areas have a smaller share of homeowners with housing cost burdens (34 percent) compared to its other areas (46 percent). Within the region, Kings County has the lowest share (30 percent) of homeowners with mortgages who experience housing cost burdens.

FIGURE 1.8

Housing cost burden is lower in the Central San Joaquin Valley than in California, except in the region’s disinvested areas



Source: 5-year ACS data from 2017-2021

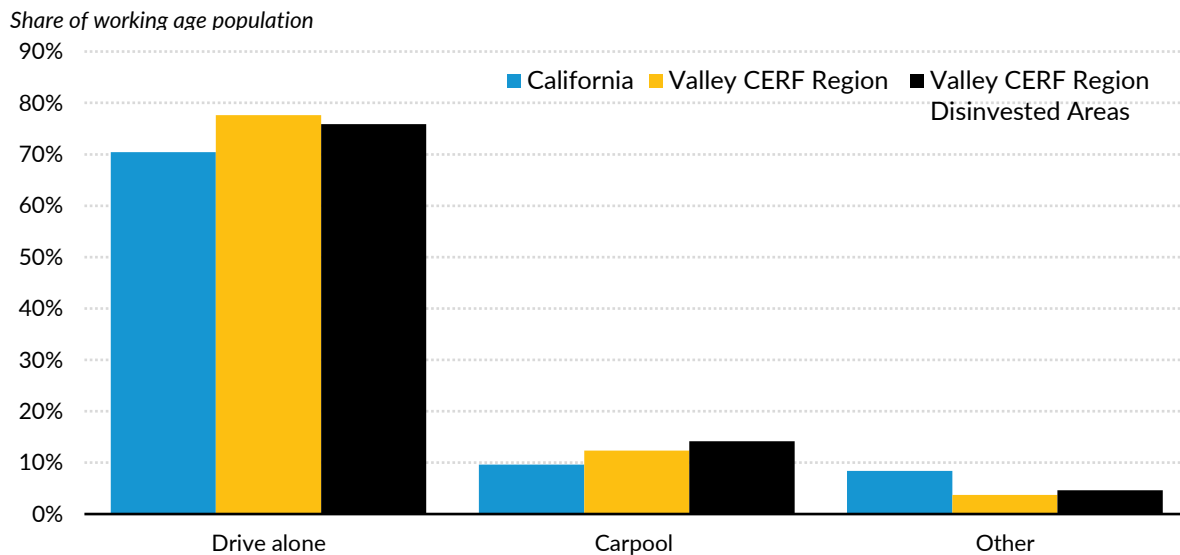
Notes: “Cost burdened” refers to paying a mortgage or rent that is more than 30 percent of a household’s income.

Almost all residents in the Central San Joaquin Valley have access to a vehicle and commute in a car

A very small share of people in the Valley CERF region (2 percent) do not have a vehicle available to them, which is lower than in California overall (3 percent). In all counties, the share of the population without access to vehicles is marginally higher in the disinvested areas. For example, in Kings County 4 percent of those living in disinvested areas do not have access to a vehicle, compared to 2 percent in the county’s other areas.

FIGURE 1.9

Most workers in the Valley CERF region drive alone to work but more carpool than in California



Source: 5-year ACS data from 2017-2021

Notes: “Drive alone” include motorcycles. “Other” includes public transport, walk, bike, and other means. This graph does not include people who work from home.

A majority of people in the region drive to work alone (78 percent), slightly more than in California overall (70 percent, figure 1.9). More people in the Valley CERF region carpool (12 percent) than in California (10 percent). Across the region, the rates of carpooling are higher in disinvested areas (14 percent) than in other areas (10 percent) of the Valley CERF region. Other modes of transportation are lower in the region than in California overall, including public transportation (less than 1 percent in the Central San Joaquin Valley compared to 4 percent in California) and walking or biking (2 percent compared to 3 percent).

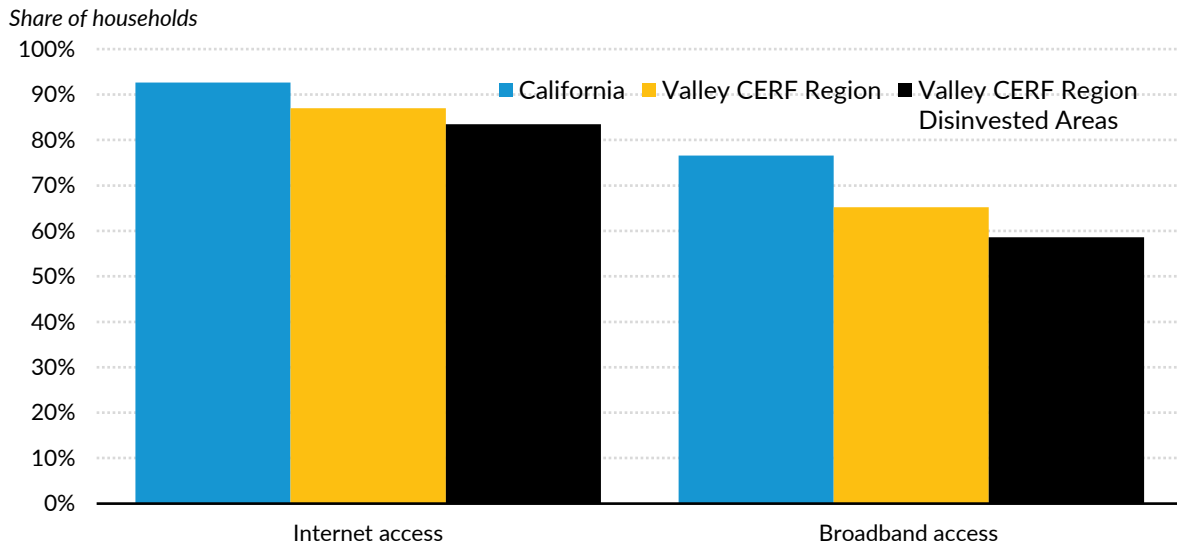
Residents of the Central San Joaquin Valley have more limited access to the internet and broadband than the rest of California

Some residents in the Valley CERF region may experience barriers to information access because of lower rates of internet access. While 7 percent of California households do not have internet access, the rate is nearly double (13 percent) in the Valley CERF region and more than double (16 percent) in the region’s disinvested areas. Broadband access is also lower in the Central San Joaquin Valley. In California, 77 percent of residents have broadband, compared to 65 percent in the Valley CERF region and 59 percent in the region’s disinvested areas (figure 1.10). Within the region, Kings County has the

highest rate of households with broadband (72 percent). Broadband figures from ACS data may be overstating access. For example, in Fresno County, ACS estimates that 33 percent of households do not have broadband but local studies show that nearly 50 percent of households in the Fresno Unified School District are underserved in terms of internet speed needed to conduct activities (Hayes et al. 2023).

FIGURE 1.10

Most residents in the Valley CERF region have internet access; a lower share has broadband access



Source: 5-year ACS data from 2017-2021

Notes: Internet access may be via smartphone, tablet, desktop, or other means.

Those living on Tribal land in the Central San Joaquin Valley experience connectivity challenges, have lower rates of educational attainment, and fewer receive public assistance despite having higher rates of poverty

There are seven Tribal land areas in the region: Table Mountain Rancheria, Big Sandy Rancheria, and Cold Spring Rancheria (within Fresno County bounds); Santa Rosa Rancheria (within Kings County bounds); North Fork Rancheria and Picayune Rancheria (within Madera County bounds); and Tule River Reservation (within Tulare County bounds). The total population of Tribal community members in the Central San Joaquin Valley is just under 2,100, with most living on the Tule River Reservation, an Off-Reservation Trust Land in Tulare County, or the Santa Rosa Rancheria in Kings County. This figure and those that follow represent the population living on Tribal land in the Valley CERF region, and do not capture Native American populations living elsewhere in the region. All Tribal land is

designated as disinvested under the CERF program, which recognizes the needs of California's 109 federally recognized tribes and 55 non-federally recognized Tribes in accordance with the Native American Heritage Commission.

People living on Tribal land in the Central San Joaquin Valley are much less connected in terms of telecommunications than those living in the region's other disinvested areas. Forty percent of the population living on Tribal land do not have internet access compared to 17 percent in other disinvested areas of the Valley CERF region, and only 28 percent have broadband compared to 59 percent in the region's other disinvested areas. In addition, 15 percent of people living on Tribal land do not have a phone, compared to 1 percent in the region. The proportion of people who do not speak English at home is lower among those living on Tribal land (15 percent) compared to those living in other disinvested areas of the region (44 percent).

The Tribal population also has lower educational attainment rates than those living in the region's other disinvested areas. For example, 32 percent of the Tribal population did not attain a high school degree or equivalent compared to 20 percent in the Central San Joaquin Valley's disinvested tracts. And while 13 percent of the population in the Central San Joaquin Valley disinvested tracts attained a bachelor's degree or higher, only 4 percent of the population living on Tribal lands did the same. However, the figures are not directly comparable because data was not available for the 18 - 24 Tribal population (only for the population over 25, whereas the census tract-based figures are for the voting age population).

The share of the population living below the poverty line is slightly higher on Tribal lands (28 percent) than in other disinvested parts of the Central San Joaquin Valley (24 percent). However, a smaller share of the population (17 percent) receives public assistance compared to the region's other disinvested areas (27 percent). Most notably, the rate of those with no health insurance coverage is much higher among those living on Tribal land (35 percent) compared to those living in other disinvested areas in the Valley CERF region (9 percent), the region overall (7 percent), and in California as a whole (7 percent).

Economy and Economic Development

The Central San Joaquin Valley is challenged by less overall investment than many other regions in the US; a highly seasonal labor force; and a gap between the number of people who are housing-cost burdened, the number of current and forecasted jobs available that pay a wage sufficient for people to afford housing, and the accessibility of those jobs. The Central San Joaquin Valley has a high rate of small businesses; this number has grown year after year, even during peak pandemic years. However, there are disparities by race, ethnicity, and gender in business ownership.

The section that follows describes these trends in the region's capital flows, labor force, and business creation. Then, it describes current industries, occupations, and businesses; forecasted job growth; and evaluates the cost of living and the extent to which current and forecasted jobs meet the needs of residents.

Trends in Capital Flows, Labor Force, and Business Creation

This section analyzes trends in capital flows, the labor force, and business creation over the last several years. First, it describes the flow of capital investment in neighborhoods, which can indicate the amount of relative investment in various areas and how equitably resources are distributed. Then it shows the trends in labor force participation and unemployment, comparing the Central San Joaquin Valley to California as a whole. Finally, it gives an overview of the rate of business growth. Each of these is a metric for the overall economy in the Valley CERF region and how it compares to the state of California as a whole. Data utilized for this analysis are described in Box 2.1.

BOX 2.1

Data and Methodology for Trends in Capital Flows, Labor Force, and Businesses

- **Capital Flows & Disparities for Cities, Counties, and States:** Researchers at the Urban Institute tracked the amount of investment between 2005 and 2019 into single-family properties, multifamily properties, non-residential real estate, small businesses, and investments from

mission-driven organizations and federal funding. Data on the capital flows is aggregated from various sources at the census tract level and combined into categories of investments. The data is consolidated into percentile rankings for the 250 largest counties in the US.

Within the region, data on capital investments are only available for Fresno and Tulare. These counties were ranked and compared on three metrics: volume of investment, how equitably it was distributed by race, and how equitably it was distributed by income demographics. Higher percentiles mean more investment or more equitable investment distributions.

Single-family flows of investment include purchase loans for owner-occupied single-family properties (one to four units). Multifamily includes purchase loans for properties with five or more units. Nonresidential comprises loans for nonresidential real estate (including commercial, industrial, and agriculture properties). Small business includes loans for business with revenue under \$1 million. Mission lending is reported by any kind of community development financial institution (CDFI) transactions, and other social mission-based lenders. Federal flows include all federal community development funding.

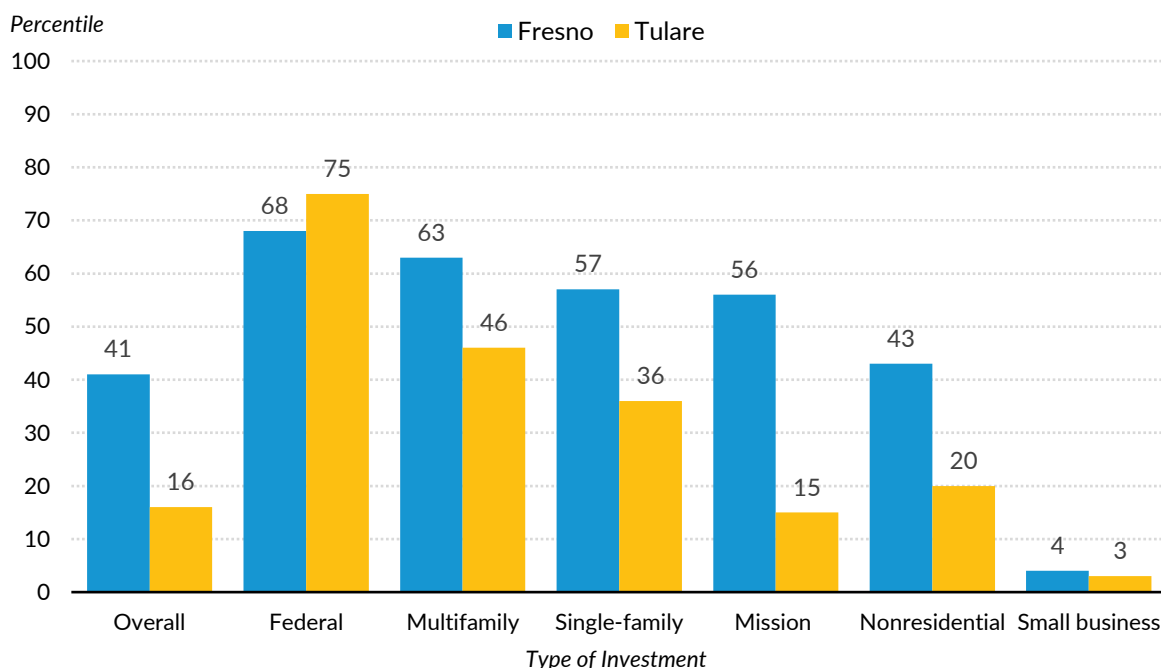
- **California Labor Market Information Division Labor Force Data:** The labor force and unemployment rate data are prepared by the California Employment Development Department (EDD) through a partnership with the US Bureau of Labor Statistics. Labor force is the total number of individuals that are employed and unemployed. Unemployment is defined as individuals who did not have a job but were available and looking for work. Unemployment and labor force data is produced by three different methodologies depending on geography. Data sources for the estimates include time series models, monthly unemployment insurance claims data, the Current Population Survey (CPS), and the Current Employment Statistics Survey (CES). Estimates are not seasonally adjusted. Data presented in this section on unemployment and labor force were downloaded from the county profiles.⁶ The most recent data is from March 2023.^v Data is monthly, but we present data from 2012-2023 in three-month averages, or quarters (with quarter one starting in January).
- **California Size of Business Report:** Data on the number of businesses is also developed by the California EDD using information submitted on tax returns by employers that have unemployment insurance and multiple worksite reports.⁷ The most recent year of data is 2022, and we examined the trends from 10 years prior. Data presented is from the size of business data (2012-2022) by county.⁸ The EDD data counts all businesses filing taxes in the region, including businesses with as few as zero employees.

Overall investment in the Central San Joaquin Valley’s largest counties has lagged behind investment in other regions of the country

Between 2005 and 2019, Fresno and Tulare counties received a smaller overall volume (total dollars received per household, housing unit, or employee) of capital investments compared to peer counties in other parts of the US. However, both Fresno and Tulare received more federal funding relative to peer counties. Overall, Tulare receives less capital investment compared to Fresno except when it comes to federal investments. Both Tulare and Fresno receive very little investment in small business. Fresno receives much more mission-based investment than Tulare (figure 2.1).

FIGURE 2.1

By percentile, both Fresno and Tulare rank below most large US counties in terms of overall investment, but higher than most when it comes to federal dollars



Source: Data on Capital Flows & Disparities for Cities, Counties, and States from 2005-2019, from the Urban Institute, <https://apps.urban.org/features/capital-investment-flows/>

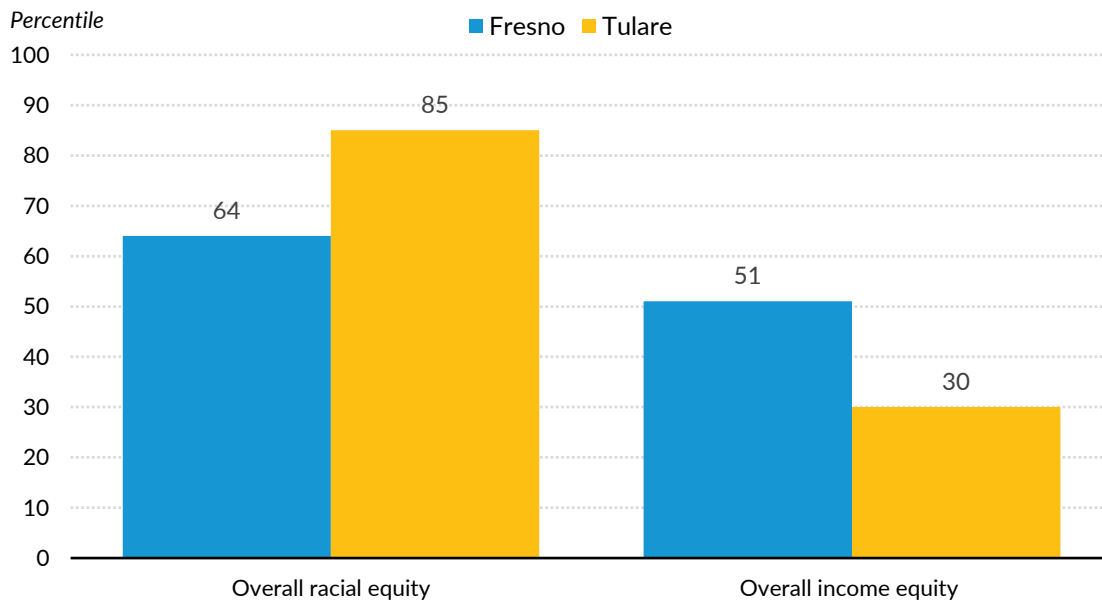
Notes: Shows percentile rank among the 250 largest US counties, e.g., Fresno is in the 41st percentile in terms of overall investment and Tulare is in the 16th percentile of overall investment relative to other counties.

Investments in Tulare County were more equitably distributed across race than in Fresno County overall, while Fresno’s investments were more equitably distributed across income than Tulare’s (figure 2.2). Tulare ranked highly in racial equity compared to peer counties, particularly for mission-based, non-residential, and single-family investments. In contrast, Tulare ranked low for

income equity of investments for the multifamily, mission, and single-family investment categories. Federal investments stood out as an area where Tulare ranked particularly high for income equity. Fresno was around the middle percentile in most categories but had slightly lower racial equity for federal investments compared to peer counties.

FIGURE 2.2

Overall, compared to peer counties, Tulare and Fresno’s investments were more equitably distributed across race; much less so by income



Source: Data on Capital Flows & Disparities for Cities, Counties, and States from 2005-2019, from the Urban Institute, <https://apps.urban.org/features/capital-investment-flows/>

Notes: Shows percentile rank among the 250 largest US counties.

The size of the labor force fluctuates with the seasons, but dipped below normal levels during the pandemic and has since rebounded in all counties except Kings County

Most of the labor force in the Central San Joaquin Valley is concentrated in Fresno County (58 percent) and Tulare County (26 percent); combined, Kings and Madera Counties account for the remainder (15 percent) of the region’s workforce. The share of population in the labor force in California is 64 percent, which is higher than in the Valley CERF region (60 percent). There is little variation between disinvested (59.8 percent) and non-disinvested areas (60.3 percent).

Generally, the share of the population participating in the region's labor force has either returned to or surpassed where it was prior to the pandemic, whereas California's labor force is still short of its 10-year peak, which occurred in the first quarter of 2020 (January, February, and March). Fresno, Tulare, and Madera had the highest labor force participation numbers in the first quarter of 2023 than at any point in the past 10 years. As of quarter one in 2023, the labor force participation in the Valley CERF region was at its highest number (800,100) within the last 10 years; the prior peak in the Valley CERF region (791,800) occurred in the first quarter of 2020. Kings County's labor force participation declined somewhat over the last 10 years, however total labor force participation has increased since a 10-year low in quarter one of 2021, though not quite to previous peaks in 2012 or quarter one of 2020.

Over the last 10 years, labor force participation in the Central San Joaquin Valley typically peaked in quarter two (April, May and June) and quarter three (July, August, and September); 2020 was an exception due to the onset of the pandemic. The region's labor force has much more seasonality—peaking each summer—compared to California's labor force as a whole.

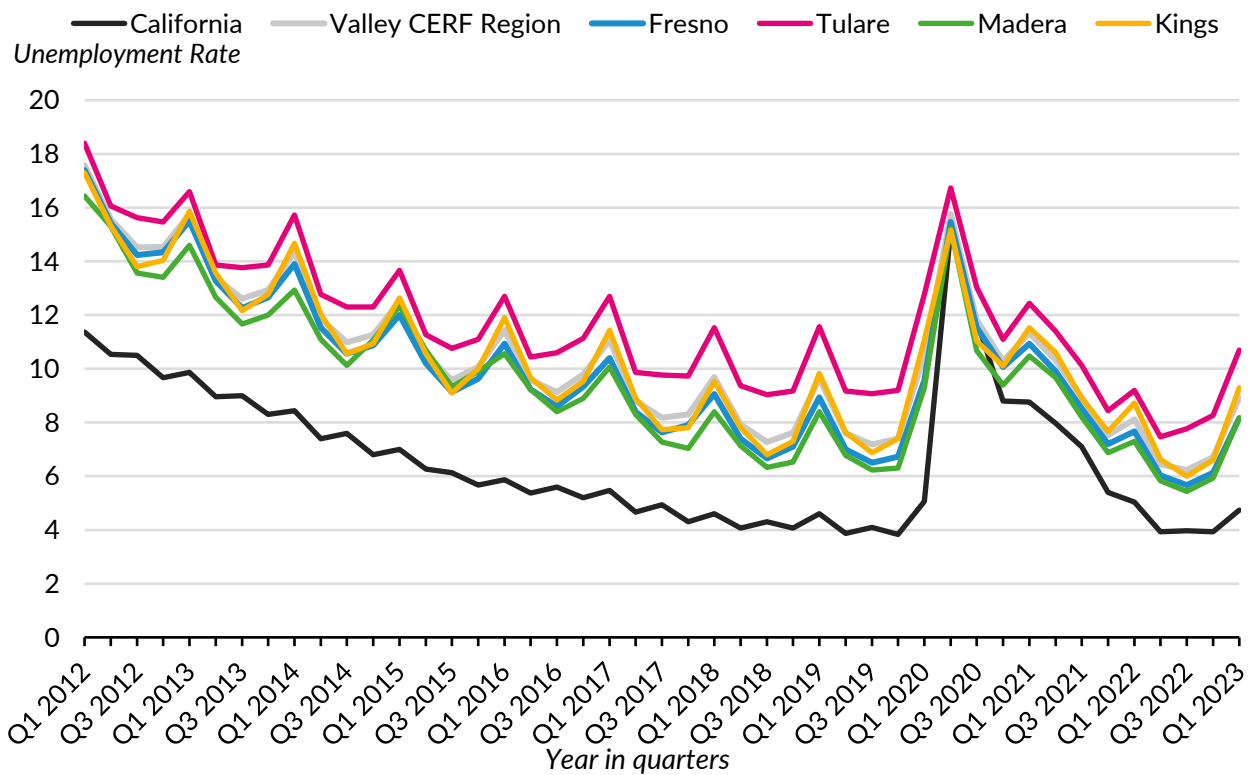
The lowest point for California's labor force participation during the last 10 years was in quarter two of 2020, which is likely a direct result of the pandemic. Comparatively, the labor force participation in the Valley CERF region was at its lowest point in the fourth quarter of 2020 (October, November, and December) and the first quarter of 2021, likely a combination of the pandemic-related economic downturn and the regular trends of seasonal unemployment in the region. The low point of people in the labor force in the Valley CERF region during the pandemic (749,400) was in quarter four of 2020; comparatively, the lowest in the 10-year period (741,700) was in quarter four of 2013.

Over the past 10 years, unemployment rates have remained consistently higher in the Central San Joaquin Valley than in California, with some variation by county

In each of the four counties in the Valley CERF region, unemployment rates are consistently higher than in California overall, and show stronger fluctuation from quarter to quarter, which is likely a result of seasonal unemployment. Over the last 10 years, the average unemployment rate in California was 6.7 percent, compared to 10.5 percent in the Valley CERF region. Within the Central San Joaquin Valley, Tulare County consistently has the highest rates of unemployment (an average of 11.7 percent over the last 10 years) and Madera consistently has the lowest (an average of 9.7 percent over the last 10 years). As referenced in the Profile of Disinvested Communities section above, unemployment rates throughout the Valley CERF region are higher in disinvested areas.

Prior to the pandemic, between 2012 and the beginning of 2020, unemployment had been steadily decreasing in California and in each of the four counties in the Valley CERF region (figure 2.3). Unemployment spiked in California and in each of the four counties during the second quarter of 2020, coinciding with the timing of pandemic-related lockdowns. Lockdowns resulted in significant economic strain throughout the US and had disproportionately negative impacts on people with low incomes and people of color. As noted in prior sections, the Central San Joaquin Valley has high populations of both groups. The pandemic-related spike in unemployment narrowed the unemployment gap between the Valley CERF region and the rest of California; however, the gap has since returned, albeit smaller now than pre-pandemic.

FIGURE 2.3
Unemployment rates are consistently higher in the Central San Joaquin Valley than in California and spiked during the pandemic



Source: California Employment Development Department, county profile, <https://labormarketinfo.edd.ca.gov/geography/lmi-by-geography.html>

Note: Rates not seasonally adjusted; monthly data averaged for each quarter

The number of business establishments has risen consistently year-over-year despite the pandemic

Between 2012 and 2020, the total number of business establishments in the Central San Joaquin Valley increased every year, as did the number of business establishments in California. In 2012, the Valley CERF region had about 43,900 businesses; by 2022, the total number of businesses in the Valley CERF had grown to about 63,900. In the same time frame, the total number of businesses in Fresno County grew from 28,400 to 41,000; in Kings County, they grew from 3,200 to 4,800; in Madera County, from 3,600 to 5,000; and in Tulare, from 8,700 to 13,000 businesses. In most cases, one establishment represents one business entity; multi-establishment businesses (businesses with multiple physical locations) are counted toward the primary or largest establishment.

The rate of growth in the total number of business establishments was larger in some years than others. In California, the rate of increase slowed between 2016 and 2020 but has increased since 2020. In the Central San Joaquin Valley, the rate of growth was relatively consistent from 2015 to 2019, slowed during the pandemic between 2019 and 2021, and has picked back up again from 2021 to 2022.

Current Industries, Occupations, and Businesses in the Central San Joaquin Valley

This section describes region's dominant industries, occupations, and businesses; what industries workers in disinvested areas are currently most likely and least likely to be employed in; where businesses are located; and the demographics of business owners.

BOX 2.2

Data and Methodology for Industries, Occupations, and Businesses

Data in this section come from several different sources:

- **Current Employment Statistics:** These data on employment by industry are from the California Employment Development Department's Industry Employment Official Estimates, which are based on the Current Employment Statistics (CES) survey. The CES collects information on employment, hours, and earnings from employers. Data presented is monthly data on employment by industry, averaged across all available months in 2022 for all the counties in the Valley CERF region, as well as for the state as a whole.⁹

- **Occupational Employment Survey:** Data on employment by detailed occupational categories as well as wages are from the Occupational Employment and Wage Statistics (OEWS). The OEWS provides estimates for the four Metropolitan Statistical Areas (MSAs) in the Valley CERF region, which are equivalent to each of the four counties.¹⁰
- **US Census Bureau’s Business Dynamics Statistics (BDS)** is used to describe business entry and exist rates. The BDS provides public output from a confidential dataset.¹¹ This data tracks establishment openings and closings. The most recent BDS data are from 2020 and are only available at the MSA level. Entry rates are the number of new establishments divided by the average number of establishments in the current and previous year. Exit rates are calculated the same way, but using the number of establishments closing.¹² Businesses in this dataset have at least one employee.
- **US Census Bureau’s Annual Business Survey** provides demographic information on businesses and business owners.¹³ The most recent year for this data is 2020 and the data are only available at the MSA level. The data are available for the Fresno MSA, Madera MSA, Visalia MSA (Tulare), and Hanford-Corcoran MSA (Kings), but because of the overlap between the MSA and county geographies, the data are referenced by county in this report. Business demographic data includes information for all businesses including firms with no employees.
- **America's Labor Market Information System (ALMIS) Employer Database:** These data, made available through the California Economic Development Department document the largest employers in each of the counties of the region. We use data from the 2023 2nd Edition.

For the Business Dynamics Statistics and the Annual Business Survey, there are several data gaps due to the relatively small numbers of businesses in each county; the numbers get smaller when grouping by business size or demographic characteristics of business owners. Data are shared for the MSAs where enough data are available.

For the purposes of this report, the term “industry” reflects the type of entity where economic activity takes place (i.e. government) as well as the type of good, service, or activity in which private businesses engage (i.e. agriculture or manufacturing), The term “occupation” refers to the type of role a worker is in (i.e. sales or labor). People working in the same occupation can work in very different industries. For example, there are service jobs both in the healthcare industry and in the food service industry. The term “jobs” refers to the number of paid positions.

Government, the social sectors, and agriculture are the most prominent industries the Central San Joaquin Valley

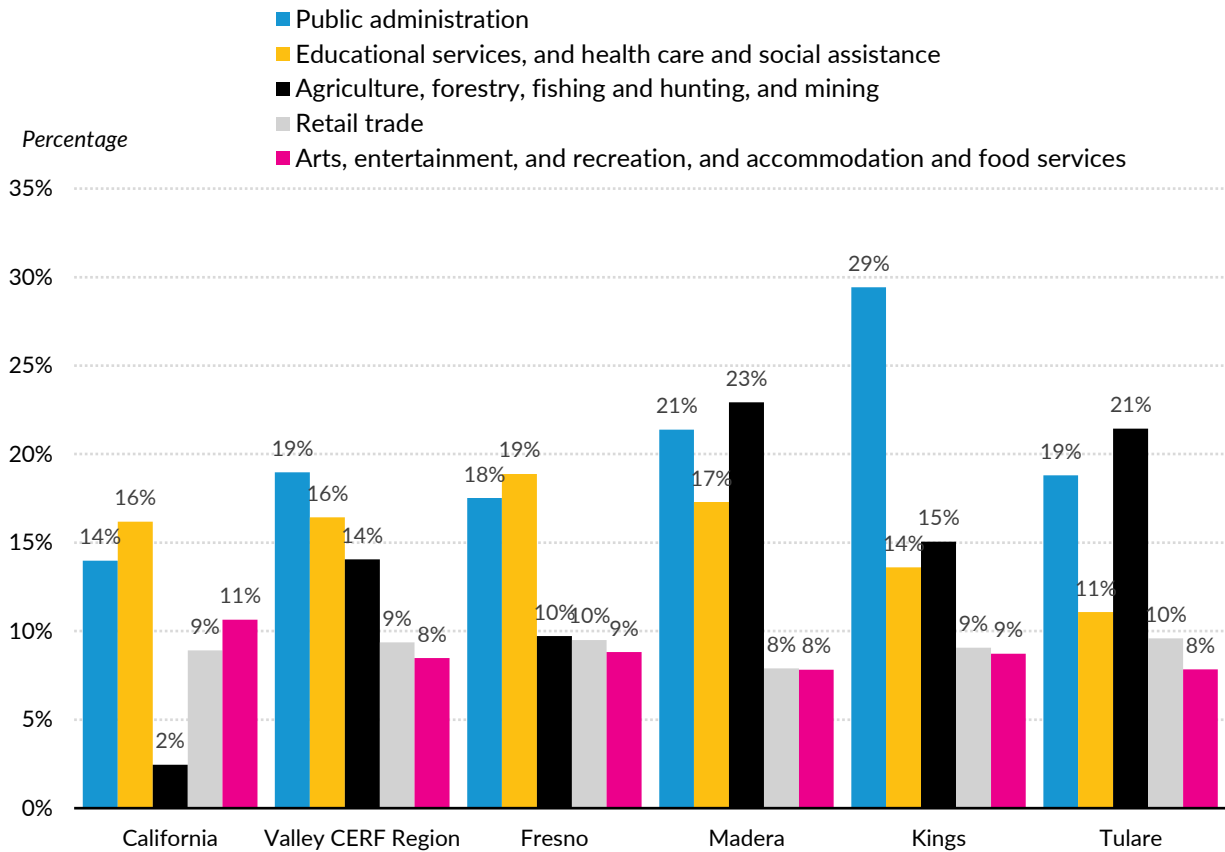
Together, jobs with government entities (public administration) as well as jobs in education, health care, and social assistance account for more than a third (35 percent) of the jobs in the Valley CERF region (figure 2.4). Government jobs (public administration) play a more prominent role in the region

(19 percent) than in California as a whole (14 percent), as does agriculture (14 percent in the region compared to 2 percent in the state). In Madera and Tulare Counties, more than 1 in 5 (23 percent in Madera and 21 percent in Tulare) of all jobs are in the agriculture industry.

FIGURE 2.4

Public administration is the largest industry in the Central San Joaquin Valley, particularly in Kings County

Percent of jobs in the largest 5 industries



Source: Analysis of 2022 Current Employment Statistics, downloaded through CA EDD, calculating average monthly employment over the year.

Considering the substantial role of government jobs in the region and the large proportion of disinvested areas in the region, workers living in disinvested tracts are acutely underrepresented in the public administration industry. Workers in disinvested areas hold roughly 5 percent of jobs in the public sector (*data not shown*), despite these jobs representing 19 percent of local opportunities. Workers in disinvested areas tend to be overrepresented in most private industries. This trend holds across all four counties.

Manufacturing is the 7th largest industry and accounts for about 7 percent of jobs in the Valley CERF region. The manufacturing industry plays the most pronounced role in Kings County, where it's the 4th largest industry, and accounts for about 10 percent of all jobs. Data on jobs specifically in food manufacturing is limited to the region's two largest counties: Fresno and Tulare. Food manufacturing accounts for a critical share of employment within this industry, representing 48 percent of manufacturing jobs in Fresno County and 53 percent in Tulare County. However, overall, food manufacturing jobs only make up about 3 percent and 4 percent of the economy respectively in each of these counties.

It is difficult to isolate the size of the oil and gas extraction industry in the region because of the limited data available. The closest estimate is from an industry category called Mining and Logging which is only available in the Current Employment Survey for Fresno County; that data show 227 jobs, which represents less than 1 percent of all jobs in the county.

Jobs in management and service occupations—prominent in government and in the social sectors—make up the largest group of occupations in the Central San Joaquin Valley

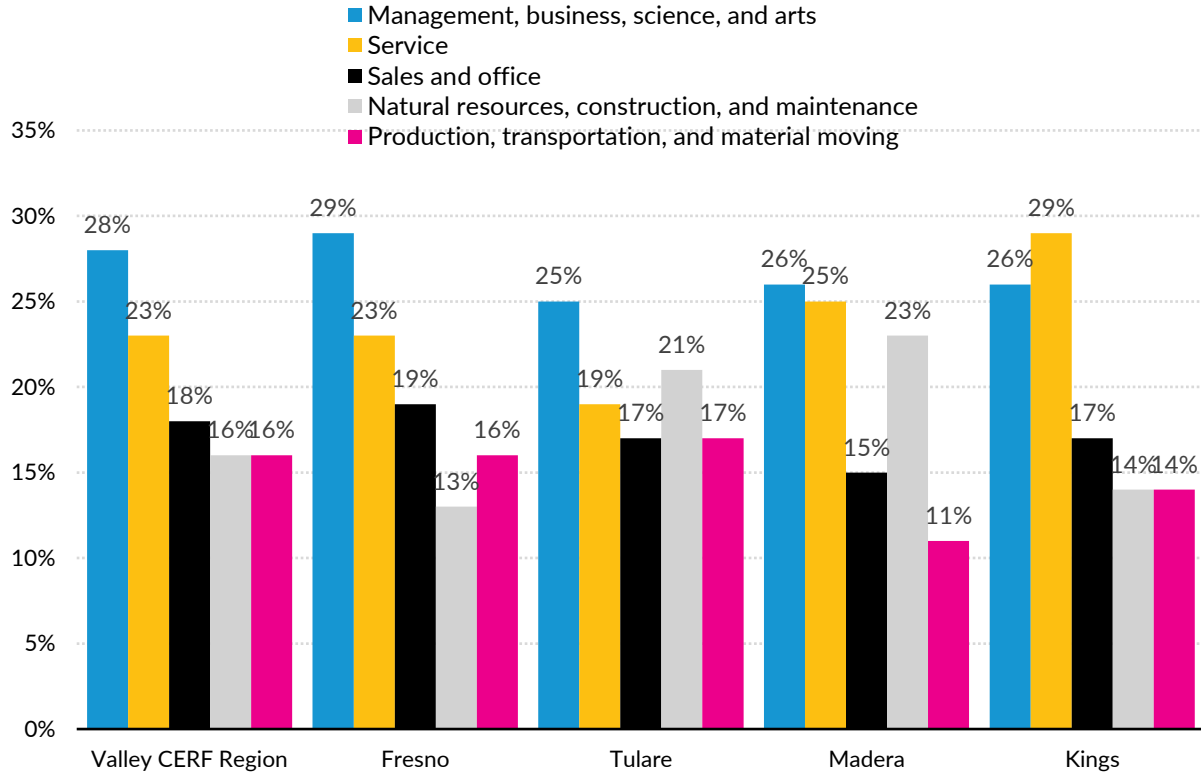
Looking at the number and share of jobs in different industries tells us a little about where people in the Central San Joaquin Valley work, but it's also important to look at what types of roles they have. Examining jobs by occupation helps create an understanding of the kind of work people do, as well as what they are likely to earn.

Management, business, science, and arts occupations make up the largest share of jobs in the Valley CERF region, and this is also true in Fresno, Madera, and Tulare (figure 2.5). In Kings County, service jobs make up the largest share. Jobs in natural resources, construction, and maintenance also figure more prominently in some counties than others, likely due to the prevalence of these occupations in the agriculture industry. In the Central San Joaquin Valley, these jobs account for about 16 percent of all jobs, compared to 23 percent in Madera County and 21 percent in Tulare County.

FIGURE 2.5

Jobs in management, business, science, and arts occupations are most common in all but Kings County

Percent of current jobs in each major occupational category



Source: Analysis of 2022 Occupational Employment Survey data.

Notes: Occupational groupings correspond to preexisting categories in the American Community Survey.

Generally, workers living in disinvested areas in the Central San Joaquin Valley are underrepresented in the management, business, science, and arts occupations, and overrepresented in jobs in natural resources, construction, and maintenance (*data not shown*).

Most businesses in the Central San Joaquin Valley are small, concentrated in Fresno and Tulare Counties, and disproportionately owned by white residents

Most business establishments are concentrated in Fresno (64 percent) and Tulare (21 percent) Counties. Combined, Kings and Madera Counties are home to the remaining 15 percent of the region’s business establishments. This distribution is consistent with trends in overall employment in these areas. Approximately 90 percent of businesses in both the Valley CERF region and California are small

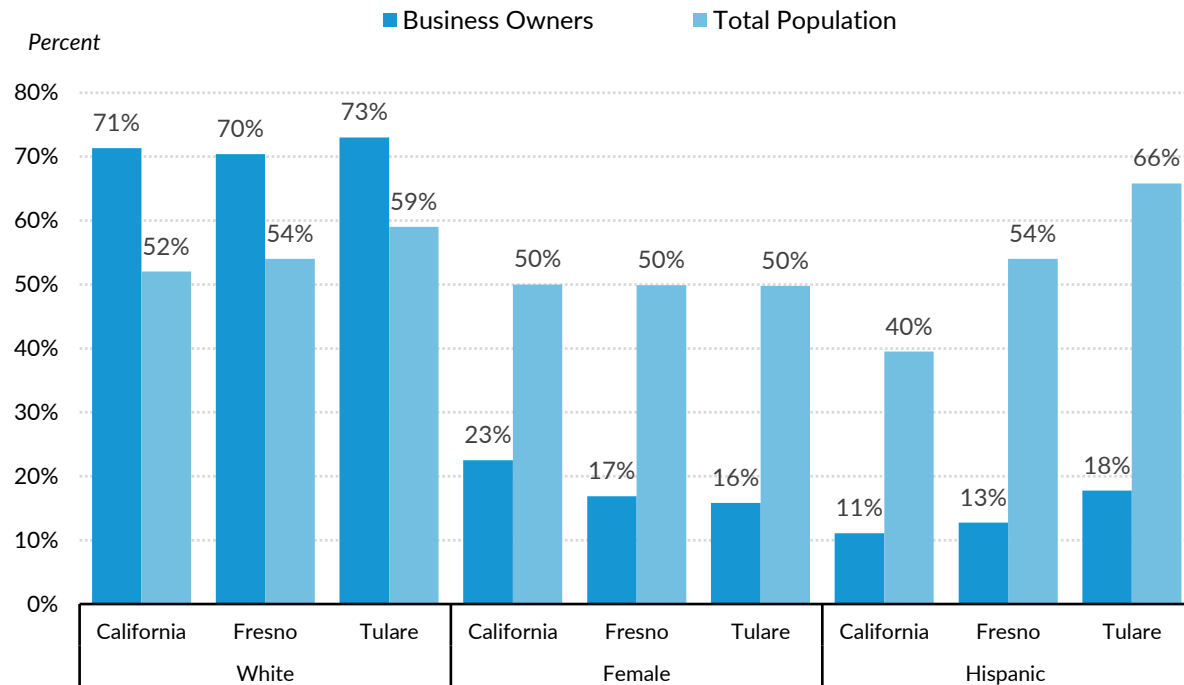
businesses (0-19 employees); fewer than 1 percent of businesses in California and the Valley CERF region have 500 or more employees.^{14,15}

The entry and exit rates of business establishments in the Central San Joaquin Valley are consistently lower than the state's, meaning that relatively fewer businesses open and close every year. These trends over time have been consistent, and overall, there are higher levels of entries than exits. Entry and exit rates are highest for establishments with 1-19 employees, meaning that there are higher rates of small business establishments opening and closing compared to medium- or large-sized business establishments.¹⁶ Businesses with zero employees were not included.

Comparing business owner demographics to the overall population in California and in the Central San Joaquin Valley, white business owners are significantly overrepresented compared to the total population (figure 2.6). In Fresno and Tulare counties Latinx and female business owners are significantly underrepresented.¹⁷ There are disparities in business ownership among Black and Asian people as well, with Black people being underrepresented in business ownership, and Asian people having higher rates of business ownership.¹⁸ Rates of Latinx business ownership are slightly higher in Fresno and Tulare than in California overall, although the disparities between the total Latinx population and the percentage of Latinx business owners are larger; female business ownership is lower.¹⁹

FIGURE 2.6

Women and Latinx residents are underrepresented among business owners in the Valley CERF region and in California



Source: Business data is from the US Census 2020 Annual Business Survey, comparison to total population is from the 5-year American Community Survey data from 2017-2021

Notes: Business data only reflects the Fresno and Visalia MSAs, which were the only regions in the study area for which sufficient data were available to report on all categories of White, Hispanic, and female business owners. Demographics here include everyone identified as White (Hispanic and non-Hispanic), though gaps are still evident looking at the Hispanic category.

Most large employers in the region are located in Fresno County, and are concentrated in public administration, education, health care, and social assistance industries

There are a total of 29 employers with more than 1000 employees in the region: 26 of those employers have between 1,000 and 4,999 employees, and the remaining 3 have between 5,000 and 9,999 (Table 2.1). These large employers are concentrated in Fresno County: twenty are located in Fresno County, 6 are located in Kings County, 2 are located in Tulare County, and 1 is located in Madera County.

These large employers are also concentrated in the same industries that drive employment in the region. Nine of the biggest employers are in education, health care, and social assistance, and

another 8 are in public administration. All three employers with over 5000 employees are also in those sectors: the Community Regional Medical Center in Fresno, State Center Community College in Fresno, and Naval Air Station Lemoore.

Five of the largest employers have some role in the food economy, including 2 in agriculture (Foster Farms and Pitman Family Farms), 2 in food manufacturing (Lion Dehydrators and Del Monte Foods), and one in retail (Stamoules Produce Company) (Table 2.1).

TABLE 2.1

The top 29 employers in the Valley CERF Region are concentrated in public administration, education, health care, and social assistance industries.

Number of employees	Employer (NAICS)	County	Industry
1,000-4,999	Air National Guard (813410)	Fresno	Other Services
	California State Univ Fresno (611310)	Fresno	Educational Services Sector
	Foster Farms (112340)	Fresno	Agriculture, Forestry, Fishing & Hunting
	Fresno County Sheriff's Office (922120)	Fresno	Public Administration and Government
	Fresno Police Dept (922120)	Fresno	Public Administration and Government
	Fresno Police Dept-Central (922120)	Fresno	Public Administration and Government
	Fresno VA Hospital Medical Ctr (622310)	Fresno	Health Care and Social Assistance
	Kaiser Permanente Fresno Med (622110)	Fresno	Health Care and Social Assistance
	Lion Dehydrators (311423)	Fresno	Manufacturing Sector
	Phebe Conley Art Gallery (459920)	Fresno	Retail Trade
	Pitman Family Farms (111998)	Fresno	Agriculture, Forestry, Fishing & Hunting
	Pleasant Valley State Prison (921120)	Fresno	Public Administration and Government
	St Agnes Medical Ctr (Medical Centers) (622110)	Fresno	Health Care and Social Assistance
	St Agnes Medical Ctr (Hospitals) (622110)	Fresno	Health Care and Social Assistance
	Stamoules Produce Co (445230)	Fresno	Retail Trade
	Taylor Communications (323111)	Fresno	Manufacturing Sector
	Teaching Fellows (561311)	Fresno	Administrative and Support Services
	Via West Insurance (524210)	Fresno	Finance and Insurance
	California State Prison (Govt Offices-State) (921120)	Kings	Public Administration and Government
	California State Prison (922140)	Kings	Public Administration and Government
	Del Monte Foods Inc (311999)	Kings	Manufacturing Sector
	Hanford Community Medical Ctr (621999)	Kings	Health Care and Social Assistance
	Kings County Admin (921120)	Kings	Public Administration and Government
Valley State Prison for Women (921120)	Madera	Public Administration and Government	
Tulare County Office of Edu Sicon (611110)	Tulare	Educational Services Sector	
Walmart Distribution Ctr (423990)	Tulare	Wholesale Trade	
5,000-9,999	Community Regional Medical Ctr (622110)	Fresno	Health Care and Social Assistance
	State Center Community College (611210)	Fresno	Educational Services Sector
	Naval Air Station Lemoore (928110)	Kings	Public Administration and Government

Source: This list of major employers was extracted from the America's Labor Market Information System (ALMIS) Employer Database, 2023 2nd Edition. Employer information is provided by Data Axel®, Omaha, NE, 800/555-5211. © 2023. All Rights Reserved.

Cost of Living and Current Local Jobs

In this section, we describe the minimum wage currently needed to live in the Central San Joaquin Valley, as well as how well local jobs currently meet this threshold, in which occupations they are concentrated, and how much education is typically required to access them. Data utilized for this analysis are described in Box 2.3.

BOX 2.3

Data and Methodology for Cost-of-Living Analysis

Wage benchmarks discussed in this chapter come from two different sources:

- **2-bedroom Housing Wage:** The National Low Income Housing Coalition looks at the cost of renting homes of different sizes across the country and publishes estimates of how much a person working full time would have to earn per hour to spend no more than 30 percent of their income on rent. As previously noted, the 30 percent benchmark is a common metric for assessing housing affordability. Because the average household in the Central San Joaquin Valley has 3 to 4 people, we focus on the 2-bedroom housing wage.
- **Living Wage:** The Massachusetts Institute of Technology (MIT) publishes a much more nuanced set of wage benchmarks for local counties which take into account estimates of eight typical expenses—food, childcare, healthcare, housing, transportation, civic engagement, broadband, and other necessities—as well as the cost of income and payroll taxes. There are different estimates, depending on household size and composition (for instance, number of children and number of working adults).

Average wages for detailed occupations from the 2022 Occupational Employment Survey described in the previous section are compared to the 2-bedroom housing wages for the 4 counties and the Central San Joaquin Valley as a whole; followed by a summary of the share of jobs that meet that threshold overall and in each major occupational category.

The typical education required for these 2-bedroom housing wage jobs is examined by bringing in data from the Employment Projections program at the Bureau of Labor Statistics. This helps with an understanding of how accessible these jobs are to workers living in disinvested tracts in the Valley CERF region. Also of note, experts disagree about how to define what it means to have a “good job,” which is a concept that can include a wide array of different elements include wages, benefits, working conditions, professional development, advancement, and so on. However, the most common ways of evaluating job quality currently look narrowly at wages and benchmark them to local costs of living.

The housing wage in the Central San Joaquin Valley is at least \$21 an hour for a 2-bedroom rental, but people may need to earn more if they are sole income providers and have children

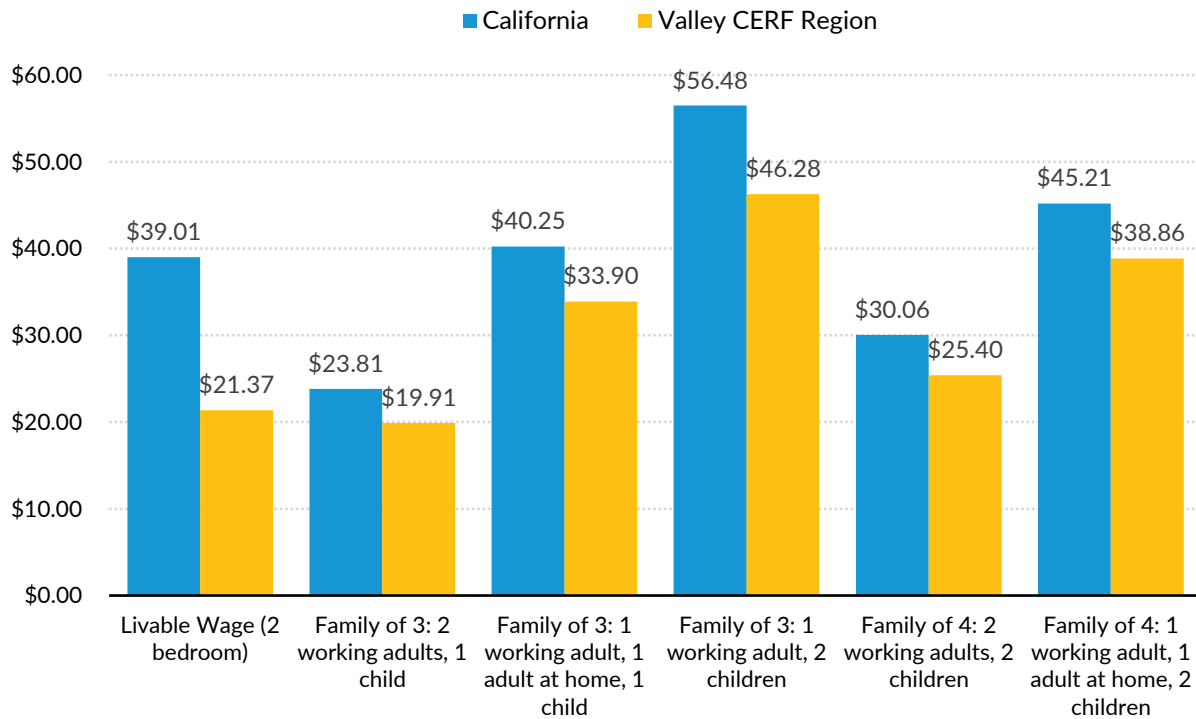
Because housing is relatively more affordable in the Central San Joaquin Valley than in the state as a whole, the 2-bedroom housing wage is significantly lower than the California average (figure 2.7). Working people in the region need to earn at least \$21 an hour, compared to at least \$39 in the state, though there is slight variation across counties. Within the region, Madera County has the highest housing wage at about \$23 an hour, and Tulare County the lowest at around \$19.

As noted in the previous section on disinvested communities in the Central San Joaquin Valley, lower housing costs do not necessarily translate to greater stability and wellbeing for people living in disinvested areas in the Valley CERF region because of their lower income. Roughly half of all renter households in these areas (51 percent) are rent-burdened, paying more than 30 percent of their household incomes on rent. This is on par with the average for the state of California (52 percent) with its much higher housing costs. In the Valley CERF region, renters in Fresno County are most likely to be rent-burdened (53 percent), while a slightly lower share of renters experience this challenge in Kings (46 percent) and Madera (47 percent) Counties.

FIGURE 2.7

At a minimum, workers in the Central San Joaquin Valley need to make about \$21 an hour to afford a 2-bedroom home, but may need to make much more to thrive

Dollar thresholds for the average housing wage and living wages in the Central San Joaquin Valley



Source: Weighted averages across the 4 counties of 2022 National Low Income Housing Coalition 2-bedroom housing wages; 2023 living wage calculations published by MIT

Moreover, it may take a much higher wage than the 2-bedroom housing wage for an individual or family unit to be financially stable in the region. As described in Box 2.3, living wage estimates that take into account eight typical expenses—food, childcare, health care, housing, transportation, civic engagement, broadband, and other necessities, as well as the cost of income and payroll taxes—can be much higher depending on family size and the number adults working in the household. For example, while the living wage for a family of three with two working adults and one child is comparable to the 2-bedroom housing wage of \$21.37, the living wage for a family of three with only one working adult and two children is more than double at \$46.28.

Jobs that pay at least the 2-bedroom housing wage make up less than half of the jobs in the Central San Joaquin Valley, are concentrated in Management occupations, and often require a 4-year degree

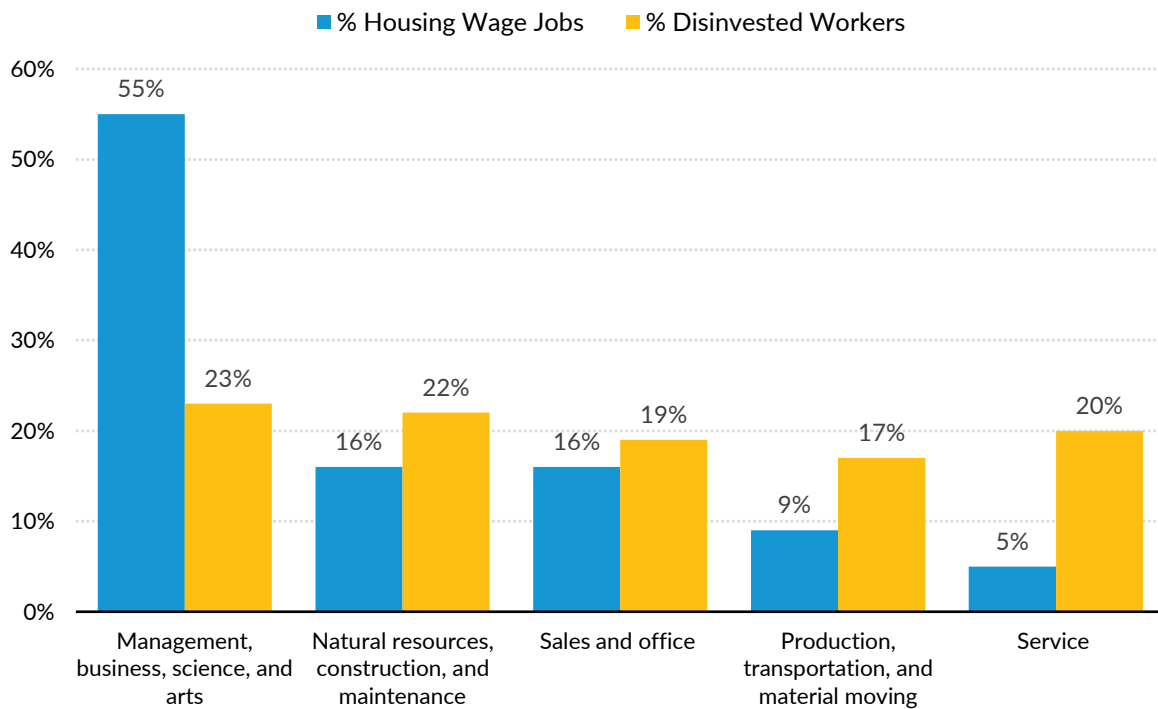
About 43 percent of jobs in the Central San Joaquin Valley have wages that meet or exceed the 2-bedroom housing wage, with variation across counties. Forty-four percent of jobs in Fresno and Tulare Counties have wages that meet or exceed the 2-bedroom housing wage; in Kings County it is 42 percent; and in Madera County it is 30 percent.

Housing wage jobs are not evenly distributed across all occupations; more than half are concentrated in management, business, science, and arts occupations (figure 2.8). As previously discussed, workers living in disinvested communities are underrepresented in these occupations; instead, workers living in disinvested communities are employed in a much wider set of occupations, many of which have very low concentrations of housing wage jobs. These patterns hold across all 4 counties.

FIGURE 2.8

Workers living in disinvested areas in the Central San Joaquin Valley work in occupations that have relatively low concentrations of jobs that meet or exceed the 2-bedroom housing wage

Percent of 2-bedroom housing wage jobs, and percent disinvested workers by occupational category



Source: Analysis of 2022 Occupational Employment Survey data, pooled across the 4 counties, along with analysis of the 2017–2021 ACS estimates for occupations in disinvested tracts

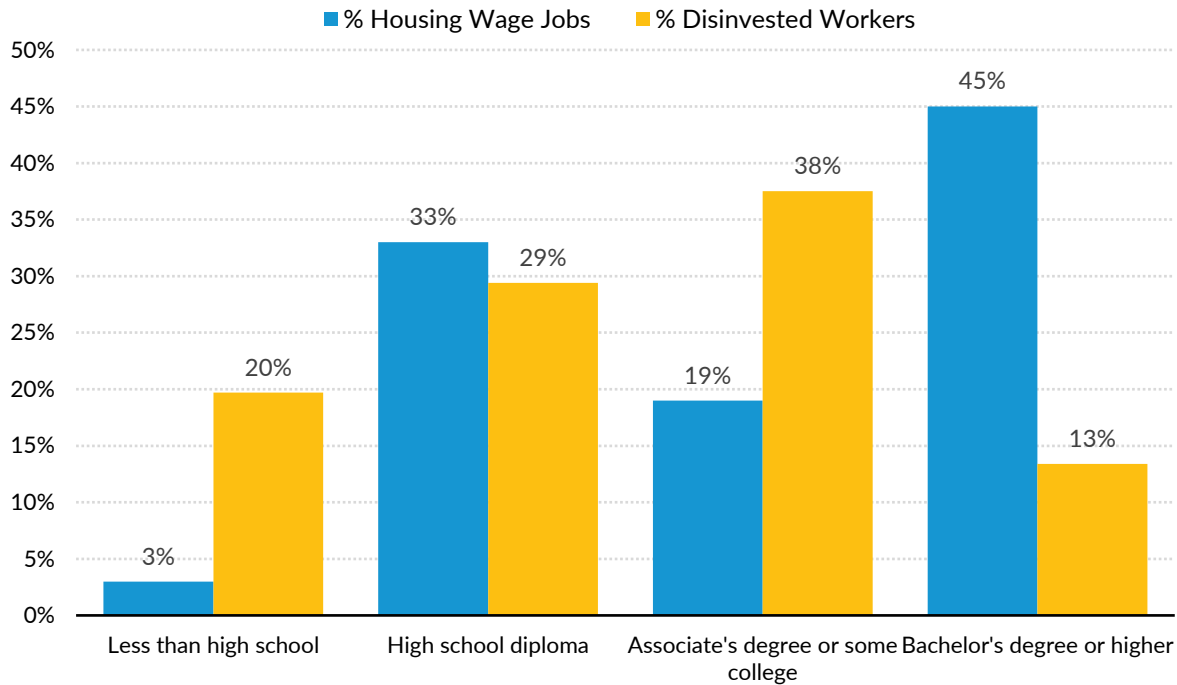
Notes: Median wages were benchmarked using a weighted average of the 2-bedroom housing wage for the study area.

There is also a clear divide between the level of education currently required for housing wage jobs and the educational attainment of adults living in disinvested areas. Nearly half of 2-bedroom housing wage jobs require at least a bachelor’s degree, but—as also noted in the Profile of Disinvested Communities in the Central San Joaquin Valley—most workers living in disinvested communities have an associate’s degree or less (figure 2.9). This trend holds across all 4 counties.

FIGURE 2.9

Nearly half of housing wage jobs in the Valley CERF region require at least a four-year degree, but most people living in disinvested neighborhoods have less education

Percent of housing wage jobs and disinvested workers by level of education



Source: Analysis of 2022 Occupational Employment Survey data, pooled across the 4 counties

Notes: Median wages were benchmarked with a weighted average of the 2-bedroom housing wage for the study area. These data were joined with education required at entry from the Employment Projections program at the Bureau of Labor Statistics. Data on educational attainment of disinvested workers comes from the 2017-2022 ACS 5-year estimates.

Forward-Looking Labor Market Analysis

This section explores how in industries, jobs, and occupations in the Central San Joaquin Valley are currently expected to evolve and change in the coming years, assuming no intervention.

BOX 2.4

Data and Methodology for Forward-Looking Labor Market Analysis

This section relies on two principal data sources, both available through the California Economic Development Department (EDD):

- **Long-Term Occupational Employment Projections:** The latest data available are projections for each of the four counties in the Valley CERF region from 2020-2030 and include the

employment in the reference year and the projected year, as well as the difference between the two for detailed occupations, education typically required at entry, and wages that are used to analyze how well future jobs meet the current basic 2-bedroom housing wage, described in an earlier section.

- **Long-Term Industry Employment Projections:** Data on projected employment are also available for the 2020-2030 window for each of the four counties by industry.

The starting point for these data comes from the Bureau of Labor Statistics Employment Projections program which generates estimates for the nation and states for 10-year windows that account for long-term structural trends of the economy resulting from factors like changes in consumer preferences that affect demand for goods and services or new technology that affects production practices. The EDD adjusts these data using local knowledge and generates county-level projections to guide regional and local planning processes such as CERF. The state does not explicitly state anywhere whether or not they account for anticipated federal investments, such as those expected from the Infrastructure Investment and Jobs Act and the Inflation Reduction Act. These federal investments will have an impact on local and regional economies, with the Valley CERF region being no exception. Possible implications are explored in the implications section.

See prior section for definitions of “industry,” “occupation,” and “jobs.” The term “new jobs” used in this section refers to the net positive difference between forecasted employment in 2030 and actual employment in 2020 within a given industry or occupation.

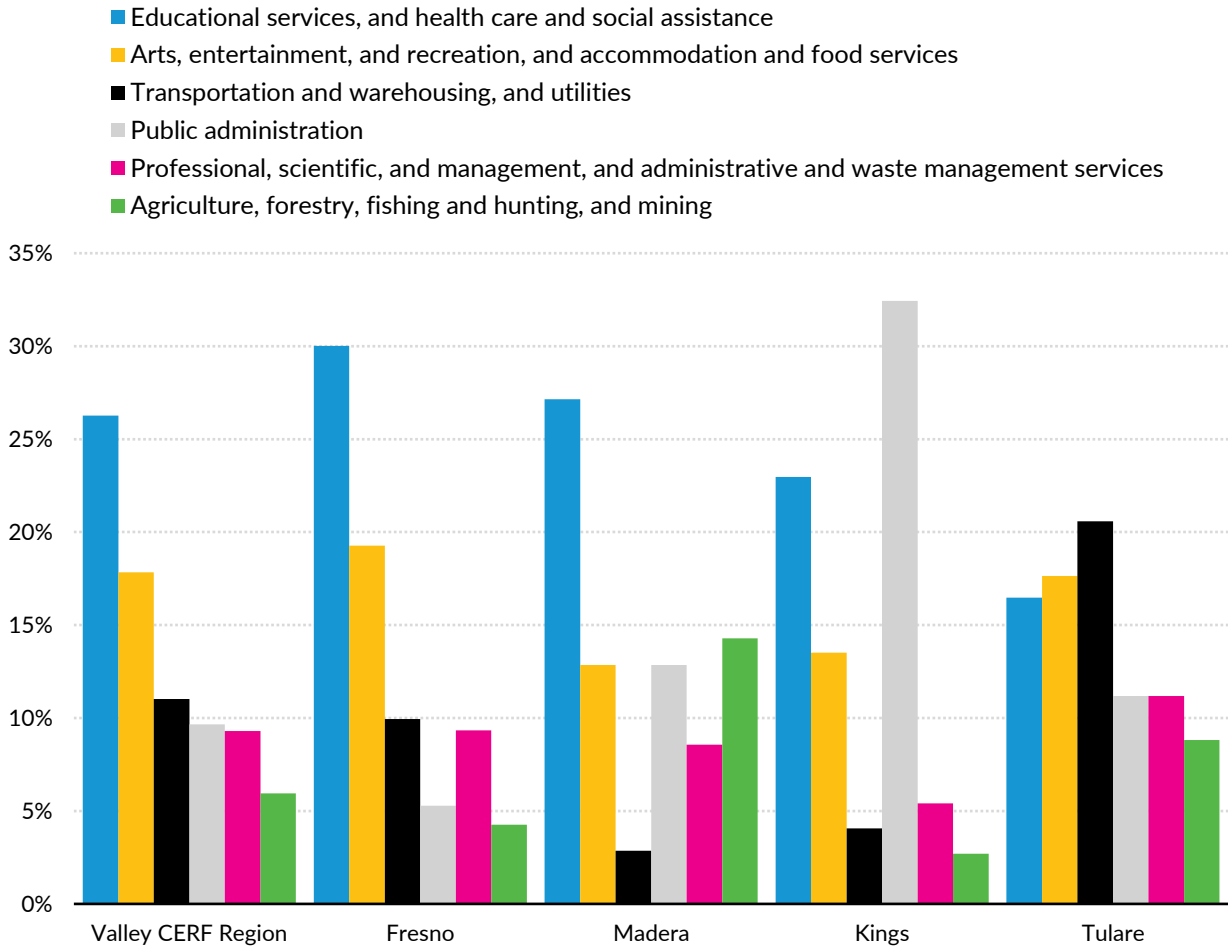
Overall, the largest share of currently forecasted new jobs in the Central San Joaquin Valley will be in educational, health care, and social services

As currently forecasted, the Central San Joaquin Valley can expect the most jobs growth in the educational, health care, and social services industry in coming years. Overall, around 80,000 new jobs are expected to be created in the Central San Joaquin Valley between 2020 and 2030 (figure 2.10). Nearly two-thirds (61 percent) of those jobs will be located in Fresno County, about a fifth (21 percent) in Tulare, and about 9 percent in Madera and Kings Counties respectively. This mirrors larger trends in the economy: the educational, health care, and social services industry is expected to add more jobs than any other nationwide.²⁰ However, in Kings County, government jobs (public administration) are forecasted to make up a larger share (32 percent) of new jobs than those in education, health care and social services (23 percent); in Tulare County, transportation and warehousing are currently expected to be the largest growth sector (20 percent).

FIGURE 2.10

Most of the currently forecasted job growth in the Central San Joaquin Valley is in the educational services, health care, and social assistance industry, but there are important differences across counties

Percent of forecasted new jobs by industry



Source: California EDD local calculations of long-term occupational employment projections, 2020-2030

Manufacturing jobs are expected to account for 2 percent of forecasted new jobs in the Valley CERF region, although this number is expected to be higher in Kings County. In Kings County, manufacturing jobs are expected to account for about 8 percent of new jobs, making it the 4th most important industry for growth in that county, which is reflective of the more prominent role manufacturing currently plays in Kings County than other counties in the Valley CERF region. As previously noted, data on jobs specifically in food manufacturing is limited to only the largest two counties: Fresno and Tulare. In Fresno County, about 300 new jobs are expected in food manufacturing between 2020-2030, amounting to about 38 percent of new manufacturing jobs, and

one percent of new jobs overall in the county. In contrast, there are no new jobs expected in this specific part of the manufacturing industry in Tulare County.

Data on projected new jobs in the oil and gas industry, are best captured as part of Mining and Logging (a subcategory under the larger industry umbrella of Agriculture, Forestry, Hunting, and Mining), and are similarly only available in Fresno and Tulare Counties. No new mining jobs are expected in Fresno County from 2020-2030, but an estimated 600 new jobs in this sector are expected in Tulare County, which represents about 4 percent of job growth in that county.

Despite these projections, and assuming no intervention, the current top five industries in the Central San Joaquin Valley will continue to be the top five in 2030: public administration (19 percent); followed by education, health care, and social services (17 percent); agriculture (14 percent); retail trade (9 percent); and arts, entertainment, and recreation, and accommodation and food services (8 percent).¹

Service occupations account for largest shares of expected job growth

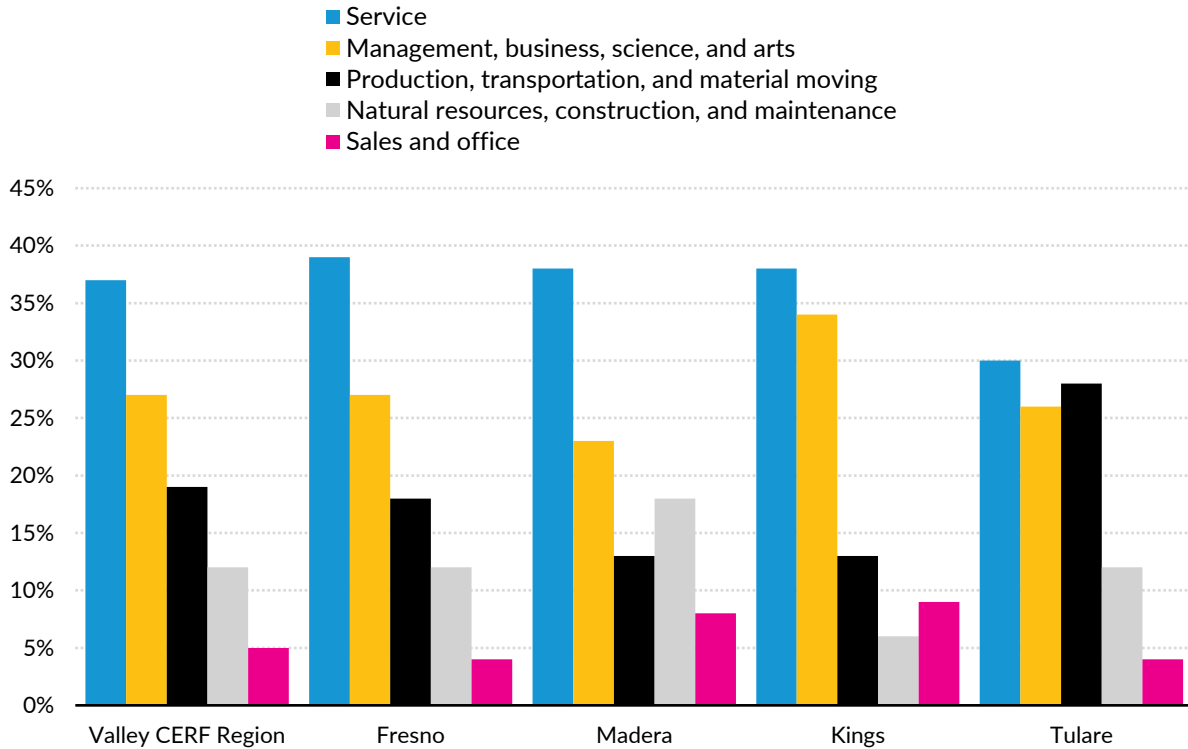
More than a third (37 percent) of new jobs forecasted to emerge between 2020 and 2030 are expected to fall into the category of service occupations, which include many healthcare support occupations (figure 2.11). Forecasted growth in production, transportation, and material moving occupations are relatively more prominent (28 percent) in Tulare County than in the Central San Joaquin Valley as a whole (19 percent); while forecasted jobs in natural resources, construction, and maintenance play a much bigger role in Madera County's job growth (18 percent) than the overall picture for the region (12 percent). Only about 5 percent of all new jobs in the region will be in sales and office occupations.

¹ Note that this distribution is different from the graph above, which displays the top industries for job growth, rather than the top industries forecasted in 2030.

FIGURE 2.11

Service occupations account for the largest share of projected job growth across the Central San Joaquin Valley

Percent of new jobs by occupational category



Source: California EDD local calculations of long-term occupational employment projections, 2020-2030

In 2030, the overall picture of the jobs is forecasted to be similar to what it looks like right now, with some small differences. Jobs in management, business, science, and arts occupations are forecasted to remain the most numerous (28%), followed by service jobs (23%). Jobs in natural resources, construction, and maintenance (18%) are expected to see an increase in the share of employment slightly (by 2 percentage points), and sales and office jobs (17%) and production, transportation, and material moving jobs are expected to decrease slightly (by 1 percentage point).

A little less than half of forecasted new jobs will pay at least the current 2-bedroom housing wage, yet may improve the overall landscape of housing wage jobs in the Central San Joaquin Valley by 2030

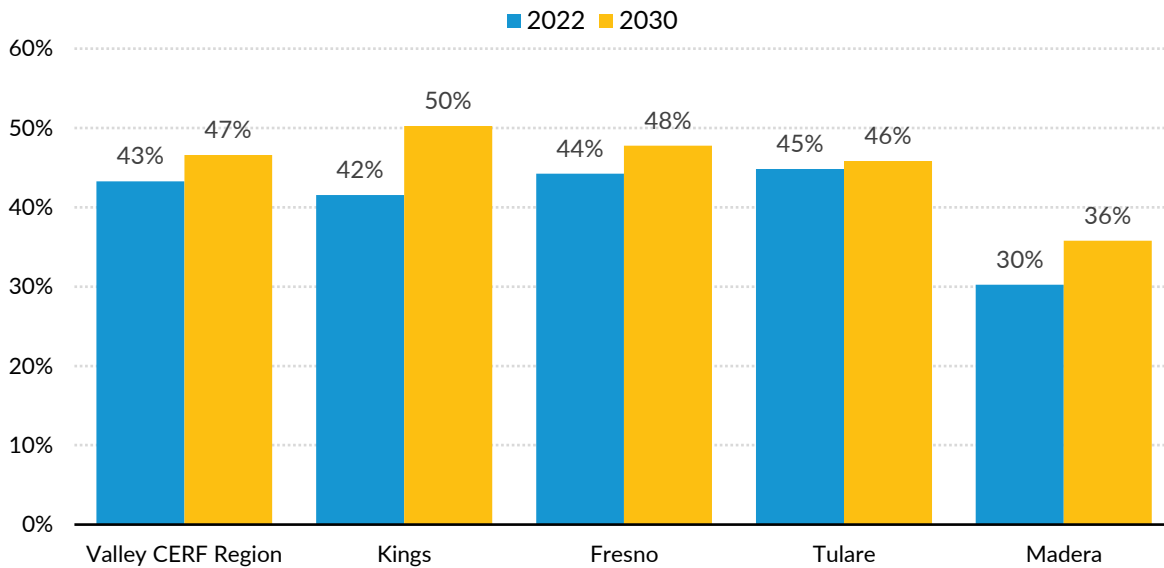
In the Central San Joaquin Valley as a whole, about 43 percent of forecasted new jobs are ones that meet or exceed the current 2-bedroom housing wage threshold. However, the overall trend masks

some interesting differences. In Kings County, where significant growth will occur in government jobs, and in Tulare County, where growth is projected to occur in transportation, warehousing, and utilities jobs, at least half of new jobs are expected to pay a wage that meets or exceeds the current housing wage. In contrast, a much smaller share of jobs is expected to meet or exceed the current 2-bedroom housing wage threshold in Fresno (42 percent) and Madera (31 percent).

Overall, the new jobs added may improve the overall employment landscape in terms of wages, if we assume that wages and housing costs change similarly in coming years. The overall share of jobs meeting the 2-bedroom housing wage threshold is expected to increase from 43 percent in 2022 to 47 percent in 2030. The biggest changes occur in Kings and Madera Counties where the share of housing wage jobs is expected to increase by 8 and 6 percentage points respectively (figure 2.12).

FIGURE 2.12

The share of jobs meeting the 2-bedroom housing wage may increase slightly by 2030 if housing costs and wages change similarly over time, with the biggest gains in Kings and Madera counties



Source: Analysis of data from the 2022 Occupational Employment Survey (OES) and the California EDD local calculations of long-term occupational employment projections, 2020-2030 in comparison to current 2-bedroom housing wages from the National Low Income Housing Coalition.

New 2-bedroom housing-wage jobs tend to be in the same types of occupations as current housing wage jobs, and so require similar levels of education

As with the current distribution of housing-wage jobs, new housing wage jobs are disproportionately distributed (58 percent) in management, business, science and arts occupations. As previously noted in the analysis of the current jobs landscape, workers living in disinvested areas are underrepresented in these types of occupations. About 47 percent of new housing wage jobs require at least a bachelor's degree, while only about 13 percent of workers living in disinvested areas have this level of education.

Many of the projected new jobs have lower barriers to entry, but do not pay the 2-bedroom housing wage

Within the top 10 occupations forecasted for new job growth (not shown), the greatest number of opportunities are for home health care aide positions—more than 10,000 are expected in a ten-year span. That is more than the number of opportunities in the next three forecasted growth occupations combined, which are fast food workers, heavy tractor-trailer drivers, and laborers and freight, stock, and material movers. Eight of the top ten occupations typically require no more than a high school education, but none of these eight pay wages that meet the current 2-bedroom housing wage for the region.

Other forecasted jobs are in occupations that do promise to provide current 2-bedroom housing wages. Of the 16 occupations with at least 500 new jobs forecasted between 2020 and 2030 that pay the current 2-bedroom housing wage (Table 2.2), about a quarter of these occupations have relatively low barriers to entry: motor vehicle operators and construction laborers (no formal education required); and maintenance and repair workers as well as sales representatives in wholesale and manufacturing (high school diploma required). Only two fall into a middle category, requiring a short-term credential or certification: heavy and tractor-trailer truck drivers and teaching assistants. The remaining 10 occupations are all in management, business, science, and arts occupations and require at least a 4-year degree.

TABLE 2.2

2-Bedroom Housing Wage Occupations with 500+ new jobs projected from 2020-2030 in the Central San Joaquin Valley

New Jobs	Occupation	Group	Typical Education Required at Entry
3140	Heavy and Tractor-Trailer Truck Drivers	Production, transportation, and material moving	Postsecondary nondegree award
1850	Registered Nurses	Management, business, science, and arts	Bachelor's degree
1240	General and Operations Managers	Management, business, science, and arts	Bachelor's degree
1110	Teaching Assistants, Except Postsecondary	Management, business, science, and arts	Some college, no degree
1060	Elementary School Teachers, Except Special Education	Management, business, science, and arts	Bachelor's degree
780	Medical and Health Services Managers	Management, business, science, and arts	Bachelor's degree
720	Motor Vehicle Operators, All Other	Production, transportation, and material moving	No formal educational credential
710	Construction Laborers	Natural resources, construction, and maintenance	No formal educational credential
670	Maintenance and Repair Workers, General	Natural resources, construction, and maintenance	High school diploma or equivalent
670	Project Management Specialists and Business Operations Specialists, All Other	Management, business, science, and arts	Bachelor's degree
580	Secondary School Teachers, Except Special and Career/Technical Education	Management, business, science, and arts	Bachelor's degree
550	Industrial Production Managers	Management, business, science, and arts	Bachelor's degree
550	Social and Community Service Managers	Management, business, science, and arts	Bachelor's degree
550	Food Service Managers	Management, business, science, and arts	Bachelor's degree
530	Sales Representatives, Wholesale and Manufacturing	Sales and office	High school diploma or equivalent
500	Teachers and Instructors, All Other, Except Substitute Teachers	Management, business, science, and arts	Bachelor's degree

Source: California EDD local calculations of long-term occupational employment projections, 2020-2030

About half of the job losses in coming years will be in sales and office occupations

Despite the fact that jobs growth is expected in all larger occupational categories, there are some more specific occupations that, without intervention, will see job losses in the coming years. Overall, there are 106 different occupations that are expected to see declines in employment by 2030, with jobs lost totaling about 3,550. More than half (52 percent) of these jobs are in 46 sales and office occupations and nearly a third (29 percent) in 24 different management, business, science and art

occupations. The other major occupational categories make up much smaller shares, ranging from 5 to 6 percent of total job losses.

These trends are also present in the 10 occupations with the largest projected jobs losses from 2020-2030 in the Central San Joaquin Valley (Table 2.3). Seven of them are sales and office occupations, and the rest are management ones. Generally, these positions have lower barriers to entry, and will likely displace people with a high school diploma or less. The top two occupations with the most forecasted jobs losses pay wages that meet or exceed the 2-bedroom housing wage, yet don't require more than a high school diploma or equivalent.

TABLE 2.3

Top 10 occupations expected to see the greatest job losses from 2020-2030 in the Central San Joaquin Valley

Rank	Job Losses	Occupation	Occupational Group	Typical Education Required at Entry	2-Bedroom Housing Wage
1	-480	Farmers, Ranchers, and Other Agricultural Managers	Management, business, science, and arts	High school diploma or equivalent	Yes
2	-240	Secretaries & Admin Assts, Except Legal, Medical, and Exec	Sales and office	High school diploma or equivalent	Yes
3	-220	Tax Examiners and Collectors, and Revenue Agents	Management, business, science, and arts	Bachelor's degree	Yes
4	-180	Executive Secretaries and Executive Administrative Assistants	Sales and office	High school diploma or equivalent	Yes
5	-170	Data Entry Keyers	Sales and office	High school diploma or equivalent	No
6	-170	Tellers	Sales and office	High school diploma or equivalent	No
7	-130	Switchboard Operators, Including Answering Service	Sales and office	High school diploma or equivalent	No
8	-90	Telemarketers	Sales and office	No formal educational credential	No
9	-70	Chief Executives	Management, business, science, and arts	Bachelor's degree	yes
10	-70	File Clerks	Sales and office	High school diploma or equivalent	No

Source: California EDD local calculations of long-term occupational employment projections, 2020-2030

Public Health Analysis

The Central San Joaquin Valley faces significant threats to community health from climate change, environmental hazards, and economic inequities. Environmental degradation including from agricultural practices, air pollution from wildfires, worker exploitation, and health care system shortages are just a few of the factors that contribute to inequitable health outcomes for communities in the Central San Joaquin Valley. Deeply rooted systemic inequities by race, ethnicity, and other characteristics further compound health challenges among the region's most marginalized populations.

The public health analysis that follows describes the ways in which climate, environment, and economic activity intersect in the Central San Joaquin Valley to shape community health, and provides an overview of major chronic conditions and diseases in the region as a baseline for understanding the current state of community health. Data utilized for this analysis are described in Box 3.1.

BOX 3.1

Data, Methodology, and Limitations

Descriptive statistics on the prevalence of select chronic conditions and diseases in California overall and in Fresno, Kings, Madera, and Tulare counties are provided. To do so, several data sources - listed below - are drawn on.

- **2022 Centers for Disease Control and Prevention PLACES:**²¹ The 2022 PLACES data release draws on data from the 2020 and 2019 Behavioral Risk Factor Surveillance Survey (BRFSS) to produce sub-state estimates of select health-related data. The BRFSS is a nationally representative survey of adults ages 18 and older covering health-related behaviors, chronic conditions, and preventive care use. Estimates using PLACES data in this public health analysis are all age-adjusted.
- **2021 Infectious Diseases report from the California Department of Public Health:**²² This report provides case counts and rates of key infectious diseases reported to public health departments in California, overall and by county and gender.
- **2019 Asthma Hospitalization Report from the California Department of Health Care Access and Information Patient Discharge Data:**²³ Data for this report include hospitalizations from all licensed hospitals in California and are available by county, age, and race and ethnicity. Estimates with low statistical reliability are suppressed.

- **2019-2021 California Health Interview Survey (CHIS) from AskCHIS:**²⁴ To obtain county-level disaggregated data for select chronic conditions, we use the University of California Los Angeles (UCLA) online query system, AskCHIS. This query system draws from UCLA's California Health Interview Survey, a survey representative of the California population. For this analysis, we rely on CHIS estimates for adults ages 18 and older. Estimates drawing on CHIS are not age-adjusted.

A literature scan and review of community health assessments for the four Central San Joaquin Valley counties also inform the overview of climate change and socioeconomic factors related to each chronic condition and disease examined; they also inform an understanding of the intersection of climate, economy, and health in the Central San Joaquin Valley. We also interviewed representatives from the public health departments at Madera, Tulare, and Kings counties in late June and early July of 2023.

There are a few limitations to consider in relying on this analysis to assess the extent of health challenges related to climate-related outcomes in the Central San Joaquin Valley. First, the Behavioral Risk Factor Surveillance Survey data that is relied on primarily comes from self-reported information, which is subject to recall bias and may not always accurately reflect individuals' health conditions. Moreover, the BRFSS excludes certain populations, including individuals without landline or cell phone access, potentially leading to underrepresentation of specific demographic groups. This limitation in sampling may result in an incomplete understanding of health disparities across different communities. Additionally, the information available often lacks the granularity necessary to comprehensively assess the impact of climate-related health outcomes on specific populations.

Effects of Economic Activity and Industry on the Environment and Public Health

Agricultural and other industry practices in the Central San Joaquin Valley have led to environmental degradation, including water pollution, soil degradation, and chemical runoff

The Central San Joaquin Valley is an example of the strong intersections between economic systems, industries, environmental health, public health, and inequity. The economic foundation of the region, being predominantly agricultural, affects both health and equity in several ways. Intensive (industrial) farming practices in the region lead to water pollution, soil degradation, and chemical runoff due to the heavy reliance on irrigation, fertilizers, and pesticides (London et al. 2021; Tariqi and Naughton 2021; Fernandez-Bou et al. 2021). A large body of research has documented the depletion and contamination of local resources by local economic activity and industry, particularly related to water

scarcity, water contamination, and air pollution. These issues are especially acute in the west side of the Valley CERF region, which is dominated by large-scale corporate agribusiness (London et al. 2013). Lower-income, predominantly Latinx residents of the Valley CERF region face both water scarcity during droughts and contamination of the available water with arsenic, pesticides, and large volumes of animal waste and other pollutants (Del Real 2019; Greene 2021; London et al. 2021; Fernandez-Bou et al. 2021).

Due to agricultural and petrochemical activities that pollute the air, residents in the Central San Joaquin Valley are at higher risk of respiratory illness and other health issues than the rest of the state.

There are many sources of air pollution related to agribusiness and petrochemical industries in the Central San Joaquin Valley, including nitrogen oxides (NOx) from dairies; particulates and other pollution from vehicle emissions; ammonia from cattle; and pesticide drift, dust, and burning from agriculture (Ortiz-Partida et al. 2020; Fernandez-Bou et al. 2021; Flores-Landeros et al. 2022). In 2019, average air pollution, measured by average daily density of fine particulate matter in micrograms per cubic meter (PM2.5), was up to 81.7 percent higher in Central San Joaquin Valley counties (11.7 in Fresno County, 12.3 in Kings County, 10.0 in Madera County, and 12.9 in Tulare County) compared with the state as a whole (7.1 in California) (University of Wisconsin Population Health Institute 2023).

Central San Joaquin Valley residents are at higher health risk for cancer, birth complications, and other adverse health conditions due to chronic low-level pesticide exposure and water contaminants.

The Central San Joaquin Valley also faces health risks from chronic low-level pesticide exposure, water contaminants, and destructive land use in the agribusiness sector. Chronic low-level pesticide exposure has been linked to childhood cancers (Brender, Maantay, and Chakraborty 2011; Buser, Lake, and Ginier 2022); other water contaminants present in the Central San Joaquin Valley are also associated with health hazards (Bangia et al. 2020; Tariqi and Naughton 2021; Balazs et al. 2011; Balazs et al. 2012). Runoff from chemical fertilizers used in farm fields and livestock facilities in the Valley CERF region contaminates drinking water and has been linked to cancer, birth complications, and other adverse health effects (Ortiz-Partida et al. 2020; Tariqi and Naughton 2021). Recent research shows that the Valley CERF region has the highest concentrations of water pollutants in

California (Pace et al. 2022; Bangia et al. 2020). Poor waste management practices also pose risks to human health and ecosystems due to improper disposal and release of hazardous substances into the environment (Office of Environmental Health Hazard Assessment (OEHHA) 2022).

Central San Joaquin Valley residents are at risk of cardiovascular disease and other adverse health conditions related to hazardous noise from oil industry machinery.

Community-based research in the Central San Joaquin Valley has highlighted community members' concerns about exposure to hazardous noise and air pollution from "pump jacks," which are mechanical devices used in the oil industry to extract oil from underground wells and are known for producing excessive noise and emitting pollutants into the air during their operation (Flores-Landeros et al. 2022). Excessive or chronic noise, often overlooked, poses a significant health hazard and has been linked by the World Health Organization to adverse effects such as impaired cognitive performance; increased risk of cardiovascular disease including hypertension, ischemic heart diseases, and stroke; and disrupted sleep patterns such as tachycardia, body movements, and awakenings (Basner et al. 2014; Baumgaertner et al. 2023).

Labor exploitation and infrastructure inequities in disinvested communities increases health risks and climate vulnerability.

Economic activity has driven housing sprawl and destructive land use (OEHHA 2022; London et al. 2013), as well as exploitative labor practices, which are often related to lack of citizenship rights (Fairbanks 2021; London et al. 2021; Minkoff-Zern 2014). Transportation and urban development in the Central San Joaquin Valley have also contributed to both air pollution and greenhouse gas emissions, thereby worsening respiratory issues and further exacerbating health inequities in the region (OEHHA 2022). Disinvested communities in the Central San Joaquin Valley, particularly those in rural areas, often lack essential infrastructure such as access to clean drinking water, sewage facilities, green spaces, grocery stores, public electrification, and health services. The absence of these basic services further amplifies their vulnerability to climate change impacts, making them among the most climate-vulnerable communities in the United States (Fernandez-Bou et al. 2021).

Intersection of Public Health with Climate Change, Environmental Inequities, and Economic Activity

The Central San Joaquin Valley faces significant health threats due to climate change, including heat-related illnesses, Valley Fever, vector-borne diseases, and exposure to wildfire smoke, which worsen pre-existing public health issues such as those caused by poor air and water quality.

The Central San Joaquin Valley faces significant direct health threats from climate change, including heightened risks of heat-related illness and death, occupational heat-related illness, Valley Fever (coccidioidomycosis), vector-borne diseases, and exposure to wildfire smoke, as well as indirect threats due to reduced air and water quality resulting from climate change (OEHHA 2022). Moreover, the region's disinvested communities, where nearly two-thirds of the population resides, as detailed in the Profile of Disinvested Communities section above, bear a disproportionate burden from the health consequences associated with climate-related hazards (Fernandez-Bou, Ortiz-Partida, Classen-Rodriguez, et al. 2021; Méndez-Barrientos et al. 2022; Tariqi and Naughton 2021).

Projected increases in average maximum temperatures, as noted in county-level climate reports from state government agencies, pose threats such as occupational heat-related illness, heat exhaustion, heat stroke, and heat cramps and other heat-related conditions, many of which have been increasing rapidly in recent years (OEHHA 2023). Poor air and water quality, which are both already serious public health issues in the Valley, are expected to worsen in coming years due to climate change (Ortiz-Partida et al. 2020; Fernandez-Bou et al. 2021; Flores-Landeros et al. 2022). For example, the Central San Joaquin Valley's water issues, including excessive nitrate levels, are expected to be aggravated by the effects of climate change on water availability and quality (Fernandez-Bou et al. 2021; OEHHA 2022). Increased wildfire frequency and intensity due to climate change (Turco et al. 2023) have led to greater exposure to hazardous wildfire smoke, contributing to respiratory illnesses and cancer (OEHHA 2023; Korsiak et al. 2022; Burke et al. 2021; Wen et al. 2023; Fernandez-Bou et al. 2021).

Climate change also exacerbates other health threats such as Valley Fever and vector-borne diseases such as West Nile Virus, because changes in temperature and rainfall patterns, combined with the existing burden of air pollution, create conditions conducive to the spread of coccidioidomycosis and the proliferation of disease-carrying vectors (OEHHA 2023; Fernandez-Bou et al. 2021; OEHHA 2022). The health risk is increased for outdoor workers (CDPH 2023a), such as agricultural workers, who are more likely to live in disinvested communities.

Deep-rooted economic and racial disparities in the Central San Joaquin Valley, aggravated by the climate crisis, lead to disinvested communities shouldering a disproportionate share of health impacts from climate-related hazards.

In the Central San Joaquin Valley, the climate crisis intertwines with deep-rooted economic and racial or ethnic inequities. Disparities in access to necessary amenities such as shade and air conditioning can have life-threatening consequences in the face of escalating heatwaves (OEHHA 2023; Fernandez-Bou et al. 2021; OEHHA 2022). Disinvested communities in the region experience the state's highest pollution burden, emphasizing the connection between environmental justice and climate change. Deeply rooted historical inequities have left Latinx, lower-income, and other disinvested communities in California's Central San Joaquin Valley disproportionately vulnerable to climate change impacts and environmental hazards such as pollution (Fernandez-Bou et al. 2021). Addressing these systemic challenges requires significant investment in infrastructure and basic services, which are crucial for improving community resilience to climate change (Fernandez-Bou et al. 2021).

Climate and environmental risks are amplified by systemic racism and economic disparities, as social determinants of health such as low income, inadequate education, poor health care access, and low-quality housing create a complex web of vulnerabilities disproportionately affecting socially disadvantaged communities.

As described in the literature reviewed, economic systems and disparities manifest in environmental and working conditions in the Central San Joaquin Valley that affect health, as lower wage and marginalized populations are exposed to unsafe environments and unsafe working conditions, while a lack of access to healthcare further marginalizes these populations. Climate and other environmental risks are further exacerbated by the intersection with systemic racism and economic disparities. Historical and persistent systemic racism, starting with the genocide of Native American communities, has left a lasting system of structural racism in the region (Madley 2017). More recently, rural colonies that were once havens for Black farmworkers and are now predominantly Latinx, such as Lanare in Fresno County, Matheny Tract in Tulare County, and Fairmead in Madera County, have been among the first to face water shortages during droughts (Del Real 2019; Greene 2021; London et al. 2021). These communities often lack access to clean drinking water, a fundamental right and necessity for human health, with the available water often containing arsenic or other pollutants. Food insecurity is another concern for the region. In California overall, 9 percent of people report food insecurity,

compared to 14 percent in Fresno County, 13 percent in Kings County, 13 percent in Madera, and 15 percent in Tulare County (University of Wisconsin Population Health Institute 2023). Furthermore, systemic issues like low wages and racism contribute to financial instability, creating conditions that prevent many families from achieving financial resilience to insulate their families from these risky environments (Ortiz-Partida et al. 2020; Fernandez-Bou et al. 2021; Flores-Landeros et al. 2022). The intersecting social determinants of health, including low-income, low-quality education, poor health care access, and low-quality housing, thus create a complex web of vulnerabilities that disproportionately impact socially disadvantaged communities in the Valley (Ortiz-Partida et al. 2020; Fernandez-Bou et al. 2021; Flores-Landeros et al. 2022).

Health System Limitations and Health Challenges

In the Central San Joaquin Valley, the share of people with private health insurance coverage is lower and the share of people with public health insurance coverage is higher relative to the state average, particularly in disinvested areas.

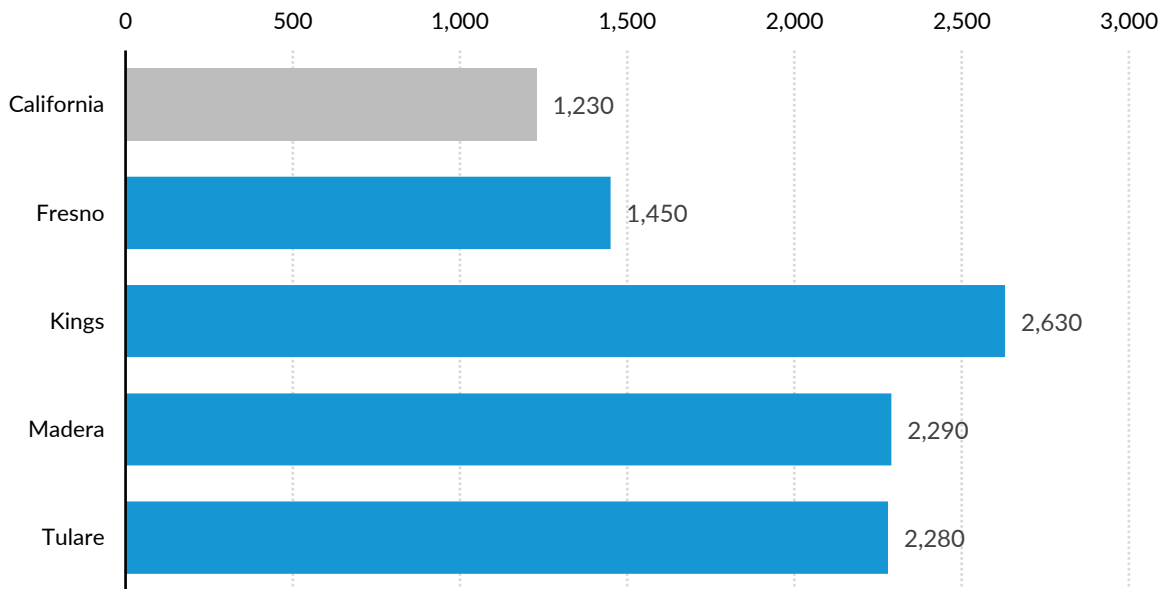
In the Central San Joaquin Valley, differences and disparities in health insurance and health care accessibility compared with statewide measures are well documented. The Central San Joaquin Valley population has lower rates of private insurance coverage (49.3 percent), and higher rates of public coverage (47.8 percent), with 7.3 percent of the population uninsured compared with the statewide rates of 62.3 percent with private insurance and 35.9 percent with public coverage, and 7.1 percent uninsured. This trend is more pronounced in the region's disinvested areas, where private insurance coverage is at just 41.0 percent and public coverage 54.1 percent, with 8.5 percent of the population uninsured (ACS 2017-2021, as analyzed in the Profile of Disinvested Communities section).

The Central San Joaquin Valley's health care landscape has critical shortages and needs, highlighting the urgent need for strategic interventions to enhance health care access.

The Valley CERF region faces significant challenges in healthcare access, characterized by higher population-to-physician ratios, limited availability of hospital beds, and variations in the accessibility of community health centers. The counties in the Central San Joaquin Valley have higher ratios of population to physicians than the rest of California, suggesting limited access to health care. Kings County, for example, has the highest ratio at 2,630 patients per primary care physician, more than

double the state average of 1,230 (figure 3.1). The other Central San Joaquin Valley counties, Fresno (1,450:1), Madera (2,290:1), and Tulare (2,280:1), also have substantially worse access to primary care physicians, and these patterns hold for other providers as well, including for dental care and mental health care (University of Wisconsin Population Health Institute 2023). From 2015 to 2021, California had the 6th lowest number of hospital beds per 1,000 residents in the country, with a rate of 1.87 beds per 1,000 people (KFF 2023). Notably, the counties of the Central San Joaquin Valley had lower rates than average, and some were among the lowest in the state on this measure—in 2018, Fresno had 1.56 beds per 1,000 people, Kings had 1.64, Madera had 0.67, and Tulare had 1.28 (Urban Institute 2020). This suggests that residents in these counties are likely to face challenges in accessing hospital care, potentially leading to difficulties in receiving adequate healthcare services when needed. Interviewees further noted that access to specialty care, such as behavioral health, is limited for residents in the region.

FIGURE 3.1
Number of People Per Physician in California and the Counties of the Valley CERF Region



Source: County Health Rankings & Roadmaps, University of Wisconsin Population Health Institute 2023.

The Central San Joaquin Valley ranked somewhat better on access to community health centers, including Federally Qualified Health Centers (FQHCs), FQHC Look-Alikes, Migrant Health Centers, Rural and Frontier Health Centers, and Free Clinics, which provide primary health care

services to all residents including those who are uninsured. Across California, there are 2.74 FQHCs per 100,000 people, while Tulare County has a much higher rate at 6.78 FQHCs per 100,000 people; Fresno County has 2.58, Kings County has 6.54, and Madera County has 4.46 (Hospital Council of Northern & Central California 2019). Despite the relatively higher availability of FQHCs in the region compared to California, interviewees noted that clinics can still face challenges with attracting and retaining providers to the region, especially in light of low Medi-Cal reimbursement rates. Unincorporated areas in the Central San Joaquin Valley can face even higher health access issues. Such communities might have access to FQHCs, but they still face shortages of pharmacies and hospitals leading residents of those communities to travel long distances to access health care services.

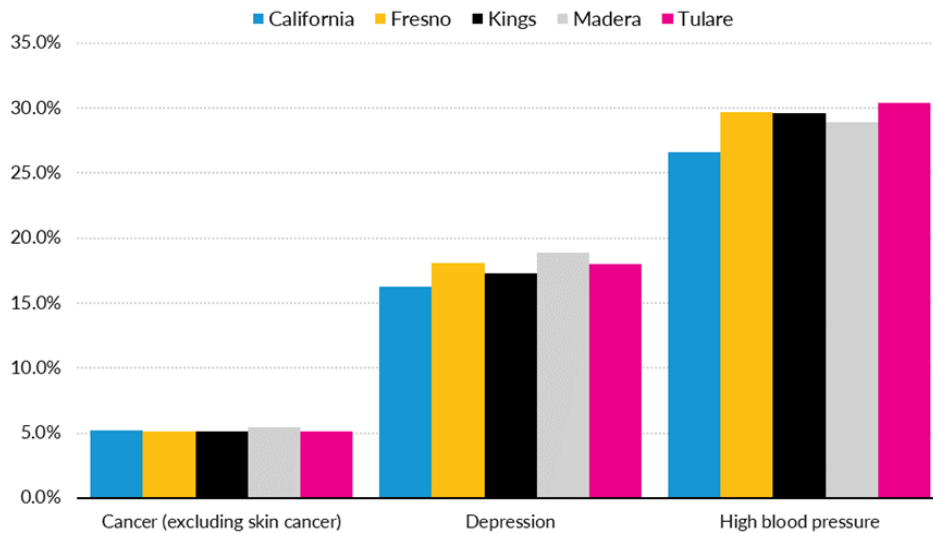
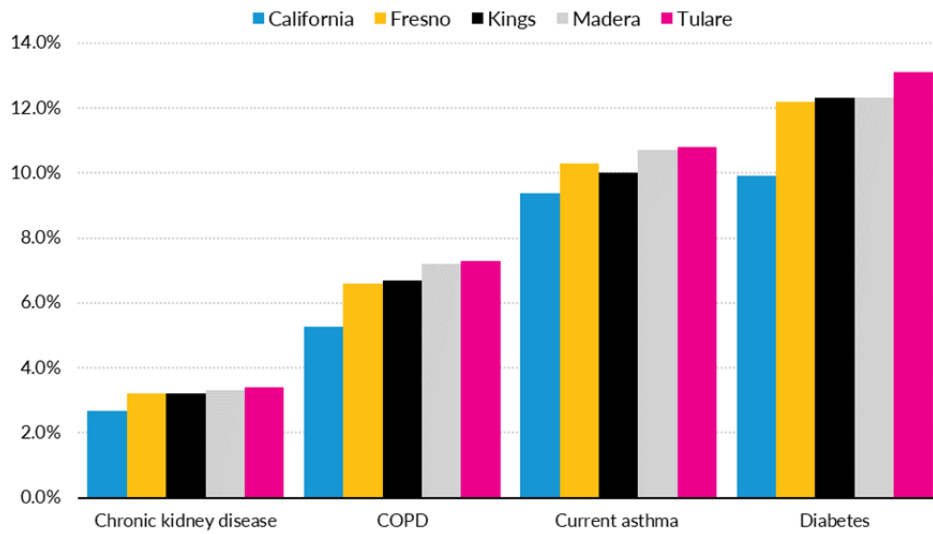
The availability of comprehensive data on the extent of availability of culturally and linguistically effective health care providers is limited. However, community health assessments for the region show that residents in the Central San Joaquin Valley have voiced concerns about the lack of culturally sensitive health care services and providers who speak languages other than English, which have contributed to reduced access to care (Hospital Council of Northern & Central California 2019). For example, non-English speaking community members described relying on children as interpreters, which raises the risk of delivering inaccurate medical information (Ibid) among other concerns. Additionally, interviewees noted that some patients, such as the LGBTQ+ population, often travel to cities in the region where more culturally sensitive services are available.

Chronic Conditions and Diseases

The climate, environmental, and economic inequities present in the Central San Joaquin Valley, along with significant health care access issues, increase the risk of poor health for residents in the area. To better understand how these intersecting challenges have and will continue to affect health outcomes, we provide a snapshot of the prevalence of major chronic conditions and diseases for the Central San Joaquin Valley population with disaggregation by race, ethnicity, gender, and age where data are available. As noted in Box 3.1, estimates in this section draw from the BRFSS and other California data sources. Findings highlight the higher prevalence of a majority of chronic conditions and diseases in the Central San Joaquin Valley counties compared to California as a whole (figure 3.2)—nearly all the chronic conditions and diseases examined in this analysis, with the exception of cancer, were more prevalent in the Central San Joaquin Valley than in California overall.

FIGURE 3.2

Prevalence of Select Chronic Conditions in California and the Counties of the Valley CERF Region, 2019 and 2020



Source: 2022 Centers for Disease Control and Prevention PLACES data release, drawing on 2019 and 2020 Behavioral Risk Factor Surveillance System (BRFSS) data.

Notes: Estimates are age-adjusted. All estimates except those for high blood pressure draw from the 2020 BRFSS.

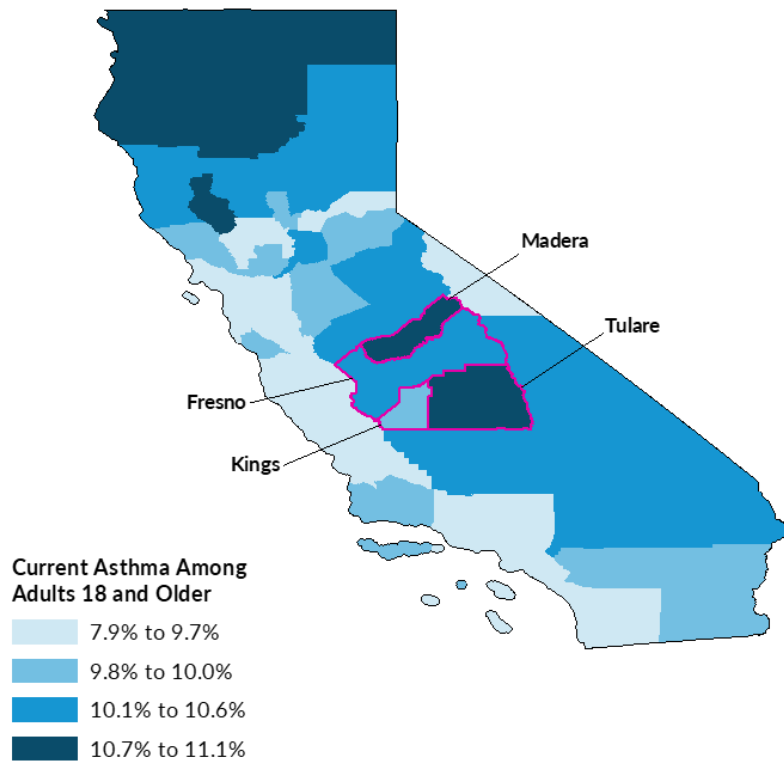
Rates of asthma are higher in Madera and Tulare compared to other counties in California, but Fresno residents are hospitalized for asthma at the highest rates

Asthma is a common and costly condition in the US. Asthma can lead to frequent emergency department visits and hospitalizations without proper management and poses a significant economic burden on the US through reduced productivity at work and school and increased medical costs (Nurmagambetov et al. 2018). Differences in social determinants of health such as housing, socioeconomic status, environmental exposure, and health care access contribute to inequities in asthma burden (Grant et al. 2022). Climate change also affects air quality and can contribute to increased asthma rates. Factors that affect air quality include the burning of fossil fuels for transportation and industrial processes, smoke from longer and more intense fire seasons, windblown dust from increasingly arid climates, and longer pollen seasons due to warmer weather (Keswani et al. 2022; Gewin 2022). Exposure to air pollution increases the risk of worsened asthma symptoms and emergency room visits for patients with asthma (Keswani et al. 2022; Gewin 2022).

About 9.4 percent of adults in California report having current asthma.²⁵ Tulare and Madera have among the highest rates of asthma in California (10.8 and 10.7 percent, respectively) (figure 3.3).

FIGURE 3.3

Share of Adults with Current Asthma in California, by County, 2020



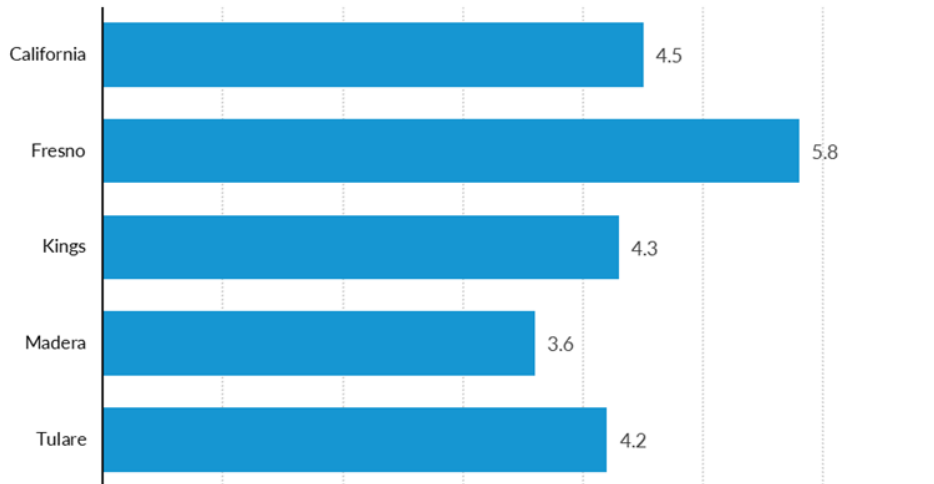
Source: 2022 Centers for Disease Control and Prevention PLACES data release, drawing on 2020 Behavioral Risk Factor Surveillance System (BRFSS) data.

Notes: Adults are ages 18 and older. Estimates are age-adjusted.

In 2019, there were about 4.5 hospitalizations for asthma per 100,000 people across the state (figure 3.4). Asthma hospitalizations in Fresno County were higher relative to both the state and Kings, Madera, and Tulare Counties.

FIGURE 3.4

Number of Hospitalizations for Asthma Per 100,000 People in California and Counties of the Valley CERF Region, 2019



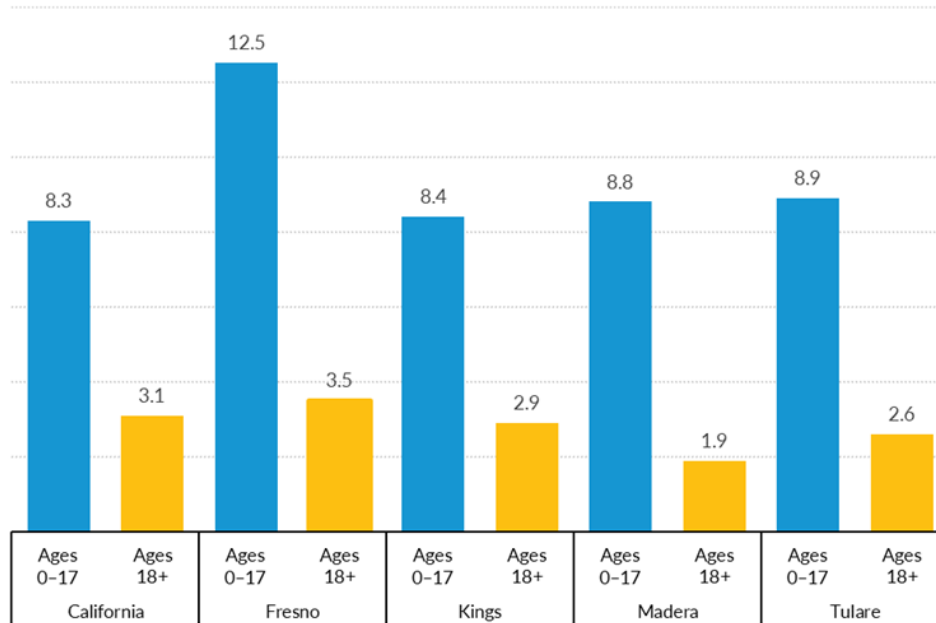
Source: California Department of Health Care Access and Information Patient Discharge Data on Asthma Hospitalization Rates by County, 2019.

Asthma hospitalizations do not vary much by race and ethnicity in the four Central San Joaquin Valley counties compared to California overall, with the exception of asthma hospitalizations for Black residents of all ages in Fresno. Rates of asthma hospitalizations among Black residents in Fresno County are 25.8 per 100,000 people (data not shown), compared to 5.8 in Fresno overall and 4.5 in California overall.

In California and across all four counties, asthma hospitalizations per 100,000 people were higher among children 17 and younger compared to adults 18 and older. Asthma hospitalizations among children are highest in Fresno County (12.5 hospitalizations per 100,000 people; figure 3.5).

FIGURE 3.5

Number of Hospitalizations for Asthma Per 100,000 People in California and Counties of the Valley CERF Region, by Age, 2019



Source: California Department of Health Care Access and Information Patient Discharge Data on Asthma Hospitalization Rates by County, 2019.

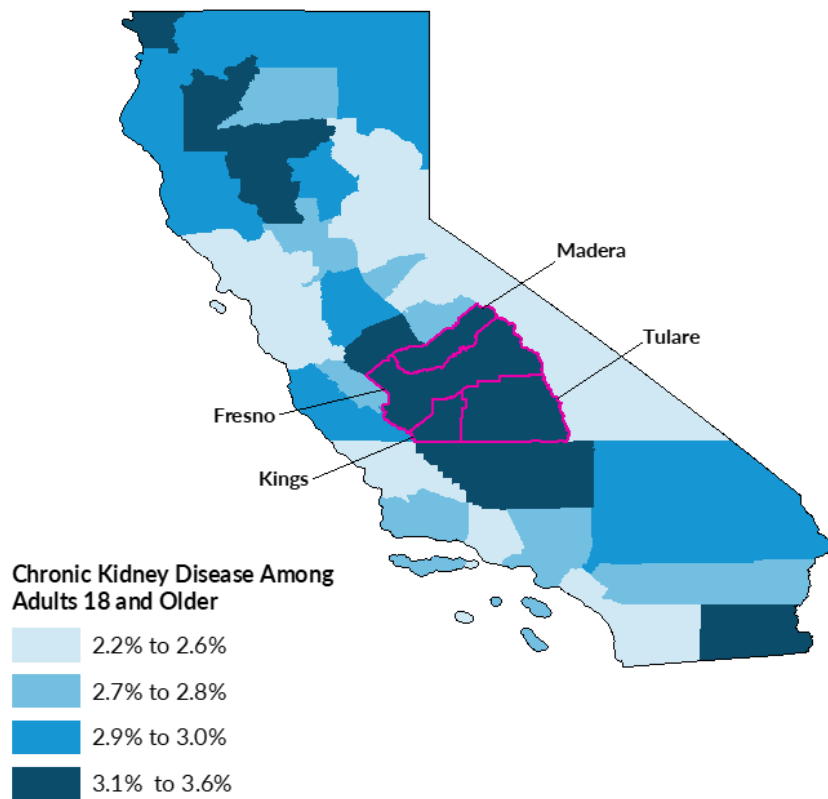
Chronic kidney disease is more prevalent in all Central San Joaquin Valley counties compared to other counties in California

Chronic kidney disease is a leading cause of death in the US. Untreated, it can progress to early cardiovascular disease or kidney failure. There is a strong association between socioeconomic factors and chronic kidney disease. Low socioeconomic status, such as low income and low education attainment, can limit access to health care, thereby increasing the risk of rapid progression to kidney failure (Nicholas et al. 2015; Grant et al. 2022). Additionally, chronic kidney disease patients experience food insecurity at higher rates than the US average, and food insecurity can worsen kidney disease due to an inability to adhere to treatments based on dietary regimens (Grant et al. 2022). The presence of other chronic conditions like diabetes and high blood pressure, which are themselves influenced by socioeconomic factors, also increase the likelihood of developing kidney disease (Nicholas et al. 2015). Workers exposed to extreme heat, such as agricultural workers, are at

disproportionate risk of developing chronic kidney disease due to dehydration (Johnson et al. 2019; Moyce et al. 2018).

About 2.7 percent of adults in California report having chronic kidney disease.²⁶ The Central San Joaquin Valley has among the highest rates of chronic kidney disease in California (figure 3.6). Among the four counties, chronic kidney disease is highest in Tulare County (3.4 percent), followed by Madera County (3.3 percent), Fresno County (3.2 percent), and Kings County (3.2 percent).

FIGURE 3.6
Share of Adults with Chronic Kidney Disease in California, by County, 2020



Source: 2022 Centers for Disease Control and Prevention PLACES data release, drawing on 2020 Behavioral Risk Factor Surveillance System (BRFSS) data.

Notes: Adults are ages 18 and older. Estimates are age-adjusted.

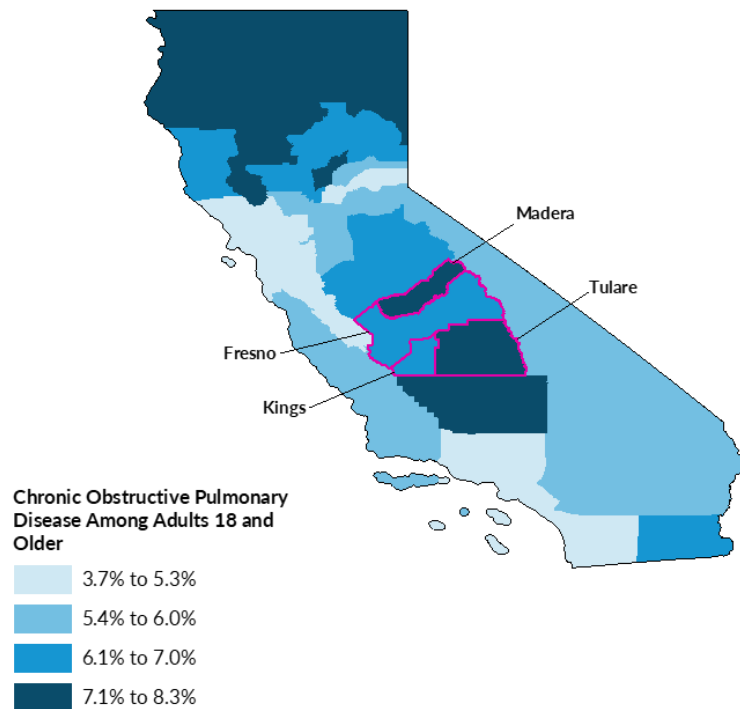
Rates of Chronic Obstructive Pulmonary Disease (COPD) are higher in Madera and Tulare compared to other counties in California

Chronic obstructive pulmonary disease (COPD) is the fourth leading cause of death and a major source of disability in the US, affecting 15 million people. COPD is a progressive lung disease that causes difficulty breathing and generally consists of both emphysema and chronic bronchitis (NIH 2022a). COPD disproportionately affects people of lower socioeconomic status. Though smoking is the main risk factor for COPD in the US, employment in occupations that expose workers to air pollution and dust, such as agricultural work, can also increase risk of developing COPD (Pleasant et al. 2016). Air pollution, especially that from wildfire smoke, has been linked to loss of lung function, increased emergency department visits, and morbidity among people with COPD (Keswani et al. 2022; Hansel et al. 2016). Extreme heat has also been associated with increased morbidity for people with COPD (Hansel et al. 2016).

About 5.3 percent of adults in California report having COPD.²⁷ Tulare and Madera have among the highest rates of COPD in California (7.3 and 7.2 percent, respectively; figure 3.7). Rates of adult COPD are also higher in Fresno County (6.6 percent) and Kings County (6.7 percent) relative to other counties in California.

FIGURE 3.7

Share of Adults with Chronic Obstructive Pulmonary Disease in California, by County, 2020



Source: 2022 Centers for Disease Control and Prevention PLACES data release, drawing on 2020 Behavioral Risk Factor Surveillance System (BRFSS) data.

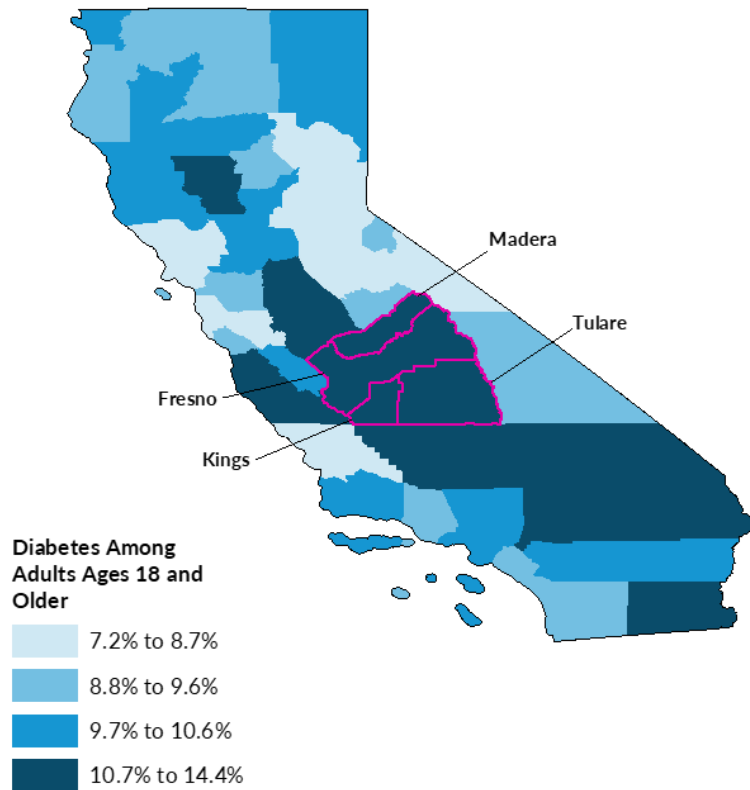
Notes: Adults are ages 18 and older. Estimates are age-adjusted.

Fresno, Kings, Madera, and Tulare Counties have among the highest rates of diabetes in California

Diabetes is a serious and costly condition that can lead to blindness, stroke, loss of kidney function, lower limb amputation, and death. Studies show that having less than a high school education and a family income below the poverty line significantly increases risk of diabetes mortality (Saydah and Lochner 2010). Food insecurity can also be a contributing factor (Hill-Briggs et al. 2021). Climate change can also worsen complications from diabetes, as patients with diabetes are particularly vulnerable to heat waves due to impaired thermoregulation and rapid deterioration of kidney function, with studies showing increased emergency department visits, morbidity, and mortality for patients with diabetes during heat waves (Vallianou et al. 2021; Green et al. 2010). Air pollution can also increase the risk of cardiovascular diseases among patients with diabetes (Vallianou et al. 2021; Hill-Briggs et al. 2021).

About 9.9 percent of adults in California report having diabetes.²⁸ The Central San Joaquin Valley has among the highest rates of diabetes in California (figure 3.8). Among the four counties, diabetes is highest in Tulare County (13.1 percent), followed by Madera County (12.3 percent), Kings County (12.3 percent), and Fresno County (12.2 percent).

FIGURE 3.8
Share of Adults with Diabetes in California, by County, 2020



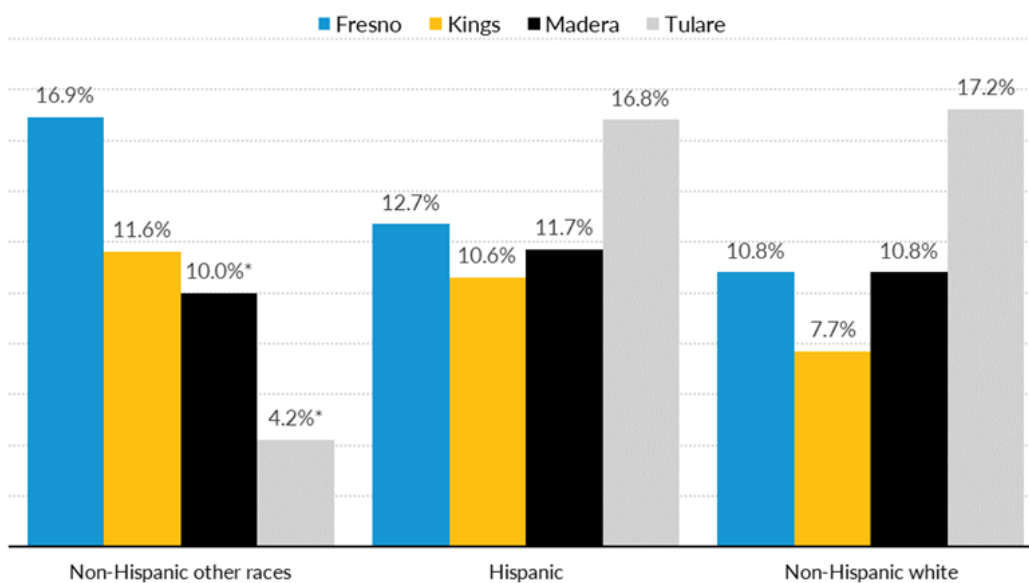
Source: 2022 Centers for Disease Control and Prevention PLACES data release, drawing on 2020 Behavioral Risk Factor Surveillance System (BRFSS) data.

Notes: Adults are ages 18 and older. Estimates are age-adjusted.

According to data from the 2019-2021 California Health Interview Survey, rates of diabetes are highest among non-Hispanic other races in Fresno County (16.9 percent),²⁹ Latinx adults in Tulare County (16.8 percent), and non-Hispanic white adults in Tulare County (17.2 percent; figure 3.9). Diabetes rates are about the same among men and women in all counties except Kings County, where men are more likely than women to report diabetes (12.4 percent versus 6.3 percent; data not shown).

FIGURE 3.9

Share of Adults Reporting They Were Ever Diagnosed with Diabetes in Counties of the Valley CERF Region, by Race and Ethnicity, 2019-2021



Source: 2019-2021 California Health Interview Survey AskCHIS.

Notes: Adults are ages 18 and older. Estimates with an asterisk (*) have wide confidence intervals and should be interpreted with caution. “Other races” includes non-Hispanic Black, American Indian or Alaska Native, Asian, Native Hawaiian or other Pacific Islander, and people who are two or more races.

The Central San Joaquin Valley has lower rates of cancer relative to other counties in California. Among the four counties of the Central San Joaquin Valley, rates of cancer are highest in Madera County, while cancer rates are similar in Fresno, Kings, and Tulare Counties³⁰

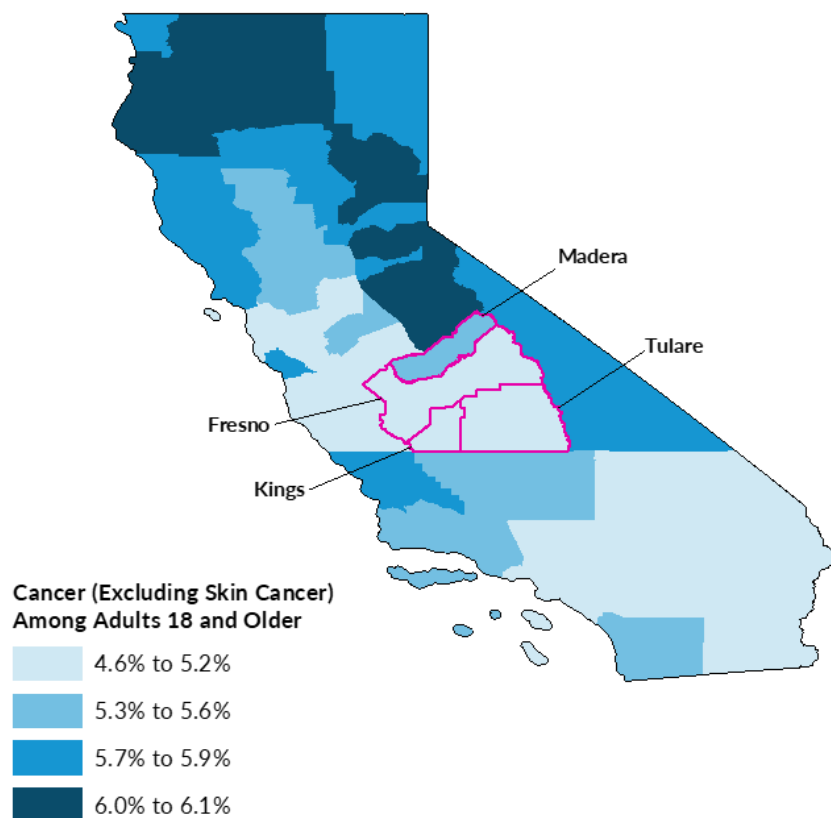
There are significant socioeconomic disparities in cancer mortality, attributed to differences in exposure to risk factors, access to preventive care, cancer screening, and quality treatment (Islami 2021). Climate change increases cancer risk in a variety of ways. Air pollution has been linked to lung cancer (Keswani et al. 2022; Gewin et al. 2022), and extreme weather events can also increase exposure to carcinogens by flooding areas surrounding manufacturing facilities or landfills, which contain hazardous waste and other pollutants.

Lower access to preventive care and screenings or diagnosis in older adulthood could be part of the reason for the lower rates of cancer in the Central San Joaquin Valley relative to California. Prior studies have found that Hispanic populations are more likely to be diagnosed with cancer later in life

(Siegel et al. 2015). Additionally, the BRFSS data on which this analysis relies only captures adults ages 18 to 64, so we may not capture adults diagnosed with cancer later in life. And, as noted above, the Valley CERF region is generally younger, has a large Hispanic population, and faces significant health care shortage issues. Further, we were not able to present data on skin cancer for this analysis because of the lack of publicly available data at the county level for this measure. However, given climate forecasts of hotter weather in the Valley CERF region (Fernandez-Bou et al. 2021), it will be important to monitor rates of skin cancer, especially for people who work in direct sunlight.

FIGURE 3.10

Share of Adults with Cancer (Excluding Skin Cancer) in California, by County, 2020



Source: 2022 Centers for Disease Control and Prevention PLACES data release, drawing on 2020 Behavioral Risk Factor Surveillance System (BRFSS) data.

Notes: Adults are ages 18 and older. Estimates are age-adjusted.

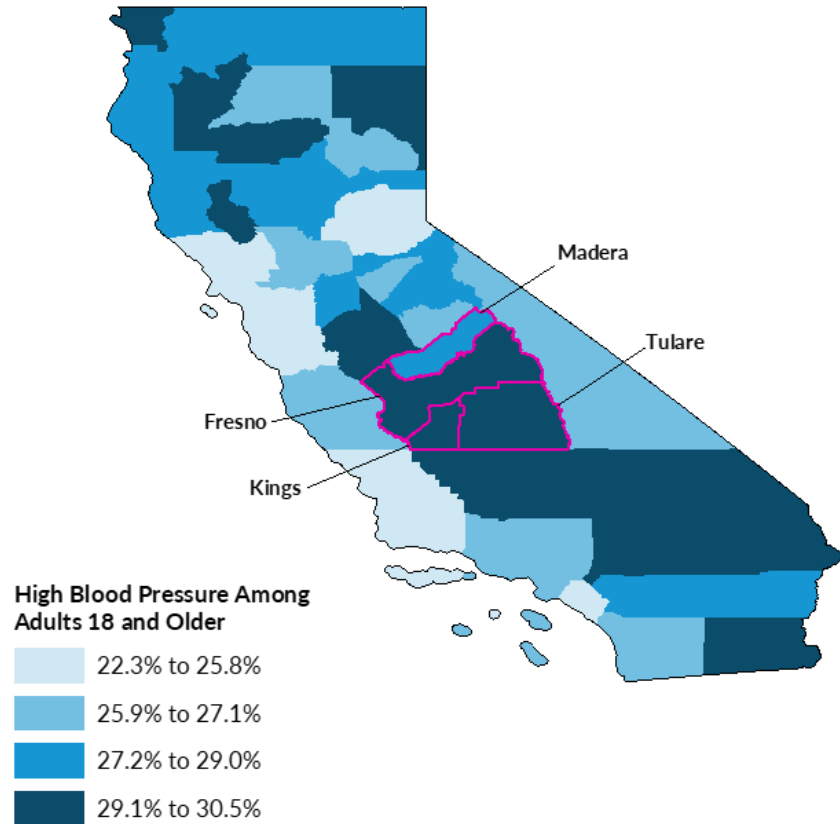
Fresno, Kings, and Tulare Counties have among the highest rates of high blood pressure in California

Hypertension, or high blood pressure, is a common chronic condition that increases risk for a variety of poor cardiovascular outcomes, such as stroke, heart attack, coronary heart disease, and heart failure. Cardiovascular disease is the leading cause of death in the United States (CDC 2023). High blood pressure is more common for Black and Latinx adults than white and Asian Adults (NIH 2022b). Socioeconomic status, segregation, racism, and job strain are linked to increased incidence of all kinds of cardiovascular disease (Garth et al. 2015; Powell-Wiley et al. 2022; Havranek et al. 2015). Air pollution has also been linked to increased cardiovascular events and mortality (Keswani et al. 2022), especially for those with lower incomes (Liu et al. 2022).

About 26.6 percent of adults in California report having high blood pressure.³¹ Rates of high blood pressure in Tulare, Fresno, and Kings are among the highest in the state (30.4 percent, 29.7 percent, and 29.6 percent, respectively; figure 3.11). The share of adults with high blood pressure in Madera County (28.9 percent) is also higher relative to other counties in California.

FIGURE 3.11

Share of Adults with High Blood Pressure in California, by County, 2019



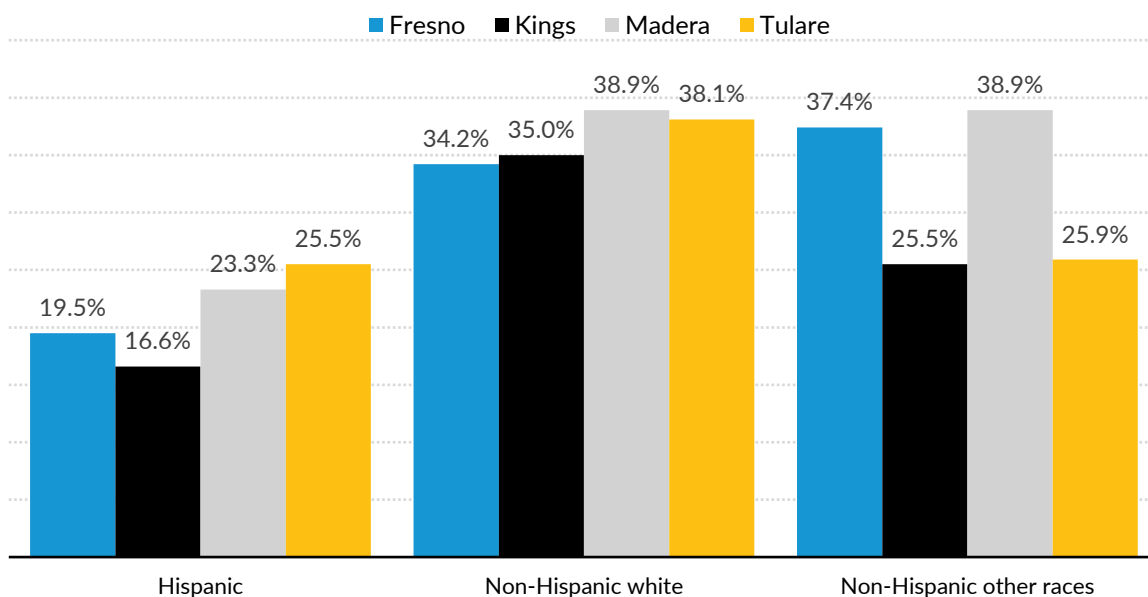
Source: 2022 Centers for Disease Control and Prevention PLACES data release, drawing on 2019 Behavioral Risk Factor Surveillance System (BRFSS) data.

Notes: Adults are ages 18 and older. Estimates are age-adjusted.

According to the 2019-2021 California Health Interview Survey, non-Hispanic white adults have among the highest rates of high blood pressure across the four counties of the Central San Joaquin Valley (figure 3.12). Adults of non-Hispanic other races³² also have high rates of blood pressure in Fresno and Madera counties.

FIGURE 3.12

Share of Adults Reporting they were Ever Diagnosed with High Blood Pressure Among Counties of the Valley CERF Region, by Race and Ethnicity, 2019-2021



Source: 2019-2021 California Health Interview Survey AskCHIS.

Notes: Adults are ages 18 and older. "Other races" includes non-Hispanic Black, American Indian or Alaska Native, Asian, Native Hawaiian or other Pacific Islander, and people who are two or more races.

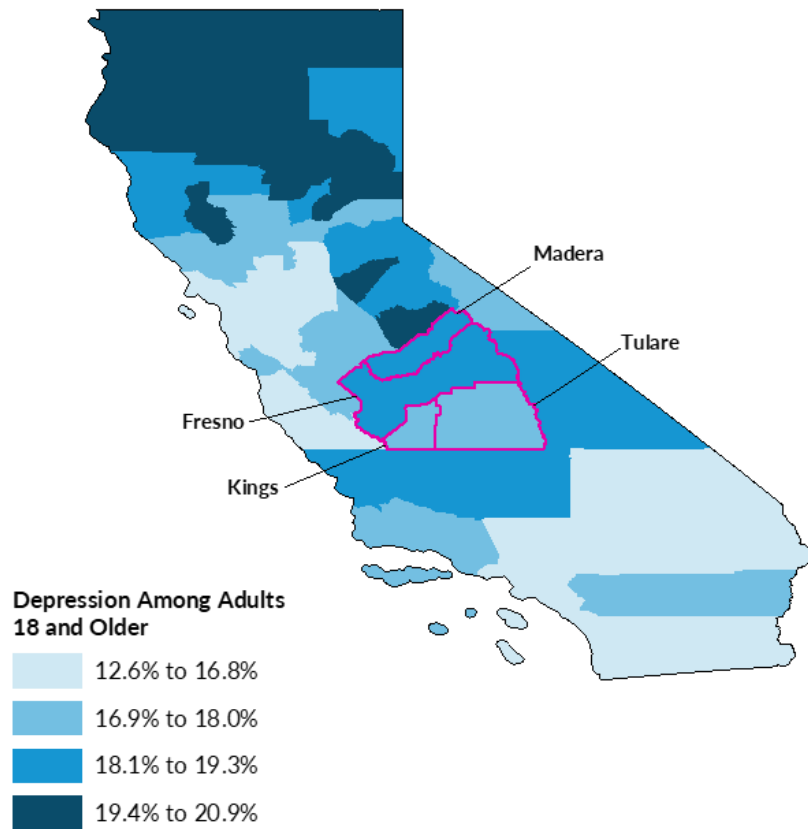
Rates of depression in the Central San Joaquin Valley are higher compared to California overall

Depression is one of the leading causes of disability worldwide according to the World Health Organization (Greenberg 2021). Socioeconomic status, financial and job strain, and lower educational attainment have all been linked to depression (Remes et al. 2021). Climate change poses a threat to mental health beyond climate anxiety. Exposure to air pollution has been linked to depression and increased risk of suicide (Keswani et al. 2022). Exposure to wildfires, extreme heat, and drought has also been associated with increased psychological distress, increased psychiatric hospitalizations, and heightened mortality among people with pre-existing mental health conditions (Charlson et al. 2021).

About 16.3 percent of adults in California report having depression.³³ Rates of depression are higher in the four Central San Joaquin Valley counties relative to the state (figure 3.13). Of the four counties, Madera County has the highest rates of depression (18.9 percent), followed by Fresno County (18.1 percent), Tulare County (18.0 percent), and Kings County (17.3 percent).

FIGURE 3.13

Share of Adults with Depression in California, by County, 2020



Source: 2022 Centers for Disease Control and Prevention PLACES data release, drawing on 2020 Behavioral Risk Factor Surveillance System (BRFSS) data.

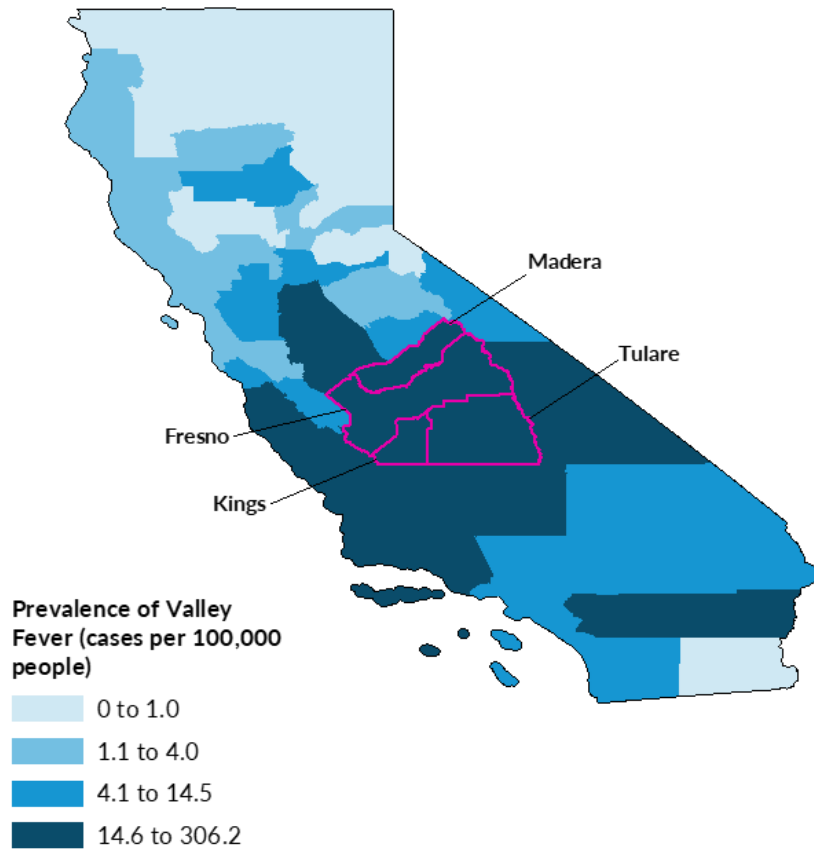
Notes: Adults are ages 18 and older. Estimates are age-adjusted.

The Central San Joaquin Valley has among the highest rates of Valley Fever in California

Valley Fever, or coccidioidomycosis, is a fungal infection endemic to the southwestern US that occurs when fungus spores from disturbed dust enter a person's lungs. Valley Fever can cause fever, headache, fatigue, difficulty breathing, and life-threatening complications such as pneumonia, or meningeal infection. Cases of Valley Fever in California tripled from 2015 to 2018 (CDPH 2023b). Employment in agricultural occupations increases risk of developing Valley Fever due to exposure to dust that can carry fungus spores. Climate change has also increased the proliferation of Valley Fever in the Central San Joaquin Valley.

In California overall, there were about 20.1 cases of Valley Fever per 100,000 people in 2021. Cases of Valley Fever were higher in the four Central San Joaquin Valley counties higher relative to the state (figure 3.14). Kings County had the most cases of Valley Fever per 100,000 people in the region (108.3), followed by Tulare County (65.8), Madera County (23.6), and Fresno County (39.8).

FIGURE 3.14
Cases of Valley Fever Per 100,000 People in California, by County, 2021

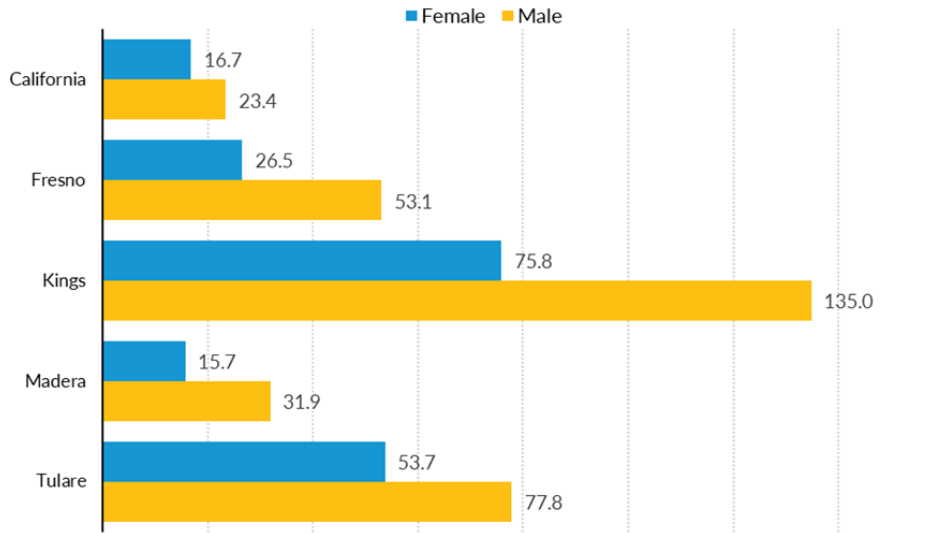


Source: California Department of Public Health 2021 report of Infectious Diseases by Disease, County, Year, and Sex.

Prevalence of Valley Fever is higher among men than women in both California and in the four Central San Joaquin Valley counties (figure 3.15). Among men, prevalence of Valley Fever is highest in Kings County (135 cases per 100,000 people), followed by Tulare County (77.8 cases per 100,000), Fresno County (53.1 cases per 100,000), and Madera County (31.9 cases per 100,000).

FIGURE 3.15

Cases of Valley Fever Per 100,000 People in California and Counties of the Valley CERF Region, by County and Gender, 2021



Source: California Department of Public Health 2021 report of Infectious Diseases by Disease, County, Year, and Sex.

Stakeholder Inventory

As of the writing of this report, 116 organizations form the Valley CERF coalition, which itself is composed of four high road transition collaboratives (HRTCs) representing each of the sub-regions within the Central San Joaquin Valley. The composition of each HRTC aims to balance representation from each of seven key stakeholder groups: community-based organizations (CBOs); education and workforce training entities; employers, businesses associations, and economic development organizations; environment and environmental justice advocates; labor and worker-centered organizations; local governments; and Tribal entities.

Analyzing the Makeup of HRTCs

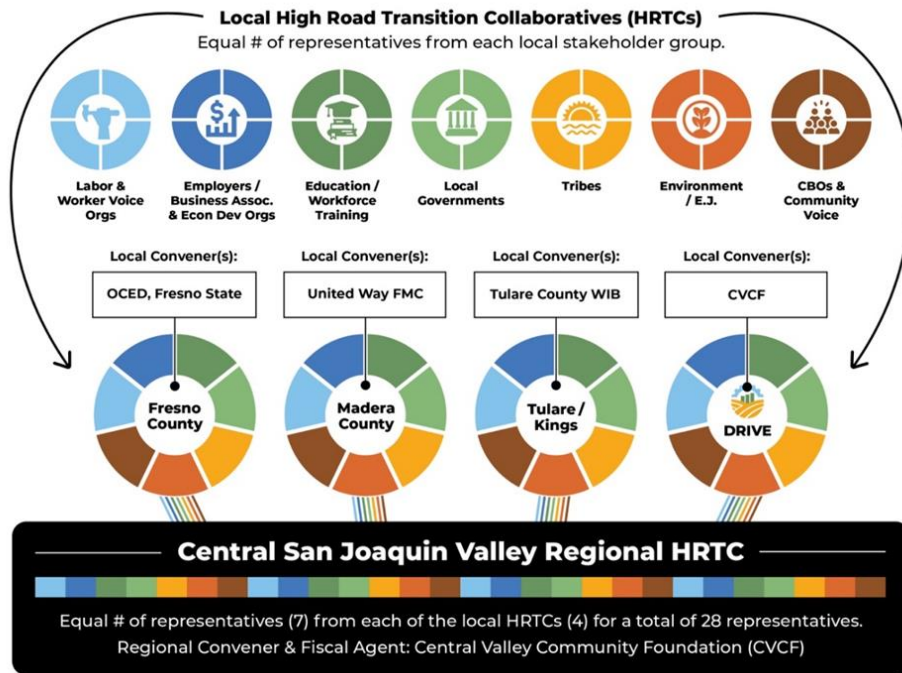
A diversity of perspectives is important to develop effective strategies to improve economic health and resilience, increase economic and racial equity, and advance climate action. At the same time, a governance structure that fosters constructive conflict among stakeholders is also critical. To assess the representativeness of the Valley CERF coalition and evaluate the domains of strength in the cohort as well as areas where additional representation may be needed, we inventoried current coalition members and performed a high-level social media and news scan. To fill in the gaps of longer-term relationships in the region, we relied on stakeholder interviews with local leaders. This analysis is by no means comprehensive and is instead intended as a complement to HRTC members' institutional knowledge as both professionals and residents of the Central San Joaquin Valley.

Our stakeholder inventory began with a list of HRTC members, their indicated stakeholder grouping, and the geography they serve. By design, all four local HRTCs have equal representation across stakeholder groups (figure 4.1). We then conducted a high-level analysis of each organization to answer three additional questions:

- Does the organization work across counties?
- Does the organization work across several stakeholder sectors?
- Does the organization have an alignment with any specific demographic or community groups?

These additional layers helped tease out where the HRTCs have concentrated expertise and where additional representation may be needed in the Valley CERF effort.

FIGURE 4.1
Composition of Valley CERF HRTCs



Source: Valley CERF Proposal in response to State of California NOFO, July 2022.

Across counties, interviewees shared that the dominant stakeholders in regional economic planning processes to date have been businesses (and business-focused entities), governmental entities, and organizations within the networks of established, well-funded non-profits. Marginalized stakeholders in these processes have historically been neighborhood-level organizations; smaller community-based organizations; organizations led by Black people, Indigenous people, and other people of color; Tribal Nations; organizations representing the interests of specific communities such as Hmong and Lao ethnic groups; and organizations who directly challenge the power of businesses and government. These interviewee insights, coupled with our sociodemographic profile of Valley CERF residents, informed our qualitative analysis of the stakeholder network.

AREAS OF STRENGTH IN HRTCS

- While most HRTC member organizations do not work across domains, a significant proportion of member CBOs do. This is valuable as their inclusion will add not only community voice, but also topical expertise that is directly shaped by residents’ experiences—for instance, a CBO

that also works in environmental justice provides a perspective that an environmental organization not rooted in community may not be able to bring.

- All workforce investment boards (WIBs) and community colleges in the Central San Joaquin Valley are included in the HRTCs.
- Four member organizations work specifically with farmworkers. Given the large role of agriculture in the region's economy, it's important that there is significant representation given to workers in this sector.
- Several organizations work specifically with Latinx communities—this is extremely important given the Latinx demographic majority in the region.
- Several CBOs work specifically with immigrant populations, which is also important given the large number of immigrants in California and in the Central San Joaquin Valley.
- The combination of stakeholders in the Education and Workforce Training category and Employers, Business Association, and Economic Development category provides a thorough base for diverse economic perspectives within the HRTCs.

AREAS OF POTENTIAL GROWTH FOR HRTCS

- Of the thirteen HRTC member organizations representing the “environment and environmental justice” topic area, only four state an explicit organizational commitment to environmental justice. Environmental conservation and green energy are the dominant foci of this cohort, and have outsized representation given the gravity of environmental injustice and racism in the Central San Joaquin Valley. Environmental justice concerns in the Valley—including agricultural workers' exposure to toxic pesticides and extreme heat as well as differential impacts of extreme weather on the lowest-income and rural communities—underscore the importance of elevating environmental and climate justice in Valley CERF's work. Only three HRTC members focused specifically on the needs of Black residents. Given the under-representation of Black residents in business ownership in the region, additional perspective here could be useful.
- Across the four HRTCs, there is little representation of CBOs in unincorporated and rural communities, which are significant populations in the Central San Joaquin Valley.
- Looking at the Employers, Business Association, and Economic Development group alongside the Labor and Worker-Centered organizations, unions appear to have an undersized role in the HRTCs.

Considerations for Cross-County Collaboration

Decades of smaller-scale partnerships across some of the participating organizations in the HRTCs have built essential trust. However, because this is the first time that all participating organizations have collaborated together, let alone around an effort of the size, scale, and stakes of the CERF program, and because each have differing capacities, priorities, and political influence, there is a shared understanding that foundational trust-building is critical within each HRTC and across all four HRTCs. A unique strength of the region is that for those “plugged in” to some of the region’s largest conveners (such as the Central Valley Community Foundation and United Way of Fresno and Madera), the hard work of foundational relationship-building has long been underway. The makeup of Valley CERF’s coalition is a testament to the “network of networks” found in the region, linking together independent non-profits and community-based organizations.

It’s important to note that these relationships are often held *inside* of counties rather than *between* counties. In interviews, several stakeholders across counties noted that Fresno is perceived to “dominate” policy action in the region. Importantly, stakeholders from Fresno County were conscientious of this and expressed self-awareness as to how this imbalance impacts cross-county collaboration. As detailed in the next section, our review of planning initiatives found that three out of six regional plans relevant to CERF goals in the Central San Joaquin Valley are led by a Fresno-based organization, grounding this perception. In part, this may be because Fresno County is home to large, cross-sector anchor institutions that have the capacity to work across domains of focus and have the resources to bring together partners across the region. We also note that, as Valley CERF is aware, Fresno County is overrepresented with two local tables (Fresno Rural and Fresno DRIVE); although this division was designed to improve coverage of and participation by more rural stakeholders in Fresno County who have less representation than their urban counterparts in FRESNO Drive and other existing planning efforts.

The Valley CERF coalition can find ways to invest in rural areas and Madera, Kings and Tulare counties to ensure they can build to a level where they can support large-scale investments. Fresno’s social impact ecosystem has benefited from sustained investment and attention from the state and foundations. CERF’s unique funding is an opportunity to boost capacity in Tulare, Kings, and Madera to level out the imbalance.

Potential Barriers

Historic exploitation and exclusion, as well as performative inclusion, creates mistrust that takes considerable effort to undo. When considering outreach to community-based organizations that are not already within the Valley CERF coalition, it's important to consider that those efforts may be perceived as an afterthought. Valley CERF should thoroughly consider the value-add each organization brings and make sure new partners are made explicitly aware of the unique gap their inclusion fills and how they are necessary to the process.

The Valley CERF region is historically under-resourced; CERF funding offers the potential for a major investment in the Central San Joaquin Valley's social impact sector. While CVCF has made considerable effort to engage "non usual" players and broaden the scope of influence, it's essential that conveners not only include smaller, lower-capacity organizations, but also invest in building their capacity. Some interviewees highlighted that organizations with lean operating budgets and staff, or organizations that are volunteer-based, may not have the dedicated resources to develop the structure necessary to support plan development and implementation at the scale required by CERF. Facilitators and conveners could identify how to build up less-resourced organizations so that they are poised for success and can grow their profile and influence through plan implementation. Investing in building capacity now is essential to ensure that future partnership is mutually beneficial.

Planning Efforts and Initiatives Relevant to CERF Goals

Valley CERF’s local and regional planning efforts exist in an ecosystem of other local, regional, and state plans, each with their own goals and priorities. To contextualize CERF planning in the Central San Joaquin Valley and assess the degree to which existing plans or programs may help or hinder the advancement of CERF goals, we conducted a landscape scan of planning efforts—including processes, initiatives, and programs—relevant to at least one of the three CERF goals of equity, economic resilience, and carbon neutrality. This landscape scan is intended to complement the knowledge of HRTC members and other CERF coalition stakeholders, and is not meant to comprehensively reflect all the plans in the region.

We focused our scan on state and regional planning efforts, and included local plans that were most likely to have implications for Valley CERF. We limited the scan to plans with ongoing efforts, meaning with stated time horizons beyond the current year. We also included plans without specified time horizons if they were published in the last 5 years (2018 onwards). Appendix A includes a list of all 27 plans reviewed. These parameters inherently limited our scan, and there are likely local governments in the Central San Joaquin Valley with plans more out of date than those we reviewed. Future analyses could consider reviewing these plans—in particular, city or county general plans as well as regional transportation plans, both of which are required by the state—to generate a more comprehensive picture of planning activity in the region. In addition to reviewing plan documents, we conducted expert interviews with local leaders involved in 7 of the 17 local and regional plans to deepen our understanding of planning efforts in the Central San Joaquin Valley. Local leaders and the communities they serve can have differing opinions on the degree to which planning efforts - and their implementation - are successful, so future analyses could also include interviewing community leaders to deepen an understanding of their perspective.

Planning Activity in the Central San Joaquin Valley

Across the four-county region, our landscape scan identified 17 current plans with relevance to at least one of the three CERF goals, of which six were regional. Most of the regional plans involved all

four Valley CERF counties, while the remaining 11 ranged from neighborhood to city and county levels. Of the 11 local plans, five were centered in the Fresno region—one focused on specific neighborhoods within the City of Fresno, one was produced by Fresno County, two were produced by the City of Fresno, and the fifth plan focused on the Greater Fresno region. Of the remaining six plans, two focused on Madera County, two on Kings County, and two on Tulare County. We describe the landscape of plans reviewed for the region and for each county below.

There are a few limitations to the scan worth noting. First, we reflect on what was stated in the plan document itself and via interviews with stakeholders involved in the plan development, but did not track implementation of each plan to see how those might have evolved. Second, complementary planning efforts – such as transportation plans or land use plans – which may or may not contribute or help establish the necessary conditions for CERF goals were not included in this analysis, but should be considered as investment priorities begin to emerge through the CERF process. Further, while its always valuable to seek community perspective on planning efforts, as well as implementation to date, we were unable to do so.

Fresno County

In the Fresno region, the City has produced both a general plan (updated in 2014) and a greenhouse gas reduction plan (published in 2020) that indicate attention to economic and climate issues. Both plans identify potential funding sources and are currently being implemented. In contrast, Fresno County's general plan was last updated in 2000. As a result, we did not include it in our landscape scan, and instead reviewed the Comprehensive Economic Development Strategy produced in 2016 by the county's Economic Development Corporation, which contains plans to develop and diversify the region's manufacturing and agriculture workforce and industries. All three of these plans are likely to have implications for Valley CERF in both the planning and implementation phases, given that Fresno is the largest city, county, and economy in the region.

The City of Fresno's general plan establishes 17 goals, including increasing opportunity, economic development, business, and job creation; emphasizing conservation and successfully adapting to climate and changing resource conditions; supporting agricultural and food production as an integral industry; and recognizing, respecting, and planning for Fresno's cultural, social, and ethnic diversity. While the plan is highly aligned with all three CERF goals on the surface, the lack of formal evaluations makes it difficult to assess the extent to which implementation has been true to plan goals. Moreover, the plan was created under former mayor Ashley Swearengin, and the election of Mayor Jerry Dyer in 2021 could lead to a different direction for Fresno in the coming years. Similarly

with Fresno’s Greenhouse Gas Reduction Plan, which was first adopted in 2014 and updated in 2020, and identifies the following as necessary measures to reach long-term reduction targets: encouraging reductions in vehicle miles travelled through mixed use and infill development; transportation demand management; development and penetration of electric vehicles; energy efficiency enhancement; water conservation; and increased work diversion. The county’s Comprehensive Economic Development Strategy, in contrast to the two city plans, focuses primarily on economic development and does not include climate or equity goals. Nevertheless, it identifies some economic development opportunities that Valley CERF may be able to build on, including expanding renewable energy projects and supporting water conservation technology.

Two non-governmental plans that stood out as particularly relevant to CERF goals in Fresno are the Fresno DRIVE (Developing the Region’s Inclusive and Vibrant Economy) and the Transform Fresno initiatives. DRIVE is a 10-year community investment plan created in 2019 with input from a 300-person steering committee representing over 150 civic, business, and community organizations. The plan proposes more than a dozen projects across three domains: economic development, human capital, and neighborhood development. To date, the DRIVE coalition has raised nearly \$300 million in support of these projects, which share an overarching goal of developing “an inclusive, vibrant, and sustainable economy for residents in the Greater Fresno Region.”³⁴

Transform Fresno is an initiative funded by the state’s Transformative Climate Communities program, which supports “community-led development and infrastructure projects that achieve major environmental, health, and economic benefits in California’s most disadvantaged communities.”³⁵ Through a participatory process including both residents and business owners, the initiative selected over two dozen projects to receive more than \$60 million in state funding towards providing environmental and economic benefits to downtown, Chinatown, and southwest Fresno. Both Fresno DRIVE and Transform Fresno could provide valuable lessons for Valley CERF on the challenges and successes of facilitating inclusive and equitable planning processes.

Kings County

In Kings County, we identified two plans relevant to CERF goals: the Kings County Regional Transportation Plan and the Kings County Comprehensive Economic Development Strategy. The former was published in 2022 by the Kings County Association of Governments (KCAG) with the goal of developing a transportation system that can “equitably and safely serve the mobility and accessibility needs of people and freight...and foster economic growth and development, while minimizing transportation-related fuel consumption, air pollution, and greenhouse gas emissions”

(KCAG 2022, p. 22). The plan details efforts to collaborate and align with other local, regional, and state plans, as well as a public participation process that involved consulting with public and local agency representatives, Tribal governments, and hosting public workshops and hearings. It identifies multiple local, state, and federal funding sources, and is currently being implemented by relevant agencies. There are likely opportunities for Valley CERF to align its work with KCAG's proposed public and active transportation projects, as well as its Sustainable Communities Strategy.³⁶

The Kings County Comprehensive Economic Development Strategy was created in 2018 by the Kings County Economic Development Corporation with the goal of developing a “dynamic, diverse economy” (Kings County EDC 2018, p. 39). The strategy outlines an action plan to develop the county's workforce, reduce unemployment, attract jobs and investment, and enhance partnerships between the state and local economic development practitioners. While the strategy does not focus on climate or equity, there may be opportunities for Valley CERF to build on Kings County's economic development plans in developing its regional strategy.

Madera County

In Madera, we reviewed the county's Strategic Plan, published in 2018 and last updated in 2020, as well as its Local Workforce Development Plan, published in 2021 and updated this year. The Strategic Plan outlines eight key focus areas for the county, including community, public safety, technology, infrastructure, and health, but is relatively light on implementation and program details. The county's Local Workforce Development Plan, on the other hand, was developed through a series of engagements with stakeholders and community members, including forums, one-to-one discussions, and public review. It identifies several key priorities, including delivering services to job seekers, strengthening communications with business and industry, and promoting economic opportunities for families. Many of these are likely to be relevant to the CERF coalition as it attempts to create high-quality jobs for the region's workers.

Tulare County

In Tulare, we identified the county's General Plan and its Climate Action Plan as relevant to CERF goals. The Tulare County General Plan was most recently updated in 2012 and intended to last through 2030. It contains many components related to the county's economic health, land use, natural resources, infrastructure, and more, and is guided by five value statements, including that “every community will have the opportunity to prosper from economic growth” and that the county will

“create and facilitate opportunities to improve the lives of all county residents.” (Tulare County 2012, p. A-1). Specifically, the plan addresses the following elements: agriculture, land use, economic development, housing, scenic landscapes, environmental resource management, air quality, health and safety, water resources, animal confinement, transportation and circulation, public facilities and services, and flood control. Many of these elements are state-mandated, while others were voluntarily included. The 2030 General Plan Update also initially included a Climate Action Plan, which was later updated in 2018 to incorporate new state emissions inventories and emissions reduction targets. Beyond documenting the county’s emissions, the plan also identifies strategies to reduce its greenhouse gas emissions to meet state targets. Examples of strategies include encouraging infill and high-density residential development, requiring open space buffers, encouraging active transportation and transit services, and encouraging alternative energy projects. Many of these strategies are likely to have implications beyond climate and will be relevant for Valley CERF to consider in its planning and implementation phases.

Regional Initiatives

- The Good Jobs 4 the Central Valley (also known as Central Valley Built 4 Scale) plan, led by the Fresno County Economic Development Corporation (EDC), received \$23 million in funding from the US Economic Development Administration in 2022 to place 2,500 people into high-quality jobs and provide community-based recruitment and wraparound services.³⁷ The plan focuses on all four counties in the Valley CERF region.
- A related initiative, High Roads to Good Jobs and Prosperity in the Central Valley, recently received \$10 million in funding from the state (as part of the CERF economic development pilot grants) to create thousands of good jobs, provide job training, and advance entrepreneurship and access to capital. The initiative is led by United Way of Fresno and Madera, in partnership with the Fresno County EDC, the Central Valley Community Foundation, and others.
- The California Central Valley Export Plan includes Kern County, Merced County, San Joaquin County, and Stanislaus County in addition to the four Valley CERF counties. It was the result of research and planning collaboration between the EDCs of all eight counties, the City of Fresno, the Fresno Chamber of Commerce, California State University Fresno, the San Joaquin Valley Regional Association of California Counties, the Center of International Trade Development, and the US Export Assistance Center, with support from the Brookings Institution and JPMorgan Chase. Its goal is to spur international export growth in industries

such as food processing, small machinery manufacturing, and freight and port services. The plan makes no mention of climate or equity concerns, which suggests a lower degree of alignment with CERF's high road approach.

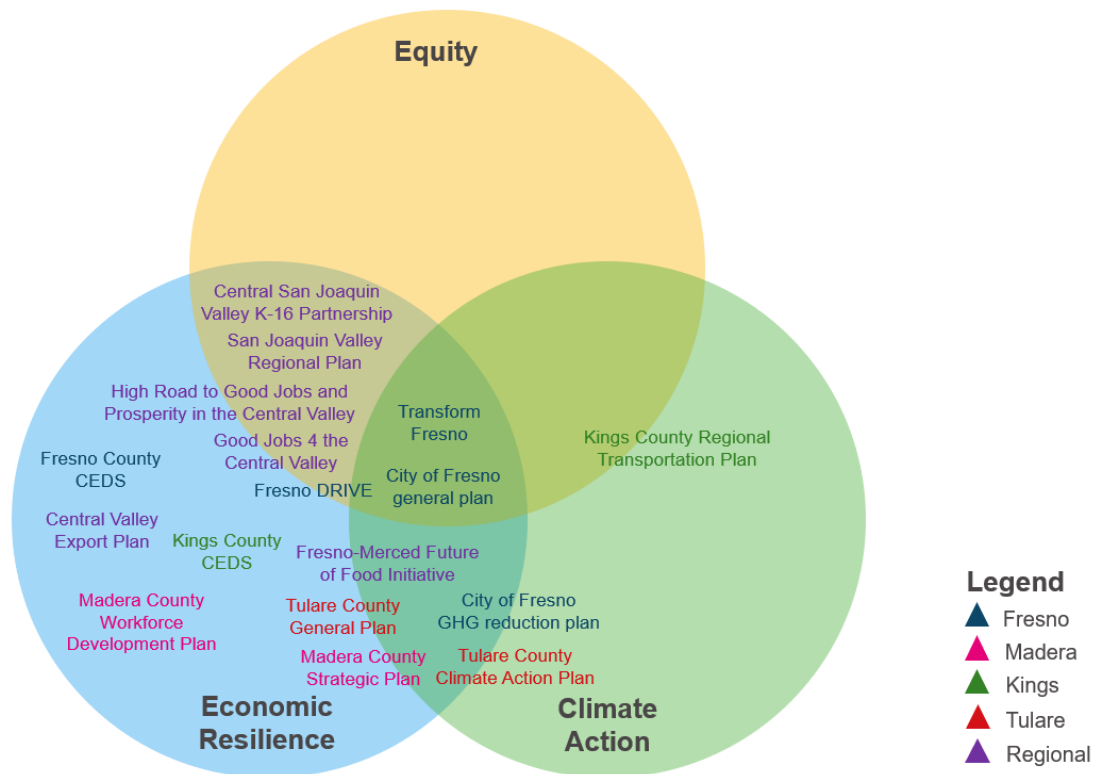
- The San Joaquin Valley Regional Plan for 2021-24 was created by the San Joaquin Valley and Associated Counties Regional Planning Unit, which comprises eight local workforce development boards representing ten counties (Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, Tulare, Kern, Inyo, and Mono). The plan focuses on fostering demand-driven skills attainment; enabling upward mobility for all Californians (including through pursuing a high-road economy); and aligning, coordinating, and integrating programs and services across the region. The regional planning unit hosted ten community and stakeholder forums to engage businesses, workers, and community members in the planning process.
- The Central San Joaquin Valley K-16 Partnership is a collaboration between the Fresno-Madera K-16 Collaborative and the Tulare-Kings College and Career Collaborative. The partnership was awarded \$18 million in 2022 through the state's Regional K-16 Education Collaboratives program, a competitive grant that aims to support "streamlined pathways from high school to postsecondary education and into the workforce."³⁸ The partnership has three goals: increase the number of graduates with postsecondary degrees in high-growth, high-wage disciplines, reduce racial and ethnic economic disparities in degree attainment and the labor market, and improve graduation rates and shorten time to degree completion.
- The Fresno-Merced Future of Food (F3) Initiative, a Fresno DRIVE project, received \$65 million in funding through the US Economic Development Administration's Build Back Better regional challenge grants to "accelerate the integration of technology and skills in the region's agriculture industry."³⁹ F3 aims to serve five counties (Fresno, Kings, Madera, Merced, and Tulare), and includes CERF-aligned goals such as improving job quality and wages for existing farmworkers, as well as driving a more resilient and sustainable food system.

Treatment of CERF priority issues in local and regional plans

Figure 5.1 maps the goals and focus areas of the plans reviewed to the three priorities of CERF. The majority of existing plans focus on economic and workforce development, with some drawing explicit connections to equity. Climate action planning is relatively nascent in the region, and relatively few economic development plans reference climate challenges.

FIGURE 5.1

Local and Regional Planning Efforts by Issue Area



Source: Urban Institute analysis of local and regional plans

Notes: Placement of initiatives does not indicate degree of alignment with each issue, only whether or not there is any alignment at all. For initiatives that overlap with one or more issues, placement is intended to indicate the issue that it is most aligned with.

ECONOMIC RESILIENCE

Three interrelated economic challenges emerged across the 17 local and regional plans we reviewed: concentrated poverty and low incomes across the region, low educational attainment resulting in the lack of a skilled workforce, and a lack of quality jobs for workers. There was a high degree of consensus between the plans on the presence and severity of these challenges—a plurality of plans mentioned at least one. A few plans also pointed to a lack of economic growth more generally as an overarching challenge, while several others noted continued job losses in recent years, whether due to the pandemic and resulting economic recession, the closure of large retail stores, or the decline of industry (including manufacturing).

Plans most often proposed workforce development—including both reskilling (to create a better match between available jobs and workers’ skills) and upskilling—as one potential solution to

these challenges. Several plans also mentioned either expanding into new markets or expanding existing industries (particularly export-oriented industries like agriculture) as a solution to create jobs and spark economic growth. A few plans noted the need for economic diversification to reduce the region's vulnerability to shocks, with some recommending a focus on "green industries."

CLIMATE ACTION

In contrast to economic challenges, which were discussed in most of the plans, climate challenges were referenced in only a minority (figure 5.1). Poor air quality and threats to water supply (due to drought and the diminishing snowpack in the Sierra Nevada) were the two challenges most frequently mentioned. A few plans also noted higher temperatures and extreme heat, as well as environmental degradation due in part to agricultural practices. Only one plan pointed to sprawl as a contributor to climate impacts. Of the plans that proposed solutions relevant to advancing climate action, many identified solutions to address water-related issues, such as water conservation, creating sustainability plans, and ensuring access to safe water. Some plans also proposed investing in or adopting new, climate-adaptive technologies, particularly those related to agricultural practices, green building, and water conservation, as well as focusing on renewable energy alternatives such as solar. A few plans proposed housing- and transportation-related solutions, including weatherizing homes, conducting energy-efficiency retrofits, and encouraging infill and transit-oriented development.

EQUITY

Many local and regional plans acknowledged the persistence of inequities in the region, generally highlighting people with low incomes and people of color (usually Black and Latinx residents) as particularly in need of attention. A few plans referred to "disadvantaged" communities more generally without further specification. However, very few plans identified or acknowledged the structural barriers driving inequality and racial or ethnic disparities within the region. The plans that did so pointed to underinvestment in specific neighborhoods and the unequal distribution of resources, as well as segregation and a lack of racial inclusion more generally. Further, while some plans detailed intentional efforts to engage and involve marginalized residents and community members, many did not, instead focusing on groups such as business owners and civic leaders.

State Planning Efforts

California has led the nation on climate action for decades. Accordingly, there are a host of state plans and policies related to climate action and achieving carbon neutrality, but we limited our review to

those most likely to have implications for Valley CERF. More specifically, we reviewed the following ten plans and programs:

- California Climate Adaptation Strategy
- California Climate Scoping Plan
- California High Speed Rail
- California Inclusive Innovation Hubs
- California State Water Plan
- California Transportation Plan
- California Unified Strategic Workforce Development Plan
- Climate Action Plan for Transportation Infrastructure
- High Road Training Partnerships
- Putting California on the High Road: A Jobs and Climate Action Plan for 2030

As directed by California Assembly Bill 1279, the state aims to achieve net zero greenhouse gas emissions no later than 2045, and to reduce statewide emissions by 85 percent below 1990 levels. As of 2020, the state had achieved emissions reductions of approximately 14 percent below 1990 levels.⁴⁰ California's pathway to carbon neutrality is laid out across several plans, including the 2021 California Climate Adaptation Strategy, the California Air Resources Board's 2022 Scoping Plan for Achieving Carbon Neutrality, and the California State Transportation Agency's Climate Action Plan for Transportation Infrastructure, amongst others. These plans outline ambitious strategies to coordinate efforts across sectors and regions, and include priorities ranging from building a climate resilient economy to accelerating the use of nature-based solutions.⁴¹

In addition to its own plans, the state has also passed a number of laws requiring local governments to create plans to address climate impacts. These include SB 375, which requires Metropolitan Planning Organizations to demonstrate how their regions will meet state-mandated greenhouse gas emissions targets in their regional transportation plans, as well as the 2014 Sustainable Groundwater Management Act, which requires local agencies to form groundwater sustainability agencies and develop and implement groundwater sustainability plans.

California has also established environmental justice as a key priority in recent years, with the legislature passing laws directing funding to environmental justice communities (SB 535 and AB 155) and requiring that local governments address environmental justice in their general plans (SB 1000).⁴² The state's Climate Adaptation Strategy identifies considering and integrating environmental justice

principles in planning documents as one necessary action to build resilience in climate vulnerable communities, which it defines as “low-income and rural communities, communities of color, and tribal nations.”⁴³

While many of the strategies outlined in the plans above have economic implications, our review also included two plans that specifically center economic goals. The Unified Strategic Workforce Development Plan for 2020-2023 outlines a framework for the state’s workforce and education system. Although it nods to the importance of the state’s “high road” approach to economic development and suggests that “special attention must be paid to industry sectors on the frontlines of the transition,” its focus is on fostering demand-driven skills attainment, enabling upward mobility, and aligning, coordinating, and integrating programs and services (California Workforce Development Board 2022). In contrast, Putting California on the High Road: A Jobs and Climate Action Plan for 2030, required by Assembly Bill 398 (the 2017 bill which extended the state’s cap-and-trade program through 2030), outlines a vision for integrating economic and workforce development into the state’s major climate plans and programs. More specifically, it makes recommendations for “simultaneously promoting equity and mobility for workers, skills and competitiveness for employers and industry, and long-term environmental sustainability and climate resilience for the state” (California Workforce Development Board 2020). In addition to these two plans, the state funds many programs from cap-and-trade proceeds (through the California Climate Investments), such as the High Road Training Partnerships, that prioritize economic and workforce development.

Implications for the Valley CERF Coalition

The economic, equity, public health, and climate change challenges facing Central San Joaquin Valley, some of which are discussed in this Baseline report, are intersecting and interdependent, and have many implications for the well-being of residents and vitality of the region as a whole – now and into the future.

This section introduces some of these implications as well as some of the opportunities for Valley CERF to address them.

Climate change is both a threat – and an opportunity – for the economic stability and vitality of the Valley CERF region

Climate change comes with an economic toll; the Valley CERF region has been experiencing some of these costs first-hand. For example, agricultural outputs, and the livelihoods of the workers who make them possible, have been harmed by the increased duration and severity of drought as well as the return of Tulare Lake (Medellin-Azuara, et al. 2022). The trends of more severe and longer lasting heat and drought, as well as the groundwater depletion and increased risk of wildfire that follow, will no doubt continue to negatively impact the region's economy.⁴⁴ Among other things, this creates both the need and the opportunity to invest in strategies that increase the region's economic resilience, including by supporting current dominant industries to become climate-considered (such as agriculture and transportation and logistics), as well as by growing new industries that are well-positioned to support climate and economic goals (such as clean energy, one-water resource management, and circular manufacturing). Some of these industries will be defined and explored in greater depth through the second phase of research support for the Valley CERF process.

Particularly given the region's demonstrated strengths in securing federal funding, there is an opportunity to leverage federal funding under the Infrastructure Investment and Jobs Act⁴⁵ as well as the Inflation Reduction Act⁴⁶ to invest in some of these industries, such as clean energy and one-water resource management. Some advocates believe that some of the proposed provisions in the 2023 Farm Bill present significant opportunities to invest in regenerative agriculture and forestry practices, which provide economic, equity, public health, and ecosystem benefits.⁴⁷

The prevalence of disinvested communities in the Valley CERF region also creates the need and opportunities for climate-conscious investments to also center equity. There are many equity considerations, including how decisions are made about what investments to make; where investments are made; and who benefits from the direct, indirect, and induced economic outcomes of investments.

There is a significant mismatch between available housing-wage jobs in the region and the profile of workers living in disinvested communities. Furthermore, projected “business as usual” industry growth is unlikely to disrupt these patterns. Intentional intervention is needed.

To ameliorate this mismatch, several economic frameworks, and the business models that stem from them, can be adopted and scaled in the region in support of CERF goals. Frameworks like local economies, triple bottom line economies, cooperative economies, circular economies, and doughnut economies have been correlated with - or show promise to - higher wages, economic equity, environmental health, stronger and more resilient businesses, and stronger and more resilient economies.^{48 4950 51} Some of these economic frameworks will be defined and explored in greater depth through the second phase of research support for the Valley CERF process.

Considering the prevalence of government jobs in the region, as well as the underrepresentation of residents living in disadvantaged communities in these jobs, there is a need and an opportunity for government entities in the region to become employers that model practices aligned with CERF goals. This includes ensuring that the government workforce in the region is fully representative of the region’s communities and that the pay and benefits provided reflect the needs of a diverse workforce and the context of the region. Achieving this may require an analysis of and adjustments to current recruitment practices and hiring requirements.

Further, the business ecosystem can be designed to ensure economic resilience, equity, and environmental health. For example, policies (regulatory, restrictive, and facilitating) can activate the private sector to adopt, maintain, and improve socially and environmentally responsible business practices; business development efforts, as well as equitable and procurement policies, can focus on local business owners – especially women owners and owners of color - which can not only ensure the business owners in the region are representative of the population, but can also help ensure investments create equitable opportunities for diverse local businesses; upskilling and reskilling workers, with a focus on workers living in disinvested areas, can help ensure investments lead to family-supporting jobs for people with a range of work experiences, educational attainment, and

“barriers” to employment; and well-designed programs and initiatives can help ensure new technologies and other resources are accessible and affordable to those living in disinvested areas.

Investing in public health in the region can not only help meet current and future healthcare needs of residents in the region’s disinvested areas, but can also create new and quality jobs in those communities

There are significant gaps in the availability of healthcare services in the region, with disparities between residents living in disinvested areas and those living in the rest of the Valley CERF region. Further, the impacts of climate change will continue to negatively affect air, water, and soil quality in the region.⁵² As discussed in the report, increasing public health concerns for residents in the region will follow these climate-change related impacts, and will be disproportionately felt by people living in disinvested areas. Current and future public health needs create both the need and opportunity to significantly expand the number – and improve the distribution - of healthcare providers, as well as increase health insurance coverage and access to preventative care, all with a focus on those living in disinvested areas.

Additionally, given the racial and ethnic diversity of the region, there is a need and opportunity to ensure current and future healthcare providers are representative of – and culturally sensitive to - the communities they serve. Achieving this representation is dependent on many things, including addressing the disparities between current levels of education in the region – especially for those living in disinvested areas - and the education requirements of many healthcare jobs.

Poverty and inequality in the region are persistent, and families and communities continue to lack basic needs necessary for them to thrive; housing affordability, increased wages, and broadband for all are important places to focus

Residents in the Valley CERF region need more pathways out of poverty and low incomes. There are many factors necessary to achieve upward mobility, including ensuring housing is affordable, that all jobs provide a thriving wage, and digital access.⁵³

Reliable internet and broadband are necessary for many things in today’s world. They enable the public and private sectors to deliver – and consumers to receive - healthcare, education, public services, social services, and goods. They are also critical in connecting people to employment opportunities⁵⁴ as well as to advancing the clean energy economy and “smart” technologies that can help with water and energy conservation and other resource conservation practices. There is a need

an opportunity for the region to leverage the many sources of federal funding to expand broadband, particularly in rural areas, to ensure everyone in the region has access.

The Urban Institute has many resources on boosting upward mobility as well as on housing justice. Urban's *Boosting Upward Mobility: A Planning Guide for Local Action*, one of many publications under Urban's *Boosting Upward Mobility Framework*,⁵⁵ offers a step-by-step guide for local government and community leaders to better understand barriers to upward mobility and to build a team capable of planning, advocating for, and implementing a set of systems changes intended to bring and keep all members of their community out of poverty. The Urban Institute Housing Justice Hub⁵⁶ draws on Urban's expertise in housing research and policy, racial equity analytics, and strategic advising on cross-sector housing solutions, and creates and shares data tools and analyses intended to support policymakers and community partners to design, implement, and monitor policies and programs to achieve housing justice for all.

The Central San Joaquin Valley faces several intersecting and interdependent economic, equity, public health, and climate change challenges. Through evidence-based local and regional high road economy road maps and transition plans, and subsequent state investment for implementation, Valley CERF has an important opportunity to begin to address them. And, as robust as CERF planning efforts are, they can only achieve so much. Current and comprehensive government-led plans, including at a local and regional scale, are also needed to ensure there is a clear directive and accountability for achieving economic health and resilience, equity, and climate action in the Central San Joaquin Valley. Local and regional plans, as noted earlier in this report, are required by California state laws, and could also better position local and regional governments to respond quickly to funding opportunities, be they from the state or federal government, or other sources.

Appendices

Appendix A: List of Plans Reviewed

- California Climate Adaptation Strategy
- California Climate Scoping Plan
- California High Speed Rail
- California Inclusive Innovation Hubs
- California State Water Plan
- California Transportation Plan
- California Unified Strategic Workforce Development Plan
- Central San Joaquin Valley K-16 Partnership
- Central Valley Export Plan
- City of Fresno General Plan
- City of Fresno Greenhouse Gas Reduction Plan
- Climate Action Plan for Transportation Infrastructure
- Fresno County Comprehensive Economic Development Strategy
- Fresno DRIVE (Developing the Region's Inclusive and Vibrant Economy)
- Fresno-Merced Future of Food Innovation Initiative
- Good Jobs 4 the Central Valley (Central Valley Built 4 Scale)
- High Road to Good Jobs & Prosperity in the Central Valley
- High Road Training Partnerships
- Kings County Comprehensive Economic Development Strategy
- Kings County Regional Transportation Plan
- Madera County Local Workforce Development Plan
- Madera County Strategic Plan
- Putting California on the High Road: A Jobs and Climate Action Plan for 2030
- San Joaquin Valley Regional Plan
- Transform Fresno
- Tulare County Climate Action Plan
- Tulare County General Plan

Appendix B: List of Stakeholders

Organization Name	Geography Served	HRTC Partner? Y/N	Specific Community Alignment
Tulare County WIB	Tulare/Kings Counties	Y; Convener	
United Way of Fresno and Madera Counties	Madera County; Fresno County	Y; Convener	
Fresno State-OCED	Fresno County	Y; Convener	
Central Valley Community Foundation	Fresno County	Y; Convener	
Kings Community Action Organization	Tulare/Kings Counties	Y	people experiencing poverty
Kings Partnership for Prosperity	Tulare/Kings Counties	Y	
Kings/Tulare Homeless Alliance	Tulare/Kings Counties	Y	people experiencing homelessness
Community Services Employment Training	Tulare/Kings Counties	Y	
Education and Leadership Foundation	Tulare/Kings Counties; Fresno County; Madera County	Y	Immigrants; K-12 students; College students
Madera Rescue Mission	Madera County	Y	People experiencing homelessness
Community Action Partnership of Madera County	Madera County	Y	
Youth Leadership Institute	Madera County	Y	Youth (primarily age 15-21)
Madera Arts Council	Madera County	Y	Artists
Binational of Central California	Madera County; Fresno County	Y	Low-income, immigrant, farmworker communities
Westside Family Preservation Services	Fresno County	Y	rural communities of West Fresno County
Centro La Familia	Fresno County	Y	Immigrants
Westside Youth Center	Fresno County	Y	youth
The Children's Movement/Cradle to Career	Fresno County	Y	youth
Jakara Movement	Fresno County	Y	Punjabi Sikh community
Tulare County Office of Education	Tulare/Kings Counties	Y	
Kings County Job Training Office	Tulare/Kings Counties	Y	
Kings County Office of Education	Tulare/Kings Counties	Y	
Porterville College	Tulare/Kings Counties	Y	
Sequoias Adult Education Consortium	Tulare/Kings Counties	Y	Adults without high school diploma/equivalency certificate; immigrants; ELL; adults with disabilities
Madera Community College	Madera County	Y	

Madera Unified School District	Madera County	Y	Youth
Workforce Development Board of Madera	Madera County	Y	
First 5 Madera County	Madera County	Y	Youth (ages 0-5)
Madera County Superintendent of Schools	Madera County	Y	Youth; foster youth; youth experiencing homelessness
West Hills College Coalinga	Fresno County	Y	
Fresno Regional Workforce Development Board	Fresno County	Y	
Familias Empoderadas	Fresno County	Y	Latino families
Parent Institute for Quality Education	Fresno County	Y	
Tulare Kings Hispanic Chamber of Commerce	Tulare/Kings Counties	Y	Latino community
Tulare Chamber of Commerce	Tulare/Kings Counties	Y	
Tulare County Economic Development Corporation	Tulare/Kings Counties	Y	
Kings County Farm Bureau	Tulare/Kings Counties	Y	Farmworkers
Kings County Economic Development Corporation	Tulare/Kings Counties	Y	
Economic Development Commission	Madera County	Y	
Eastern Madera Community Foundation	Madera County	Y	
Madera Downtown Association	Madera County	Y	
Quady Winery	Madera County	Y	
Madera Chamber of Commerce	Madera County	Y	
Parlier Chamber/Central Valley Resource Center	Fresno County	Y	
Los Promotores Comunitarios	Fresno County	Y	
Southeast Asian Economic Development Coalition	Fresno County	Y	Southeast Asian business owners
National Latino Farmers and Ranchers	Fresno County	Y	Latino communities; farmers; ranchers
Fresno County Economic	Fresno County	Y	

Development Corporation			
San Joaquin Valley Clean Energy Organization	Tulare/Kings Counties	Y	
Self-Help Enterprises	Tulare/Kings Counties	Y	
Sequoia Riverlands Trust	Tulare/Kings Counties	Y	
California Environmental Voters	Tulare/Kings Counties	Y	
NAACP-Madera	Madera County	Y	Black communities
Yosemite/Sequoia Resource Conservation and Dev. Council	Madera County	Y	Rural communities of the Central San Joaquin Valley
Madera Coalition for Community Justice	Madera County	Y	Low-income communities
Coarsegold Resource Conservation District	Madera County	Y	
Latino Equity Advocacy and Policy Institute	Fresno County	Y	Farmworker communities; immigrants; youth; 'disadvantaged' communities
Sierra Resource Conservation District	Fresno County	Y	
San Joaquin River Parkway and Conservation Trust	Fresno County	Y	
Kings River Conservancy	Fresno County	Y	
Central California Asthma Collaborative	Fresno County	Y	
IBEW Local 100	Tulare/Kings Counties	Y	
Teamsters	Tulare/Kings Counties; Madera County; Fresno County	Y	
Unidad Popular Benito Juarez	Tulare/Kings Counties	Y	Indigenous communities
Proteus	Tulare/Kings Counties	Y	low-income communities; dislocated workers
United Food and Commercial Workers	Madera County	Y	
California Farmworker Foundation	Madera County; Fresno County; Tulare/Kings Counties	Y	Immigrants; Farmworkers
Central Valley Opportunity Center	Madera County	Y	Farmworkers; low-income communities
California Association of Agricultural Labor	Madera County	Y	Farmworkers
Communications Workers of America	Fresno County	Y	
City of Avenal	Tulare/Kings Counties	Y	
City of Lemoore	Tulare/Kings Counties	Y	
County of Tulare	Tulare/Kings Counties	Y	
City of Visalia	Tulare/Kings Counties	Y	
City of Porterville	Tulare/Kings Counties	Y	
Chowchilla City Council	Madera County	Y	

City of Madera	Madera County	Y	
County of Madera	Madera County	Y	
Madera County Dept. of Public Health	Madera County	Y	
Sierra Nevada Conservancy	Madera County	Y	
City of Selma	Fresno County	Y	
City of San Joaquin	Fresno County	Y	
Fresno Economic Opportunities Commission	Fresno County	Y	
First 5 Fresno County	Fresno County	Y	Youth; families
County of Fresno	Fresno County	Y	
Tachi Tribal TANF	Tulare/Kings Counties	Y	Tribe members with income <200% federal poverty level
Owens Valley Career Development Center	Tulare/Kings Counties	Y	Members of 12 tribal nations in Central Valley
Tule River Economic Development Corporation	Tulare/Kings Counties	Y	Tule River Indian Tribe
North Fork Rancheria	Madera County	Y	North Fork Rancheria of Mono Indians
Fresno American Indian Health Project	Fresno County	Y	Members of 120 tribes
Table Mountain Rancheria	Fresno County	Y	Table Mountain Rancheria of the Chukchansi band of Yokuts and the Monache tribe
Fresno Building Healthy Communities	Fresno County	Y	
Every Neighborhood Partnership	Fresno County	Y	
Fresno County Independent School District	Fresno County	Y	
Fresno State	Fresno County	Y	
Community Justice Network	Fresno County	Y	formerly incarcerated people
Fresno Business Council	Fresno County	Y	
Access Plus Capital	Fresno County	Y	Small business owners
Fresno Housing	Fresno County	Y	
Fresno Metro Black Chamber of Commerce	Fresno County	Y	Black small business owners
Fresno-Madera K-16 Collaborative	Fresno County	Y	students in 'underserved' neighborhoods
GO Public Schools	Fresno County	Y	youth; ELL
BLACK Wellness and Prosperity Center	Fresno County	Y	Black women
Fresno City College	Fresno County	Y	
Fresno Pacific University Center for Community Transformation	Fresno County	Y	
RISE-INC	Fresno County	Y	Hmong community
Vision View	Fresno County	Y	Entrepreneurs from underrepresented communities

Central Valley Pacific Islander Alliance	Fresno County	Y	Central Valley Native Hawaiian and Pacific Islander community
Another Level Training Academy	Fresno County	Y	BIPOC women; youth
California State University, Fresno	Fresno County	Y	
Islamic Cultural Center of Fresno	Fresno County	Y	Muslim community
A Hopeful Encounter	Fresno County	Y	Southeast Asian community
Generation Changers	Fresno County	Y	
El Dorado Park CDC	Fresno County	Y	
Jackson CDC	Fresno County	Y	
El Quinto Sol de America	Tulare/Kings Counties	N	Farmworkers; monolingual Spanish seekers; residents of unincorporated communities in Tulare County's foothills
Friends of Calwa	Fresno County	N	Residents of Calwa (which is partially located within City of Fresno and partially in unincorporated Fresno County)
Community United Lanare	Fresno County	N	Residents of Lanare (an unincorporated community)
Concerned Citizens of West Fresno	Fresno County	N	
Hmong Innovating Politics (HIP)	Fresno County	N	Hmong community
Root & Rebound: Fresno Women's Reentry Employment Initiative	Fresno County	N	formerly incarcerated and justice system-impacted women, with a focus on women of color
Laotian American Community of Fresno	Fresno County	N	Laotian community
San Joaquin Valley Rural Development Center	Fresno County; Tulare/Kings Counties; Madera County	N	Rural communities of the San Joaquin Valley
Californians for Pesticide Reform	Fresno County; Tulare County	N	
Central California Environmental Justice Network	Fresno County	N	
Leadership Counsel for Justice and Accountability	Fresno County; Madera County	N	Low-income communities; rural communities; environmental justice communities
Fresno Building Healthy Communities	Fresno County	N	People of color; environmental justice communities
Lideres Campesinas	Fresno County; Madera County; Tulare County	N	Female farmworkers

Notes

- ¹ A full list of HRTC members can be found here: <https://www.valleycerf.org/partners>.
- ² See more detailed on methodology: <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40>
- ³ See Census.gov: https://www.census.gov/programs-surveys/geography/about/glossary.html#par_textimage_13 and a total population of 1.78 million
- ⁴ Migration Policy Institute (MPI) analysis of U.S. Census Bureau data from the 2015-19 American Community Survey (ACS) pooled, and the 2008 Survey of Income and Program Participation (SIPP), drawing on a methodology developed in consultation with James Bachmeier of Temple University and Jennifer Van Hook of The Pennsylvania State University, Population Research Institute.
- ⁵ Office of the Assistant Secretary for Planning (ASPE), “2021 Poverty Guidelines.” U.S. Department of Health and Humans Services, Accessed July 19, 2023, <https://aspe.hhs.gov/2021-poverty-guidelines>
- ⁶ Labor market and unemployment data was downloaded from each county from the following location: <https://labormarketinfo.edd.ca.gov/cgi/databrowsing/localAreaProQSSelection.asp?menuChoice=localAreaPro>
- ⁷ For more about the business data from the California Employment Development Department: https://labormarketinfo.edd.ca.gov/LMID/Size_of_Business_Report_Terms.html
- ⁸ Business data is sources from “Third Quarter Payroll and Number of Businesses by Size Category – Classified by County (Table 3A)”: https://labormarketinfo.edd.ca.gov/LMID/Size_of_Business_Data.html
- ⁹ For more about the Industry Employment data: https://labormarketinfo.edd.ca.gov/LMID/Methodology_for_Industry_Employment.html
- ¹⁰ For more information about the Occupational Employment and Wage Statistics see here: <https://www.bls.gov/oes/>.
- ¹¹ The Business Dynamics Statistics is output from the restricted-use Longitudinal Business Database housed in the Federal Statistical Research Data Center.
- ¹² Business entry and exit rate calculations explained in more detail: <https://www.census.gov/programs-surveys/bds/documentation/faq.html>.
- ¹³ For more information on the Annual Business Survey: <https://www.census.gov/programs-surveys/abs/about.html>.
- ¹⁴ In this dataset, in most cases, businesses are one establishment and multi-establishment businesses are counted toward the primary or largest establishment.
- ¹⁵ Data from the state of California Employment Development Department: https://labormarketinfo.edd.ca.gov/LMID/Size_of_siness_Data.html.
- ¹⁶ Data from US Census Bureau Business Dynamics Statistics. <https://www.census.gov/programs-surveys/bds.html>
- ¹⁷ Only Fresno and Tulare had data available for percentage of Hispanic and female business owners which is why the comparison is restricted to these counties, and they are the only ones displayed in the graph. In Kings County, 71 percent of business owners are white, although white people in Kings County represent 57 percent of the population. In Madera, 75 percent of the business owners are white compared to 55 percent of the overall population. For Kings Cuntly and Madera County, demographic data for business owners is only reported for the following categories: white, male, and non-Hispanic. Data is suppressed for all other demographic categories due to small sample sizes.

- ¹⁸ In California, 2% of businesses are Black owned compared to 6% of the population. In Fresno 2% of the businesses are Black owned compared to 5% of the population. In Tulare less than 1% of businesses are Black owned compared to 2% of the population. In California, 22% of businesses are Asian owned compared to 15% of the population. In Fresno 18% of the businesses are Asian owned compared to 11% of the population. In Tulare 15% of businesses are Asian owned compared to 4% of the population.
- ¹⁹ Data comes from the Annual Business Survey 2021, which reports data collected in 2020. The comparisons are from the 5-year ACS 2017-2021. Business ownership counts under each demographic when more than 51% or more of the business stock or equity is owned by that demographic.
- ²⁰ See [Employment Projections: 2021-2031 Summary - 2021 A01 Results \(bls.gov\)](#)
- ²¹ Centers for Disease Control and Prevention, "PLACES: Local Data for Better Health," updated April 12, 2023, <https://www.cdc.gov/places/index.html>.
- ²² California Department of Public Health, Center for Infectious Diseases, Infectious Diseases Branch, Surveillance and Statistics Section, "Infectious-Diseases-by-Disease-County-Year-Sex," updated November 22, 2022, <https://data.chhs.ca.gov/dataset/infectious-disease>.
- ²³ Healthcare Information Division, Department of Health Care Access and Information [Distributor: California Breathing Asthma Program, California Department of Public Health], Asthma Hospitalization Rates by County," updated January 27, 2023, <https://data.chhs.ca.gov/dataset/asthma-hospitalization-rates-by-county>.
- ²⁴ University of California Los Angeles, "AskCHIS," accessed June 19, 2023, <http://ask.chis.ucla.edu/>.
- ²⁵ Adults are considered to have current asthma if they answered affirmatively to the following questions: "Have you ever been told by a doctor, nurse, or other health professional that you have asthma?" and "Do you still have asthma?" in the 2020 BRFSS.
- ²⁶ Adults are considered to have chronic kidney disease if they answered affirmatively to having ever been told by a doctor, nurse, or other health professional that they have kidney disease in the 2020 BRFSS.
- ²⁷ Adults are considered to have chronic obstructive pulmonary disease if they answered affirmatively to ever having been told by a doctor, nurse, or other health professional that they had chronic obstructive pulmonary disease (COPD), emphysema, or chronic bronchitis in the 2020 BRFSS.
- ²⁸ Adults are considered to have diabetes if they answered affirmatively to having ever been told by a doctor, nurse, or other health professional that they have diabetes other than diabetes during pregnancy in the 2020 BRFSS.
- ²⁹ "Other races" includes non-Hispanic Black, American Indian or Alaska Native, Asian, Native Hawaiian or other Pacific Islander, and people who are two or more races.
- ³⁰ Adults are considered to have cancer if they answered affirmatively to having ever been told by a doctor, nurse, or other health professional that they have any other types (besides skin) of cancer in the 2020 BRFSS.
- ³¹ Adults are considered to have high blood pressure if they answered affirmatively to having ever been told by a doctor, nurse, or other health professional that they have high blood pressure in the 2019 BRFSS. Adults with diabetes excludes women who were told they have high blood pressure only during pregnancy or told they had borderline hypertension.
- ³² "Other races" includes non-Hispanic Black, American Indian or Alaska Native, Asian, Native Hawaiian or other Pacific Islander, and people who are two or more races.
- ³³ Adults are considered to have depression if they answered affirmatively to having been told by a doctor, nurse, or other health professional that they had depressive disorder in the 2020 BRFSS.

- ³⁴ Nicole Foy, "Can Fresno bridge its economic divide? California's millions boost Black businesses, ag tech," CalMatters, May 23, 2023, <https://calmatters.org/california-divide/2023/05/fresno-drive-economy/>; "About," Fresno DRIVE, accessed June 9, 2023, <https://www.fresnodrive.org/about>.
- ³⁵ "Transformative Climate Communities: Community-led Climate Solutions for Equitable Transformation," California Strategic Growth Council, accessed June 9, 2023, . https://sgc.ca.gov/programs/tcc/docs/20230424-TCC-Fact_Sheet-en.pdf.
- ³⁶ California's Senate Bill 375 requires Metropolitan Planning Organizations to develop a Sustainable Communities Strategy (as part of their regional transportation plans) that demonstrates how the region will meet state greenhouse gas emissions targets by integrating transportation, land use, and housing in the planning process.
- ³⁷ "Fresno County Economic Development Corporation," US Economic Development Administration, accessed June 9, 2023, <https://www.eda.gov/funding/programs/american-rescue-plan/good-jobs-challenge/awardees/Fresno-County-Economic-Development-Corporation>.
- ³⁸ "Who We Are," Regional K-16 Education Collaboratives Grant Program, accessed June 9, 2023, <https://k16collaborative.org/who-we-are/>.
- ³⁹ Fresno-Merced Future of Food (F3), US Economic Development Administration, accessed June 9, 2023, <https://www.eda.gov/funding/programs/american-rescue-plan/build-back-better/finalists/central-valley-community-foundation>.
- ⁴⁰ Nadia Lopez, "Slashing greenhouse gases: California revises climate change strategy," November 16, 2022, CalMatters, <https://calmatters.org/environment/2022/11/california-revises-climate-change-plan/>.
- ⁴¹ "Overview of the California Climate Adaptation Strategy," California Climate Adaptation Strategy, accessed June 13, 2023, <https://climateresilience.ca.gov/overview/index.html>.
- ⁴² "SB 1000 – Environmental Justice in Local Land Use Planning," Office of the Attorney General of California, accessed June 18, 2023, <https://oag.ca.gov/environment/sb1000>.
- ⁴³ "Overview of the California Climate Adaptation Strategy," California Climate Adaptation Strategy, accessed June 16, 2023, <https://www.climateresilience.ca.gov/overview/index.html>.
- ⁴⁴ For more information on trends related to climate change and environmental resources in the region, see the Community Economic Resilience Fund Environmental and Climate Report prepared by the Sierra Resource Conservation District and Yosemite-Sequoia Resource Conservation and Development Council for Valley CERF in 2023: <https://sway.office.com/bcmSzA7iUXaGEBfB?ref=Link>.
- ⁴⁵ For more information on the Infrastructure Investment and Jobs Act: <https://www.congress.gov/bill/117th-congress/house-bill/3684>.
- ⁴⁶ For more information on the Inflation Reduction Act: <https://www.congress.gov/bill/117th-congress/house-bill/5376>.
- ⁴⁷ For a summary of the NRDC's priorities for the 2023 Farm Bill: <https://www.nrdc.org/sites/default/files/2023-05/2023-farm-bill-priorities-fs.pdf>.
- ⁴⁸ "Why Care about Independent, Locally Owned Businesses?" Institute for Local Self Reliance, accessed July 27, 2023, <https://ilsr.org/why-care-about-independent-locally-owned-businesses/>.
- ⁴⁹ "The ABC's of Cooperative Impact," National Cooperative business Association CLUSA International, accessed July 27, 2023, <https://ncbaclusa.coop/resources/abcs-of-cooperative-impact/>
- ⁵⁰ For information on circular economies and some the benefits: <https://ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview>.

⁵¹ For a summary of Doughnut Economics: <https://doughnuteconomics.org/>.

⁵² For more information on trends related to climate change and environmental resources in the region, see the Community Economic Resilience Fund Environmental and Climate Report prepared by the Sierra Resource Conservation District and Yosemite-Sequoia Resource Conservation and Development Council for Valley CERF in 2023: <https://sway.office.com/bcmSzA7iUXaGEBfB?ref=Link>.

⁵³ To learn more about boosting upward mobility, a research approach for identifying the metrics, and the evidence behind those metrics: <https://upward-mobility.urban.org/>.

⁵⁴ Fishbane, Lara, Adie Tomer, "Broadband is too important for this many in the US to be disconnected," Brookings Institution, August 14, 2019, <https://www.brookings.edu/articles/broadband-is-too-important-for-this-many-in-the-us-to-be-disconnected/>

⁵⁵ See <https://upward-mobility.urban.org/>

⁵⁶ See <https://www.urban.org/projects/housing-justice-hub>

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Valley CERF

Climate and Environmental Analysis for the Central San Joaquin Valley

Sierra Resource Conservation District and
Yosemite Sequoia Resource Conservation & Development Council



CENTRAL
VALLEY
COMMUNITY
FOUNDATION

California's Community Economic Resilience Fund (CERF)

Climate and Environmental Analysis Report Central San Joaquin Valley

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Regional Analysis

CERF Valley Region

The Valley CERF region consists of Madera, Fresno, Tulare and Kings counties; the Valley is an elliptical shaped bowl bounded on the east by the Sierra Nevada Mountains and on the west by foothills of the Diablo Range of the Coastal Mountains. The Sierra Nevada Mountains are densely forested with some alpine zone habitat at high elevations, with the highest peak of the Sierras being Mt. Whitney (14,505 feet above sea level) in Tulare County. The majority of Sierra National Forest overlaps Madera and Fresno Counties. Sequoia National Forest straddles Fresno and Tulare Counties. Three of the CERF Counties are a gateway to a National Park, Yosemite (Madera County), Kings Canyon (Fresno County) and Sequoia (Tulare County). In contrast, the Diablo Range within the Valley CERF area consists of lower elevation foothills (400 to 1,000 feet) and largely unpopulated with lands either owned by large-holding ranchers or the Bureau of Land Management. The Diablo Range is a hotspot of biodiversity, supporting many plant and animal species endemic to California (meaning, they do not exist outside of California). The Diablo Range regions within the Valley CERF area are crucial buffers to the internal ecosystem of the Coastal Mountains. The area between the Sierra Nevada Mountains

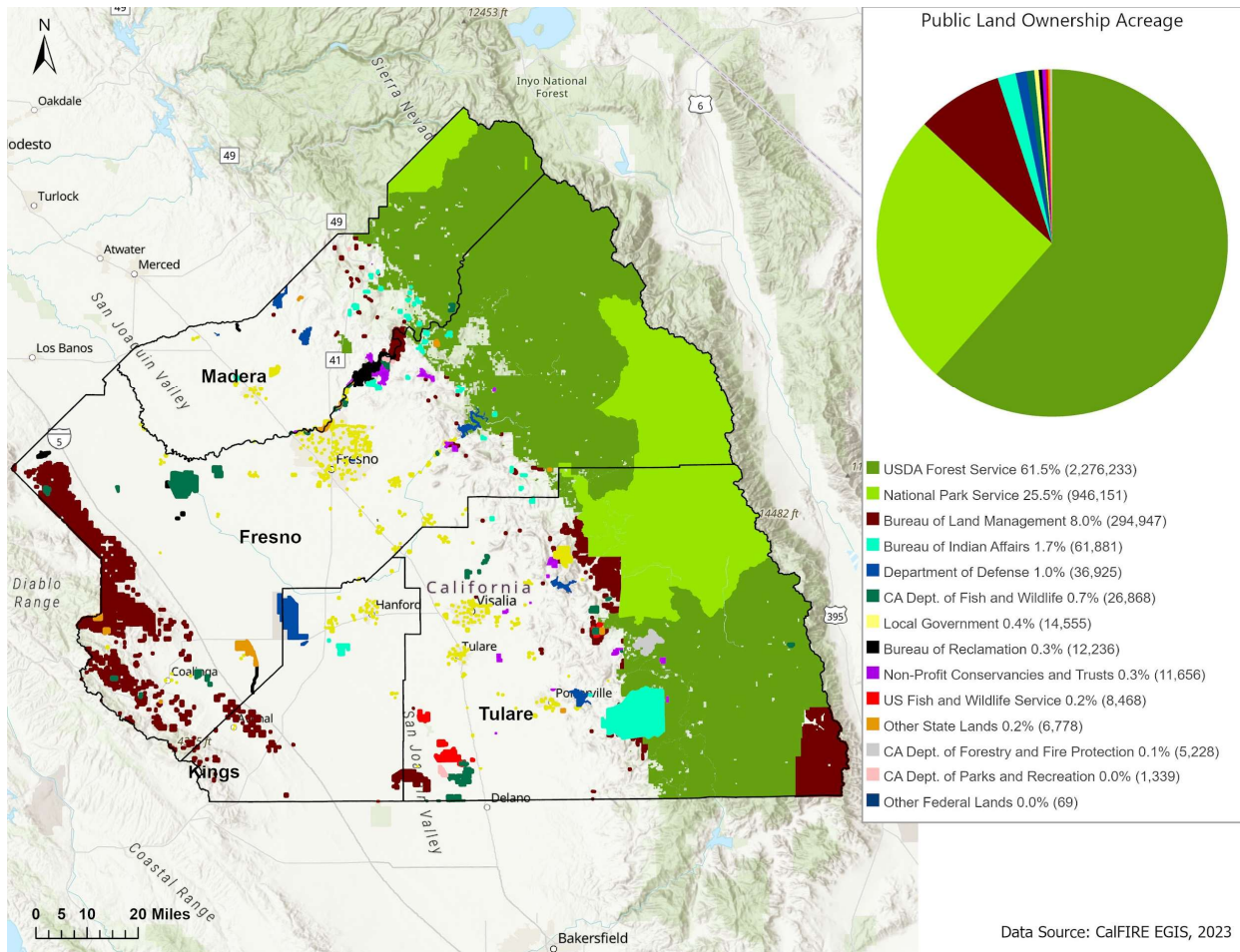


Roads and Parklands of the CERF Valley Region



and the Diablo Range is referred to as the "Valley Floor"; it is fairly flat and generally below 500 feet in elevation. This central San Joaquin Valley area has about 4,157,977 acres engaged in active agriculture. The fertile soil has been washed down from both sides of the bowl and has been enriched by the vegetation of the ages. The 400-mile-long Central Valley is the world's largest agricultural area. It is the nation's largest supplier of dairy products and the source of over a third of its vegetables and two-thirds of its fruits and nuts. A daily challenge for the thousands of farmers,

dairymen and ranchers is water. The annual precipitation in the San Joaquin falls in the winter, leaving the valley relatively dry during the growing months.



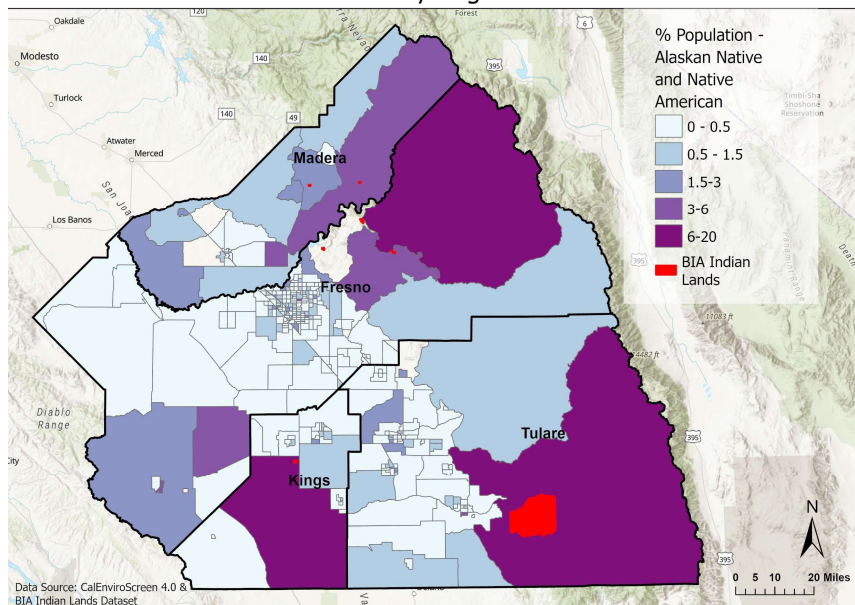
Demographics

The total acreage for the 4 counties adds up to 9,212,800 acres. Most of the forested lands in the Sierra Nevada Mountains, about 3,700,000 acres (or ~24% of the four County Valley CERF region) is owned by public entities including the USDA Forest Service, National Park Service and Bureau of Land Management. The vast majority of those lands are in the Sierra Nevada Mountains and foothills, contained within the Sequoia and Kings Canyon National Parks, and Sequoia National Forest. These lands have the important role of holding snowpack which accumulates in the winter months and is released to the foothills and Valley Floor through snowmelt. The Bureau of Land Management holds other lands to the west of the Central Valley, covering the Panoche, Tumey and Ciervo Hills of the Diablo Range.

Tribal Lands

The Bureau of Indian Affairs (tribal lands, rancherias and reservations) accounts for about 61,000 acres within the CERF Valley region. The majority of reservations are located in the foothill regions of the Sierra Nevada Range. There are seven reservations and the largest Indian Reservation is the Tule River Reservation located in Tulare county. Indigenous groups are the original environmental stewards. Their Traditional Ecological Knowledge represents and unveils the significance of the reciprocal relationship between land and humans. For the Sierra Nevada Tribes, cultural burning is a valuable practice that bonds fire to resources. By traditionally burning, the land returns to a natural state and the material and food resources are renourished. This concept of human-land relationships and land management that has been successful for indigenous groups for time immemorial further encourages returning lands back to a healthy state by improving our management strategies and land relationship.

Percent Population of Native Americans and Alaskan Natives in the CERF Valley Region



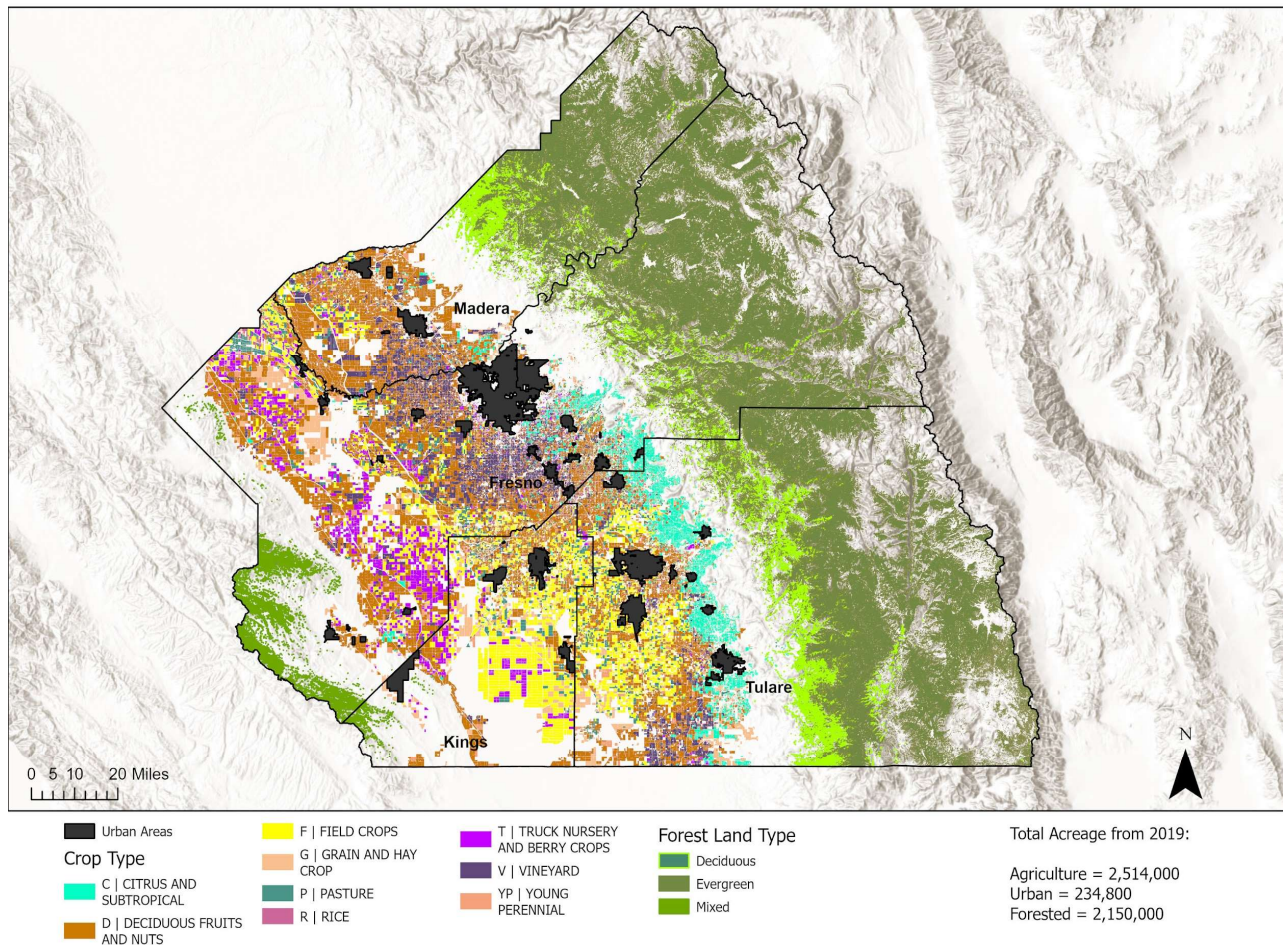
Land Use

Agriculture is the predominant land-use category in the central San Joaquin Valley. A strong value of California's food system is that 93% of the food grown is direct-to-human food (fruits and vegetables) and is therefore more accessible. Only 7% of the food grown is fed to animals or used for other purposes. Versus for example, Iowa, where 100% of crops grown are fed to animals or used for other purposes such as creating ethanol (Satran, 2017). Of the four, Fresno has the largest number of acres in farms (1,646,540 acres, 59% of the county's land base), followed by Tulare (1,250,121 acres, 45% of the county's land base), Madera (645,358 acres, 47% of the county's land base) and Kings County (615,958 acres, 60% of the county's land base). These counties comprise around 17% of California's total 24,522,801 acres of farmland. Across all four counties, there is a range of farm sizes with most (42% - 57%) being small farms of one to 49 acres, a slightly smaller

percentage (40% - 50%) being mid-sized farms of 50 to 499 acres, and the smallest percentage (10% - 18%) being large farms of 500 to 1000+ acres. (County 2017 Ag Census data)

Note, there is an overall decline in the number of individual farms in California as well as the Central Valley, but an increase in the size of farms which is due to a trend in farm consolidation in California and nationwide as corporate entities purchase more farmland.

Forested, Urban and Agriculture Land Cover in Madera, Fresno, Tulare and Kings Counties



A comparison of farm demographics in relationship to general population demographics in the four counties and across California reveals the following information: Although the four counties have 5% of the overall population of California, this area is home to 16% of its producers. Around 30% of all of the state's Asian producers and around 10% of the state's Black or African American producers, are in the four counties; as are around 23% of the state's producers who identify as being of Hispanic, Latino, Spanish origin. The four counties have around 60% of the state's per county average number of organic producers and around 50% of the average number of producers who sell directly to consumers.

Fresno County, long ranked #1 in California agriculture, has an agricultural production value of \$8.5 billion in 2021. Tulare County with an agriculture production value of \$7.99 billion, is ranked #3 in California agriculture. Kings County and Madera County are ranked at # 8 (\$2.34 billion) and # 11

(\$2.04 billion) respectively. The data above is from the 2021 County Crop Reports. When compared with data from the 2017 County Crop Reports, Fresno, Tulare and Kings Counties all show remarkable increases of around 14% in total agriculture value. Madera had a more modest increase of just under 4% in total agriculture value. Almonds, milk and pistachios are leading crops in all counties. (County Crop Reports, 2017 - 2021, County 2017 Ag Census data, compiled).

Forested lands cover almost 25% of the total area. The Sierra Nevada mountains are crucial to the health of the Central Valley economy, providing most of the water (in the form of snowpack) that supports the Central Valley. Healthy forests are critical to plentiful and uncontaminated water for local communities and those in the foothills and Valley floor as snowmelt travels down through the watershed. Historically, Valley CERF mountain communities were supported by the timber and mining industry. Now predominantly supported by tourism and recreation. The mountains are host to five National Wilderness Areas, including the world's largest grove of giant sequoia trees (Sequoia and Kings Canyon National Parks). These areas are an important part of the economy. For example, 1.2 million visitors to Sequoia and Kings Canyon National parks in 2020 spent \$96.7 million in communities near the park. This results in 1,228 local jobs and annually contributes \$68.9 million to the local economy.

Water

The Central Valley comprises three main watersheds that feed into the Sacramento-San Joaquin Delta before flowing into the Pacific Ocean. The Sacramento River watershed is to the north of the Delta, and the San Joaquin River watershed and Tulare Lakes Basin to the south of the Delta. The four-County Valley CERF region occupies the San Joaquin River watershed (Madera, and Fresno Counties) and the Tulare Lake Basin (Tulare and Kings Counties).

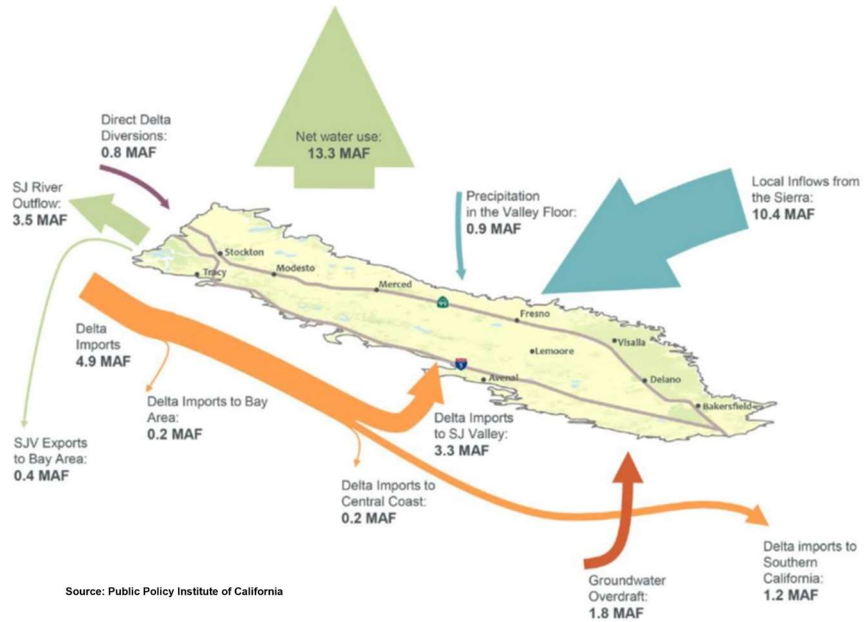


In the winter months, snow falling in the Sierra Nevada Mountains collects as “snowpack” which provides the majority of surface water for the Central Valley. As snowpack melts, water flows down through the mountains supplying the foothills and Valley Floor with water. In the San Joaquin River watershed, water flows down through the mountains approximately 100 miles to the west, then turns north for 260 miles where it meets the Sacramento River at the Sacramento-San Joaquin Delta. Major tributary rivers that flow into the San Joaquin River include (from south to north) the Fresno, Chowchilla, Merced, Tuolumne, Stanislaus, Calaveras, Mokelumne, and Cosumnes Rivers San Francisco Bay Delta. South of the San Joaquin River watershed, snowmelt from the Sierra Nevada Mountains flows into the major rivers of the Tulare Lake Basin including the Kings, Kaweah, Tule, and

Kern Rivers and their tributaries. Historically, prior to European settlement, water from these rivers settled into a series of large lakes and marshes on the Valley floor, with occasional movement of surface water into the San Joaquin watershed via the Kings River and its tributaries.

Modern-Day Surface Water Movement

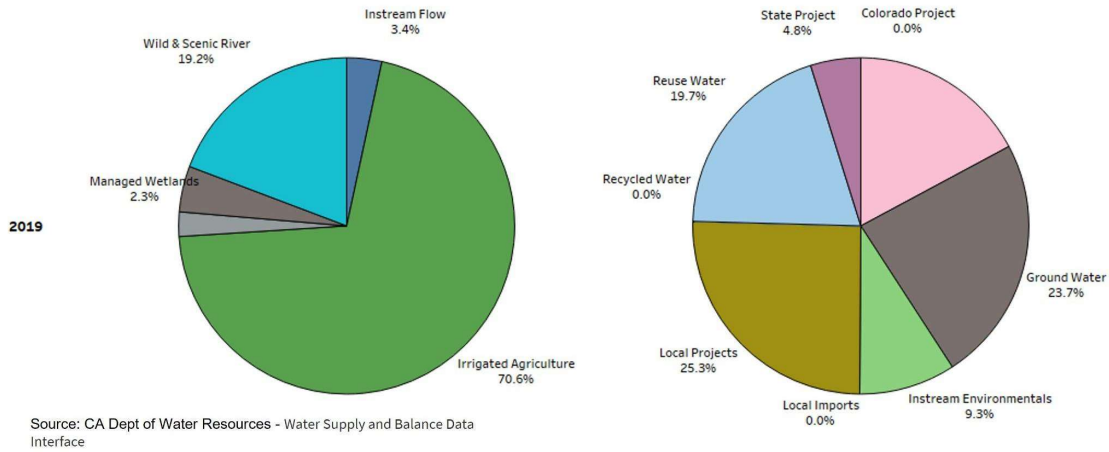
Throughout the 20th Century, dams constructed on rivers in the foothills of the Sierras captured snowmelt for water storage in reservoirs. The Friant Dam which creates Millerton Lake is the most significant of these dams. Constructed in 1942, and owned and operated by the United States Bureau of Reclamation, the dam controls the San Joaquin River flow and provides for downstream releases to meet water delivery requirements, flood control, conservation storage, and water diversions into Madera and Friant-Kern Canals which deliver water to a million acres of agricultural land in Fresno, Kern, Madera, and Tulare Counties (BR 2023).



There is very little remaining natural flow of surface water in the San Joaquin River watershed and Tulare Lakes Basin as ditches and canals were created to transport water for irrigation and agricultural fields. To better manage the flow of water in the Central Valley, three significant constructed waterways were made. These were the Central Valley Project in the 1930's, The Delta-Mendota Canal in 1951, and the California Aqueduct in the 1960's. These three systems were connected in 2012, via the Delta-Mendota Canal/California Aqueduct Intertie as a pumped connection between the CVP Delta-Mendota Canal and the California Aqueduct.

On average statewide, the proportion of water used by each sector is as follows: cities and communities = 11%; agriculture = 42%; and environment = 47%. In the Central Valley, water use by sector is as follows: cities and communities = 4.4%; Irrigated agriculture = 70.6%; and environment = 25%.

Central Valley, CA



Air

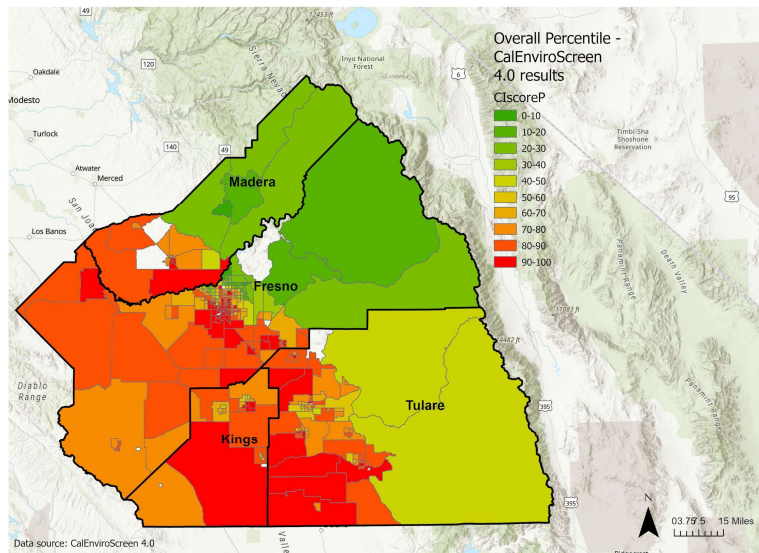
In the San Joaquin Valley Region, the geography, topography, and meteorology of the air basin create a low capacity for air pollution. The Valley is shaped like a bowl with the Sierra Nevada Mountain range bordering it to the East and the Coastal ranges to the West. The San Joaquin Valley Air Pollution Control District (SJVAPCD) reports that the air quality of the Los Angeles area is only marginally worse than the Valley's although about 10 times more pollution is emitted in that region. The Bay Area's air quality is much better than the Valley's even though about 6 times more pollution is released there. The Valley's topography combined with stagnant, dry winters, trap pollution under the inversion layer. To clear air pollution a combination of a wind and a rain event is required (SJVAPCD 2022).

Broad Impacts

Cumulative Environmental Impact

CalEnviroScreen is a tool used to calculate the cumulative environmental pollution burden on communities per tract from multiple indicators. The final CIscoreP indicates potential vulnerability to communities from multiple sources of pollution (e.g., hazardous waste, air pollution, water pollution) and evaluates the burden while accounting for adverse effects of pollution. This ranking is based on exposures to pollutants, adverse environmental conditions, socioeconomic factors, and the prevalence of certain health conditions. The map indicates that the mountain communities are the least vulnerable to pollution effects, while the valley and foothill communities are the most vulnerable (OEHHA 2023).

Cumulative Environmental Impacts on Communities in the CERF Valley Region



Drought

As described earlier, snowpack that forms in the Sierra Nevada Mountains during the winter is the primary source of surface water for the Central Valley. Records since 1984 show that winter precipitation (snow and rain) events have changed so that winter precipitation events are smaller and less frequent between summers. This has led to increasingly longer and more severe periods of dry summers between the rainy/wet winters in the State of California. This pattern has led to drought, which results from an imbalance between water supply and water demand. The National Oceanic Atmospheric Administration U.S. Drought Monitor provides that there have been increasing events over the past 50 years of “Exceptional Drought”, the most severe drought category (Drought.gov 2023). The most recent years of Exceptional Drought were 2001-2002, 2007-2009, and 2012-2016 (USGS 2016). This has resulted in impacts on the health of forests in the Sierra Nevada Mountains resulting in high tree mortality; and limitations on the agricultural industry of the Valley Floor, leading to landmark legislation to regulate the use of groundwater.

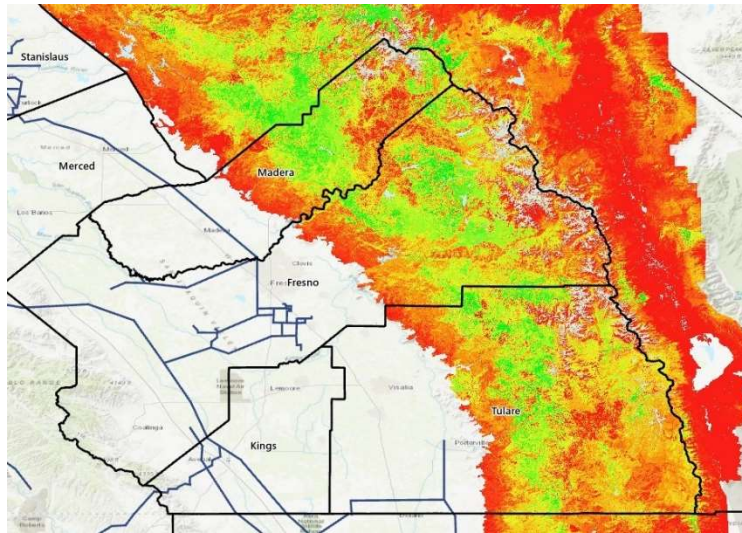
Tree Mortality and Biomass

Changes in environmental regulations, deforestation concerns, concerns about reduced habitat, and fire suppression stopped responsible forest management. The Sierra National and Sequoia National Forests started to overgrow and die due to competition for water and light, this created dead and

downed fuels, exasperated by the effects of drought and bark beetles. Fires between 2010 and 2020 consumed more acres than the 100 years beforehand had to fire. Forced withdrawal from the forest under the idea of protection, elimination of traditional treatments of the forest by the native tribes that called this region home, and the collapse of the logging industry, have adversely created a forest management problem of too much fuel throughout the entire Sierra Nevada.

Much of California experienced a severe drought in 2012–2015 inciting a large tree mortality event in the central and southern Sierra Nevada. About 48.9% of trees died between 2014 and 2017. Tree mortality ranged from $58.7 \pm 3.7\%$ on the Sierra National Forest. Tree mortality continues to increase as the effects of drought and bark beetle infestations do not show up until many years later and as the drought years continue to increase into longer and drier seasons. The impacts of tree mortality include a loss of significant carbon absorption and storage with an increase in greenhouse gas emissions. In 2021 approximately 7 million trees died throughout the Sierra with no trees or vegetation to replace them in the short to medium term. The tree mortality crisis has brought a loss of critical habitat for wildlife, threats to public safety and infrastructure from an increase in falling trees, a financial burden to remove all the dead trees and excess biomass, and a loss of revenue from tourism due to public safety risks (SNC 2022).

Valley CERF Available Forest Biomass (Dead Carbon -Dry tons per acre- branchwood and foliage)
 U.S. Forest Service Data



Woody biomass produced by tree mortality, fuels treatments, forest and range management, urban and disaster cleanup, and other activities are numerous. The biomass no longer absorbs carbon but creates more carbon as it sits and decomposes on the forest floor. The utilization of biomass can come in many forms to lower greenhouse gas emissions and improve air quality. Biomass utilization can reduce the costs of hazardous fuel treatments, provide forest management, provide a renewable

energy source, create biofuels or other byproducts, and bring health back to the forest. The United States Forest Service Region 5 estimates that between six and nine million acres of the land they are responsible for managing in California that are in need of restoration (Branham 2014).

Wildfire

Three factors significantly impacted the Sierra Nevada forests making them vulnerable to extreme wildfire. Decades of fire suppression and restrictions on logging, multiple years of extreme drought, and the significant increase in the native bark beetle population led to unprecedented tree die-off across the Region. The intensity and size of wildfires have increased dramatically. Between 1984-2001 and 2002-2020, in millions of acres, wildfires increased in acreage by more than 800,000 in June and July months and have increased in nearly every month of the year (EPA 2023). In California, the top 7 largest wildfires in the State’s history have

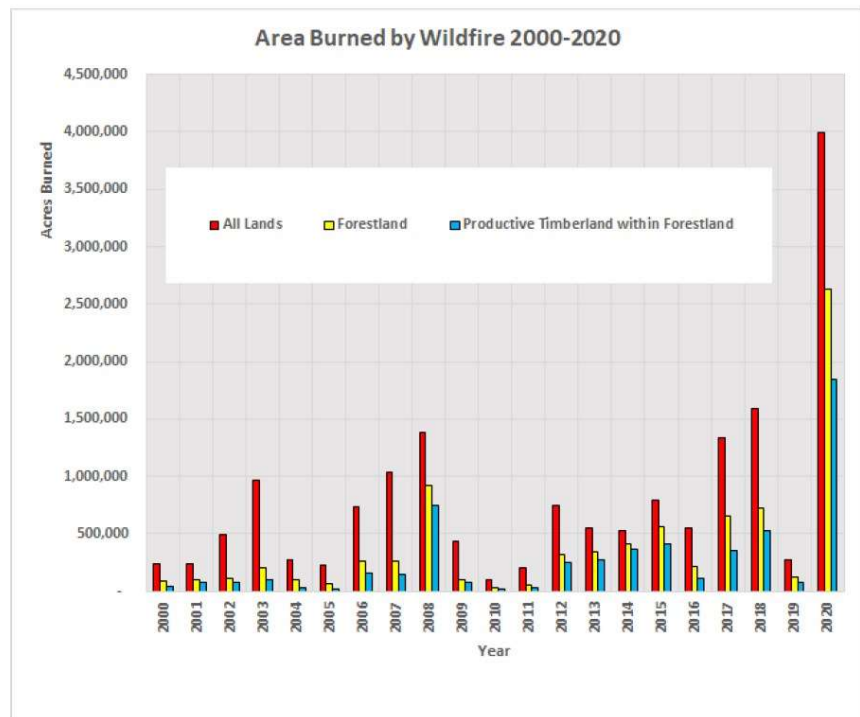
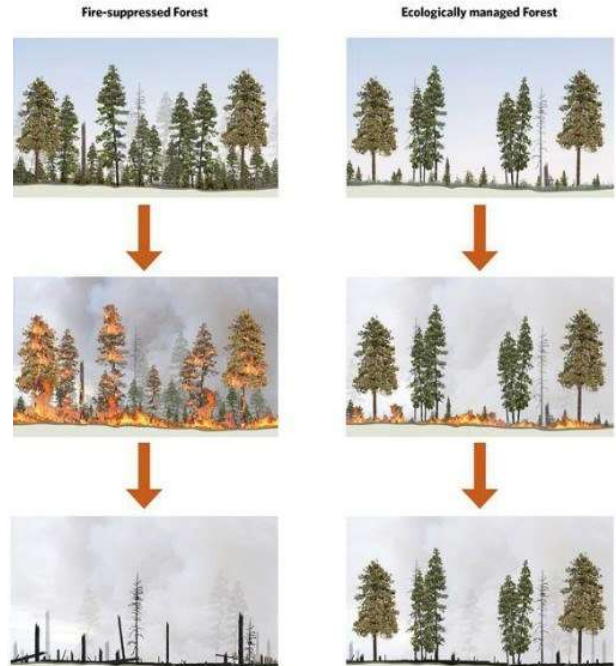
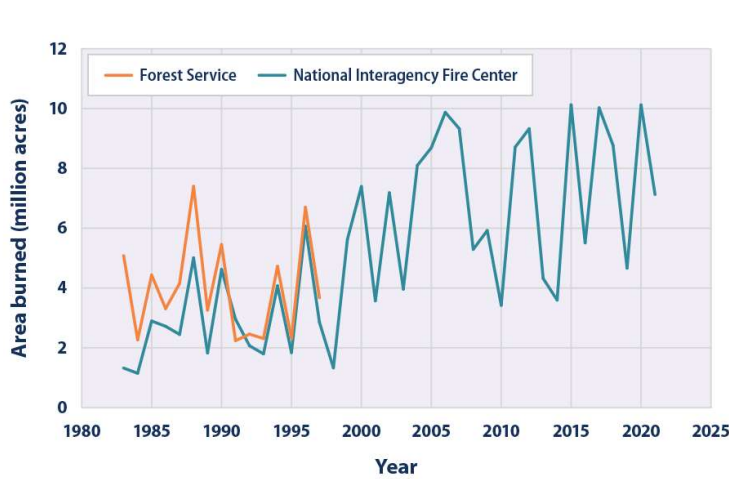


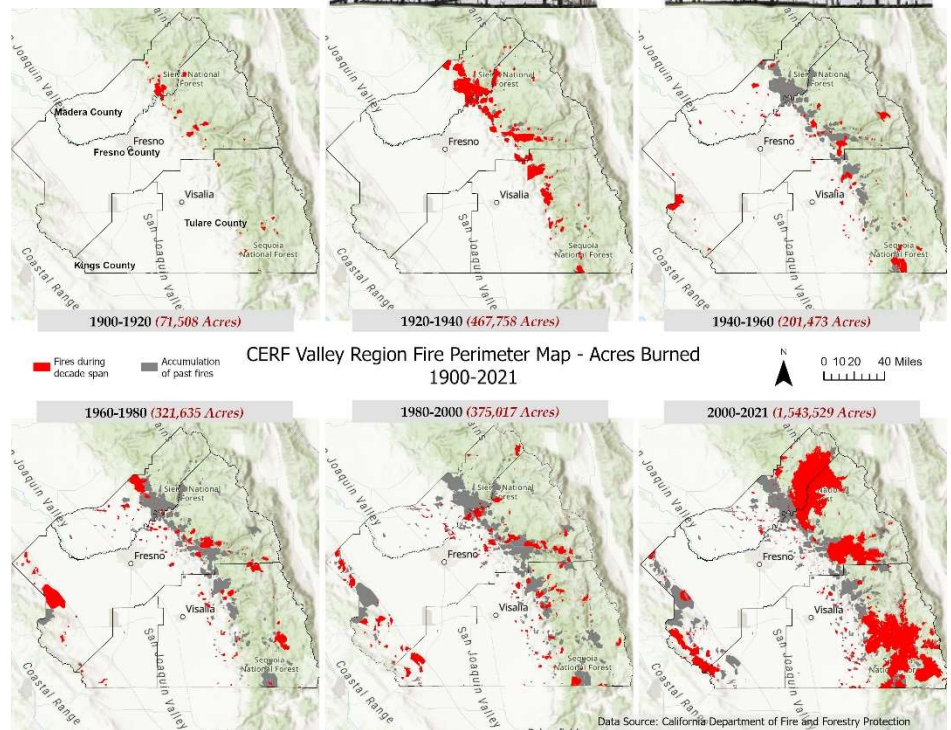
Figure 2: Wildfire acres burned statewide: all-lands (red); the portion of wildfire that occurred in forestland (yellow); the portion of wildfire that occurred in timberlands (blue), annualized 2000-2020. *Note that acres burned does not indicate level of fire severity.

been recorded within the last 5 years. (CALFIRE 2023). The overall trend has shown an increase in acres burned, the difference between 1980-1990s and 2010-2023 as large as 4-6 million acres larger in size for each fire season. Generally, wildfire is good for forests and is part of healthy forest ecology. However, the size and intensity of the fire within current forest health conditions can and has been completely destructive. An ecologically managed forest responds positively to fire with many benefits.

This image of the last 100 years of wildfire has a story, many people ask, why is there such an



explosion of wildfire starting in the 1980s? In the Madera County town of North Fork, known as the Exact Center of California, was a thriving town from the mid-1800s till the early 1980s. In 1980 the South Fork Timber Industries mill started a massive layoff due to the loss of incoming raw wood materials. The last log was milled on Feb 19, 1994, ending a century-old industry that the community was dependent on. Madera County was named for the timber industry as Madera is the Spanish word for wood. The transition away from logging as a dominant form of forest management, and the decline of the industry in California, correlates with



the decrease in forest health and an increase in wildfire severity.

Due to this shift away from the logging industry, workforce capacity has been transitioned to Tourism and infrastructure. The tourism industry in the Sierra and Sequoia National Forest is dependent on many things, where climate events can greatly impact visitation to the communities and the workforce. Wildfires have impacted tourism due to the closures of National Parks and Forests and smoke impacts lakes, rivers, and trail recreation.

The region stores 420 million tons of carbon within its productive forests, equivalent to the annual emissions of over 400 coal-fired power plants. Each year, when the fire season is not too extreme, these forests sequester enough additional carbon to offset the annual carbon dioxide emissions of almost 2.7 million passenger cars (or 10% of all registered automobiles in California in 2013). Initial estimates indicate that the Rim Fire released 11 million metric tons of greenhouse gases (GHGs). Based on the U.S. EPA's website, that's roughly equivalent to the annual GHG emissions from 2.3 million cars. Computer modeling of the Sierra has found that fuel treatments that alter the size and intensity of wildfires could reduce the amount of carbon emitted by fires from 36 to 85%. In addition, removing smaller, overgrown biomass from stands reduces the water stress for the remaining trees, enabling them to thrive. This is important, because, for many species, larger trees accumulate carbon faster than smaller trees. (Sierra Nevada Conservancy, 2014)

The wildland-urban interface (WUI) is the area where houses and wildland vegetation meet or intermingle, and where wildfire problems are most pronounced. The WUI in the United States grew rapidly from 1990 to 2010 in terms of both the number of new houses (from 30.8 to 43.4 million; 41% growth) and land area (from 581,000 to 770,000 km²; 33% growth), making it the fastest-growing land use type in the conterminous United States. The vast majority of new WUI areas were the result of new housing (97%), not related to an increase in wildland vegetation. Within the perimeter of recent wildfires (1990–2015), there were 286,000 houses in 2010, compared with 177,000 in 1990. Furthermore, WUI growth often results in more wildfire ignitions, putting more lives and houses at risk. Wildfire problems will not abate if recent housing growth trends continue (Alexandre 2017). According to a June 2022 U.S. Congressional Budget Office report, the intensity of wildfires has increased, as has the number of wildfires impacting the built environment over the past 30 years. Communities are faced with increased wildfire threats associated with increased populations, reduced land management practices, a dangerous increase in fuel buildup, and climate change.

Drought and Agriculture

During years of drought, where surface water is limited, farmers have increasingly relied on groundwater to irrigate crops. As competition for groundwater has grown, with no state-level regulation on groundwater pumping, wells were drilled deeper and deeper in order to reach shrinking aquifers. The so-called "Race to the Bottom" (Walton 2019). For example: Nearly 25 percent of all new irrigation wells installed in California over the last five years (2017-2021) were in Tulare (969) and Fresno (677) Counties (DWR 2021).

As noted by Liu et al. (2022), “In heavily agricultural regions like California’s Central Valley, where groundwater management is being slowly implemented over a 27-year period that began in 2015, groundwater provides two-thirds or more of irrigation water during drought, which has led to falling water tables, drying wells, subsiding land, and its long-term disappearance.” Furthermore, the trajectory of groundwater storage in the Central Valley over the past 60 years shows a clear pattern of brief groundwater recovery events with short, wet periods of heavy precipitation in winter, followed by longer periods of groundwater loss during drought, leading to an overall trend of long-term groundwater depletion due to over drafting.



With no legal oversight of drilling for water until very recently, groundwater pumping over the past century has led to severe consequences. The multiple impacts of groundwater over-drafting resulted in landmark passing of legislation in 2014; the Sustainable Groundwater Management Act (SGMA), the state of California’s effort to regulate the management of groundwater. Under SGMA, areas of the State that are overdrafted, will be subject to Groundwater Sustainability Plans, which are to be developed and implemented by local Groundwater Sustainability Agencies (GSAs) (DWR 2023).

As shown in the map titled, *California’s Critically Overdrafted Basins*, all subbasins in the four County area are considered "Critically Overdrafted": characterized as an unsustainable amount of groundwater being pumped out of the ground, depleting aquifers. In developing their local plan, each GSA must address six “Sustainability Indicators” that are the result of historic groundwater over-drafting: (1) Groundwater-Level Declines; (2) Groundwater Storage Reductions; (3) Land Subsidence; (4) Interconnected Surface-Water Depletions; (5) Seawater Intrusion; and (6) Water-Quality Degradation (USGS 2023). The goal of each Groundwater Sustainability Plan is for these Sustainability Indicators to no longer be a factor within 20 years (year 2034).

High Risk of Conversion for Most Valuable Agricultural Lands

The San Joaquin Valley is the nation’s agricultural powerhouse with more than 300 crops and livestock products. Water scarcity, changing climate conditions, housing pressures and growing populations are key challenges farmers and ranchers face. The region is among the state’s fastest-growing, with development happening on the highest quality agricultural land. Only 9% of the roughly 6 million acres of irrigated farmland in the San Joaquin Valley is high quality. Of the high-

quality farmland about half is located along Highway 99 where it is most vulnerable to development and around the valley’s cities. Based on an analysis of SGMA and other current and anticipated water supply restrictions, a study by University of California Berkeley economists, Dr. David Sunding and David Roland-Holst, concludes that up to one million acres may be fallowed in the San Joaquin Valley over a period of 2-3 decades as a result of reduced ground and surface water availability (Roland-Holst 2020). As many as 323,000 acres are projected to be converted into low-density urban and rural residential uses by 2050 in the San Joaquin Valley, according to spatial analysis research conducted from 2015 to 2018 with AFT and Conservation Biology Institute (AFT 2018). An estimated 55% of the Valley’s high-quality farmland has a high risk of development. Due to a variety of factors, water demand could increase by 600,000 acre-feet per year by mid-century. Groundwater regulations and proposed streamflow regulations are likely to reduce the amount of water available for farming. Thirteen percent of all agricultural water in the valley comes from over-drafted groundwater sources. Owing to increased evapotranspiration, irrigation water may need to be augmented by 3.6 to 7.9 percent in various parts of the San Joaquin Valley between now and mid-century.

Climate Risks Facing the Agricultural Industry

The Central Valley’s agricultural land and water resources are facing challenging climate risks. Most notably, it is inevitable that climate change and its associated impacts on snowfall, precipitation, and temperatures will have a significant influence on the future of agricultural land and water. Two major impacts to water supply will be the loss of Sierra snowpack and increased evapotranspiration.

Table 1 summarizes Cal-Adapt projections for the Southern Central Valley Region and is intended to identify the major types of changes projected for the region. Regional projections may differ from county level projections.

Table 1. Summary of Cal-Adapt Climate Projections for the Southern Central Valley Region⁵

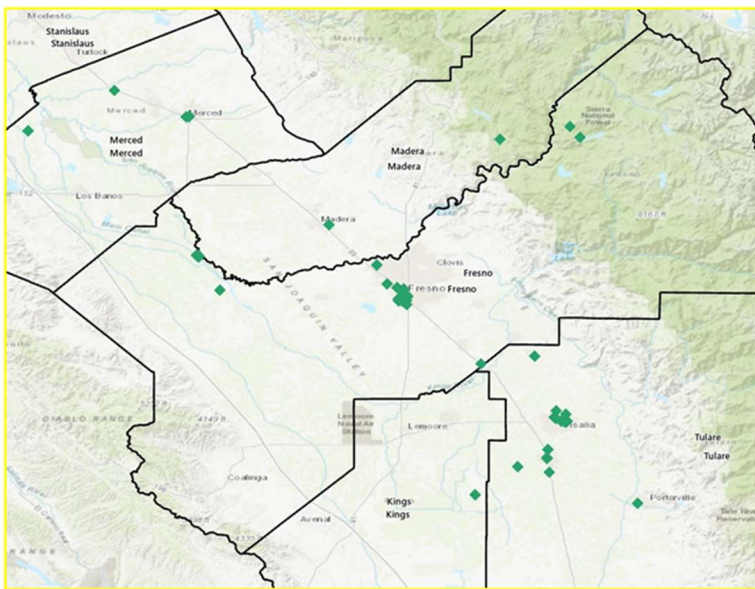
RANGES	
Temperature Change, 1990-2100	January increase in average temperatures of 3°F to 4°F by 2050 and 7°F to 10°F by 2100. July increase in average temperatures of 5°F to 6°F in 2050 and 9°F to 11°F by 2100, with larger temperature increases in the mountainous regions to the east. <i>(Modeled high temperatures – average of all models; high carbon emissions scenario)</i>
Precipitation	Low areas are projected to experience declines in annual precipitation of 1 or 2 inches by 2050 and up to 3.5 inches by 2100, while more elevated areas are projected to decline up to 10 inches. <i>(CCSM3 climate model; high carbon emissions scenario)</i>
Heat Wave	The threshold temperature that defines a heat wave is over 100°F in most of the region. In the mountains, a heat wave is defined by lower temperatures, 70°F to 90°F. By 2050, the number of annual heat waves is projected to increase by three to five. An increase of seven to 10 heat waves is expected by 2100 in most of the region, with an increase of up to 14 expected in the mountain areas.
Snowpack	Snowpack in the eastern elevated regions is projected to decrease by approximately 9 inches, resulting in snowpack that is less than 4 inches by March 2090. <i>(CCSM3 climate model; high emissions scenario)</i>
Wildfire Risk	The eastern edge of the region is projected to experience an increase in wildfire risk of 4 to 6 times current conditions. <i>(GFDL model, high carbon emissions scenario)</i>

Source: Public Interest Energy Research, 2011. Cal-Adapt⁶ (<http://cal-adapt.org>)

The *Climate Change and Health Profile Reports* were developed by the CDPH Climate Change and Health Equity Section's CalBRACE Project for each County in California. They are designed to help counties prepare for the health impacts related to climate change through adaptation planning (CDPH 2023). The table below is included in the *Climate Change and Health Profile Reports* for Kings, Fresno and Tulare Counties, which along with Kern County, make up the Southern Central Valley region. The projections for Madera County, categorized in this report series as the southernmost county of the Northern Central Valley region, are almost identical.

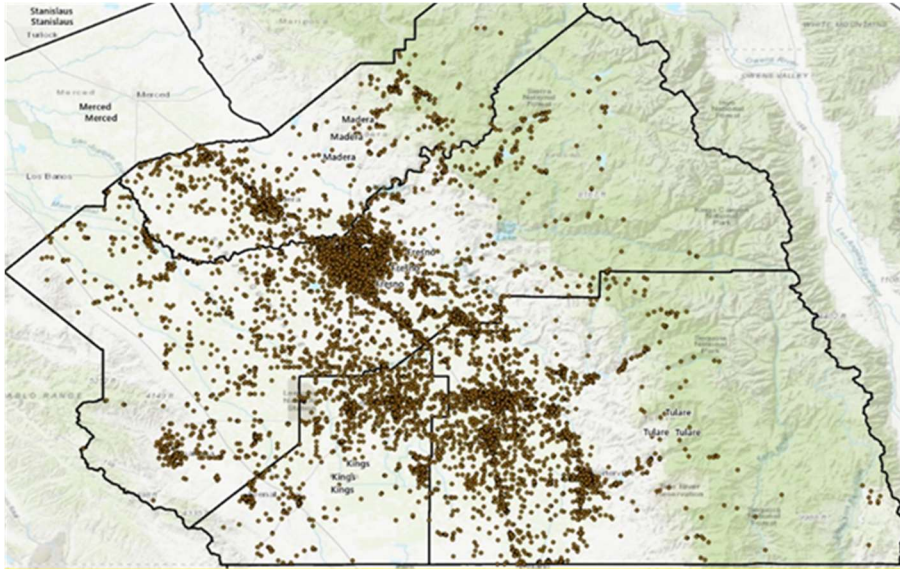
According to additional climate models and reports the following are likely to occur: hotter, drier, and longer summers, overall temperatures are expected to rise substantially throughout this century, and scenarios predict 1°F-2.3°F in California (Chan 2017). Additionally; more severe storms, 80% decline in snowpack, an increase in wildfire, an increase in erosion and sedimentation, lower groundwater recharge rates, and a loss of some native species and functioning ecosystems. Additional climate predictions indicate less productive range for cattle, an increase in invasive species, an increase in severe heat days, and further declines in air quality. An increase in stress that affects mental health due to heat, drought, food insecurity, socioeconomic disruption, and health impacts due to decreasing air quality and heat illness is predicted to occur. Lastly, an increase in natural disasters (floods, droughts, fires), a reduced number of “chill hours”, and resulting changes to agricultural productivity.

Brownfields



Brownfields are “a property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant” (EPA 2023). In the Valley CERF region, there are 142 locations in the EPA Brownfield Assessment, Cleanup and Redevelopment Exchange System (ACRES) program. The map below shows the 142 ACRES sites from 2020 with multiple sites per location. Additionally, the Environmental Protection Agency has identified

23,266 Brownfield “Facilities Interest” sites. The list of Facilities’ Interest includes the categories of air, animal operations, chemical release, chemical storage, drinking water, groundwater, hazardous waste, pesticides, radiation, remediation, solid waste, underground storage, waste water, and water resources among others (EPA 2023).

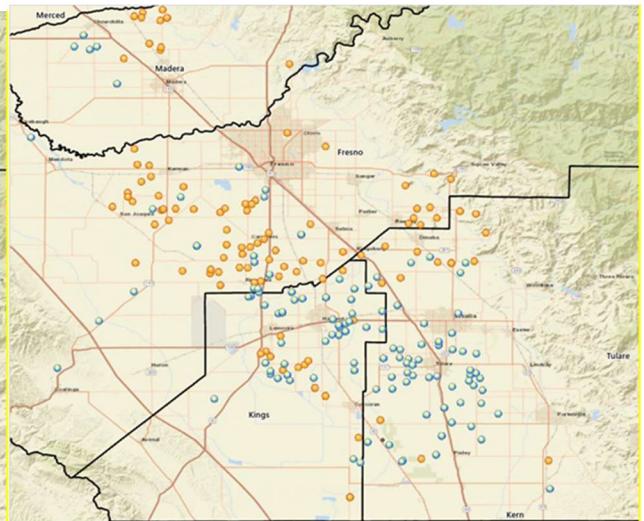
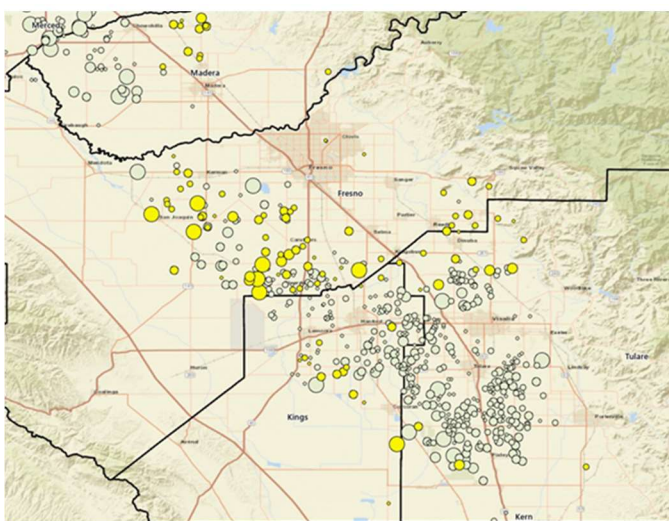


Water Pollution

Categories of water issues designated by the California Water Board for the Central Valley Region 5 are generally listed as Waste Discharge, Waste Management, Wastewater Treatment Management, Salinity, Confined Animal Facilities, Storage Tanks, Drinking Water Policy, Spills/Leaks/Cleanups, Wildfire, Forestry, Runoff, Total Maximum Daily Loads

and Impaired Water Bodies, Surface Water Monitoring, Homelessness, Industrial (agriculture, mining, dredging, oil fields), and stormwater. Nonpoint source (NPS) pollution, also known as polluted runoff, is the leading cause of water quality impairments in the Central Valley Region (CWB 2023).

Nutrients from livestock and poultry manure are key sources of water pollution. Ever-growing numbers of animals per farm and per acre have increased the risk of water pollution (Agapoff 2003). There are 575 dairies in the Valley CERF region with 1,003,521 permitted dairy animals. The amount of manure these dairy animals produce in the region is estimated at 74,260 tons per day. This calculation is using manure at 90% moisture where each dairy cow produces .074 tons per day by the Natural Resource Conservation Service Agency’s published data. The number of poultry birds in the region are 32,100,802 which produce approximately 16,371.4 tons of waste per day. The bovine feedlots which are not dairy-producing have approximately 645,175 animals and produce approximately 14,968 tons of animal waste per day (CWB 2023).



California Water Board Data: Poultry (yellow) and Dairy (green) Operations in Valley CERF Region
 California Water Board Data: Poultry (orange) and Bovine Feedlot (blue) Operations in Valley CERF Region

Landfills and Food Waste

Landfills are the third largest source of methane (CH4) emissions in California. Organic waste in landfills emit 20% of the state’s CO4 and contributes to PM 2.5 emissions (CalRecycle 2023). SB 1383 targets a 50% reduction of California’s organic waste disposal from 2014 levels by 2020 and a 75% reduction by 2025 (CalRecycle 2023). Valley CERF food waste facilities estimate approximately 327,922 tons of excess food annually with the data that is available.

Valley CERF Region

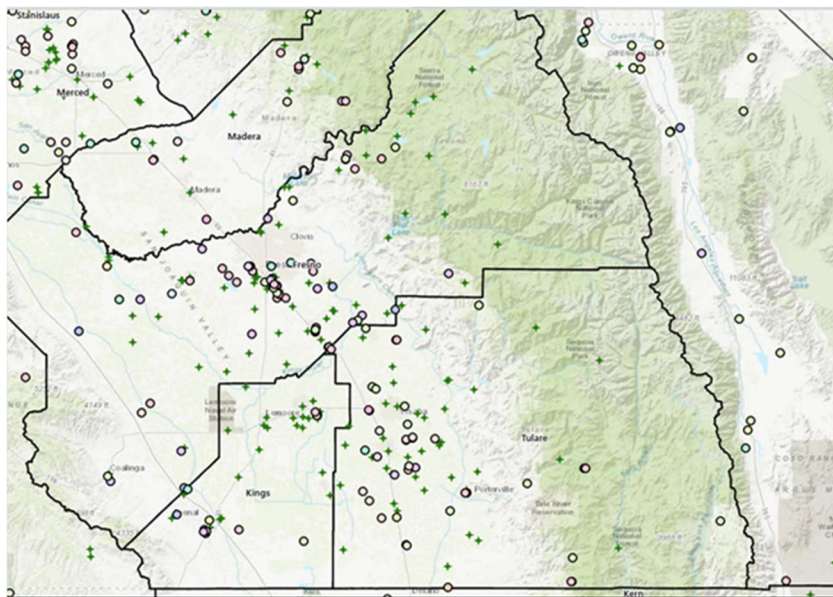
EXCESS FOOD OPPORTUNITIES MAP (EFOM)

0 = N/A (not available)

Facility Type	# of Facilities	TOTAL TONS ANNUALLY	
		Excess Food Low Range	Excess Food High Range
Anaerobic Digestion Facilities	35	0	0
Composting Facilities	17	0	0
Correctional Facilities	26	3,543	5,836
Educational Institutions	768	4,591	23,181
Farmers Markets	5	0	0
Food Wholesale and Retail	190	0	8,030
Healthcare - Hospitals	26	0	3,929
Healthcare - Nursing Homes*	164	0	3,487
Hospitality Industry	199	208	1,102
Manufacturing and Processing	163	132,354	424,532
Refrigerated Warehousing/Storage	8	0	0
Restaurants and Food Services	<u>1,764</u>	<u>15,354</u>	<u>29,698</u>
TOTALS	3,365	156,050	499,794

* Includes Assisted Living, skilled nursing, and other residential care facilities (mental/developmental health)

The map displays the locations of landfills in the Valley CERF region with the waste type of each location from 2022-2023 CalRecycle data.



Cal Recycle Data: Locations of Landfills in the Valley CERP Region.

Pesticides

Additional negative impacts from agricultural practices on the environment and human health in the Central Valley include the following. According to a summary from the California Department of Pesticide Regulations, Fresno, Tulare, Madera and Kings rank # 1, #3, # 5, and # 9 respectively as the California Counties with the highest use of chemicals in both 2020 and 2021. (Kern County ranks #2.) Fresno County used 29.5 million pounds of chemicals in 2020, a reduction from the 3.3 million pounds used in 2020 (CDPR 2021).

A Californians for Pesticide Reform (CPR) Study analyzes a pair of studies published in 2020 and 2021 that establish a statistically significant link between several childhood cancers and prenatal residential proximity to applications of 13 agricultural pesticides, ...when they are applied in any amount at a distance of up to 2.5 miles (4000m) from a residence. *There's Something in the Air, and It Causes Childhood Cancer Findings include:* "Fresno, Kern and Tulare Counties are among the 11 counties in the state with populations that are majority Latinx, with a total population of roughly six million in these 11 counties. More than a combined eight million pounds of the 13 pesticides linked to childhood cancers were applied in these majority-Latinx counties in 2019" (Weller 2021).

Air Pollution

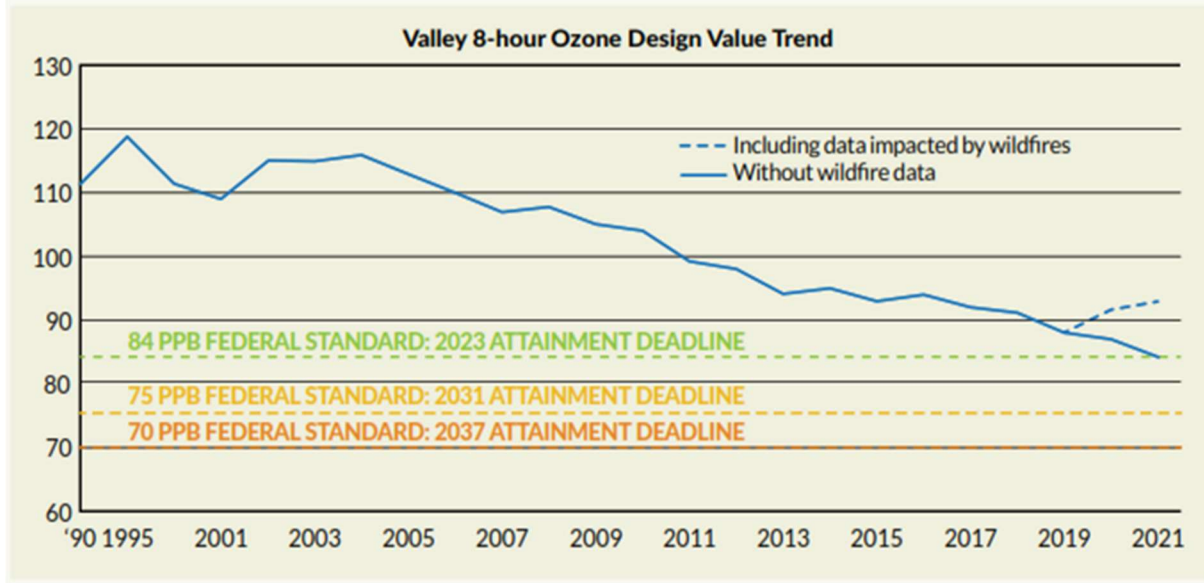
The Environmental Protection Agency (EPA) sets the air quality standards for the United States and identifies six common air pollutants. These six are Ground-Level Ozone, Particulate Matter, Carbon Monoxide, Lead, Sulfur Dioxide, and Nitrogen Dioxide (NOx) (EPA 2023). In the Valley CERP region, concerns are about meeting Federal and State standards in Ground-Level Ozone and Particulate Matter (SJVAPCD 2012). Ground Level Ozone and Particulate Matter are labeled as Extreme Nonattainment and Nonattainment by Federal Standards, specifically in 8-hour Ozone and Particulate Matter 2.5.

Efforts made by the SJVAPCD have succeeded in significant reductions in Ozone over the past twenty years, although the current classification at the 8-hour standard is still labeled as extreme nonattainment (SJVAPCD 2023). The Federal Standard for 8-hour Ozone set in 1997 is 84 parts per billion (ppb). SJVAPCD reports significant progress with a downward Value Trend from 1995 until 2019 from 120 parts per billion (ppb) to just under 90ppb in 2019. However, the standards continue

to become more stringent and with the increase in wildfire activity, there has been a plateau and an increase in the Value Trend away from achieving the standard of 84ppb by 2023 (SJVAPCD 2023).

VALLEY ON THE VERGE OF ATTAINING OZONE STANDARD

With respect to ozone concentrations, significant progress has also been made, where the Valley is on the verge of attaining the 8-hour standard of 84 ppb, while progressing towards the more stringent standards of 75 ppb and 70 ppb. The following figures depict how far the region has come in reducing peak ozone values, bringing the Valley even closer to attaining additional health-based air quality standards.

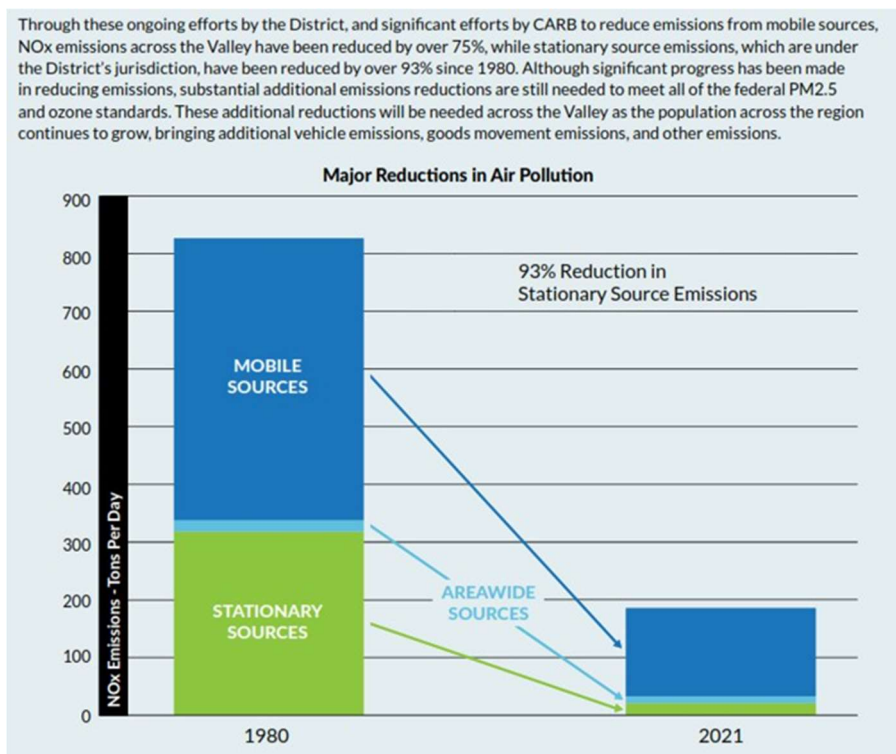


Similarly, Particulate Matter (PM) has seen significant reductions but has yet to meet current Federal and State standards. Particulate matter is a mixture of tiny solids or liquid droplets that include soot, smoke, dirt, and dust floating in the air. Particulate Matter is measured and monitored by the 10 and 2.5 microns in diameter categories. The State of California classification for 10 and 2.5 microns is nonattainment and for the Federal Standards PM 2.5 is classified as nonattainment (SJVAPCD 2012).

The sources of Ozone and Particulate Matter can be traced to concentrations of Nitrous Oxides (NO_x). Ozone is formed in the atmosphere by a combination of heat, sunlight, NO_x, and Volatile Organic Compounds (VOC). Particulate Matter is emitted directly into the atmosphere and secondary Particulate Matter is formed in atmospheric reactions of NO_x (SJVAPCD 2022). Emissions from industrial facilities and electric utilities, motor vehicle exhaust, gasoline vapors, and chemical solvents are some of the major sources of NO_x and VOC's in the United States (EPA 2023).

The major sources of air pollution are categorized into mobile sources and stationary sources. The majority of NO_x emissions in the SJVAPCD are 82% mobile with heavy-duty diesel trucks and farm equipment as the largest categories from 2020 data. The largest category of VOC emissions at 32% are areawide farming operations including confined animal facilities. The largest categories of PM 2.5 reported by the SJVAPCD are 22% areawide farming operations, 27% road dust and fugitive windblown dust, 14% mobile sources, and 12% stationary sources (SJVAPCD, n.d.)

From 1980 to 2021 the SJVAPCD has reported a 93% reduction in stationary source NOx emissions and 75% reduction of NOx mobile emissions across the Valley. The SJVAPCD reports that their success in a significant decline in emissions is their ability to control stationary sources within the District and their incentive programs (SJVAPCD 2022). The challenges for air pollution reductions come from measures outside the District’s control, including Federally regulated mobile emissions that traffic through the Valley in increasing concentrations, and wildfire activity. Mobile sources that fall exclusively under federal jurisdiction include interstate heavy-duty trucks, locomotives, and aircraft. These sources now dominate NOx emissions for the District (SJVAPCD 2022).



When there is a large wildfire in the area, the control measures of the SJVAPCD are overwhelmed and “result in periods of excessively high particulate matter and ozone concentrations.” Data from wildfire is not included in the recording of air standards because the data is extreme and does not accurately reflect the work that is within the SJVAPCD’s control. In 2021 through the September-October wildfire timeframe, peak PM10 concentrations of

543 micrograms per cubic meter and 24-hour PM 2.5 concentrations of 206 micrograms per cubic meter were recorded. The Federal standard for PM10 concentrations is 150 micrograms per cubic meter, which means what was recorded was 362% of the 24-hour period standard. The PM 2.5 federal standard is 35 micrograms per cubic meter, which means what was recorded was 588% of the 24 standard. Both are well above health-based quality standards and are a drastic increase to typical non wildfire seasons (SJVAPCD 2022).

“Wildfires in California have become a major and growing source of GHG emissions,” said Dr. Michael Jerrett, UCLA Fielding School of Public Health professor of environmental health sciences and a lead author of the research. “Wildfire emissions in 2020 essentially negate 18 years of reductions in greenhouse gas emission.” (Jerrett, Jina, Marlier 2022) Co-authors, who include researchers from UCLA and the University of Chicago, found California’s wildfire carbon dioxide equivalent, or CO2e, emissions from the 2020 blazes are approximately two times higher than California’s total greenhouse gas (GHG) emission reductions since 2003.”

In the Valley CERF region, the SJVAPCD has the most stringent air regulations in the nation and operates the most effective and efficient incentive grant programs for clean air projects (SJVAPCD 2022). The need for regulation and incentives is due to the fact that the Valley CERF region is rated among the worst in air pollution in the United States. A 2022 study by the American Lung Association places Valley CERF at the top of the 25 most polluted places to live by county by ozone and particulate matter (American Lung Association 2023).

The American Lung Association "State of the Air" 2022

Particle pollution, also called **particulate matter (PM)**, is a mixture of tiny solids or liquid droplets that includes smoke, soot, dirt, and dust floating in the air.

Most Polluted Places to Live

In addition to the 25 worst cities for each pollutant listed above, the 25 most polluted counties for ozone and particle pollution are ranked in the tables below:

Daily PM Ranking	State	County
1	CA	Fresno
2	CA	Mono
3	CA	Kern
4	CA	Kings
5	AK	Fairbanks North Star
6	CA	Inyo
7	CA	Siskiyou
8	OR	Klamath
9	CA	Stanislaus
10	CA	San Joaquin
11	CA	Tehama
12	CA	Madera
13	CA	Colusa
14	CA	Butte
15	CA	Sacramento
16	CA	Los Angeles
17	CA	Merced
18	CA	Mendocino
19	CA	Placer
20	CA	Nevada
21	CA	Plumas
21	CA	Sutter
23	WA	Okanogan
24	CA	Calaveras
25	CA	Alameda
25	CA	Contra Costa

Annual PM Ranking	State	County
1	CA	Mono
2	CA	Kern
3	CA	Kings
3	CA	Tulare
5	OR	Klamath
6	CA	Plumas
7	CA	Fresno
8	CA	Stanislaus
9	CA	San Bernardino
10	OR	Jackson
11	CA	Riverside
11	CA	San Joaquin
13	CA	Madera
14	MT	Lincoln
15	CA	Merced
16	AK	Fairbanks North Star
16	CA	Los Angeles
18	AZ	Pinal
19	CA	Butte
19	OR	Josephine
21	CA	Imperial
22	WA	Okanogan
22	CA	Sacramento
24	CA	Sutter
25	OH	Hamilton

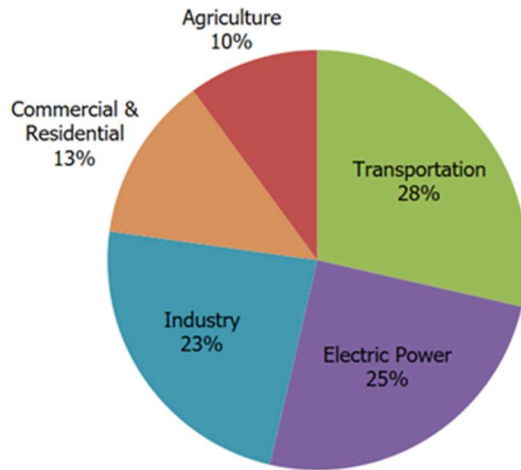
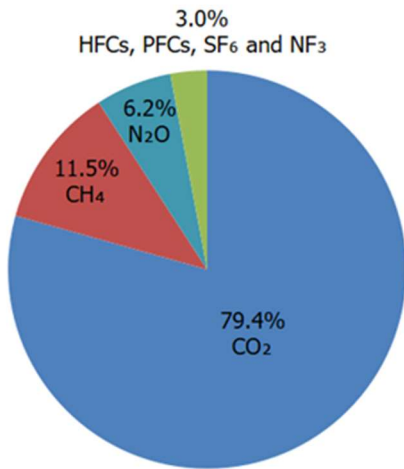
Ozone Ranking	State	County
1	CA	San Bernardino
2	CA	Riverside
3	CA	Los Angeles
4	CA	Kern
5	CA	Tulare
6	CA	Fresno
7	AZ	Maricopa
8	CA	San Diego
9	CO	Jefferson
10	TX	Harris
11	CA	El Dorado
11	CA	Kings
13	UT	Salt Lake
14	NV	Clark
15	CA	Mariposa
16	CA	Orange
17	CA	Madera
18	NM	Dofia Ana
19	CA	Stanislaus
20	CT	Fairfield
21	CA	Imperial
22	NM	Eddy
23	CO	Douglas
24	AZ	Pinal
25	IL	Cook
25	CA	Merced
25	TX	Tarrant

Fourteen counties received failing grades for all 3 measures of pollution: Butte, Fresno, Imperial, Kern, Kings, Los Angeles, Madera, Merced, Riverside, San Bernardino, San Joaquin, Stanislaus, and Tulare in California, and Pinal in Arizona.

Greenhouse Gases

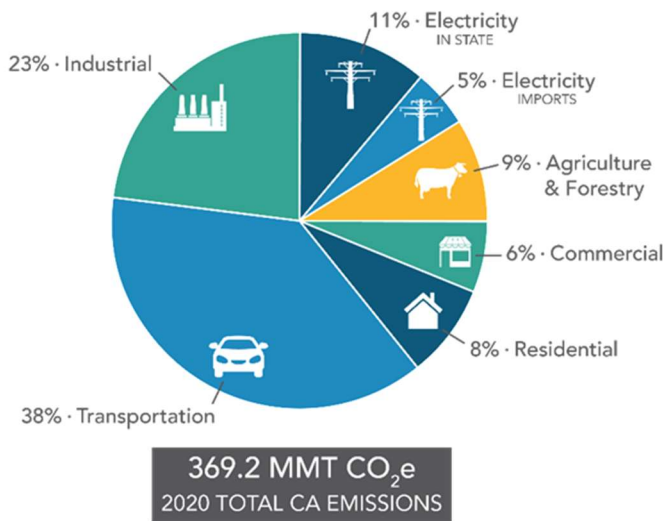
Greenhouse gases (GHG) are naturally occurring (Carbon Dioxide (CO2), Methane (CH4), Nitrous Oxide (NOx)) and not naturally occurring gases (Fluorinated Gases) that have a warming effect within the atmosphere. The Greenhouse Gas Effect is an environmental concern because when there is an excess of GHGs in the atmosphere, it slows the release of heat outside of the earth's atmosphere. Heat becomes trapped inside the earth's atmosphere causing the temperature to increase over time, with long-term effects on the climate and ecosystems (NASA 2023). Each GHG has a different Global Warming Potential (GWP) to better understand the warming effect each gas has in comparison to others. Carbon Dioxide has a GWP of 1 which is the standard. Methane's GWP is 27-30 times over 100 years. Nitrous Oxide's GWP is 273 times over 100 years, and Fluorinated Gases are in the thousands to tens of thousands more warming (EPA 2023).

In the United States, the breakdown of GHG emissions is 79.4% CO2, 11.5% CH4, 6.2% NOx, and 3% Fluorinated Gases. The source of total US GHG emissions by economic sector is 28% transportation, 5% Electric Power, 23% Industry, 13% Commercial and Residential, and 10% Agriculture (EPA 2023).



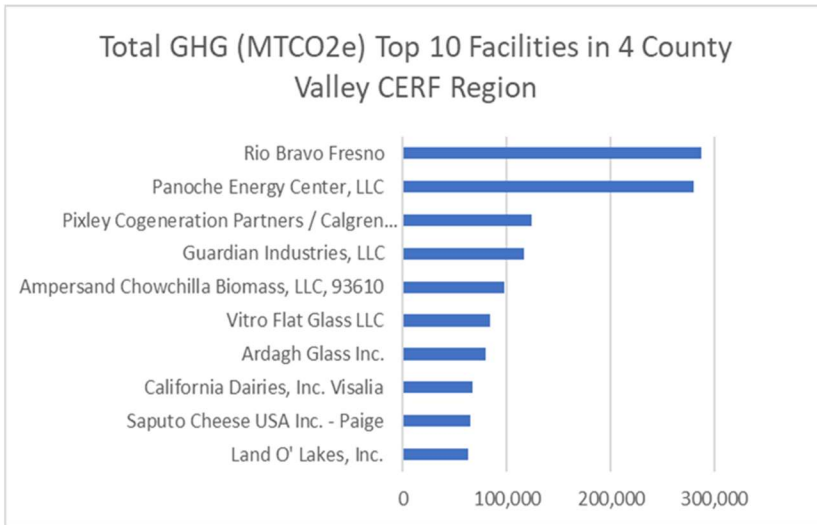
U.S. Environmental Protection Agency (2023). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2021

The breakdown of GHG emissions is similar for California with 38% Transportation, 23% Industrial, 16% Electricity, 9% Agriculture and Forestry, and 14% Commercial and Residential (CARB 2023).

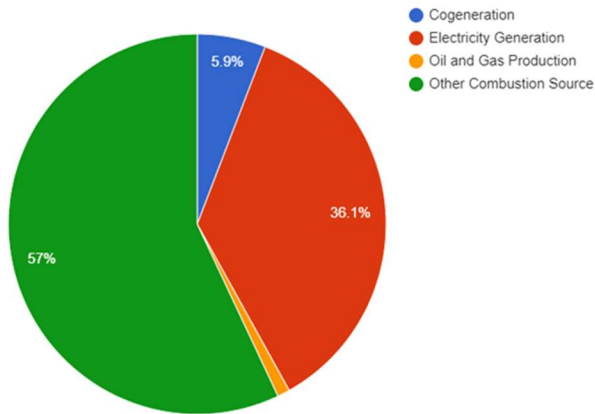


The California Air Resources Board tracks the total Metric Tons of GHGs by large facilities in California displayed through the Air Pollution Mapping Tool. CO₂ is measured with the other GHGs in an equivalent to their Global Warming Potential. The shorthand for this standard is MTCO₂e, which is Metric Tons of CO₂ Equivalent. The Valley CERF region has approximately 49 large facilities within this data. Of the 49 facilities, the top ten emitters of MTCO₂e are the following: Rio Bravo Fresno, Panoche Energy

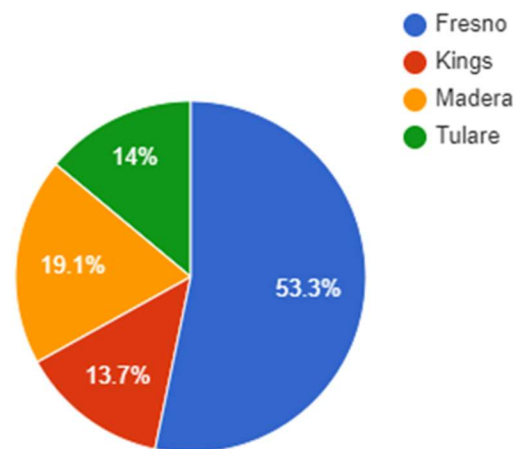
Center, Pixley Cogeneration Partners, Guardian Industries, Ampersand Chowchilla Biomass, Vitro Flat Glass, Ardagh Glass, California Dairies, Saputo Cheese USA, and Land O'Lakes. The total GHG emissions for Valley CERF facilities are 57% Other Combustion Sources, 36.1% Electricity Production, 5.9% Cogeneration, and 1% Oil and Gas Production (CARB 2023). By Valley CERF County 53.3% of total GHG Emissions are in Fresno County, 19.1% Madera County, 14% Tulare County, and 13.7% from Kings County.



Facility Total GHG Emissions (MTCO2e) by Sector



Facility Total GHG Emissions (MTCO2e) by County



Considering the effect that NO_x has on air pollution in the formation of Ground-Level Ozone and Particulate Matter as well as being a GHG with a GWP of 273 times over 100 years of CO₂e, the solution to better air quality and global warming may come in great strides with significant NO_x reductions. “NO_x has been a primary focus for the District and CARB to address both Ozone and PM_{2.5} in the Valley (SJVAPCD 2022).” The primary sources of NO_x into the atmosphere are from the burning of fuel, such as emissions from cars, trucks, buses, power plants, and off-road equipment (EPA 2023). This is how NO_x is primarily tracked through the SJVAPCD and CARB. However, NO_x can also be introduced into the atmosphere from the soil. A peer reviewed University of California Davis study suggests that cropland soil in the San Joaquin Valley is an overlooked source of NO_x emissions, by 20-51%, and primarily affecting the rural most disinvested communities (Bai, Conley, Faloona, Houlton, Trousdell, Wang 2018). The source of the NO_x emissions in this study is agriculture fertilizer applications. Additionally, NO_x in the atmosphere also contributes to

acid rain, and excess NO_x in the atmosphere and soils create nutrient pollution in the water (EPA 2023).

Overall, GHG emissions and air pollution can be significantly altered by the major sources of uncontrolled transportation emissions, a greater focus on limiting any and all NO_x sources, and a reduction in wildfires. Successes have been made due to California's stringent air regulations and the SJVAPCD's incentive programs which show an overall trend in reductions despite the growing population of the region.

Nitrates in Groundwater

Nitrate pollution in groundwater is another negative impact of N (nitrogen) fertilizer applications in croplands. According to the California Water Boards' Nitrate Project, "Nitrate pollution in groundwater is a widespread water quality problem that can pose serious health risks to pregnant women and infants if consumed at concentrations above the Maximum Contaminant Level (MCL) of 45 milligrams per liter (mg/L) nitrate as nitrate (SWRCB 2023). Nitrate contaminated groundwater can be found in many areas of California but is a particularly significant concern in the Tulare Lake Basin and Salinas Valley areas.

The 2012 UC Davis Nitrate Report, contracted by the California Water Boards, found that nitrate problems will likely worsen for decades. Agricultural fertilizers and animal wastes applied to cropland are by far the largest regional sources of nitrate in groundwater. Nitrate loading reductions are possible, some at modest cost. Large reductions of nitrate loads to groundwater can have substantial economic cost. Drinking water supply actions such as blending, treatment, and alternative water supplies are most cost-effective. Blending will become less available in many cases as nitrate pollution continues to spread. Many small communities cannot afford safe drinking water treatment and supply actions. High fixed costs affect small systems disproportionately. The most promising revenue source is a fee on nitrogen fertilizer use in these basins. A nitrogen fertilizer fee could compensate affected small communities for mitigation expenses and effects of nitrate pollution.

State Board recommendations to address the issues associated with nitrate-contaminated groundwater focus on the following area of activities: providing safe drinking water; monitoring, assessment, and notification; nitrogen tracking and reporting; and protecting groundwater.

Disproportionate Impacts on Disinvested Communities

Information provided by CalEnviroScreen 2021 provides insight about additional health burdens on communities in the Southern Central Valley. CalEnviroScreen is an environmental justice mapping tool, which identifies areas with the highest rates of pollution, correlated with socioeconomic indicators. While these impacts can affect all residents of the region, they are compounded for people working in and living near agricultural fields. These impacts include highest average daily maximum Ozone concentrations. Ozone is an air pollutant that causes respiratory and cardiovascular illnesses. Highest levels of particulate matter pollution (PM) in the state. High air pollution causes respiratory issues. Drinking water contaminants around Fresno,



some desert areas, and NE of Bakersfield has the highest averages, at 789-1161 on the drinking water contaminant index. Pesticide use is highest in a line from the Sacramento area down the San Joaquin Valley to Bakersfield, with averages of 1,175+ lbs pesticides per sq. mi.

Industry Characteristics

Largest Industries



Emerging Industries

The emerging industries of Valley CERF are reflected in the increase in jobs over the past six years and that has set pace with the increase in population. The Region's population has increased by 4% from 2017 to 2022 and jobs have increased by 6.1% from 2017 to 2022. The top three industries as part of this increase are "Education and Hospitals (Local government), Support Activities for Crop

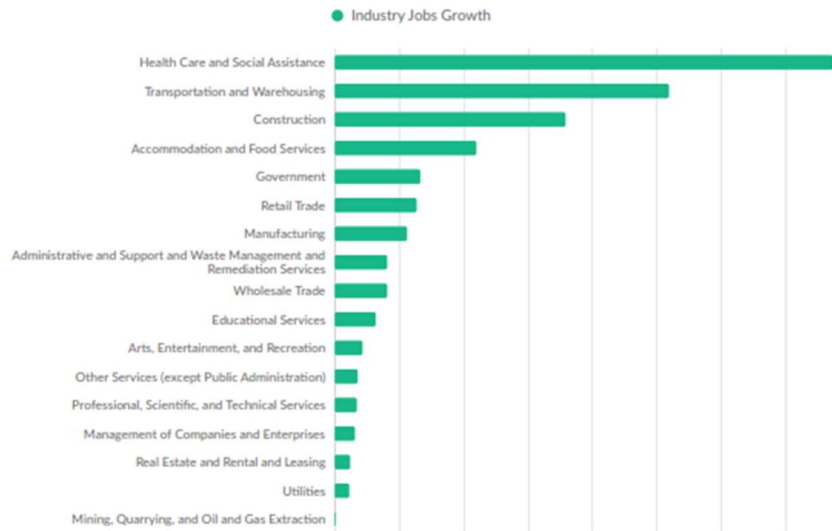
Production, and Restaurants and Other Eating Places." The largest industries in the Valley CERF region are Government with over 140,000 jobs, Health Care and Social Assistance with over 100,000 jobs, Agriculture, Forestry, Fishing, and Hunting with over 100,000 jobs, and Retail Trade with 60,000 jobs. The top growing industries in the Valley CERF region are Health Care and Social Assistance, Transportation and Warehousing, and Construction (Workforce 2023).

The Valley CERF region as a whole has the top Industry Employment Concentration in Agriculture, Forestry, Fishing, and Hunting as an extremely higher concentration than the rest of the United States, with over 10,000 jobs. The top Industry Gross Regional Product is Government, then Health Care and Social Assistance, then Manufacturing, with Agriculture, Forestry, Fishing, and Hunting just below it.

Top Industry GRP



Top Growing Industries



The top industries or highest-performing clusters for Valley CERF are mostly localized industries such as government services, health, and education. However, Valley CERF is positioned for growth in the top three industries best suited for direct foreign investment. Those are

manufacturing, business services, and wholesale trade in terms of total jobs. In “Greater California” which excludes Southern California and the Bay Area, 69.8% of the total jobs created by these

industries generated over \$2.5 billion in wages in 2021. The Fresno County Economic Development Corporation (FEDC) estimates approximately 30% of those wages were generated by direct foreign investment in Fresno County alone. An FEDC analysis selected the 8 top

Industry Cluster	Overall Score
Transportation and Logistics	80
Distribution and Electronic Commerce	55
Automotive	43
Business Services	43
Food Processing and Manufacturing	43
Paper and Packaging	43
Upstream Chemical Products	43
Wood Products	43

performing clusters within the manufacturing, wholesale, or business services industries that are suited for growth from direct foreign investment. These clusters are ranked in consideration of their support for other major industries such as agriculture, construction, and logistics, their Countywide job growth has exceeded or is projected to exceed that of the nation or state, regional job concentration is high for key occupations, there is a strong regional supply chain, and lastly a lower cost of labor compared to state and national levels. The top 8 industries best suited for growth from Direct investment are Transportation and Logistics, Distribution and Electronic Commerce, Automotive, Business Services, Food Processing and manufacturing, Paper and Packaging, Upstream Chemical Products, and Wood Products (Bremer 2022).

California's focus on the climate is creating opportunities and incentives to address climate issues within the economy. The California Climate Commitment is a plan to cut air pollution, slash greenhouse gas emissions, reduce fossil fuel consumption, create 4 million jobs, and save \$200 billion in health costs from pollution. This plan includes a focus on carbon neutrality, a clean electric grid, enlisting nature, a transition away from reliance on oil, accelerating clean energy projects, creating climate-friendly buildings, promoting soil health and sustainability, and protecting Californians from the extreme effects of climate change. The extreme effects of climate change include wildfire, drought, extreme heat, and the restoration of forests, woodlands, grassland, and rivers that buffer climate impacts and store carbon (CA.gov 2022). With this emphasis on incentives for clean energy Valley CERF has seen growth in clean energy production like solar and hydrogen. Through government incentives and voluntary markets, the impacts of climate change can be addressed with new creative leading solutions. Some examples include environmental products and services, nature-based solutions, revenue-positive conservation, energy/fuel/emission reduction trading, clean energy, or corporate sustainability goals. Businesses with an emphasis on recycling, biomass utilization, and GHG reductions have great potential to address or mitigate pollution and climate change.

The impacts of drought, wildfire, extreme heat, landslides, and floods can have negative impacts on the localized economy in the region. High drought years have a negative impact on groundwater supply which impacts the jobs in the agriculture industry and as land is fallowed from production. High drought years lead to high tree mortality and increased wildfires. These impact the availability of productive forest land, eliminate the region's largest carbon sink, and increase air and water pollution that harms the health of the people and workforce. In extreme water years, stress is put on the region's water infrastructure of dams, canals, and flood management plans.

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Valley CERF

SWOT Analysis



CENTRAL
VALLEY
COMMUNITY
FOUNDATION

SWOT Analysis

Local SWOT Analyses

In August, Local HRTCs each completed SWOT analyses, distilling the intricacies of their respective landscapes into clear snapshots of Strengths, Weaknesses, Opportunities, and Threats. These analyses were developed to inform local development plans while also enriching the broader Regional SWOT. Completed Local SWOTs are included below.

Regional SWOT Analysis

Several regional themes rose to the surface from our Local SWOT Analyses and showcase the Central San Joaquin Valley's complexity. Collaborative bonds and affordability intertwine with the region's agricultural abundance and innovation. Opportunities for growth abound, including forging transformative coalitions, embracing emerging sectors, and harnessing digital connectivity. Amidst these strengths and opportunities, weaknesses and threats persist: education inequities, workforce shortages, and income disparities threaten to stall progress, while climate change and water scarcity cast uncertainty.

Strengths

Nestled in the heart of California, the Central San Joaquin Valley is known for its agricultural abundance, and excels in collaborative synergy, leveraging affordability, and innovation. Thriving tourism, robust infrastructure, a diverse business landscape, and a skilled workforce contribute to its competitive edge.

Collaboration – The spirit of collaboration runs deep in the region and fosters connections and partnerships among Community Based Organizations, Academic Institutions, Local Governments, etc. This collaborative ethos propels progress and innovation.

Affordability – One of the region's distinct advantages is its affordability, making it an attractive destination for both residents and businesses. The cost of living and operation expenses are notably lower compared to other urban centers across California, creating an environment where individuals and entrepreneurs can thrive.

Agriculture – While the Central San Joaquin Valley has played a vital role in sustaining the nation through its food production, it has also been a creator of livelihoods. Its fields, farms, and food processing factories generate jobs throughout the region.

Agricultural Innovation – The region harnesses cutting-edge technologies, sustainable practices, and scientific research to elevate its agricultural output. From precision farming techniques to water-efficient irrigation systems, the Central San Joaquin Valley pioneers advancements that optimize yield, minimize waste, and conserve resources.

Tourism – The region boasts a diverse range of attractions, from picturesque landscapes to national parks. Its strategic location as a gateway to iconic locations such as the Yosemite National Park and Sequoia & Kings Canyon National Forest attracts travelers, contributing

to an expanding tourism industry that showcases the region's natural beauty and unique experiences.

Infrastructure Growth & Development – The region's infrastructure growth and development, including construction and transportation, emerges as a notable strength. This strength underpins economic vitality, facilitates seamless movement of goods and people, and positions the region as an attractive destination for residents, businesses, and tourists alike.

Business – In the region small business owners have the resources to flourish. The supportive environment, combined with an entrepreneurial workforce, facilitates the growth of enterprises across various sectors. Furthermore, the emergence of logistics and manufacturing industries capitalizes on the region's strategic location, well-connected transportation networks, and access to markets, enabling businesses to expand their operations.

Workforce - The region is experiencing steady job growth in public administration, education, and health sectors. The region's workforce is not only readily available but also rapidly expanding -- acquiring essential competencies to thrive in the evolving job landscape.

Weaknesses

Challenges in education equity, workforce shortages, and low-wage jobs hinder growth. Infrastructure limitations, environmental vulnerabilities, and access to quality foods pose obstacles, while complex regulations impede progress.

Education – The region faces challenges in providing equitable access to high-quality education. Limited resources and educational disparities hinder the development of a strong foundation for young learners, impacting their long-term academic success and future opportunities in the region.

Workforce – The region faces a critical challenge in its workforce development. The region struggles with a shortage of skilled workers across various industries, including healthcare. The scarcity of medical professionals hampers the delivery of quality healthcare services, impacting the well-being of the local population. Additionally, the absence of robust apprentice programs limits the growth of a skilled workforce pipeline, hindering the region's ability to meet evolving demands and seize opportunities for economic diversification.

Low Wage Jobs – A significant portion of the job market in the region consists of low-wage positions. This contributes to challenges related to poverty, income inequality, and limited economic mobility for many residents, which in turn impacts the overall quality of life and economic growth.

Infrastructure Limitations – Infrastructure limitations present a notable weakness for the region. There is a lack of well-connected roads, efficient water systems, robust broadband

that facilitate seamless movement and access to opportunities, and proactive utility development. These infrastructure limitations inhibit the region's ability to attract businesses, provide quality services, and offer residents a high quality of life.

Environmental Vulnerabilities – The region faces a series of environmental weaknesses that pose significant challenges. The region's heavy dependency on water for agriculture makes it susceptible to both water scarcity and poor water quality. The variability of water availability creates economic uncertainties that reverberate throughout the agriculture sector and impacts communities' access to clean water. Poor air quality resulting from agricultural and transportation impacts residents' health and quality of life. These environmental vulnerabilities are exacerbated by the threat of wildfires, which are intensified by dry conditions and further contribute to economic losses and insecurity among residents. The interplay of these weaknesses amplifies the region's ecological concerns.

Poverty - The region faces the challenge of poverty, which poses a significant weakness for the region. Despite its strengths, economic disparities persist, affecting access to quality education, healthcare, and overall well-being. Addressing poverty is crucial to ensure equitable economic growth.

Lack of Access to Quality Foods – Despite the region being known as the “food basket of the nation,” communities across the Central San Joaquin Valley face limited access to fresh, nutritious foods. This contributes to health disparities and food insecurity, and can have a cascading effect on community well-being, potentially leading to adverse health outcomes and increased healthcare costs.

Regulations – Navigating complex regulations related to housing development and business establishment can pose obstacles for developers, entrepreneurs, and individuals. These barriers limit housing options and discourage potential business growth impeding overall economic development.

Opportunities

Collaborative coalitions can catapult transformative change, while addressing education disparities and embracing emerging sectors fuels growth. Advancements in digital literacy, connectivity, and entrepreneurship open doors. Climate resilience, manufacturing, and skill development foster sustainability and economic empowerment.

Collaborative Coalitions – Within each Local HRTC exists strong partnerships and a history of collaboration. Valley CERF is a new opportunity to leverage these partnerships and bolster a cross-regional coalition for transformative change.

Addressing Education Disparities – The region has an incredible opportunity to address educational disparities by ensuring disinvested communities have access to quality education. This investment can create a skilled workforce that meets the needs and

demands of evolving and emerging industries, that may lead to higher earning wages and improve quality of life for residents of the Central San Joaquin Valley.

Digital literacy & Broadband – By bridging the digital divide and ensuring equitable access to high-speed internet, the region can empower its residents by increasing educational resources, attracting remote workers, and participating in e-commerce opportunities, thus fostering economic growth.

Improved Connectivity – The enhancement of sustainable transportation infrastructure presents a pivotal opportunity for the region. By ensuring all residents have affordable, accessible transportation options, we increase access to essential services, job opportunities, education, and healthcare. The region can leverage its improved connectivity to attract new business and diversify its economy.

Emerging Industries – The region has the potential to diversify its economy by embracing emerging industries such as cannabis and clean energy. The legalization of cannabis offers a chance to generate revenue and job opportunities. Similarly, the region's abundant sunshine and open spaces make it an ideal candidate for clean energy projects, contributing to sustainability while fostering economic opportunities and growth.

Manufacturing and Logistics Industries – Attraction and expansion of manufacturing and logistics industries can offer a pathway to equitable growth. By providing job opportunities and skill development, these industries can promote economic mobility. Additionally, by adopting eco-friendly technologies, efficient supply chain management, and renewable energy sources, the region can become a model for sustainable industrial growth.

Entrepreneurship and Innovation – Encouraging entrepreneurship and innovation can lead to the creation of new and flexible job opportunities for diverse communities. By offering support, mentorship, and resources to aspiring business owners, the region can promote equity and empower individuals to launch their own businesses and contribute to economic growth.

Downtown Development - Downtown development in our major cities can be a powerful catalyst for fostering economic growth. By leveraging and supporting our diverse communities' entrepreneurial aspirations and small businesses, we can facilitate equitable economic growth.

Carbon Sequestration and Climate Resilience - Restored forests play a crucial role in carbon sequestration and mitigating the impacts of climate change. The region can position itself as a leader in climate resilience by actively restoring and protecting its forested areas. Ecosystem restoration can create new opportunities for eco-tourism, research, and sustainable resource management.

Alternative Skill Routes - Opportunities abound for creating pathways to good jobs that don't rely solely on traditional degrees. By embracing vocational training programs, online

education platforms, and apprenticeships, the region can empower individuals to acquire specialized skills that align with emerging fields such as agricultural technology, renewable energy, and advanced manufacturing. This approach not only addresses the evolving needs of industries but also enhances the employability of the local workforce, fostering economic resilience and adaptability.

Threats

Geographic competition, income inequality, and housing affordability may deter progress to creating a sustainable and equitable economy. Automation, climate change, and environmental concerns disrupt stability. Water scarcity, pollution, and infrastructure gaps compound challenges.

Geographic Competition – Historically, our counties have competed for funding and resources. Potential lack of cross-county cohesion could slow down decision-making and impede effective implementation of regional initiatives.

Income Inequality and Poverty – Failure to tackle income inequality and poverty can have dire consequences for the region and as a result the region may struggle to attract and retain skilled workers and businesses, hampering the region's long-term growth prospects.

Housing Issues - Persistent low wages in relation to the increasing cost of living undermine the region's affordability. This affects residents' overall well-being and the economic stability. Lack of homeownership is also a significant threat in the region that threatens the stability of communities and the overall economic vitality of the area.

Potential Job Displacement - As agriculture technology evolves, there's a potential for job displacement among workers, in particular farm workers. The transition to more automated systems could threaten existing jobs in agriculture and negatively impact people's livelihoods.

Climate Change Risks - The region is susceptible to the impacts of climate change, including more frequent and extreme weather events. Extreme heat, fire, droughts and flooding, and poor air quality can disrupt agricultural activities, infrastructure, our economy and economic activities, and negatively impact the health and well-being of our residents.

Water Scarcity and Pollution - Overdraft conditions in groundwater reservoirs, water pollution from agriculture runoff, and pesticide use challenge water availability and quality. This threat jeopardizes economic sectors, disrupts ecosystems, and negatively affects residents' livelihoods and health.

Infrastructure Vulnerabilities - The region's infrastructure including transportation, energy, and broadband, is outdated and requires maintenance. Our infrastructure is vulnerable to disruptions caused by natural disasters and deliberate actions. Neglecting these structures can lead to disruptions and safety hazards, hinder our regional economy, and negatively impact livelihoods.

External Factors – Changes in State regulations, particularly regulations that do not take into consideration the region's unique needs, may pose challenges due to significant adaptations, potentially affecting the competitiveness of local industries and economic vitality of the area.

Conclusion

For our region to follow a path that centers equity, economic resilience, and sustainability, we need a roadmap that acknowledges and addresses these complex challenges and opportunities at a systemic level. Ongoing collaboration, meaningful engagement, and inclusion of diverse stakeholders is necessary to ensure the development and implementation of effective and lasting transformative strategies.

Madera Local HRTC SWOT Analysis

We used a couple of research-based methods to facilitate this SWOT analysis with our local Madera County HRTC stakeholder members. The first involved an online Qualtrics survey that was introduced during our virtual July HRTC meeting. Our objective was to allow for participants to anonymously provide input and feedback while also priming discussions that would take place during our subsequent August Zoom session where we co-facilitated four randomized concurrent small group breakouts addressing each component of S.W.O.T. with a room host driving modified prompts, encouraging participation and share outs.

Strengths

For the Strengths section, many of our participating stakeholders centered their responses on Madera's diversity. Both in terms of the residents that call Madera County home; the geographic landscape from foothill mountain to the Valley floor; and of course the wide array of agricultural commodities that are cultivated throughout Madera county .

STRENGTHS – Summarized Qualtrics Responses

Which businesses or industries are the largest in our county right now? What are the most important products or services we provide?

Valley children's, prison, manufacturers, Agriculture (food processing), government (city , county, school district), wineries, casinos, CertainTeed, JBT Food, EVAPCO, Georgia Pacific, manufacturers, social services, healthcare, tourism, natural resource protection/enhancement, construction, recreation

Where are we seeing the greatest economic development?

Industrial manufacturing, ag tec, government institutions, education, cannabis, business along the 41 corridor, housing development, social services, education, healthcare, agriculture, tourism.

What are the county's key competitive advantages? I.e. What sets this county apart in relation to equity, economy and sustainability?

Centrally located, medium sized, relatively low cost to buy/own land and real estate, cheap labor, business friendly, affordable and accessible land, agriculture, mountain recreation, diverse county

What unique resources or assets does our county possess that can be leveraged for equity, economic development and/or sustainability?

Madera is characterized by its diverse population, excellent schools, Foothill mountains, fertile valley land, and a moderately temperate climate. The presence of small towns translates to less bureaucracy, and its central location offers advantages for industry. The region boasts agricultural resources, renewable energy potential, scenic beauty, and

cultural heritage, with strong community-government partnerships. The availability of inexpensive land and diligent, wood-focused workforce are appealing. Collaborations, like those with local schools and the community college, facilitate education and workforce development. Madera's unique position as the southern gateway to Yosemite, with attractions like Bass Lake and Sierra National Forest, bolsters tourism and natural resources.

What are the major success in our county recently, relative to equity, economic resilience/growth and sustainability?

The hospital's potential reopening and enhancement through partnerships is encouraged by positive factors: civic projects, urban development, and new businesses in the area. While business turnover is relatively balanced, tourism is rising, and existing government entities drive growth. Education services are expanding, and collaborative efforts in agriculture aim to conserve water. Housing developments and business growth persist in various regions, while Madera's lower living costs attract industry. Overcoming Covid closures, industrial land development has brought higher employment opportunities.

What businesses are likely to come to our county in the next five years?

In the upcoming five years, a variety of businesses are anticipated in the county. These include manufacturing, transportation, shipping, and storage sectors. The cannabis industry is also expected to grow, along with retail and fast-food establishments. Uncertainty remains due to recent closures, including the hospital and big box stores. Potential economic boosters include the construction of the Mono casino and potential expansion of tourism-related positions. The region may witness more agriculture and social services, while industries like solar companies and workforce training facilities are predicted to emerge. The open land in Madera continues to attract warehouses, possibly leading to increased fast-food and discount stores. Service businesses for the Highway 99 corridor and small manufacturers are possibilities, while health care, particularly the hospital, remains relevant. In Eastern Madera County, prospects involve hotels, restaurants, a conference center, an apartment complex, and a college campus in Oakhurst, if housing can be provided. Overall, manufacturing is also projected to play a significant role in business development.

What businesses are needed in our County in the next five years?

There's a demand for commercial solar energy production and storage, as well as large retail outlets like Target. The community seeks diverse shopping options, entertainment, and recreation venues, including a hospital. Support for small downtown stores targeting Millennials and Gen Z is desired. A wood processing plant in the mountains, locally owned establishments in entertainment, recreation, and hospitality, and a broader range of food production are also needed. Affordable multi-family housing and accessible healthcare services are crucial requirements. The focus is on businesses fostering growth with well-

paying jobs and benefits, including a wish for tech companies. Health care and trade schools, along with construction jobs, both residential and infrastructure-related, are important. The county also seeks a conference center, more restaurants, and businesses catering to human needs.

What are the most important products or services that count County produces now?

Currently, the county's primary focus lies in the production of food and agriculture-related products. This sector is of utmost importance, comprising a variety of crops including almonds, though concerns arise due to water supply limitations. Tourism also plays a role, particularly in Eastern Madera County. The county emphasizes direct services for families in need and adult education. Agribusiness, manufacturing jobs supporting agriculture, and a diverse range of agricultural products contribute significantly to the economy. The desire for more local businesses is also evident.

Strengths From Virtual Jamboard Session

What are the primary products or services our county provides?

- Most used Corridor for Yosemite
- A large amount of Sierra Forest, resources, rec, tourism
- Exporting of Ag products and manufactured products
- Grapes, citrus, nuts, other Ag
- New home building
- Agriculture, new home development, Yosemite
- Ag and tourism

Where are we seeing the greatest growth in quality jobs in our county?

- In Eastern Madera County there are agencies and organizations working together to creatively work with forest and fire issues - Also the first forest bioenergy plant
- Partnerships with education with businesses that provides opportunities for upskilling and training
- Educational settings
- Competitive pay
- Ag jobs which include farm labor, business/admin, and technology
- MANUFACTURING / WAREHOUSE
- Government jobs

What unique resources or assets does our county possess that can be leveraged for equity, economic development and/or sustainability?

- Room for Expansion, for either housing or businesses.
- Diverse cultures and languages that could be leveraged to engage diverse populations.
- A tourist goes to a location because it is unique and something they can't get where they are from.
- Location/Geography /Centrally Located
- Plenty of land to grow

- People with diverse backgrounds, education, etc. can help provide multiple perspectives.
- The land that is empty in Madera can be used for affordable housing and business development.
- People, partnerships, willing to collaborate...private and public sectors united efforts
- Natural Resources (tourism, water for agriculture, timber, , fire prevention)
- The County has been awarded money to clear dead trees, which is so important.

What are the county's key competitive advantages?

- A growing youthful employment base - a new third HS
- Mexican Indigenous food and culture
- Land availability and affordability
- Available transportation for transporting goods/exporting
- The unique location and proximity to bigger counties and travel areas.
- LOWER COST OF DOING BUSINESS
- The mountains and the south gate of Yosemite
- Proximity to Yosemite for tourism and centrally located in the State. Cost of living vs urban counties.
- Fishing, lakes, wineries, mountain region

What are Madera's biggest victories (large or small - relative to equity, economic resilience/growth, and sustainability)?

- We have established political alliances with state-level supporters to aid the hospital in Madera.
- Local leaders and representatives have formed partnerships to do better
- Madera has been providing more opportunities to showcase all groups and make sure that they are welcomed. For example, there was an LGBTQ event.
- Being able to reach the rural/ undocumented communities and give them resources. leveraging partnerships with farm owners to serve the farm workers
- TEAMWORK , AGENCIES WORKING TO SOLVE ISSUES.
- Healthcare and Education partnerships between Camarena Health and school districts
- CTE, STEM, and healthcare pathways at Madera Community College
- Supporting quality education with Matilda Torres High School and Madera Community College

What businesses are likely to come to our county in the next five years?

- Madera Swap Meet
- Agriculture jobs
- Amazon and other large warehouses or distribution centers
- Small businesses, North Fork Rancheria Casino
- Healthcare
- Retail business
- Fast food chains and possibly other corporate businesses that may squeeze out mom and pop establishments.

- Restaurants
- More small businesses

Weakness

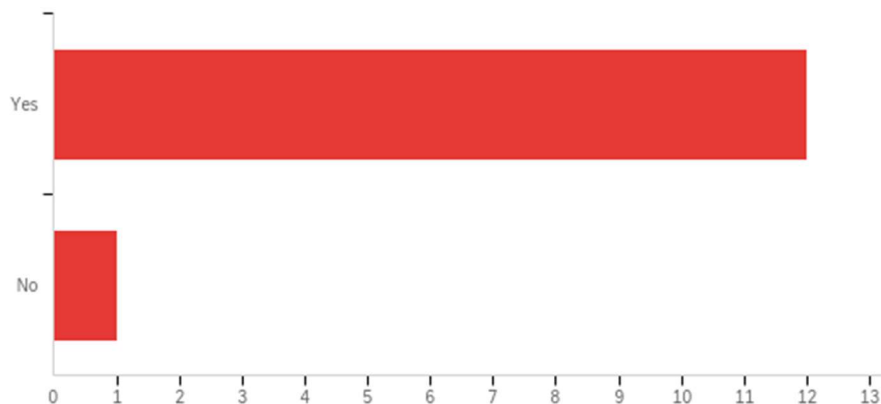
Outside of agriculture, Madera County’s economy consists largely of government employees low-middle wage jobs in retail and the food industry. Demographically, Madera is a struggling county when compared to the rest of the Central Valley and other similarly sized California counties. Other issues that make life in Madera County difficult are the ongoing drought, low preschool enrollment rates, extremely high adult obesity rates, and low paying jobs that complicate access to health and home ownership. Additionally, the county was a large undocumented workforce, much of it Mexicans with indigenous backgrounds, such as the Mixtecos and Zapotecos from Oaxaca, Mexico. With such prevalence of undocumented people living and working in the county, with the constant fear of deportation, communication and outreach become increasingly complicated. Lastly, it is this population that worked through the pandemic, being deemed *essential workers* and also needing to work in order to survive and provide for their families.

Weakness – Summarized Qualtrics Responses

What are the major challenges or barriers to equity, economic development and/or sustainability in our county and which geographic area are they in?

Education is lacking, impacting a population without generational wealth or stability. Downtown Madera requires revitalization, and a less educated workforce hinders the attraction of higher-paying jobs. Sociocultural disparities and the "Brain Drain" phenomenon are evident. Success requires personal drive, collaboration with employers, and a willingness to learn. Water availability is critical for agriculture and population growth. The shortage of skilled workers is a barrier, despite available jobs. The geographical divide hampers equity, with funding and population disparities between the valley and foothills. Eastern Madera County seeks race diversity, a hospital, and housing for labor force expansion, while limited funds and capital availability present overarching challenges.

Are there any infrastructure limitations or deficiencies that hinder economic growth?



#	Answer	%	Count
1	Yes	92.31%	12
2	No	7.69%	1
	Total	100%	13

If there are infrastructure limitations or deficiencies that hinder growth, what are they?

Water-related challenges like storage and resource mobilization are prominent, along with the need for affordable energy for both residential and commercial sectors. A call for an alternative energy provider to counteract the perceived monopoly of PG&E is raised due to issues of line maintenance, disaster accountability, and rate hikes. Leadership with a genuine passion for growth is required, and inadequate transportation exists in certain regions. The county faces limitations in broadband and internet access, as well as constrained water resources and the absence of a local hospital. Educational opportunities are limited to a community college level, and natural hazards such as wildfires affect mountainous areas. Historically, local government has neglected infrastructure, focusing primarily on the Highway 41 corridor. The county is criticized for being reactive rather than proactive, resulting in poorly maintained roads. Additional challenges include poor road quality, distance to resources, workforce education requirements, and funding limitations for private businesses. Eastern Madera County is constrained by the management of land under the control of the US Forest Service. The region requires more trails to manage overcrowding in popular areas, housing, year-round jobs, and a hospital. Road conditions, property zoning, and development are also areas of concern.

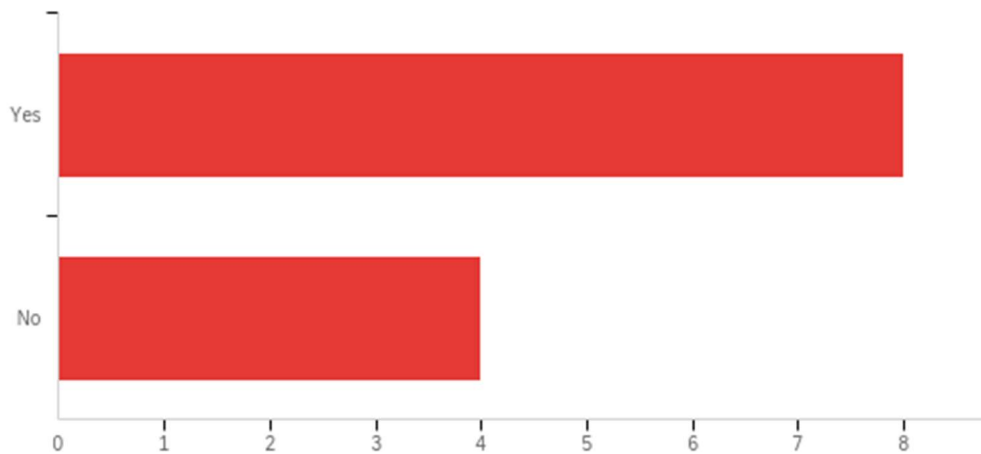
What are our limitations in resources (healthcare, financial, workforce, living wage jobs, natural resources)?

Healthcare suffers from a shortage of specialists, particularly in areas like ob-gyn and pediatrics, leading to inadequate preventative and primary care services. Lack of high-paying and living wage jobs drives educated individuals to seek opportunities elsewhere. The county's education, healthcare, shopping, and insurance sectors are insufficient, pushing residents to travel to Fresno or resort to online options. Affordable and available rentals are scarce, impacting housing availability. Wage rates, water access, education quality, and workforce skills contribute to challenges. Improving workforce training is seen as a potential solution. Water, air quality, transportation, and education also pose limitations, while healthcare, housing, and living wage jobs remain persistent issues. Overall, resources related to healthcare, education, housing, and wages need improvement to address the county's limitations effectively.

How does our county's location have a negative impact on businesses?

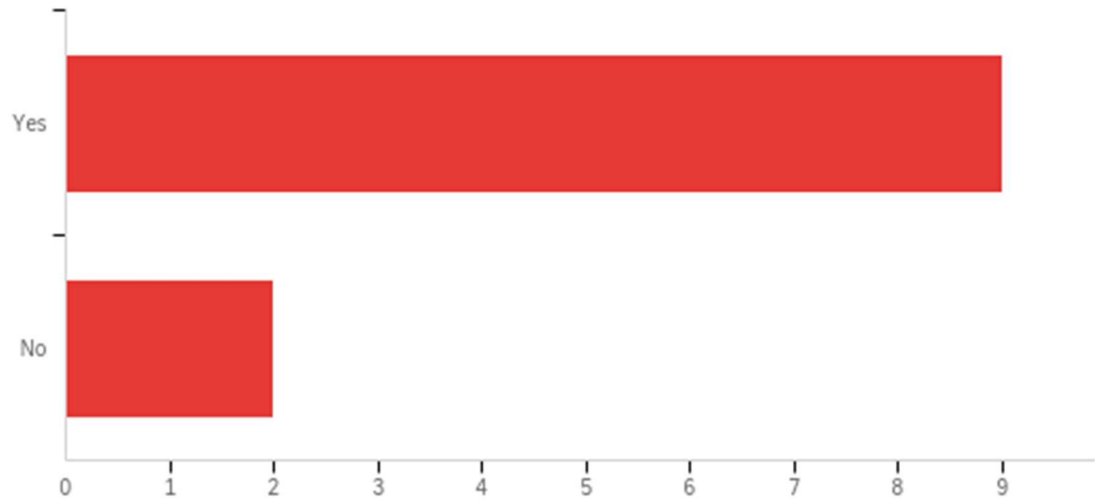
Situated between Fresno and Merced, it benefits from being centrally located but faces challenges due to its proximity to these growing counties. The reputation of the Valley as having limited activities and quality of living affects its appeal to workers. While some see it as a positive location, others feel that resources and opportunities flow more toward Fresno County due to its larger population, higher education resources, and hospitals. Sociocultural disparities, lack of education and opportunity, as well as lengthy construction permits, have negative impacts. There's an overreliance on low-paying agricultural jobs, and transportation costs for materials are significant. The county's geographic split hampers balanced economic development, and the need for improved infrastructure is emphasized. Addressing skill gaps through increased education opportunities is also crucial for the area's business environment.

Are there any issues from previous leadership that are impacting growth right now?



#	Answer	%	Count
1	Yes	66.67%	8
2	No	33.33%	4
	Total	100%	12

Are there any regulatory or policy issues that are holding back equity, economic development and/or sustainability?



#	Answer	%	Count
1	Yes	81.82%	9
2	No	18.18%	2
	Total	100%	11

What are the regulatory or policy issues that are holding back equity, economic development and/or sustainability?

CEQA and NEPA are holding back development. Regulations and policies that reflect past negative practices. Lack of skill development, education, and experience for workforce.

Weakness from Virtual Jamboard Session

What are the major challenges or barriers to equity, economic growth and/or sustainability in Madera?

- Language barrier
- Access to reliable fast speed internet
- Access to capital, access to water and dependance in water wells, wildfires
- Workforce that is not well educated and does not attract high paying employers
- Potential young workforce -leaving for other opportunities in counties that have a more diverse career opportunities
- Large ag industry, but low paying jobs
- Affordable homeowners insurance or canceled homeowners insurance
- Education issues
- Bureaucracy for small business start up.
- Lack of diversity reorientations/celebration of other ethnic groups
- Embedded systems that structure inequities.

- Lack of opportunities for the younger population
- Funding to repair/build out infrastructure needed. Funds from State and Feds goes to larger cities

Are there any infrastructure limitations or deficiencies that hinder economic growth?

- Tourism is an opportunity to grow, but there is a lack of hospitality/tourism training to upskill
- Lack of available vocational trainings in Madera County. Participants must travel outside.
- Lack of housing and/or affordable housing
- Highway 41 thru Oakhurst - need to beautify and it's hard to as a major highway...
- High-speed internet in Eastern Madera Co
- Depending on area of growth proper infrastructure may not be available, often times needs to connect to city
- BUILDING CODES SLOW PROGRESS DOWN.

What are Madera's human capital/human infrastructure limitations that hinder economic growth?

- Equitable housing (and associated cost of living like PGE, food, etc.) policies.
- Water policies that benefit both ag and environment
- The allocation of funds is not well proportioned and not available to Madera.
- Lack of job opportunities for young adults
- Workforce that is not well educated and doesn't attract high paying jobs
- Lack of educated workforce in the stem fields
- This is not a place that is attractive to younger people
- Workforce education
- Skilled workforce

Are there any regulatory or policy issues that are holding back equity, economic development and/or sustainability?

- PG&E
- Federal Regulations that hinder efforts to improve forest conditions.
- Access to affordable housing
- Modify zoning to allow more housing on larger parcels in Easter MC to reduce housing need
- Lack of investment, in roads, digital infrastructure, small business, housing
- Lack of jobs and skilled workforce
- SJVAP District regulations on manufacturers

Are there any issues from current and/or previous leadership that are impacting growth?

- Economic development is something that was happening, but the funding was lost
- Lack of countywide large scale transportation infrastructure
- Growth/Development seems to be taking place outside of city
- Transportation

Opportunities

Our local Madera HRTC stakeholders appeared to spend the bulk of their time and energy responding to the questions in this section. There seemed to be general consensus and optimism surrounding the availability and affordability of land/housing; innovations in workforce development; unity surrounding improvements in health care access and quality; and a general feeling that our county leadership and even processes like this advanced collaborative planning with CERF are all excellent examples of the opportunities that exist for Madera County.

Opportunities – Summarized Qualtrics Responses

What are some ways in which we are well positioned for growth and expansion? Infrastructure? Policies? Job training?

There's active engagement through meetings and discussions for planning. Anticipated growth in healthcare options and the region's affordability for remote workers with strong internet accessibility are advantages. There's a push to establish job training pathways in homebuilding and construction trades, catering to non-college jobs, and elevating community skills for higher positions. Additional resources for job training, English acquisition, and higher education are sought. The existing Madera Workforce is ready to support self-improvement efforts. The county benefits from natural resources, available open space, and potential housing development.

What sets us apart from other counties when we think about equity, economic growth and/or sustainability?

The county's people form a cornerstone. Notably, agricultural diversity, scenic beauty, and natural resources are key assets, and the central location facilitates proximity to major markets and tourist destinations. Strategic planning and sustainability initiatives, including a move toward solar energy, have been undertaken. Despite comparatively fewer economic resources, commitment to identify programs and solutions prevails. Collaboration among Madera County and State agencies is notable. An available workforce, combined with space and opportunities, makes the county well-positioned for growth, but the focus now shifts to attaining livable wages and accessible homes. The strategic location, progress through dialogue, and people's determination all contribute to the county's unique attributes.

How is Madera county structured and organized to manage growth/expansion?

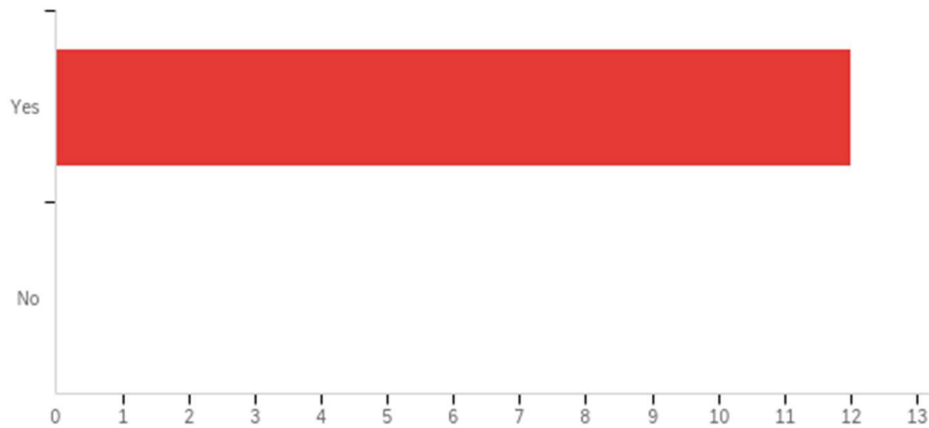
The presence of ample affordable land encourages development. The Board of Supervisors, County Administrator, and County departments play a supportive role in fostering growth and expansion, aiming for equity and economic prosperity. The steadiness of leadership changes is a positive factor. Planning Departments are actively involved, and some Supervisors are notably engaged, such as the District 5 Supervisor. While uncertainties exist in some responses, the county's lower cost of living, vast open land for commercial

and residential expansion, and a generally receptive attitude among supervisors contribute to the overall approach to managing growth and expansion.

How effective is job training in our county?

Job training could be more effective and better in our county. Older job trades are facing challenges recruiting a younger workforce. Through there are programs and organizations that offer support, more job training is needed.

Are there untapped markets or customer segments that can be targeted for economic development?



#	Answer	%	Count
1	Yes	100.00%	12
2	No	0.00%	0
	Total	100%	12

What are the untapped markets or customer segments that can be targeted for economic development?

Untapped markets and customer segments that hold potential for economic development in the county include immigrants, migrants, and growing microenterprises that can serve new immigrant communities. The region can target individuals seeking remote work opportunities, drawing in those from the Bay Area and Southern California seeking to relocate. Leveraging wood product industries and expanding offerings in hospitality, entertainment, recreation, and cannabis also offer avenues for growth. High school students and young adults represent an audience ripe for targeted programs in training and higher education. Encouraging entrepreneurship by simplifying the process for starting

businesses is essential. Additionally, focusing on recreation, forestry, and natural resources, especially in Eastern Madera County, can yield benefits. Meeting the retail needs of the population, enhancing food services, and providing accessible health services are also potential avenues for economic development.

Opportunities from Virtual Jamboard Session

Where do we see Madera's potential for new job creation or industry expansion?

- Enhanced and successful language and cultural opportunities in education
- Our diversity and various perspectives really set us apart and is an asset that we need to make sure we invest equitably in the growth.
- Creating value/education/certification in our ag/ hospitality jobs for youth and low-level workers
- Ecosystem restoration - workforce training on forest restoration, fire protection, recreational trails, and assist with fire fighting
- Restaurants & Hospitality to increase guests and visitors
- Improvement in transportation
- Attract larger manufacturing or shipping companies
- Potential for internet infrastructure jobs, solar farms and other renewable energies

What are Madera's untapped markets or customer segments that can be targeted for economic development?

- Bi-Literacy
- Pathways in high schools/higher ed, for leadership positions and other training opportunities
- Technology based services and jobs
- Entertainment and (indoor) recreation
- Healthcare training
- Downtown development to support local businesses and tourism
- Cultural celebrations for tourism
- Pre-apprentice/apprenticeship opportunities to skill up entry level positions

How is Madera well positioned for growth and expansion? Infrastructure? Policies? Job training?

- Have a thriving visitMadera!
- Make the county a destination for AG tourism
- Value-added agricultural products
- Elder Care - we need facilities and skilled workers
- Forestry and hospitality education focus for youth
- Open land available, central location in California, growing young adult population
- New CTE campus for students – provide career exposure.
- Partnerships among community college, k-12/adult ed, businesses, and workforce that will support training

What sets us apart from other counties when we think about equity, economic growth and/or sustainability?

- Dual-language immersion schools
- Technology and youth training - robotics and prototype.
- "Madera County - We move everyone forward!"
- MADERA invested in EDUCATION and our YOUTH! WE built those REAL WORLD LIFE SKILLS
- Ample space for development
- Recreational tourism

What businesses are needed in Madera County in the next five years?

- Green Economy businesses (solar, water conservation, etc)
- Grow and expand in the tech industry.
- Food tours, in manufacturing field of products we produce.
- Restaurants & clothing stores in Eastern Madera County!
- Affordable apartments for seasonal workers
- Service businesses for the 99 (gas stations, restaurants, etc.)
- Small manufacturers
- Potential to develop downtown and create entertainment type district.
- Local hospital

Threats

Common threads centered on natural resources like water and forest management. Brain drain, the loss of talent in key sectors such as health and tech, couples with the disproportionality of residents that are socio-economically and educationally disadvantaged got the most passionate discussions going surround threats to economic development.

THREATS – Summarized Results from Qualtrics

Which counties or geographic areas are our competition in terms of equity, economic growth, and/or sustainability and how?

Our competition lies primarily with Fresno and Merced. Their proximity and more attractive shopping opportunities present challenges. Fresno leads due to quicker services, a strong hospitality industry, and comprehensive support services for businesses. Both Fresno and Merced receive higher funding percentages. Additionally, Mariposa competes in the tourism sector. From the Eastern Madera County perspective, areas like Tahoe, Big Bear, and Mammoth, while smaller, share similarities. Fresno County, given its size and abundance of goods and services, poses significant competition.

What are the socioeconomic factors, such as income inequality or demographic shifts, that could hinder economic development?

Institutional racism and generational poverty are significant obstacles. A less educated population impacts job prospects, especially for positions perceived as requiring higher qualifications, and low income hampers disposable income. The prevalence of low-income

families struggling to afford housing is a concern. Income inequality is widespread, affecting access to business property due to high insurance costs and impeding affordable housing. Limited access to higher education, inadequate nutritional services, and a lack of livable wages further complicate the situation. High poverty levels, language barriers, and inadequate healthcare access compound challenges. The key lies in addressing these issues to ensure a trained workforce and equal opportunities for all, ultimately mitigating income inequality and fostering economic growth.

Which external factors (such as policies and natural resources) can negatively impact equity, economic development, and sustainability in our region?

The lack of water, water quality issues, and poor forest management pose significant challenges. Uncertain air quality could deter businesses and population growth, and the valley's political orientation might discourage engagement with Bay Area companies. The absence of affordable housing and well-paying jobs hinders progress. Environmental limitations and slow-paced development impact natural resources, while zoning and codes influence growth. Resistance to change, manifested in an exclusive focus on agriculture despite potential barriers like water scarcity, can hinder diversification. The power of fiscal conservatives in business and government overlooks equity and sustainability. Yosemite National Park and the US Forest Service exert significant influence, often affecting the economy. Excessive drought and rain patterns also contribute to negative impacts.

What is our greatest challenge for success or holding us back?

Income inequality among the population, coupled with climate change and ingrained mindsets, present substantial barriers. The need to embrace non-traditional options, recognize education's role in providing opportunities, and create good jobs shape Madera's potential for improvement. Education emerges as a critical aspect. Transforming Madera into a destination, rather than just a county of industry and agriculture, requires a shift in perception. Financial resources are crucial. The key lies in developing an achievable, straightforward plan that can be effectively executed to surmount these challenges and drive progress.

How are other counties competition for our county?

Merced and Fresno have the advantage of offering more extensive shopping options, job opportunities, and arts-related projects. Their higher paying jobs attract businesses and foster a greater range of community amenities. In comparison, Madera is perceived as less competitive in various aspects. Factors like roads, pay rates, education, and healthcare contribute to the challenge. Other counties tend to be more demographically and economically diverse, and Madera County's size and resources make it less competitive against larger neighbors. Merced's university enhances its appeal. While Madera shares similar industries with neighboring counties, the lack of services such as housing and

hospitals makes it difficult to retain residents. The competition necessitates a more proactive approach to create opportunities and stay competitive.

Threats from Virtual Jamboard Session

What are the socioeconomic factors, such as income inequality or demographic shifts, that could hinder economic growth?

- Income & Inequalities
- Unskilled labor
- Need to distinguish itself (populations and needs) apart from northern or southern cities, for State, Federal and Private investment.
- Younger generation leaving Madera and taking talents with them.

Which resources (including natural resources) are threatened that might impact economic growth?

- Lack of high-quality educators (need to attract and retain more)
- A lot of false information in our communities.
- Water-treatment and testing
- Water
- People leaving due to growing cost of insurance.
- Air Quality and Water needs to be cleaned and preserved.

Which external factors (e.g. federal, state, and local policies and natural resources) negatively impact equity, economic development, and sustainability in Madera?

- Utility bills
- Insurance companies canceling policies in foothills
- Social normalization around the feeling that Madera is in the shadow of Fresno
- Needing to go to Fresno for resources
- Federal and environmental regulations and climate issues – complicated and expensive for local small businesses impacting ability to thrive and grow.
- Lack of funding for rural communities

What is our greatest challenge for success?

- Opportunities are limited in number and in potential in comparison to larger cities (ex. Los Angeles)
- Diversity exists but groups need to be feel more connected to their community.
- Support, education, and financial assistance to underserved demographics that wish to start a business.
- Not growing the community fast enough with high skilled workers
- Proper planning
- Jobs with growth and acceptable pay with benefits

What is holding Madera back?

- Low supply of water, dry wells, potential sink holes, high cost of new wells

- Water starts in the mountains and water needs to be addressed at all elevations and ecosystems in order to impact Madera County as a whole
- Need more diverse industries.
- Limited entertainment/things to do to attract traffic and retain youth
- Lack of collaboration with diverse stakeholders

Fresno County Local HRTC SWOT Analysis

Background to Fresno County SWOT Analysis

Fresno County stands as a diverse and intricate tapestry, spanning over 6,000 square miles and hosting a population of a million. This expansive territory reflects a microcosm of the entire nation, with the spectrum of American experiences converging within its boundaries. From pioneering modern-day visas to birthing iconic food items like the Taco Bell chalupa, Fresno also plays a vital role in sustaining the nation by being a cornerstone of its food production. It's a key contributor to the nation's food supply through its agricultural might, yet it grapples with pockets of food insecurity within its own community. Fresno County is emblematic of the American dream, attracting individuals with the promise that hard work can pave the path to socio-economic ascent.

Amid these intricacies, one truth stands clear: Fresno defies simplicity. Its narrative is woven from threads of promise and challenge, where potential collides with persistent issues. The following SWOT analysis underscores this, revealing both points of pride and entrenched problems. Fresno's evolution hinges on embracing these nuances, forging collaborations, and crafting solutions that resonate with its complex reality. Through these deliberate steps, Fresno can cultivate a future where diversity and prosperity truly flourish hand in hand.

Strengths

For centuries, Fresno County's identity has been intertwined with the ebb and flow of its waters, a resource that once brought prosperity and now poses challenges. This dependency on water, historically pivotal for agriculture, is emblematic of the county's strength and vulnerability. Amid this, Fresno shines as a diverse tapestry of people, ranking among the most racially diverse cities in America. This inclusivity fosters a strong sense of community and a shared commitment to equity. Agriculture, at the heart of Fresno's economy, exemplifies its strength. With over half of its land dedicated to farming, Fresno boasts fertile soil that yielded an impressive \$8.09 billion in agricultural commodities in 2021. Geography enhances Fresno's potential, nestled near vital resources and emerging tech hubs, allowing for dynamic growth and collaborations.

Affordability, a hallmark of the Central Valley, attracts residents seeking a lower cost of living compared to the rest of the state. These strengths, interwoven with a commitment to higher education, a rapidly expanding workforce, and a burgeoning manufacturing sector, lay the groundwork for Fresno's progress.

Diversity and Community Fresno County's true strength lies in its people. Its rich diversity makes it a standout, ranking 9th among the Most Racially Diverse Large Cities in America, as revealed by U.S. News & World Report. The blend of languages and cultures is a testament to the county's multicultural spirit. This inclusivity has sparked a powerful advocacy movement, bringing to light not just the necessity but also the vigor of ongoing work towards equity and representation. This representation can be seen in the number of CBO's that serve so many varied populations' interests and needs. Fresno thrives on its strong sense of community. The

residents share a bond that transcends boundaries, providing a robust foundation for mutual support. This unity is more than just a notion; it's palpable in the concerted efforts to uplift each other, creating an environment of empowerment and collaboration.

Agricultural Abundance At the heart of Fresno's economy is its agriculture. With a staggering half of the county's land dedicated to agriculture, it's no wonder that Fresno boasts some of the world's most fertile soil. The numbers speak for themselves, with the record-breaking 2021 gross value of agricultural commodities reaching \$8.09 billion, marking a 1.47% increase from the previous year.

Geography Nestled in close proximity to crucial resources and burgeoning tech hubs, Fresno enjoys a geographical advantage. This strategic positioning fosters connections and collaborations, propelling the county's progress and potential. With ample open land, Fresno holds the promise of future developments. This availability can translate into dynamic growth, offering possibilities for new ventures and initiatives.

Affordability The Central Valley's affordability in comparison to the rest of the state makes Fresno an attractive place to live and work.

Infrastructure Development Fresno is poised to become a transportation hub with planned airport expansions. This enhanced infrastructure echoes Fresno's growing significance in the heart of California and its connectivity with the rest of the state and nation.

Higher Education & Research Institutions Fresno's higher education sector is a beacon of excellence, enriching the county's intellectual landscape and providing a foundation for future advancements. Fresno's research institutions, like the WET Center at Fresno State and Vista at UC Merced, are pioneering solutions to pressing issues like water conservation, showcasing the county's commitment to innovation and sustainability.

Workforce Fresno's workforce is not only readily available but also rapidly expanding. The county has seen a surge in professionals across various sectors, shaping a talent pool that fuels economic growth and innovation. Fresno's commitment to skills training is evident, offering avenues for individuals to acquire essential competencies and thrive in the evolving job landscape. Strong labor unions underscore Fresno's social fabric, advocating for the rights and well-being of workers. This resilient backbone ensures a fair and just working environment for many. Migrant residents exhibit a commendable willingness to improve their well-being and a deep-rooted desire to learn and grow, creating a culture of continuous development.

Tourism Potential The allure of Fresno as a tourism destination cannot be understated. With its proximity to coveted National Parks, the county draws visitors from far and wide, promising recreation and vistas for the world.

Ag Technology Advancement In tandem with its agricultural prowess, Fresno is embracing agricultural technology. This convergence of tradition and innovation positions the county as a

hub for ag tech advancements. Fresno has demonstrated remarkable adaptability in the face of change. The county's readiness to embrace technological shifts and new paradigms speaks to its capacity for evolution and innovation.

Manufacturing A burgeoning manufacturing industry has been taking root, adding to the region's economic diversity and providing new opportunities for both skilled and unskilled workers.

Business Fresno fosters a nurturing environment for micro-businesses, championing local entrepreneurship and offering a platform for innovative ventures to thrive.

Philanthropic Nexus The county's proximity to philanthropic institutions and private foundations provides opportunities to pilot projects and leverage private funding for community betterment.

Weaknesses

Fresno County grapples with profound challenges that stem from concentrated poverty, a critical issue impacting all other weaknesses. This is exacerbated by the demanding work conditions and economic instability faced by numerous residents, especially migrant farmworkers, leading to chronic traumatic stress. The prevalent mental health challenge remains largely unaddressed, affecting the overall well-being and productivity of the county's workforce. The dynamic of a transient population further compounds these challenges, with the constant flux of residents impacting community cohesion and hindering long-term engagement. This "Brain Drain" phenomenon, where educated individuals seek better opportunities elsewhere, exacerbates the struggle. These interlinked factors form the backdrop against which Fresno's weaknesses play out, necessitating a comprehensive approach to overcome these systemic issues and set the county on a trajectory of sustained growth and prosperity.

Workforce Fresno County struggles with interconnected weaknesses in education and workforce development. The lack of adequate upskilling opportunities prevents individuals from accessing meaningful wage increases, stalling economic growth. Further, the absence of comprehensive labor education in high schools compounds the issue, leaving students without the necessary knowledge to navigate diverse career paths. This not only perpetuates industry dependence but also contributes to the recruiting challenges faced by the county. The insufficiency in resources, both in terms of funding and staffing, adds another layer of complexity to addressing these challenges, impacting the operations of educational institutions and workforce programs. These interconnected educational and workforce challenges hinder the region's ability to diversify its economy and attract skilled professionals.

Primary Education There is a high level of illiteracy in rural areas in Fresno. Not enough funding is put into schools that need to

Infrastructure and Connectivity Deficits Fresno County's economic development is held back by its inadequate infrastructure. The county lacks well-connected roads, efficient water systems,

and robust digital networks that facilitate seamless movement and access to opportunities. This infrastructure gap limits the county's ability to attract businesses, provide quality services, and offer residents a high quality of life. These deficits in infrastructure and connectivity also intersect with the limited access to parks and outdoor spaces, depriving residents of recreational options and impacting physical and mental well-being.

Environmental Vulnerabilities Fresno County faces a series of environmental weaknesses that pose significant challenges. The region's heavy dependency on water for agriculture makes it susceptible to both water scarcity and poor water quality. The variability of water availability creates economic uncertainties that reverberate throughout the ag sector. Poor air quality resulting from agricultural and transportation impacts residents' health and quality of life. These environmental vulnerabilities are exacerbated by the threat of wildfires, which are intensified by dry conditions and further contribute to economic losses and insecurity among residents. The interplay of these weaknesses amplifies the county's ecological concerns.

Social and Economic Disparities Fresno County's weaknesses in healthcare availability and lack of recognition for important natural areas intersect with issues of chronic traumatic stress, population transience, poverty, and high unemployment. The absence of adequate healthcare infrastructure perpetuates health disparities and affects the overall well-being of residents. Additionally, the lack of recognition for crucial natural areas underlines a broader issue of imbalanced development priorities. These social and economic disparities are further underscored by the transient population dynamics, making it challenging to establish a strong sense of community and achieve sustained community engagement. This, in turn, impacts the region's ability to address and overcome its weaknesses collaboratively.

Imbalanced Development Priorities Fresno County's emphasis on agricultural development often comes at the cost of recognizing and preserving crucial natural areas. This imbalance neglects the ecological significance and long-term benefits of these areas. Failure to recognize and protect vital natural resources has ecological consequences, affecting biodiversity, ecosystem stability, and the county's overall environmental health.

Access to Recreation and Outdoor Spaces The lack of accessible natural areas hinders residents' access to recreational spaces and impacts their physical and mental well-being.

Unfunded Mandates Small cities make up rural Fresno. The service expectation for small cities is the same as large cities in many respects and residents in smaller communities often rely more heavily on their civic infrastructure. The unrealistic demands from the state such as AB 1383 organic waste recycling often make it difficult for cities to direct resources as their communities need.

Water Dependency and Quality Fresno County's economic vitality teeters on the precipice of water availability. The region's heavy reliance on water for agriculture creates a delicate balance where a bountiful water supply signifies prosperity, while water scarcity yields economic setbacks. The year-to-year unpredictability of water availability amplifies the vulnerability of the

agricultural sector and the wider economy. The very source of sustenance for Fresno's agriculture can also be a source of concern. Water quality issues, including pesticide residues and pollutants, cast a shadow over the county's agricultural output. Contaminated water jeopardizes both human health and crop yields, posing a dual challenge that necessitates comprehensive solutions.

Air Quality Fresno's atmosphere, marred by poor air quality, is a glaring drawback. Pollutants, driven by factors like agricultural activities and vehicular emissions, contribute to a persistent haze. This compromised air quality not only affects residents' health but also detracts from the overall quality of life in the county.

Forest Health Decaying biomass in the forest that is emitting carbon as it decomposes. San Joaquin Valley topography and dry winters that trap pollution under the inversion layer that creates smog. The threat of wildfires looms large over Fresno County. Dry conditions and a combination of natural and human factors increase the susceptibility to devastating wildfires. The annual fire season brings not only destruction but also economic losses and a sense of insecurity among residents.

Soil Health While Fresno's agriculture relies on fertile soil, the health of this vital resource is a concern. Soil degradation due to intensive farming practices can impact productivity and sustainability, necessitating concerted efforts for soil preservation.

Recruiting Challenges The county struggles with attracting and retaining skilled professionals in various sectors. The dearth of incentives or comprehensive support systems inhibits the county's ability to bolster its workforce.

Lack of Labor Education in High Schools The absence of comprehensive labor education in high schools contributes to a gap in workforce preparedness. This lack of exposure to diverse career paths leaves students ill-equipped to make informed decisions about their future.

Pollution Concentration Fresno's concentration of industrial and agricultural activities can result in pollution hotspots. These areas suffer from heightened pollution levels, impacting both the environment and public health.

Organizing Challenges Organizing efforts within the county's labor market encounter obstacles. The complexity of sectors and varying needs of workers make effective organization and advocacy a daunting task.

Unfunded State Mandates The burden of unfunded state mandates places strain on Fresno County's resources. Implementing required programs without adequate financial support diverts resources from essential services and projects.

Poverty Despite its economic potential, Fresno County grapples with pockets of poverty. Economic disparities persist, affecting access to quality education, healthcare, and overall

well-being.

Park Access Limited access to parks and outdoor spaces within Fresno curtails recreational opportunities and impacts residents' physical and mental health.

High Unemployment The county contends with periods of high unemployment, contributing to economic instability and limiting opportunities for residents.

Lack of Recognition of Important Natural Areas While agricultural development takes precedence, other crucial natural areas often go unrecognized. This imbalance neglects the preservation of diverse ecosystems and their ecological significance.

Lack of Equitable Political Representation Fresno County faces a challenge of inadequate political representation. These entities are often influenced by business developers and special interest groups, resulting in an unbalanced decision-making process. This leaves the dominant community with ineffective token representation, impeding their ability to advocate for their needs and shape policies that reflect the county's true diversity and priorities.

Opportunities

Navigating Fresno's intricate landscape, one finds opportunities that can transform challenges into triumphs. The urgency of addressing educational disparities becomes apparent in the stark contrast between strong higher education and weak primary education. This void can be filled by enriching curricula and bridging the skills gap, thus preparing students for a diversified job market. Fresno's strategic location and availability of open land offer opportunities for tech integration, ag tech advancement, and regenerative agriculture. Fostering entrepreneurship, attracting high-wage industries, and creating supportive ecosystems can diversify the job landscape. Better connectivity, digital literacy programs, and improved infrastructure hold potential for upliftment. Collaborative coalitions and holistic literacy initiatives can strengthen community bonds and prepare future leaders. Amid these opportunities, Fresno can shape a path toward a more inclusive, tech-driven, and resilient economy.

Digital Literacy Fresno County can prioritize digital literacy programs to equip residents with essential digital skills. This includes training for using online tools, accessing information, and participating in the digital economy.

Improved Connectivity By establishing better first and last-mile connections for both broadband internet and transportation, the county can bridge accessibility gaps, ensuring that even remote areas can benefit from online resources and economic opportunities

Alternative Skill Routes Opportunities abound for creating pathways to good jobs that don't rely solely on traditional degrees. Fresno can foster training programs that equip individuals with the skills needed for emerging industries, expanding the pool of eligible candidates for well-paying positions.

Entrepreneurship and Innovation Encouraging entrepreneurship and innovation can lead to the creation of new, flexible job opportunities. By offering support, mentorship, and resources, Fresno can empower individuals to launch their own businesses and contribute to economic growth.

Tech Integration Incorporating technology and innovation across industries can drive economic diversification. Fresno County can attract technology-driven businesses and startups, adding a layer of innovation to its economic landscape.

Attracting High-Wage Industries By emphasizing living wages and unionization for government contracts, Fresno can attract industries that provide higher-paying jobs, thereby raising the standard of living for its residents.

Curriculum Enrichment Improving educational curricula to expose students to diverse careers and skill sets can equip them for a wider range of opportunities, reducing the skills gap and aligning education with workforce demands. Introducing students to potential career paths from an early age can spark interest and provide a clear trajectory for their educational journey.

Health and Mental Wellness Prioritizing healthcare and mental health services can significantly enhance overall well-being and productivity. Fresno can invest in accessible healthcare infrastructure, ensuring that residents have the necessary support to lead healthy lives.

Civic Engagement and Advocacy Encouraging civic involvement and education empowers residents to actively participate in shaping their community's future. This can lead to better-informed decisions and policies that address local needs. This also relies on heavily focusing on developing the leaders of tomorrow. There is teeming potential for people to be developed as leaders for tomorrow.

Regenerative Agriculture Fresno's agricultural foundation presents an opportunity to transition towards regenerative agriculture practices. Implementing techniques that restore soil health and reduce environmental impact can contribute to both sustainable farming and a healthier ecosystem.

Creative Reuse and Redevelopment Empty buildings can be repurposed for community initiatives, incubators, and collaborative spaces. By creatively reusing these spaces, Fresno can stimulate economic activity and provide platforms for innovation.

Holistic Literacy Programs Initiatives targeting both adult and childhood literacy can uplift the community. Fresno can establish cohesive pipelines, including community libraries, literacy programs, and adult education, fostering a culture of continuous learning. Supporting young professionals dedicated to improving literacy scores in underserved communities can have a lasting impact. Their efforts can lead to higher retention rates and a more educated workforce in Fresno County.

Collaborative Coalitions Fresno has the opportunity to create cohesive pipelines that build coalitions across sectors. By partnering with educational institutions, businesses, and community organizations, the county can leverage combined efforts for greater impact. CERF and CEMI cited as prime examples of these regional networks.

University Readiness Empowering residents with access to educational opportunities that prepare them for admission to top universities can create pathways to higher education, enabling them to pursue advanced degrees and contribute to professional growth. Connecting them to the job opportunities and creating those pathways from day 1 will allow them to learn here and stay here rather than leaving seeking opportunity.

Addressing Educational Disparities By addressing the challenges faced by communities of color in accessing equal education, Fresno County can strive for equity in its educational system, ensuring that all students have equal opportunities to succeed.

Streamlined Work Permits Creating ease of access to work permits for all individuals can foster economic mobility and encourage a diverse workforce, enhancing both individual livelihoods and the county's economic vitality. Creation of more city parks for access to green space, greater standard of living, and improvement in air quality Use of excess food waste of approximately 327,922 tons annually with available data to reduce methane emissions, landfill use. Creation of more city parks for access to green space, greater standard of living, and improvement in air quality.

Threats

Low Wages and Cost of Living Low wages in relation to the increasing cost of living undermine the county's affordability. This threatens the quality of life for residents, making it challenging to make ends meet and dampening economic growth.

Skills Gap Gaps in essential trade skills and industries pose a significant threat, especially with industries undergoing rapid changes. Without a skilled workforce to meet evolving demands, Fresno's economic sustainability is at risk.

Social Inequities and Health Concerns:

Inequality and Racial Disparities Social inequality, racial disparities, and racism pose a threat to community harmony and overall well-being. Addressing these issues is crucial for fostering an inclusive and united county.

Healthcare and Mental Well-being Mental health and healthcare access emerge as pressing concerns. The lack of adequate healthcare infrastructure and support systems hampers residents' well-being and ability to contribute fully to the community.

Lack of Job Diversity The county's economic overreliance on specific industries or employment types creates an imbalance. A lack of diversification makes Fresno vulnerable to economic downturns in those sectors.

Job Instability External funding shifts can have a direct impact on job stability. This is particularly concerning for industries heavily influenced by external factors beyond the county's control.

Air Pollution and Health Persistent air pollution, primarily due to agricultural activities, poses a serious threat to public health. Dirty air affects residents' well-being and their ability to live and work comfortably in the region.

Climate Extremes Fresno is susceptible to climate-related threats such as wildfires, droughts, and floods. These extreme events impact human health, economy, and infrastructure, disrupting normal life and economic activities.

Forest Conditions and Water Quality Unhealthy Forest conditions increase the risk of intense wildfires, leading to air quality issues, water pollution, and ecological damage. This threatens the environment and the county's agricultural productivity.

Water Scarcity and Pollution Overdraft conditions in groundwater reservoirs, water pollution from agriculture runoff, and pesticide use challenge water availability and quality. This affects both residents' livelihoods and the agricultural sector.

Infighting and Prioritization Internal conflicts and an inability to prioritize projects hinder progress. This lack of cohesion can slow down decision-making and impede effective implementation of initiatives.

Access to Resources Despite the availability of resources, there's a challenge in ensuring that residents are aware of the programs and support available to them. This lack of awareness can result in missed opportunities for assistance.

Potential Job Displacement As ag tech evolves, there's a potential for job displacement among workers. The transition to more automated systems could threaten existing jobs in agriculture.

Housing Issues Rising housing rates, often driven by remote work pay from higher-cost areas like the Bay Area, can lead to housing affordability challenges for residents. This affects their overall well-being and economic stability.

Youth Work Disruption Youth missing school to support their families due to financial needs impacts their education and future opportunities. This is further exacerbated by the funding structure tied to attendance.

Weakening Social Fabric Growing divisions and weakening community bonds can erode the county's social fabric, affecting civic engagement and collective problem-solving.

Aging Infrastructure The need for repair and maintenance of aging public infrastructure, including dams, canals, roads, and utilities, presents a significant challenge. Neglecting these structures can lead to disruptions and safety hazards.

In essence, Fresno County's SWOT analysis paints a complex portrait of a region poised at a crossroads of potential and challenges. This analysis highlights not just isolated factors, but the intricate interplay between them. The strength of Fresno lies in its diversity, in both its people and its industries. It's a place where innovation can emerge from the fusion of cultures, where opportunities can be harnessed from the bounty of its land, and where a sense of community can be the driving force behind positive change.

Yet, as with any journey, this path to growth and diversification is not a straightforward one. It's not just about capitalizing on strengths or mitigating weaknesses, but about navigating the crossover between them. For instance, addressing the pressing issue of chronic traumatic stress among migrant workers doesn't only involve healthcare access; it's also linked to education, social equity, and community engagement. The opportunity here is not just about providing healthcare services, but also about creating an ecosystem that supports mental well-being, which is vital for a sustainable workforce.

To move forward, Fresno County needs a roadmap that acknowledges these intersections. Practical strategies must align with this nuanced reality. A key step is fostering an environment that promotes dialogue and collaboration, transcending traditional silos. A comprehensive education system that integrates digital literacy and vocational training can serve as the cornerstone for a diverse, skilled workforce. Entrepreneurship, supported by innovative tech integration, can drive economic diversification while being mindful of social disparities. Conservation of water resources and regenerative agriculture can serve dual purposes, protecting both the environment and the agricultural economy.

Ultimately, Fresno's journey is not just about checking boxes on a to-do list; it's about a collective and ongoing effort. It's about adapting, refining, and learning from both successes and failures. Fresno's story is a living testament to the intricate dance of strengths and weaknesses, of seizing opportunities amid challenges. It's a story that involves every stakeholder, from local leaders and educators to entrepreneurs and community members. It's about embracing the complexity, understanding the nuances, and forging ahead with a spirit of resilience and collaboration. In doing so, Fresno County can redefine itself as a model of sustainable growth and inclusivity, echoing its unique narrative across the nation and beyond.

DRIVE Local HRTC SWOT Analysis

Strengths

- Able to get multiple sectors together early on in process.
- Agriculture
- Large institutions like Hospitals, Educational Institutions, City and County Depts hire many of our residents.
- Small business owners
- Food products, irrigations/water products, high on list of exportable products
- Have been able to acquire funds from various sources.
- Focus on Equity
- Compared to state, cheaper land and housing
- Decent Healthcare
- Community driven work
- Dedicated Race Equity Committee
- Anchored in M&E and research.
- Backbone organization has strong ties federally, statewide and locally.
- Leveraging the other larger initiatives like Cradle to Career, FCHIP and The Children's Movement
- Strong CBO partnerships
- Building out a learning curriculum like Shared Understanding of Racism
- Timely for city/region and our increasingly challenging socio-economic context, etc.; inclusive and equity based; appropriately leads with unifying economic development focus/lens; connects interrelated community/civic capacity development with specific drivers like infill and affordable housing development.
- Infrastructure funds for Downtown Fresno

Weaknesses

- Not as visible, understood, and/or supported as it should/needs to be in city/region by players and sectors required to scale endorsement, engagement and impact. Thinking here about push back from the likes of City of Fresno and many people/org leaders across city and valley who I have asked that simply have not heard about DRIVE - or if they have – do not know the logic or details behind the strategy and initiatives.
- Didn't start with a green/climate approach.
- Could have had community voice from the very beginning, that was a miss.
- Capacity building is needed for CBOs.
- Need more focus on early education.
- Lack of water in rural areas for ongoing ag
- Still need to find more sustainable funding for the initiatives.
- Need to build more connectivity between the DRIVE initiatives.
- Lack of employer/business voice in DRIVE.
- Bitwise set us back in the tech world.
- Need more climate friendly jobs.

Opportunities

- We have the land for more manufacturing.
- Fresno Impact Economy's Scorecard could help play a role in shifting employer's mindsets on work environments, employee supports and pay wages.
- A lot of people and organizations need the hope and clear strategies for positive change that DRIVE definitely represents. I am an advocate for DRIVE as an enduring movement with a shared identity/aspirational framework - and not as an institution per se.
- Can build be a leader nationally with the M&E and Urban Institute Indicators for upward mobility.
- Need more advanced manufacturing companies coming to Fresno.

Threats

- Poverty will always anchor our disparities.
- Data is showing that people with money are moving out of Fresno and those moving in are lower in income, so we'll continually have a need to upskill
- Lack of water
- Continual climate change
- Air quality due to forest fires
- Conservative elected leaders
- There seems to be larger manufacturing/warehouse type jobs in Kern County, maybe because of the convergence of Interstate 5 and Highway 99
- What happens at the state level has an impact on our development.
- Need more community voice to drive policy changes that make life better for businesses, neighborhoods, and families.
- We need to invest in the current generation of youth that are 3-15 years old so they are on a better path post-secondary.
- The DRIVE program is moving methodically as it builds structure, involving various perspectives and taking actions in due course. However, as a movement of energetic individuals and organizations working for immediate change, it might lack the sense of momentum and urgency required to sustain attention and commitment. Managing the necessary but differing mindsets of organization and community engagement can be challenging, with a need to better align strategy to maintain motivation and generate impactful action within the broader movement.

Kings Tulare Local HRTC SWOT Analysis

Strengths

High Level Takeaways: Kings-Tulare counties reside in a centrally located part of one of the biggest economies in the world. It has a strong and innovative agriculture sector with expanding industries in commercial and retail logistics and clean energy. It has abundant natural resources including national forests and Sequoia-Kings National Parks that bring economic activity and tourism to our communities. It is affordable relative to the rest of the state and has room to expand. Community and institutional leaders are able and willing to work together in a way that should be a model for the rest of the state.

- **Where does our economic strength come from in the Kings and Tulare Counties? Where do people work?**
 - Work ethic of the regional workforce and cohesion of the intertwining components of the economy
 - Collaboration and cohesion of the neighboring counties
 - Central location
 - Prisons
 - Naval Air Station (NAS) Lemoore
 - Agriculture
 - Food processing
 - Farm labor work
 - Water source
 - Public admin/government jobs/school districts/Public services
 - Logistics jobs
 - Central located in the 5th largest economy + activity
 - (2019-2024) Buildings, lands, highway access, access to interest routes
 - Availability of zoned lands
 - Lower labor cost
 - Affordability (to the rest of CA)

- **Which businesses or industries are the largest in our region right now?**
 - Agriculture
 - farming companies
 - manufacturing around ag
 - Food processing
 - Healthcare
 - Warehousing, distribution, Logistics
 - E-commerce distribution

- Governmental/PA/School districts
 - Retail services
 - Minerals and forestry
 - Tourism
 - Solar
 - Casino
 - Prison
 - Construction
 - Energy jobs
- **What are the primary products or services our county provides?**
 - Agriculture
 - Dairy products-milk, cheese
 - Nuts
 - Citrus, stone fruit
 - Raw Ag commodities
 - Exporting/producing
 - Lumber
 - Logistics/Supply chains/ shipping and receiving
 - Healthcare
 - Tourism/hospitality
 - Electrical resources/construction/solar and battery storage
 - Education
- **Where are we seeing the greatest growth in quality jobs in our region?**
 - Healthcare
 - Public admin jobs/school districts/ government jobs
 - Distribution /logistics/ Advance Manufacturing
 - Existing business–upskilling employers and leveling them up internally
 - Energy Jobs---Methane capture jobs
 - Year around jobs
- **What are Kings-Tulare counties key competitive advantages?**
 - Location –freeway/highway access (the 99 and 5)
 - Space available
 - Ready workforce/Young workforce–Young county
 - Land prices/Property price
 - Lower housing cost
 - Unity of chamber of commerce throughout the counties

- Business support services within economic divisions
- **What unique resources or assets does our county possess that can be leveraged for equity, economic development and/or sustainability?**
 - Clean energy expansion
 - utility solar
 - Wind storage ---local community expansion
 - Hydrogen
 - Geographical location—access to ports, highways (the 5 and 99)
 - Leader of labor standards
 - local focus -local jobs
 - Ag—natural resources
 - State prisons
 - Available Workforce
 - Cost of living
 - NAS Lemoore
 - Availability of land for development
 - Tourism
 - National Park/
 - Large open park space throughout the counties
- **What have been the major successes in our region (relative to equity, economic resilience/growth, and sustainability)?**
 - Growth of industrial parts
 - Infrastructural growth
 - New partnerships
 - Solar farms
 - Partners are connected around equity, economic resilience/growth, and sustainability has been a great success—quickly identifying issues and bring change
 - High-speed train-once completed
- **What businesses or industries are likely to come to our county in the next five years?**
 - Cannabis
 - Oil producers –biodiesel/ fueling stations/
 - Manufacturing/ Chemical companies
 - Franchises
 - Alternative energy companies
 - Ghost kitchens
 - Healthcare providers

- Alternative energy production
- Logistics
- Retail and logging
- Renewable energy stations/projects

Weaknesses

High Level Takeaways: Residents in Kings-Tulare counties are poorer and have fewer opportunities compared to the rest of the state. Jobs are too often at the minimum wage level with little possibility of advancement. While local educational institutions are robust, the lack of a 4-year university program results in a lower dynamism to the local economy relative to other areas within the state. Communities, especially those that are smaller, rural, and/or remote, do not have access to the same basic levels of infrastructure (healthcare, food distribution, utilities/internet, clean water). Local institutions are sometimes unable to directly address a problem because of poorly thought out or overly prescriptive regulation. Business can be difficult to establish and operate because of low capital availability and confusing and complex regulations. More housing is needed to make sure that lower wage earners can still afford to live.

- **Where are we seeing the greatest growth in jobs (or jobs currently?) that don't meet standards for equity or quality of life?**
 - *Retail/warehouses/distribution center.*
 - *Low wage agriculture and farmworkers.*
 - Service industry, retail, fast food, Fear of ag work going away.
 - line staff for public work (paraprofessional positions)
 - Huge challenge to get applications to some types of public workers
- **What are the major challenges or barriers to equity, economic growth and/or sustainability in our county and which geographic area are they in?**
 - Not realistic to rely on minimum wage as a solution
 - Lack of a ladder/pathways. Have to give opportunities to excel, training to give people a pathway.
 - Lack of a 4 year institution
 - Sometimes lose out on business investment/relocation
 - Need More housing a mix of (low income and high income)
 - Big challenge for housing for workforce to relocate. High earners and low earners alike
 - Low public health outcomes are lower comparatively
- **Are there any infrastructure limitations or deficiencies that hinder economic growth?**
 - Water is the biggest limitation to economic growth, better water policy at state.

- Public utilities are (and private utilities) are slow to expand in more rural areas of the state. Lack of High speed internet access can be a big hindrance.
 - Roads repair and expansion. (Potholes)
 - Water related infrastructure. Community water wells (supply side). Business impacts
 - Lack of housing (low income). Local transportation between the communities. Harder for rural area populations to travel for
 - Proactive utility development, public transportation
 - Food deserts still exists in a lot of rural areas, Better food distribution needed
 - Lack of infrastructure capacity in unincorporated areas (sewer and water)
- **What are our Kings/Tulare human capital/human infrastructure limitations that hinder economic growth?**
 - What's the motivation to pay higher wages for industry? Increase productivity. Make it visible
 - Attract 4-year university or degree program.
 - There isn't a robust offering of apprenticeships. Need to attract young people, brain drain.
 - Better Perception of valley to draw folks back
 - Farmworker population, following circuit of work.
 - How to keep people here and stabilize folks to the area.
 - One Stop Service is weak for farmworkers. Keeping people working in offseason
 - Geographic imbalance of wages. SGMA will exacerbate. Housing limitations can lead to a cycle of poverty/school population and funding cuts
 - What is the optimal scenario for living in the Central Valley
 - Low Household income and wealth prevents certain business from coming
- **Are there any regulatory or policy issues that are holding back equity, economic development and/or sustainability?**
 - Right to work, water policy, public utilities.
 - Fees that businesses have to pay to start a business can be prohibitive.
 - Justice involved are still often labeled and shut out from the labor market
 - Too many legislative orders coming out of Sacramento, business regulations, labor laws, makes it difficult to start and continue business
 - Rebalancing state tax portfolio, reforming joint authorities
 - Streamlining development/regulation at the state level, shifting targets hurts investments
 - CEQA reform, outcomes have strayed from the original goals

- **Are there any issues from current and/or previous leadership that are impacting growth?**
 - Lacking experience for establishing apprenticeships experience in standing up sophisticated training programs. Apprenticeship and preapprenticeship and pathways. Experiential lack, capacity building towards those things.
 - Some old ordinances on the books that may be hindering growth. Zoning for attracting mixed-use development
 - Bring redevelopment back to build more affordable housing
 - Lack of recognition the region gets at the state level
 - Empowerment of local leadership over state and regional decision making
 - Need to make local governments more nimble

Opportunities

High Level Takeaways: Kings-Tulare is rife with opportunities for expanding economic development, attracting new industry, and improving the lives of its residents. Affordability and eventually the establishment for high speed rail can bring new opportunities for remote workers and advanced industry appropriate to the endowments of our area such as agriculture or clean energy. While SGMA may lead to a reduction in agricultural acres, there are opportunities to transition this land to a variety of uses including clean energy production/distribution, parkland, and other industry. Job training is available and nimble enough to update curriculum to train up workers for new types of work. Existing cross-county, cross-sector collaboration can be built upon to coordinate the necessary work needed to advance our economy and opportunities for our residents.

- **Where do we see potential for new industries, businesses, and job creation?**
 - Remote workers
 - New technologies
 - Mass transit, public transportation
 - E-commerce
 - Rail access for distribution, high speed rail
 - Alternative energy
 - Sub-construction like heavy equipment operators to move dirt for mass projects
 - Green jobs
 - Healthcare workers, home health aids
 - Expanding shipping & receiving, logistics
 - Rail expansion for logistics and transportation
 - Cannabis industry
 - Green energy, advance ag technology, hydrogen, regenerative farming, renewable energy

- **Are there untapped markets or customer segments that can be targeted for economic development?**
 - Ability to produce power, data infrastructure
 - Attracting remote workers for higher paying skilled jobs
 - Transitioning private land that is water conservation base, soil regeneration
 - Advance technology labs in ag
 - Commercial based kitchens for ghost kitchens and locally financed
 - AI Industry and training
 - Recruitment of higher skilled candidates
 - Large amount of young people
 - Specialized training for population like unhoused, ELL, disabilities, first generation
 - Solar renewable energy, land conservation, electric batteries, clean hydrogen, using less water and land
 - Construction industry is lacking and needs growth
 - Remote business work

- **What are some ways in which we are well positioned for growth and expansion? Infrastructure? Policies? Job training?**
 - Good workforce & education development system
 - Good geographic location
 - Zoning land
 - Can adapt well to ever changing environments
 - High speed rail
 - Job growth
 - Portable land
 - Connection to transportation
 - Tulare & Kings County Communities work well together when needed
 - Municipalities, friendly forward moving attitude

- **What sets us apart from other counties when we think about equity, economic growth and/or sustainability?**
 - Cost of living is still lower than most of the state
 - Strong work ethic
 - Diversity of cultures and ideas
 - Is considered to be a high-priority area for economic growth
 - Our ability to move forward quickly, and connectedness across counties, industries, and leadership
 - Affordable housing and standard of living
 - Cooperation among businesses and partners

- Location, well positioned for transportation and logistics
- Inexpensive land for development
- Strength between the two Counties coming together

- **Is our county structured, organized and ready to manage economic growth?**
 - County structure is organized and well managed for economic growth
 - High level of collaboration, everyone is willing to come to the table
 - Business-friendly and welcomes growth
 - Well established structure for growth
 - TCEDC helps the region market and seriously be considered
 - Easy zoning and permitting for businesses to establish than other counties in CA
 - Initiatives like this one will help us get there
 - Yes, when it comes to our municipality and overcoming significant obstacles
 - On the same page in preparing & building infrastructure for transportation
 - Not ready when it comes to Sigma threats

- **How effective is job training in our county?**
 - Effective in finding creative solutions
 - Yes, but we have an opportunity to expose early education for vocational type jobs and training opportunities
 - Yes, but we need more early education exposure to public service, local government jobs to replace the ones retiring, like city building inspectors
 - There's an opportunity for job training needed in the plant science industry
 - Training opportunities for green jobs, construction, healthcare
 - Lack in trainers and career training educators
 - Good opportunities in design curriculum
 - Yes, because of the great strength between education and workforce partners

- **What businesses are needed in our county in the next five years?**
 - Alpaugh needs more land owners to work on selling their land to developers that can bring corporate chains like McDonalds provide more sustainable jobs in the area
 - Advanced tech jobs, ag robotics
 - Energy related businesses, technical manufacturing, green energy
 - Production of medical supplies, etc.
 - Property-land owners coming to a discussion and understanding what the market could look like in certain low-population areas, like Alpaugh, to try and become more developer friendly
 - Solar farms and the production of solar panels
 - Businesses that create higher level positions and upward mobility

- Tech companies
- AI

Threats

High Level Takeaways: Kings-Tulare faces a variety of threats that could hinder its development moving forward. SGMA will reduce farmed acreage and combined with increasing automation and technological advancement may threaten the livelihoods of many farmworking families. Overall the area has a low education attainment compared to other parts of the state. Climate change has led to extremes on both ends of drought and precipitation in recent years and current infrastructure could be threatened by these extremes. A large community of undocumented immigrants face changing expectations due to the national political climate that is out of our control. Conflicting priorities at a State and Local level could imperil local plans because of decisions out of our direct control.

- **What are the socioeconomic factors, such as income inequality or demographic shifts, that could hinder economic growth?**
 - Lack of housing / home ownership
 - Low Educational attainment
 - Lack of access to transportation from rural areas to cities
 - Fallowing of farmland for water conservation - reduction of ag jobs
 - Citizenship/immigration status of residents
 - Tourism is impacted by climate change/fires/floods/drought
 - Small business growth/entrepreneurship - BIPOC
 - Climate resilience
 - Poverty/homelessness
 - Access to high quality jobs
 - Cost of living
 - Access to utilities (takes to long to get utilities for new businesses)
 - Retirement and people leaving the area - luckily we have a younger demographic
 - Vacation rentals and tourism are impacting housing opportunities for individuals who want to live near jobs in tourism (national parks).
 - At times organizations duplicate or overlap programs an example is current flood recovery efforts
- **Which resources (including natural resources) are threatened that might impact economic growth?**
 - Water
 - Business and housing growth will be slowed due to water demands
 - How to handle high precipitation (infrastructure) / Too much or not enough

- Water Quality
 - Lack of Infrastructure (particularly in unincorporated areas)
 - Energy (electricity) - the process of deciding on investments for CPUs
 - Not enough energy to meet the states new requirements.
 - High Speed internet
 - Housing
 - Climate/environment
 - High heat & drought
 - Flooding
 - Air quality - impacts public health
 - Workforce - Automation threatens low skill labor force - need for higher skilled workers
 - Land
 - Ag land transitioning
 - Loss of land for economic development to housing
 - Elimination of natural gas
 - Access to healthy food
 - fresh produce
 - create food deserts
-
- **Which external factors (such as federal, state, and local policies and natural resources) that currently (or could, in the future) negatively impact equity, economic development, and sustainability in our region?**
 - SIGMA implementation
 - State views all of CA the same
 - Cost of doing business in CA
 - Tax rates
 - Labor cost/minimum wage
 - Litigious environment
 - Heavy environmental regulations (ambiguity of how to implement or approach the process)
 - Air quality regulation
 - Lessening environmental regulation impacts public health/quality of life
 - Housing regulations
 - Immigration/undocumented workers
 - **What is our greatest challenge for success?**
 - We are unseen by the state
 - We are being lumped into the larger regions that don't reflect our needs

- State does not understand the impact of the Valley on the rest of the state/country
- State agency staffing - our region is divested
- Income gaps
- Erosion of local control - We need local citizens to provide local leadership
- Cost of doing business in CA
- Absentee investment in our region
- Need of a 4 year institution
- We are not attracting high paid telecommuters
 - Cities/municipalities having to provide increased incentives to relocate/build to compete with other areas/states
- **What is holding us back?**
 - Representation at the State level
 - Infrastructure
 - Post Secondary Education / Workforce
 - Access to capital/investment for small business
 - We need to be more creative in developing programs/systems that meet the needs of residents
 - Challenge our status quo/structure
 - Conflicting priorities (state and local level)
 - Need to look at the big picture holistic approach
 - Property owners - who don't live here/not willing to part with property
 - How do we transition from low wage/low skill jobs
 - Persistent high poverty level - due to ag - but we need ag to survive



Valley CERF

APPENDIX A



CENTRAL
VALLEY
COMMUNITY
FOUNDATION



Needs and Opportunities in the Central San Joaquin Valley

Baseline Assessment for the Community Economic Resilience Fund



July 2023

Baseline Report: Purpose

- Compile data on current and projected future conditions for HRTC members to use in brainstorming priorities, solutions, and investments
- Highlight intersections between three CERF goals of equity, economic resilience, and climate action
- Meet CERF requirements for analysis as part of the Regional Plan submission

Baseline Report: Sections

- Demographics and Profile of Disinvested Communities
- Economy, Industries, and Workforce
- Climate Change and Environmental Resources
- Public Health
- Stakeholder Mapping and Landscape Analysis of Relevant Planning Efforts

Baseline Report: Opportunities to Engage

- TODAY! Through SLIDO polls, Q&A and breakout group discussion
- 7/28-8/4: HRTC comment period on Baseline Report
- Next Month: SWOT analyses led by HRTCs
- August 23rd Regional Congress

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#2972838**

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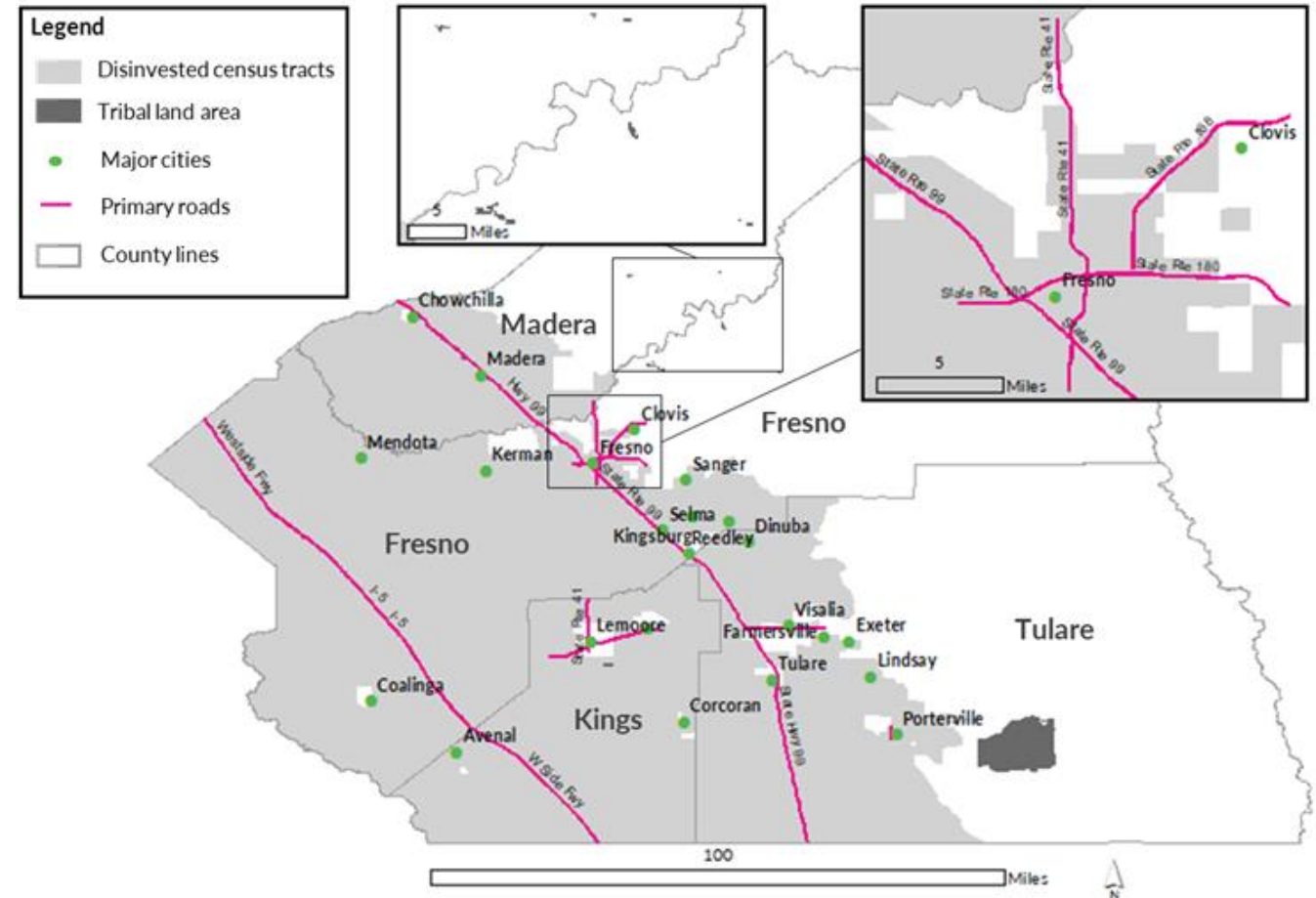
How would you rank your level of familiarity with the following topics in the Central San Joaquin Valley (1: highest - 5: lowest):

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Demographic Profile of the Central San Joaquin Valley

Roughly two-thirds of the areas within the Valley CERF region are designated as “disinvested”

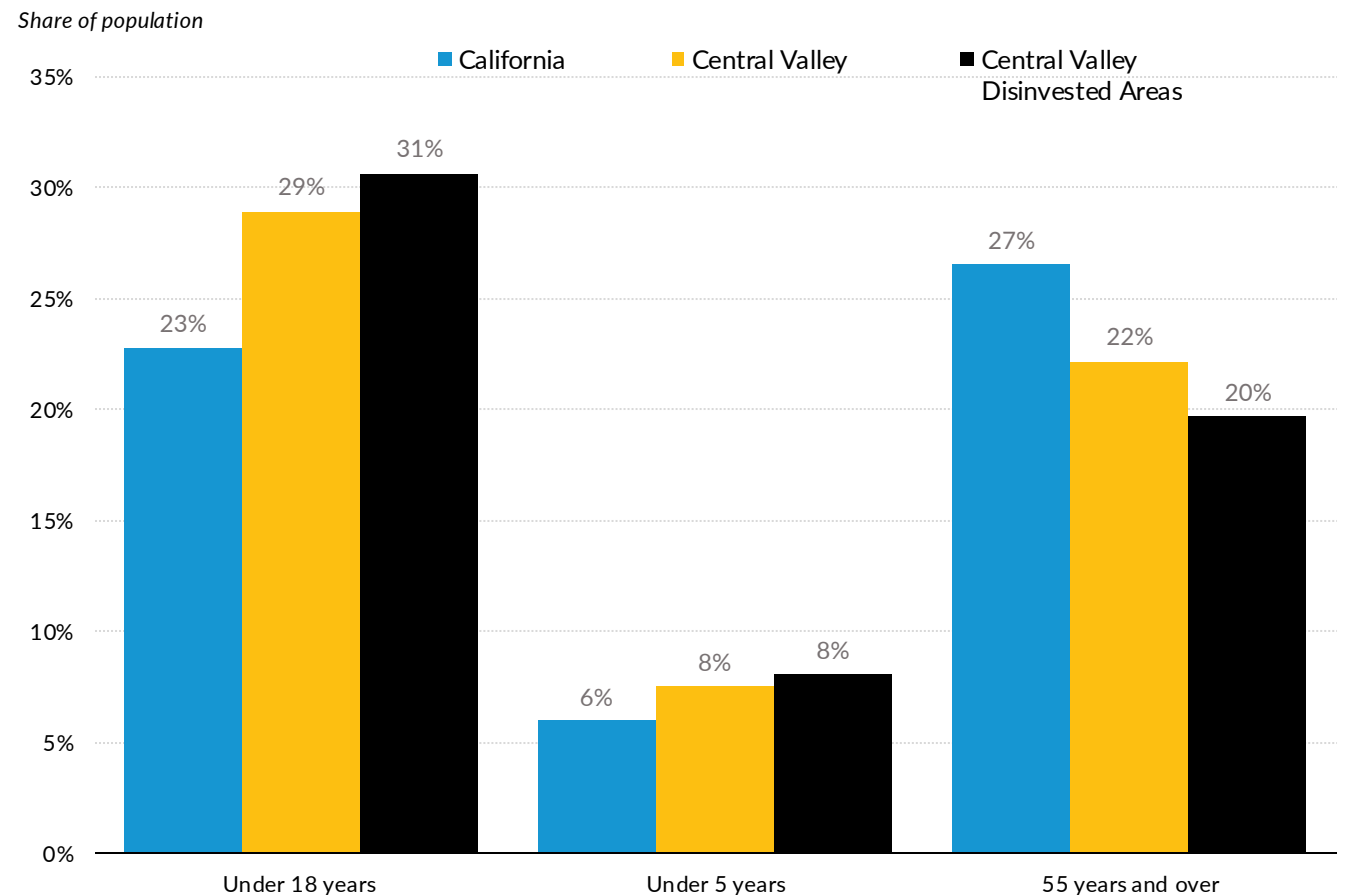
- The region has a **total population of 1.78 million**.
- Nearly **2 out of every 3 residents (1.1 million people)** live in a disinvested area.
- There are **seven Tribal land areas** in the region which are home to just under **2,100 people**.



Source: Disadvantaged Communities; Data.gov: Nation, US, American Indian/Alaska Native/Native Hawaiian (AIANNH) Tribal Subdivisions

Residents of the Valley CERF region tend to be younger than other California residents

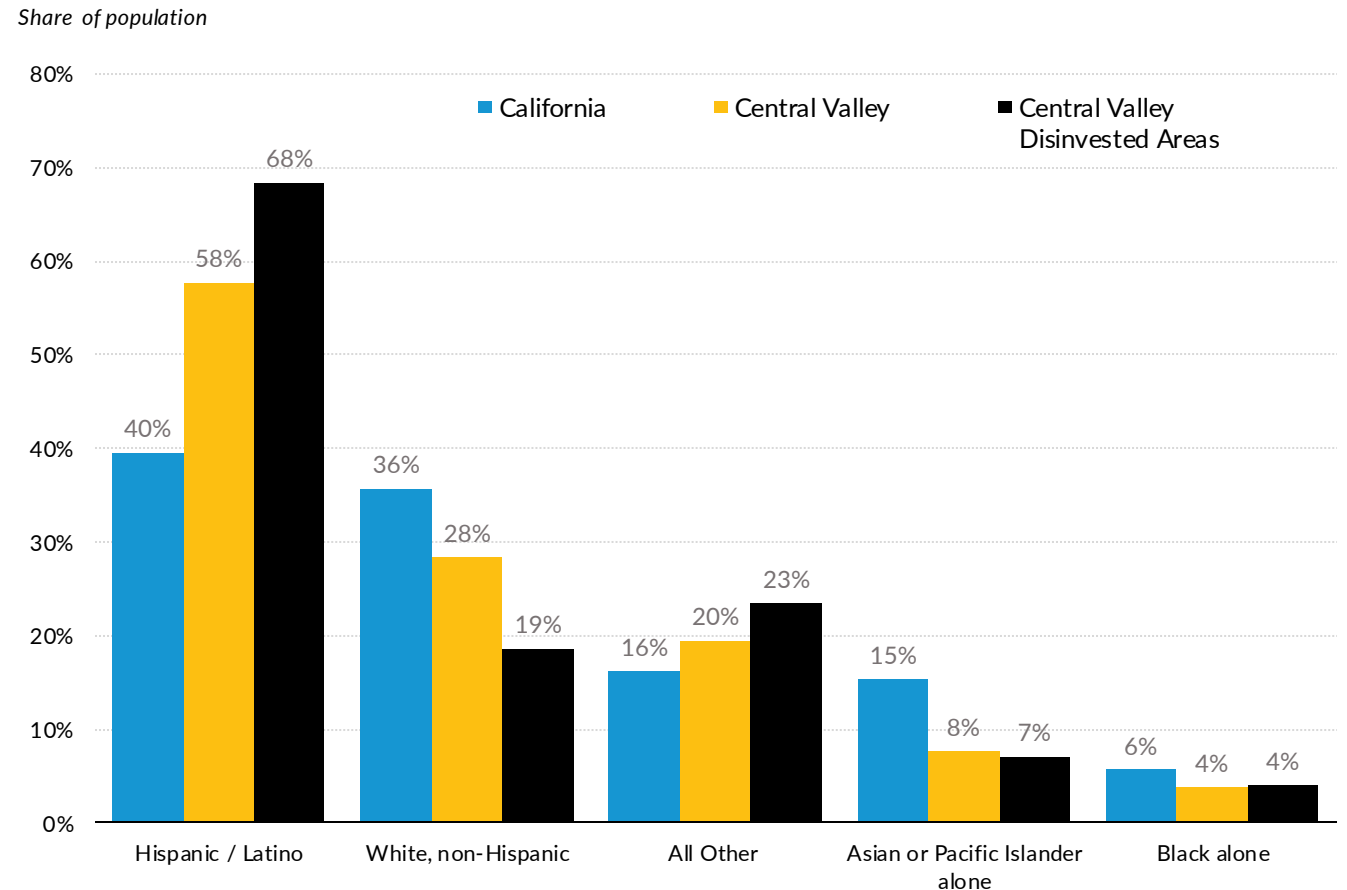
- There is a **higher share of minors** in the region and its disinvested areas than in California.
- Adults **55 or older account for more of the population** in California than in the region and its disinvested areas.
- **More households have children** in the region than in California and **there are more children under 5.**



Source: 5-year ACS data from 2017-2021

Latinx people make up the largest share of the population and are highly concentrated in disinvested areas

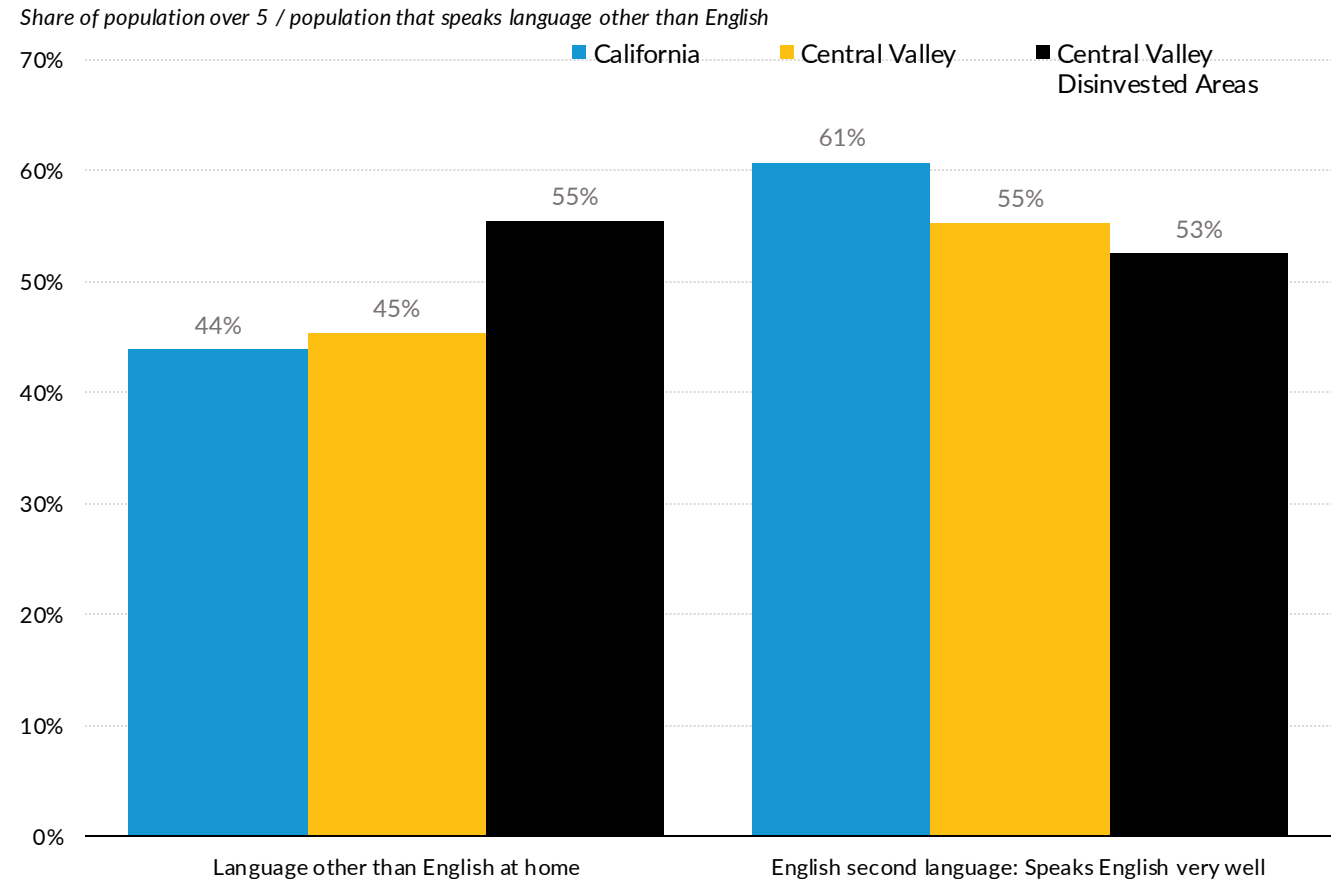
- The Valley CERF region is home to **multiple race groups**.
- **Latinx residents make up 68 percent of the population** in the region's disinvested areas.
- **Immigrants account for a smaller share** of the population than in California and **most are from Latin America**. (not pictured)



Source: 5-year ACS data from 2017-2021

More than half the region's residents living in a disinvested area speak a language other than English at home

- A disproportionate share of those who speak a language other than English at home live in disinvested areas of the Valley CERF region.
- The region has a lower rate of people who speak English with advanced English proficiency than in the state.

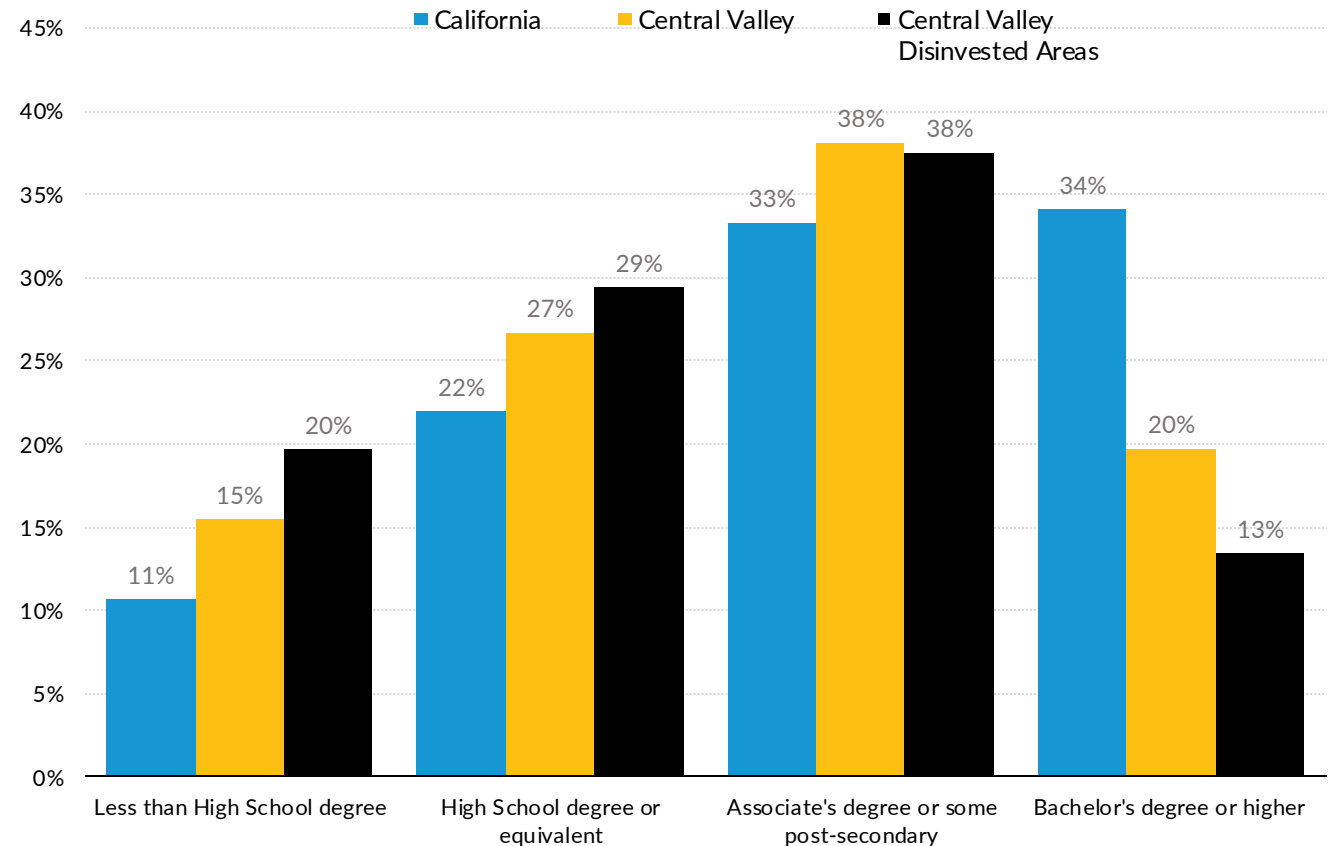


Source: 5-year ACS data from 2017-2021

Adults in disinvested areas tend to have less formal education than adults in other parts of the region and state

- A **higher share of adults have less than a high school diploma** in the Valley CERF region compared to California, **especially in the disinvested areas.**
- A **smaller share of the disinvested area population graduated from college** in the region compared to California.

Share of voting age population

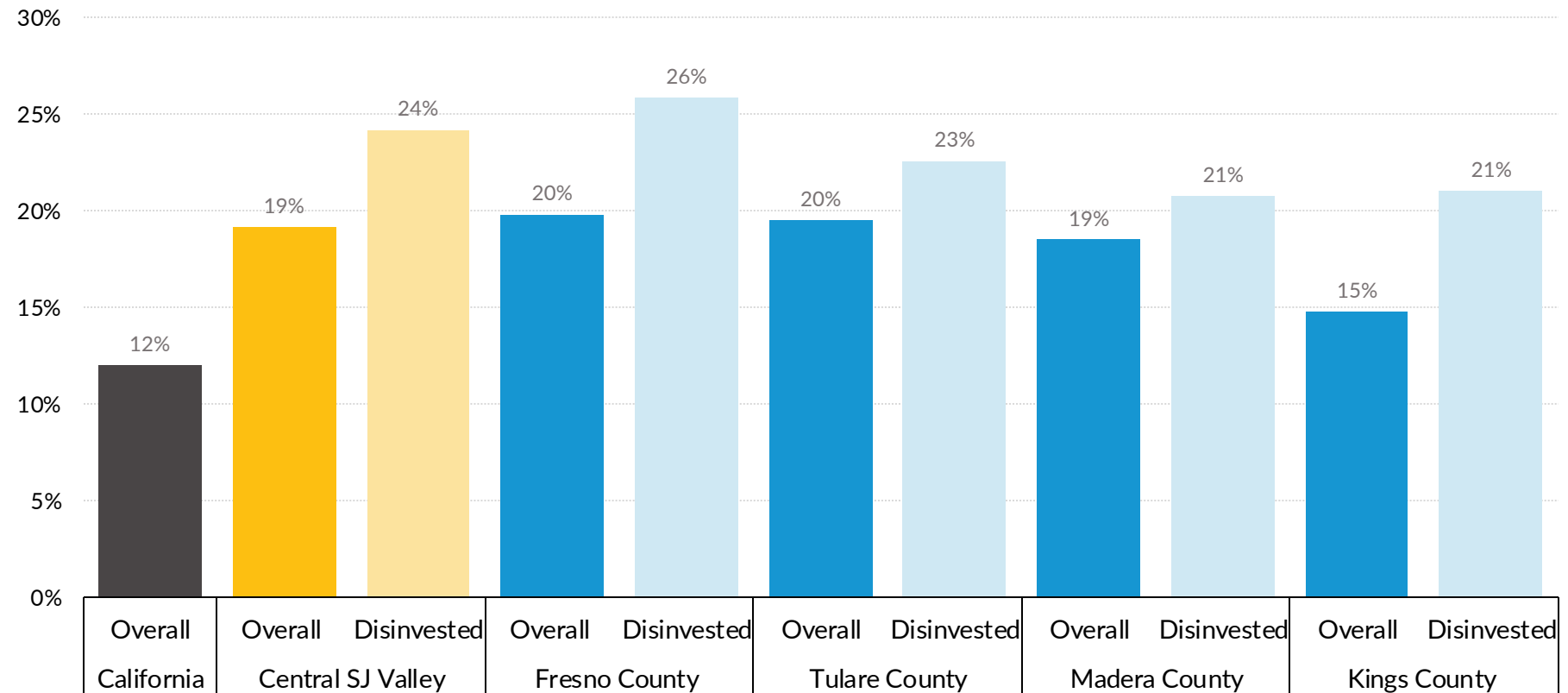


Source: 5-year ACS data from 2017-2021

Poverty rates are highest in the Central San Joaquin Valley's disinvested areas

- Nearly **1 of every 5 people** lives below the poverty line in the Valley CERF region.
- **Average household income tends to be lower** in the region than in California and **households are bigger.** (not pictured)

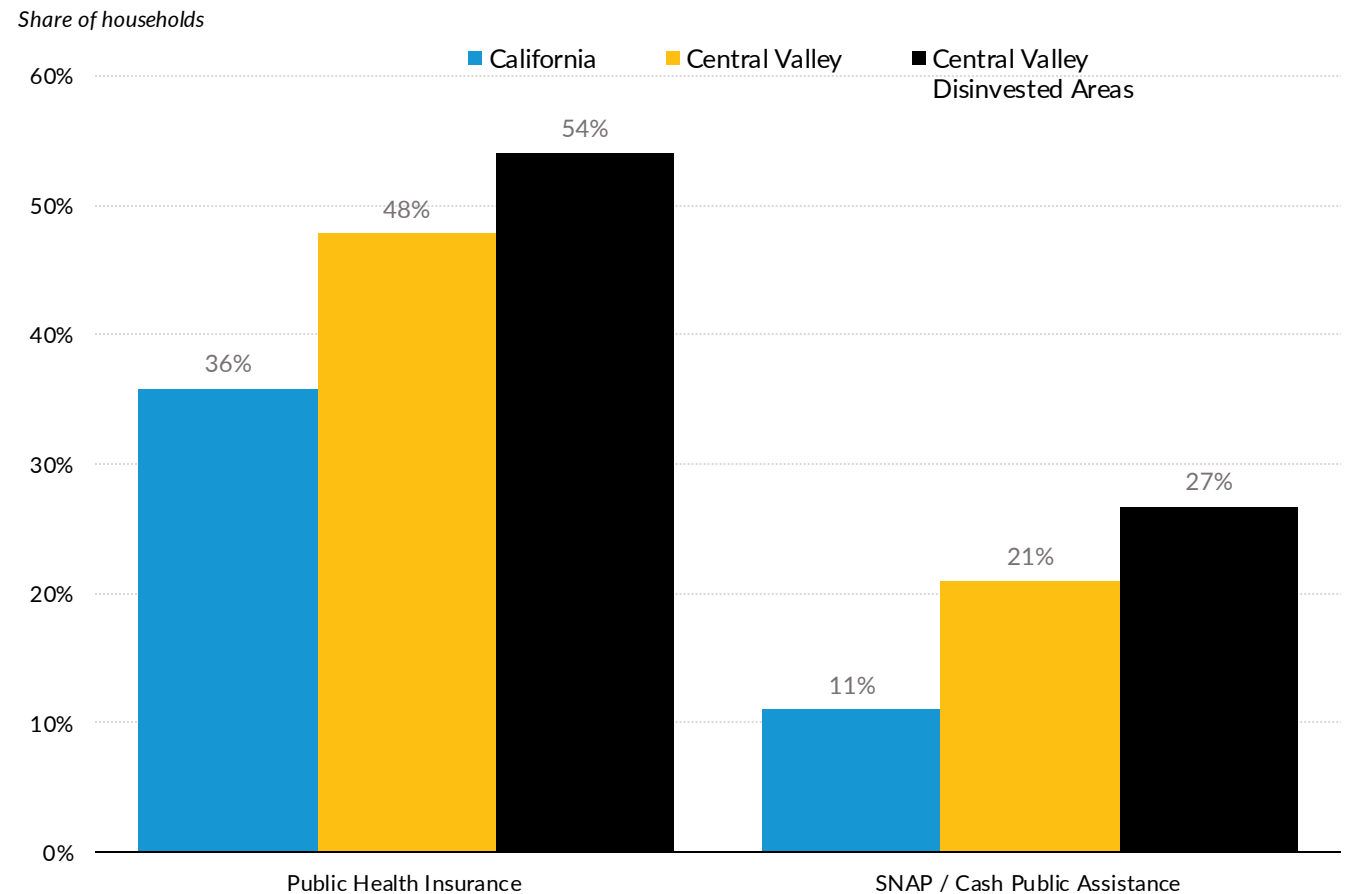
Share of households with income below poverty level



Source: 5-year ACS data from 2017-2021

Public programs provide important support to families in the Valley CERF region

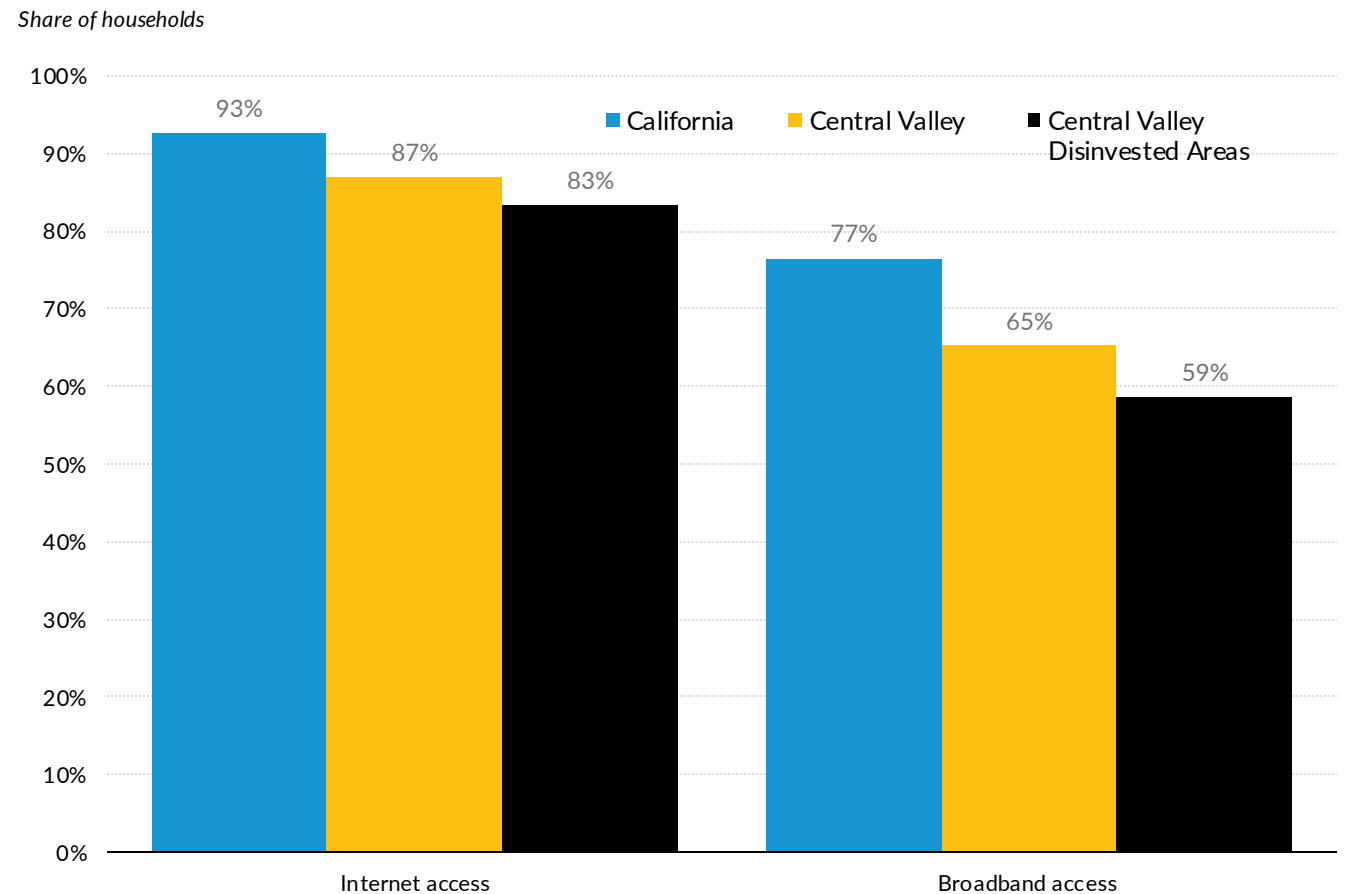
- The **share of households receiving cash assistance or food stamps** is higher in the region than in California.
- In the region, **more of the population relies on public health insurance** than in California.



Source: 5-year ACS data from 2017-2021

Fewer residents of the Valley CERF region have access to the internet and broadband than the rest of California

- Nearly **twice the population share do not have access to internet** in the Valley CERF region compared to California.
- A **smaller share of the population has broadband** in the region than in the state.



Source: 5-year ACS data from 2017-2021

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DEMOGRAPHICS | What stood out to you from the information presented?

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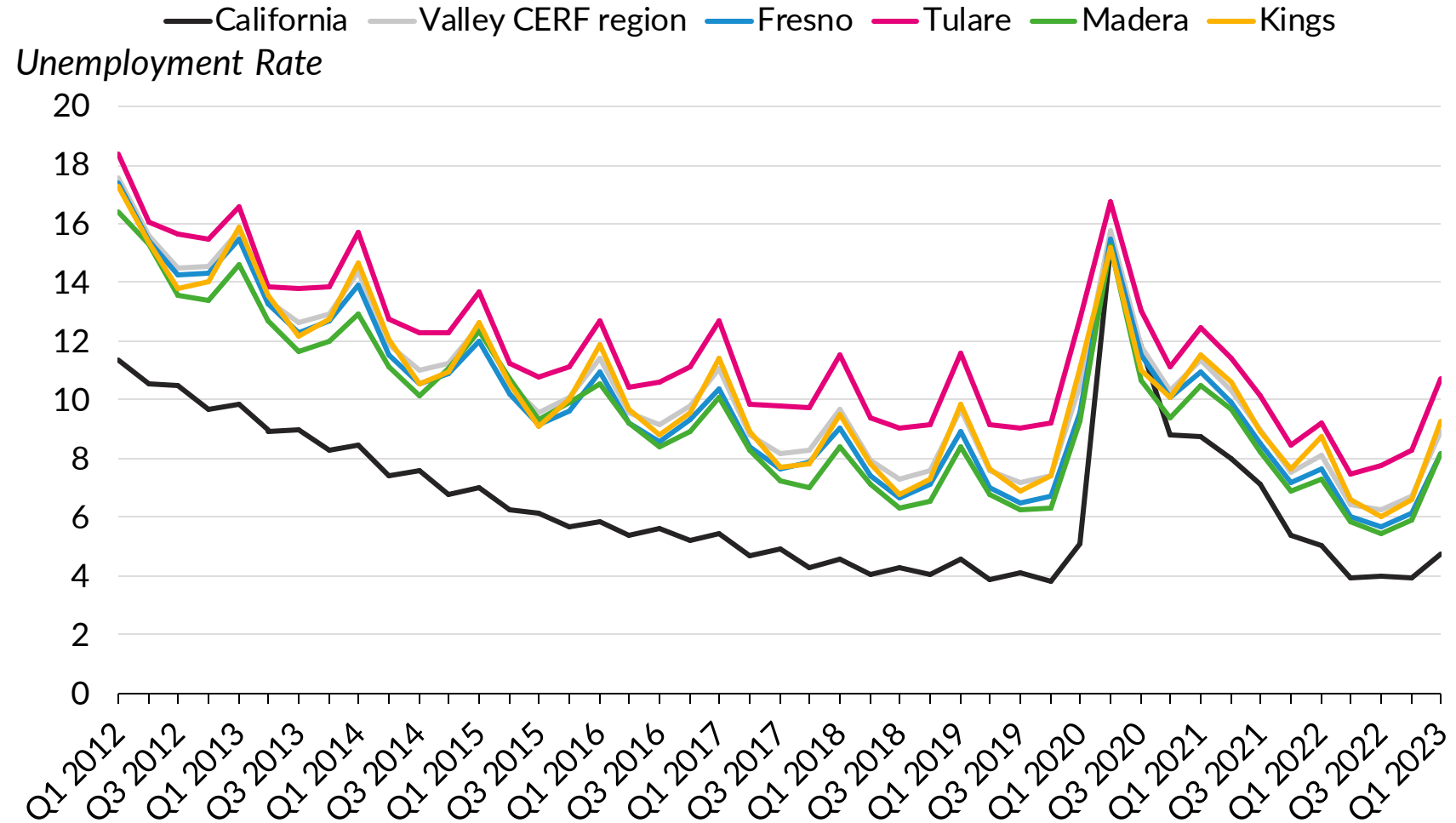
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Economy, Industries, and Workforce in the Central San Joaquin Valley

Unemployment rates are consistently higher in the region than the state and spiked during the pandemic

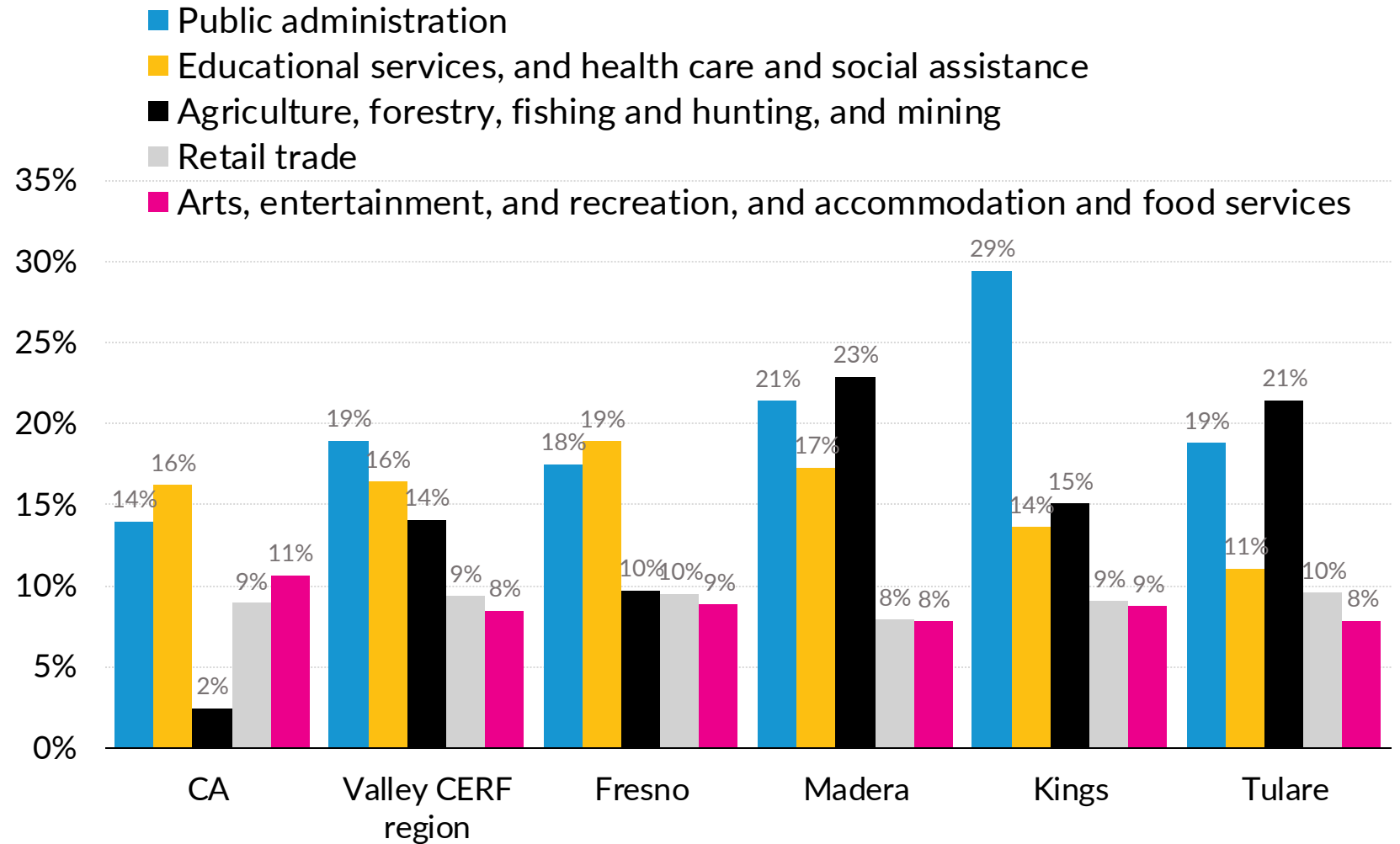
- Unemployment rates and labor force participation have largely **rebounded to pre-pandemic levels** in the Valley CERF region.
- The region's unemployment and labor force are **more seasonal** than what we see for the state overall.



Source: California Employment Development Department, county profile, <https://labormarketinfo.edd.ca.gov/geography/lmi-by-geography.html>
Note: Rates not seasonally adjusted; monthly data averaged for each quarter

Government, social sectors, and agriculture are the most prominent industries in the Valley CERF region

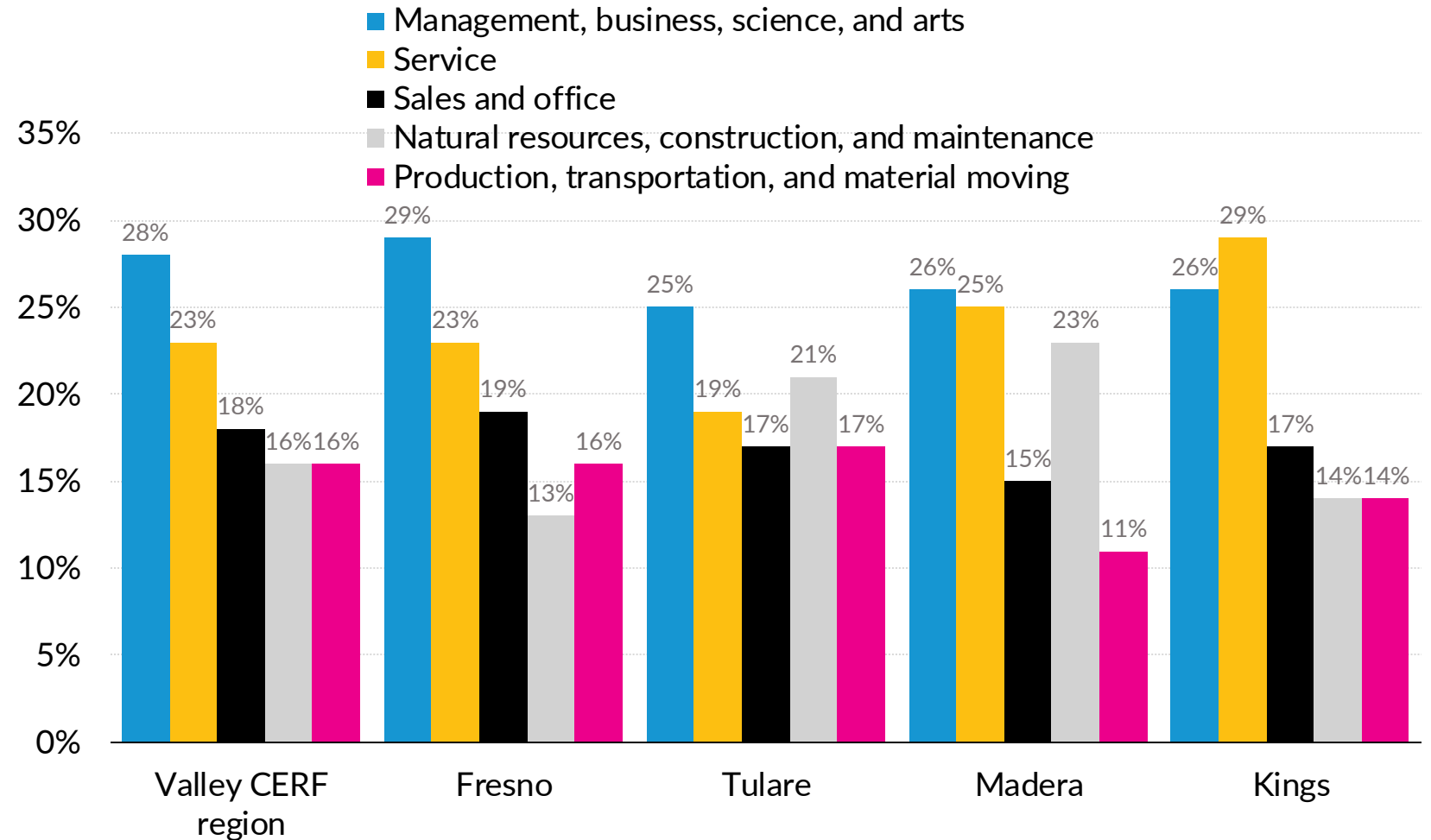
- Mirrors **common trends** in more rural communities
- Reflects **high level of federal investment** in the area, compared to other large U.S. counties
- Workers in disinvested areas are acutely **under-represented in government jobs.**



Source: Analysis of 2022 Current Employment Statistics, downloaded through CA EDD, calculating average monthly employment over the year

Management and service jobs—prominent in government and in the social sectors—make up the largest group of occupations in the Valley CERF region

- Workers in disinvested areas are **under-represented** in management occupations, and **over-represented** in natural resource, construction, and maintenance.

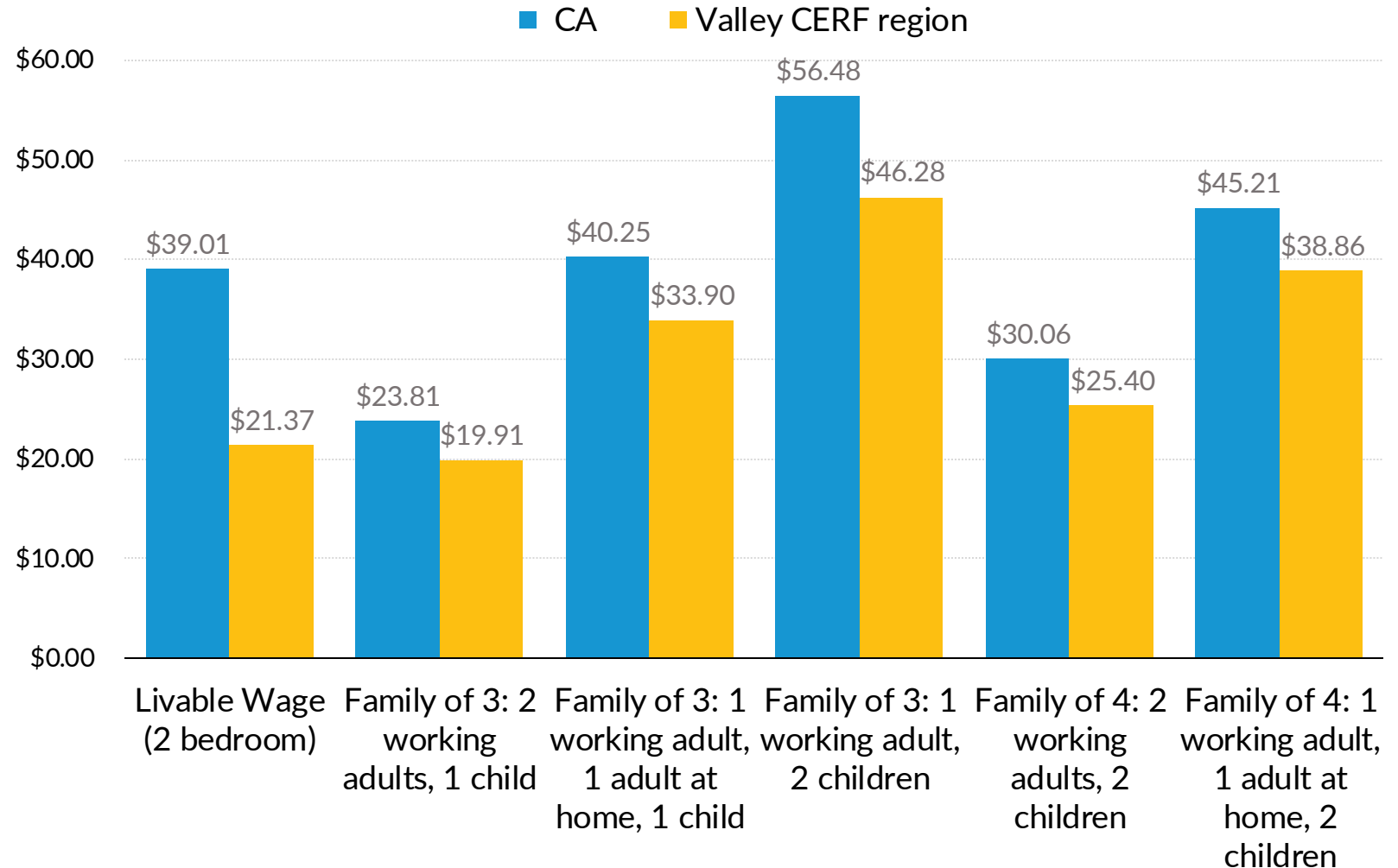


Most businesses in the Valley CERF region follow similar patterns

- Most business establishments are **concentrated in Fresno (64 percent) and Tulare (21 percent) Counties**. Combined, Kings and Madera Counties are home to the remaining 15 percent of the region's business establishments.
- **90 percent of businesses in the region are small** (0-19 employees). Fewer than 1 percent have 500 or more employees.
- Relatively **low investments in small business**, compared to other large counties across the country.
- White and male business owners are significantly overrepresented.
- It **takes more to start up a business** in the Valley CERF region, but businesses may also be **more stable** than in other parts of California: they tend to have lower entry rates and exit rates.

The housing wage in the Valley CERF region is at least \$21 an hour for a 2-bedroom rental, but people may need to earn more if they are sole bread-winners and have children

- **Average household** in the region's disinvested neighborhoods: **3-4 people**.
- Would need a **2-bedroom** rental home.
- Housing wage is **hourly rate** needed to spend no **more than 30 percent of fulltime income on rent**.
- Lower than most "living wage" calculations

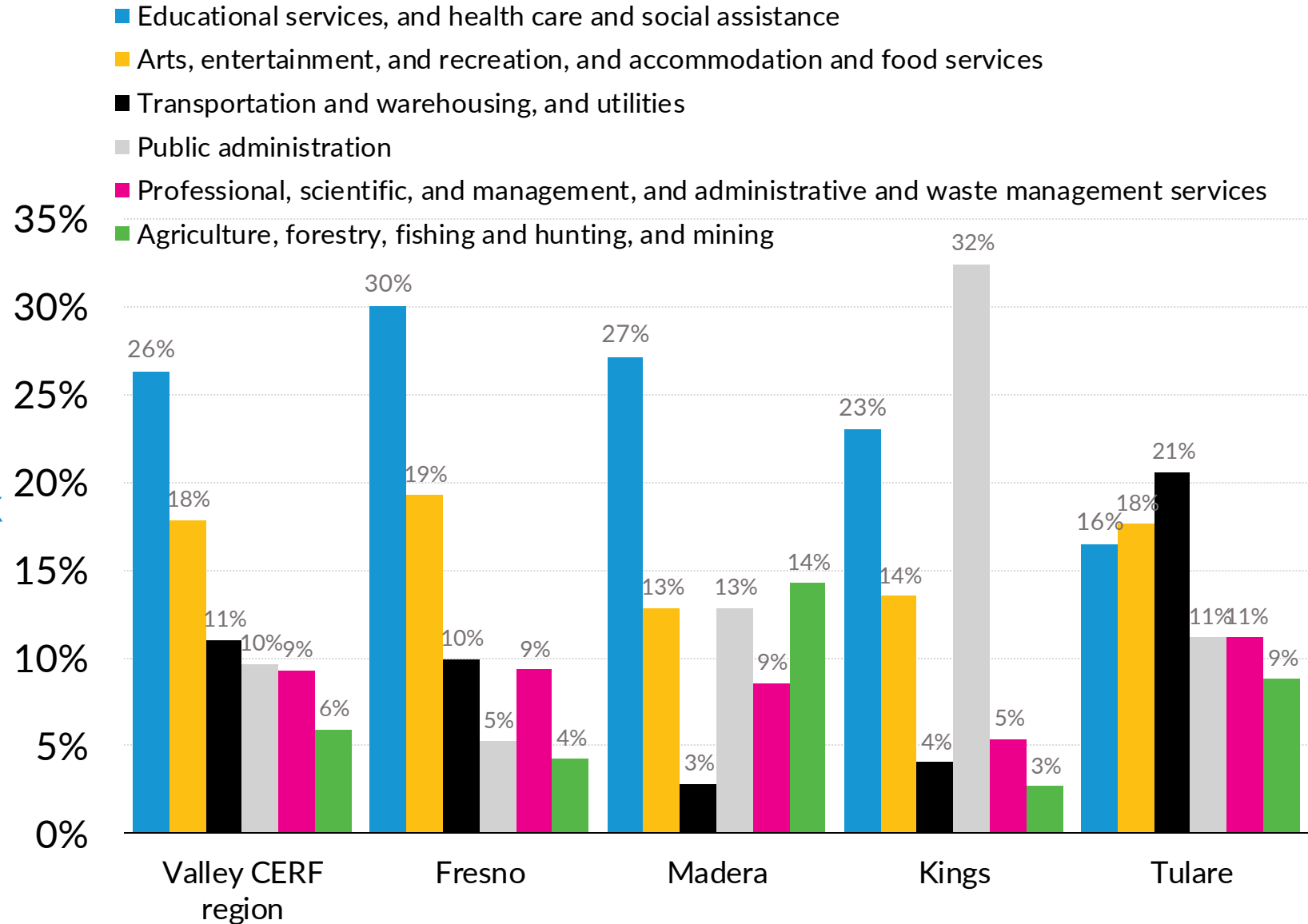


Jobs that pay at least the 2-bedroom housing wage make up less than half of jobs in the Valley CERF region

- Housing wage jobs are **concentrated in management, business, science, and arts occupations**, but workers living in **disinvested communities** are **underrepresented** in these occupations
- Nearly half of 2-bedroom housing wage jobs **require at least a bachelor's degree**, but most workers living in **disinvested communities** have an **associate's degree or less**.

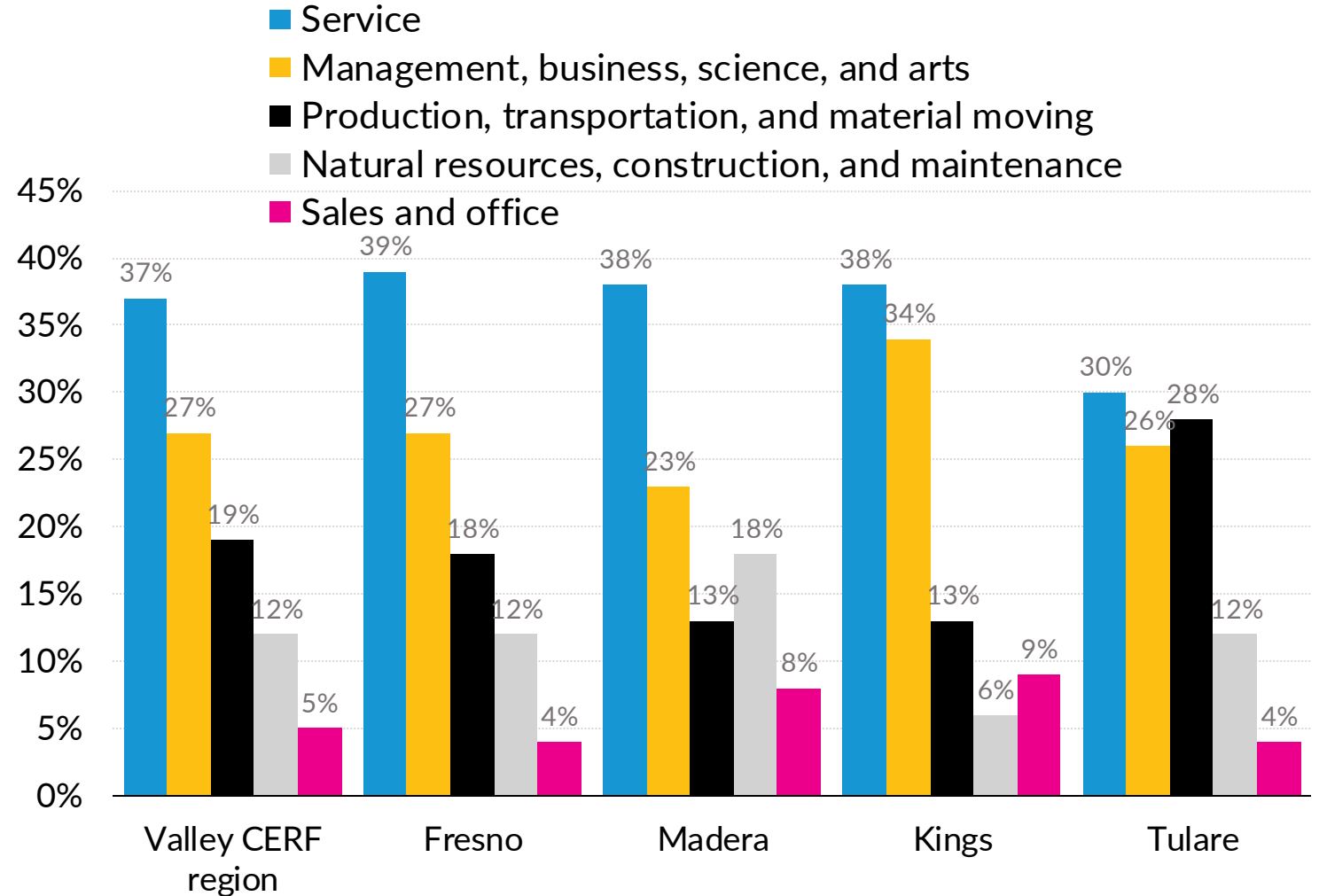
Overall, the largest share of new jobs in the region will be in educational, health care, and social services

- Overall, around **80,000 new jobs** are expected to be created in the Valley CERF region between 2020 and 2030
- The new jobs are **not expected to change the mix of industries** we're likely to see in 2030.



Service occupations account for the largest share of projected job growth across the Valley CERF region

- About half of the **job losses** in coming years will be in **sales and office** occupations
- **Overall mix of occupations not likely to change** much.



Source: California EDD local calculations of long-term occupational employment projections, 2020-2030

A little less than half of new jobs are expected in occupations that currently pay at least the current 2-bedroom housing wage

- The overall share of these kinds of jobs is **expected to increase** from 43 percent in 2022 to 47 percent in 2030.
- But depends on how both **wages and housing costs may change over time.**
- New 2-bedroom housing-wage jobs are in the **same types of occupations** as current housing wage jobs, and so **require similar levels of education**
- **Many of the projected new jobs** with the most opportunities have **lower barriers to entry**, but **do not currently pay** the 2-bedroom housing wage.

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**ECONOMY | What stood out to you
from the information presented?**

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ECONOMY | What is missing from the information presented?

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Breakout 1

Breakout 1 Instructions

- Reflecting on the **last 10-years**: what have been major factors influencing demographics and the economy in the Central San Joaquin Valley?
 - For example: elections, pandemic, arrival/exit of major industries/employers, extreme weather or climate change
- **Looking ahead**, what do you think will be the key forces shaping demographics and the economy in the Central San Joaquin Valley?

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- 15 Minutes
- Capture discussion on Jamboard: <https://jamboard.google.com/d/1dILBrKddJxwvdlJzkc5rysb7Whxkv3pS62WHfgnmwKk/edit?usp=sharing>
- Breakout rooms assigned with ~ 5 people per group
- One research team member or HRTC facilitator available to support

Climate Change and Environmental Resources in the Central San Joaquin Valley

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**CLIMATE | What stood out to you
from the information presented?**

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CLIMATE | What is missing from the information presented?

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Public Health in the Central San Joaquin Valley

Intersections between economic inequity, climate, and public health

- **Environmental degradation:** chemical runoff from agricultural fertilizer and pesticide use lead to drinking water contamination

Intersections between economic inequity, climate, and public health

- **Environmental degradation:** chemical runoff from agricultural fertilizer and pesticide use lead to drinking water contamination
- **Climate change:** air pollution related to agribusiness and petrochemical industries (e.g., from fossil fuel and plastic industries) in the Valley CERF region

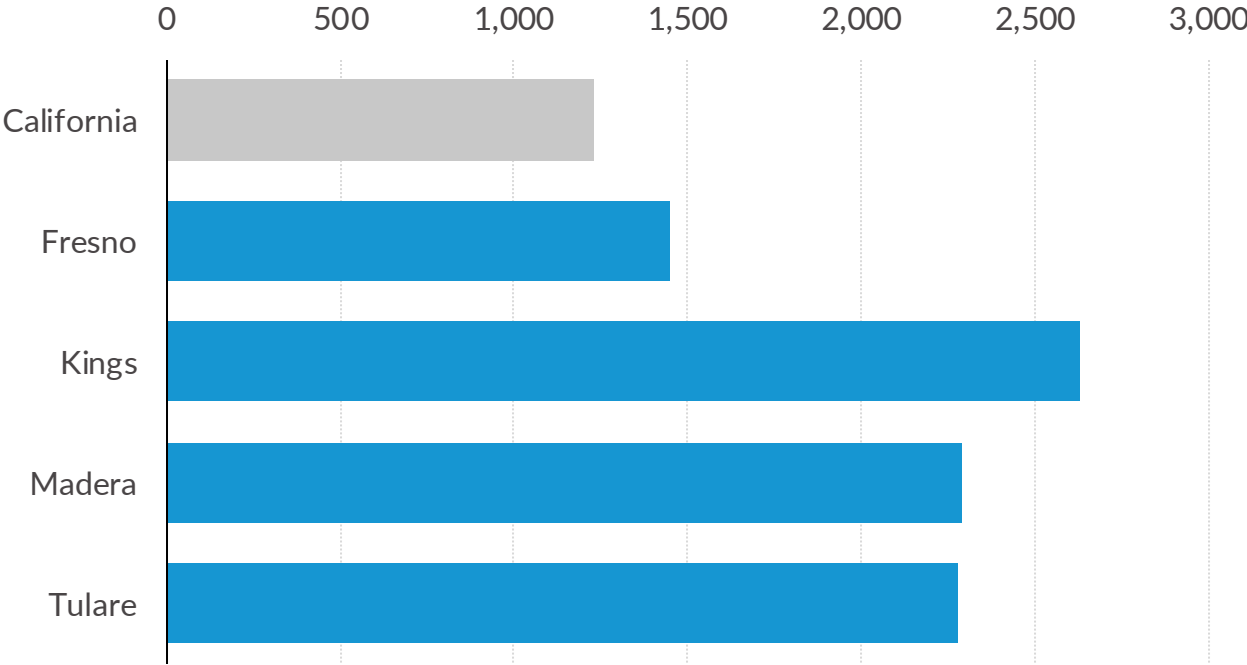
Intersections between economic inequity, climate, and public health

- **Environmental degradation:** chemical runoff from agricultural fertilizer and pesticide use lead to drinking water contamination
- **Climate change:** air pollution related to agribusiness and petrochemical industries (e.g., from fossil fuel and plastic industries) in the Valley CERF region
- **Economic inequity:** disinvestment limits strength of local health care infrastructure; labor exploitation in agribusiness, especially migrant labor

Health System Limitations and Health Challenges

- Provider shortages, especially for specialty care

Number of People Per Physician in California and in Central San Joaquin Valley Counties



Source: County Health Rankings & Roadmaps, University of Wisconsin Population Health Institute 2023.

Health System Limitations and Health Challenges



Limited availability of hospital beds

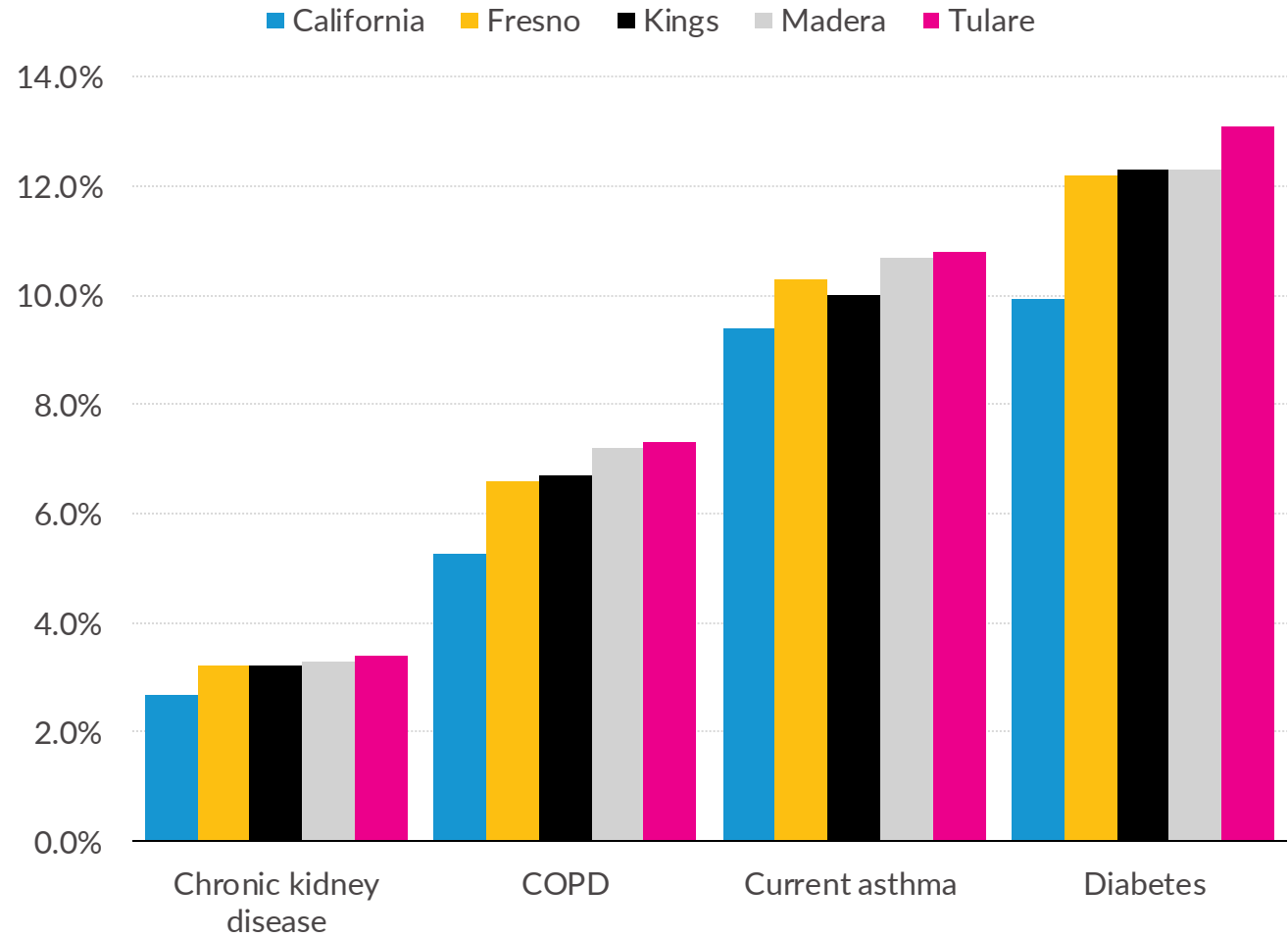


Varied access to community health centers



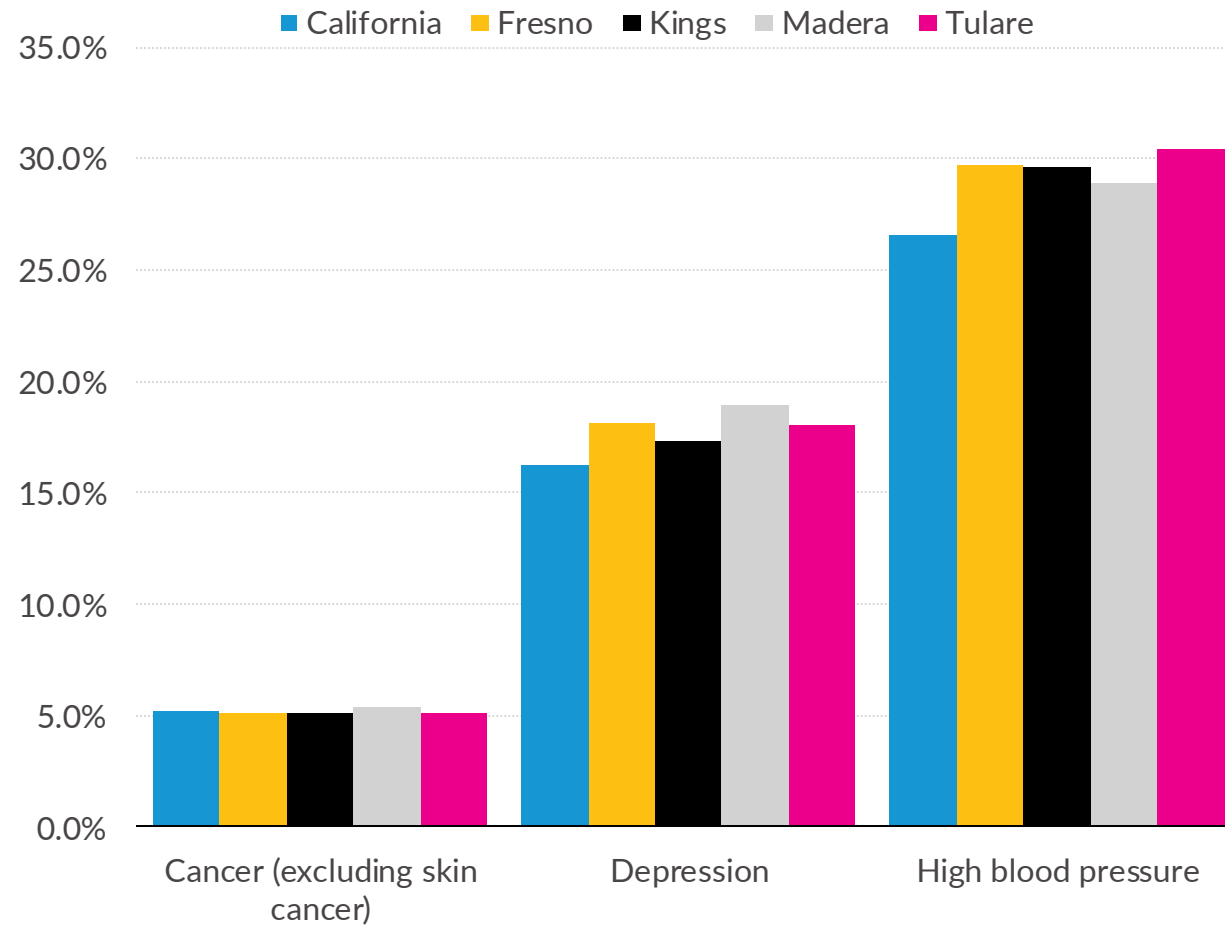
Higher public health insurance enrollment

Prevalence of many major chronic conditions and diseases is higher in the Central San Joaquin Valley compared to California



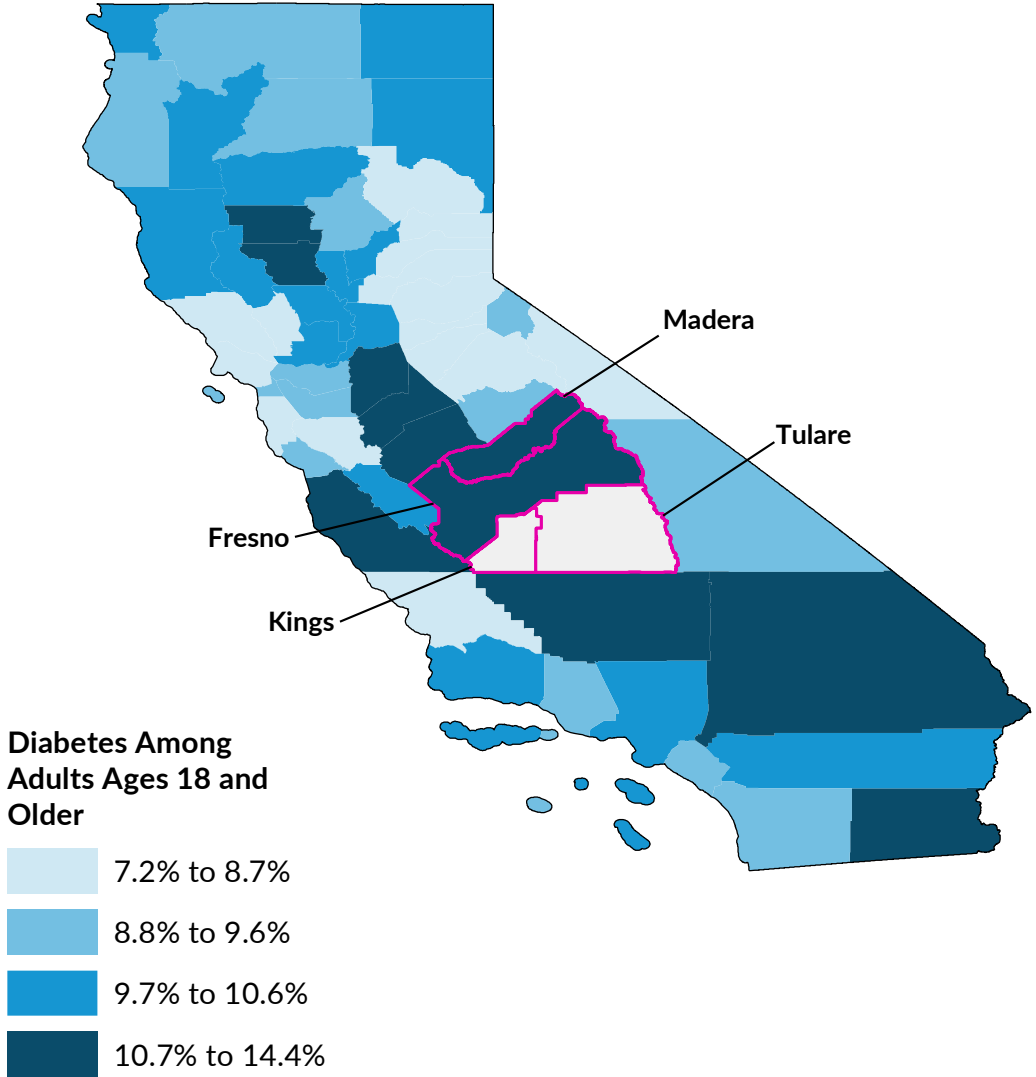
Source: 2022 Centers for Disease Control and Prevention PLACES data release, drawing on 2019 and 2020 Behavioral Risk Factor Surveillance System (BRFSS) data.

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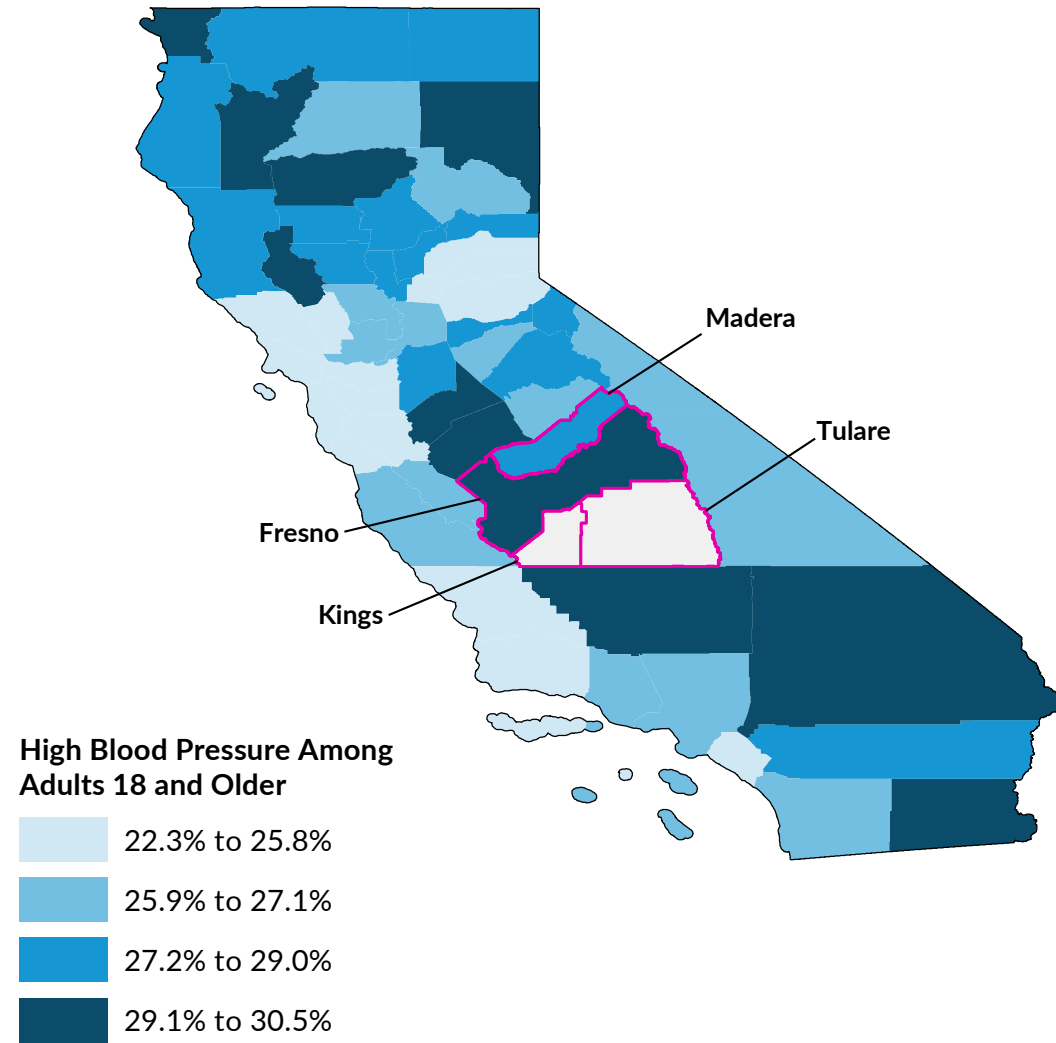
Source: 2022 Centers for Disease Control and Prevention PLACES data release, drawing on 2019 and 2020 Behavioral Risk Factor Surveillance System (BRFSS) data.

Diabetes



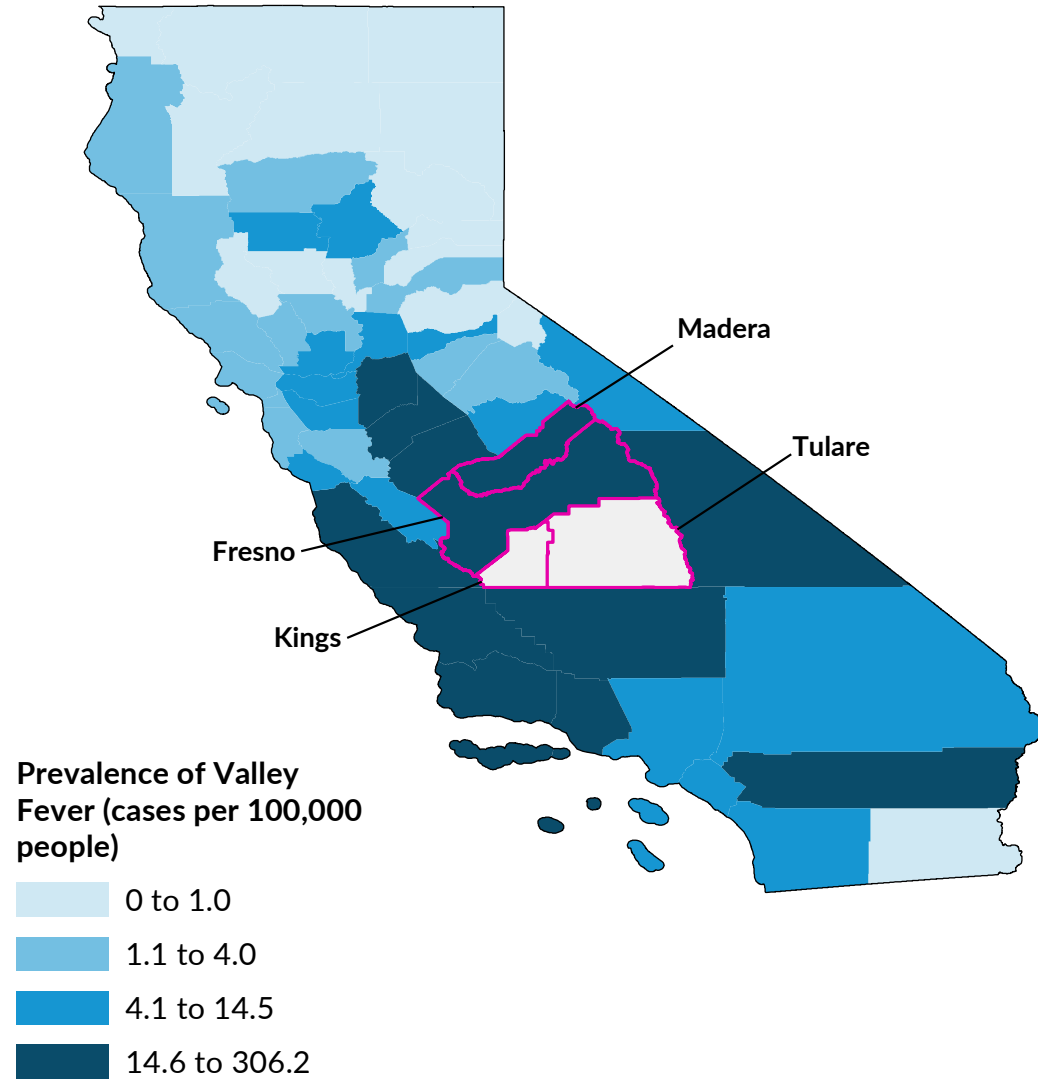
Source: 2022 Centers for Disease Control and Prevention PLACES data release, drawing on 2020 Behavioral Risk Factor Surveillance System (BRFSS) data.

High blood pressure



Source: 2022 Centers for Disease Control and Prevention PLACES data release, drawing on 2019 Behavioral Risk Factor Surveillance System (BRFSS) data.

Valley Fever



Source: 2022 Centers for Disease Control and Prevention PLACES data release, drawing on 2020 Behavioral Risk Factor Surveillance System (BRFSS) data.

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HEALTH | What stood out to you from the information presented?

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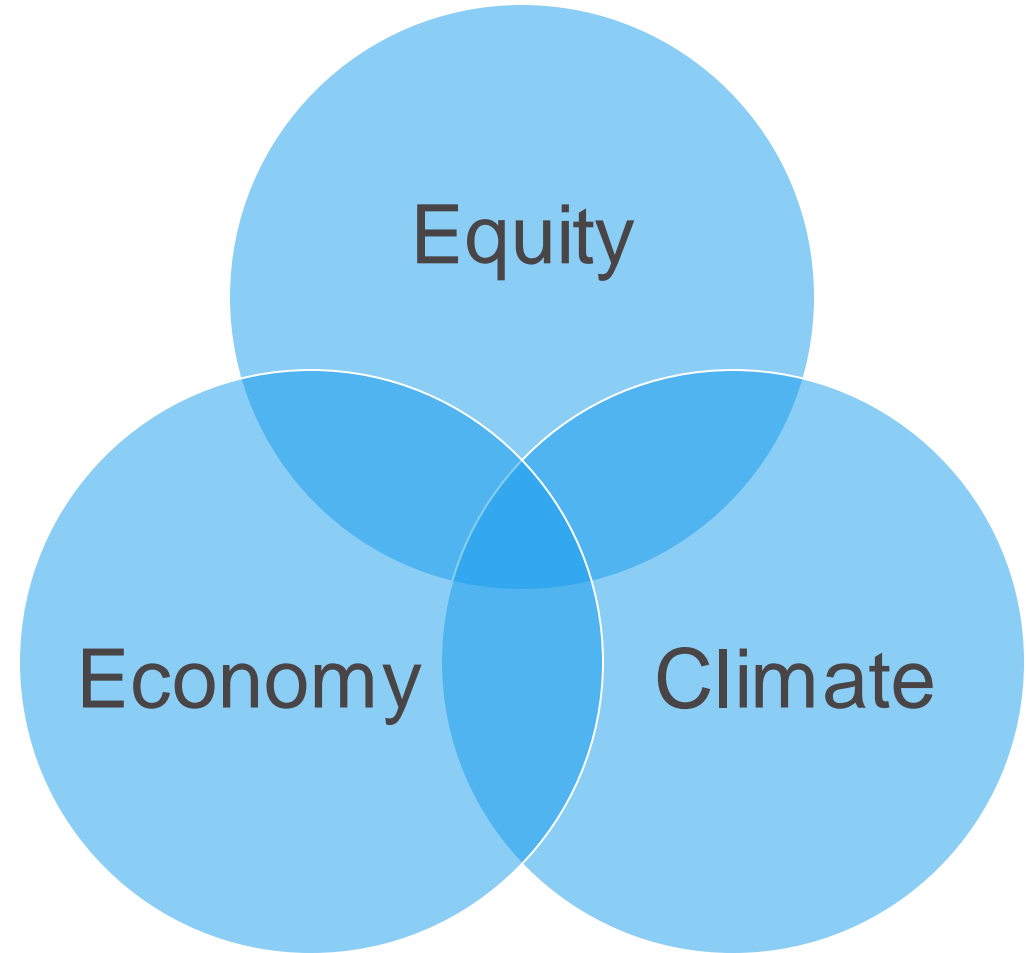
HEALTH | What is missing from the information presented?

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Breakout 2:
**Making connections between
climate, economy, and equity**

Breakout 2 Instructions

- **So, what?** What are the implications of the data presented for Valley CERF?
- What are the key issues in the Valley CERF region to pay attention to?
- Which issues or opportunities sit at the intersections between the three CERF goals of climate action, economic resilience, and equity?



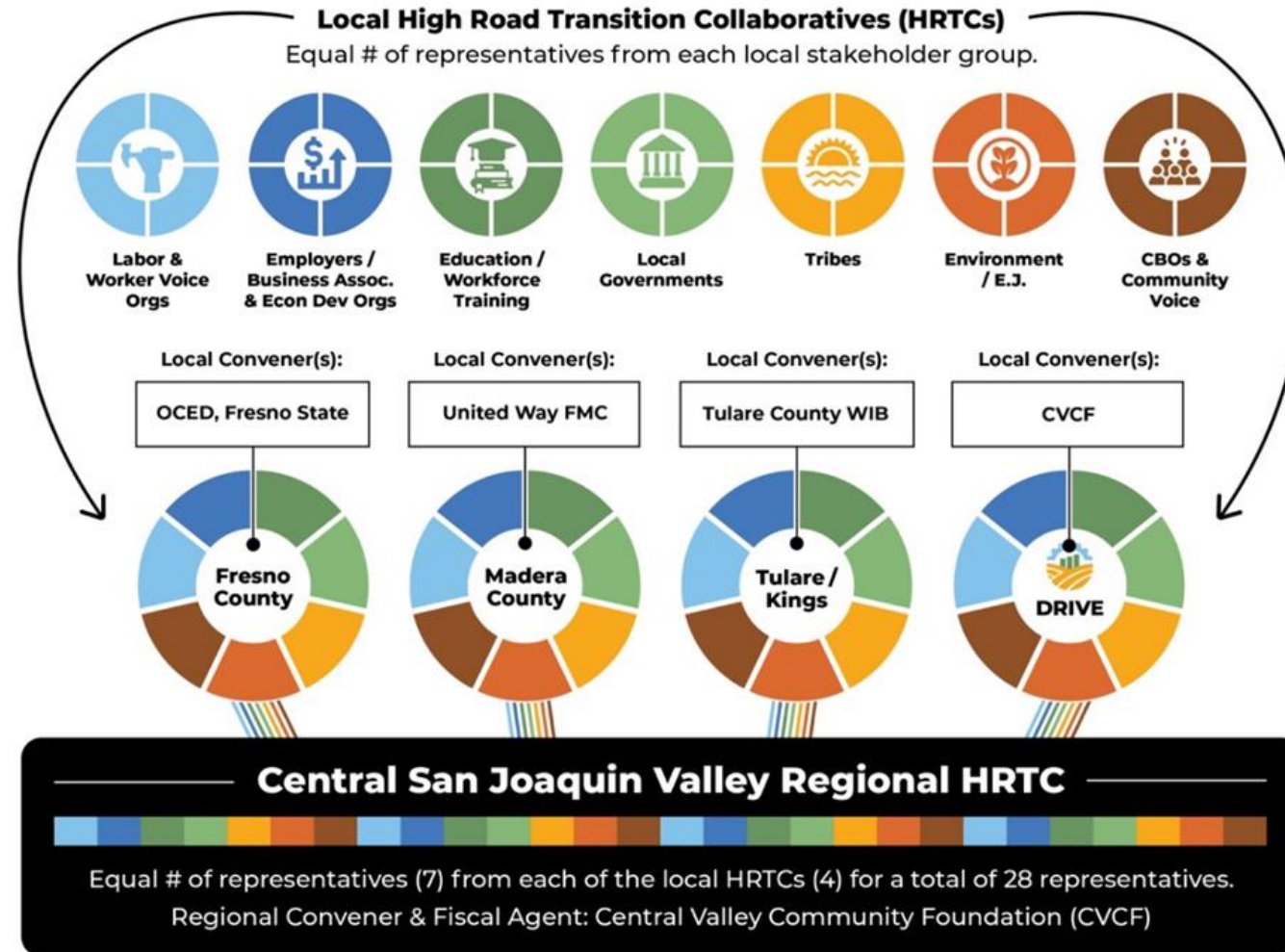
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Valley CERF Stakeholder Inventory & Scan of Planning Efforts Relevant to CERF Goals

Composition of Valley CERF HRTCs



Areas of Strength in HRTCs

- While most HRTC member organizations do not work across domains, a significant proportion of member CBOs do
- The HRTCs include several organizations that work specifically with marginalized groups, including farmworkers, Latinx communities, and immigrants
- The combination of stakeholders in the Education and Workforce Training category and Employers, Business Association, and Economic Development category provides a thorough base for diverse economic perspectives

Areas of Potential Growth

- Only one HRTC member focuses specifically on the needs of Black residents and none focus on Hmong residents
- There is little representation of CBOs in unincorporated and rural communities, which are significant populations in the Central San Joaquin Valley
- While there are 13 HRTC member organizations representing the “environment and environmental justice” topic area, most focus on conservation and green energy rather than environmental and climate justice

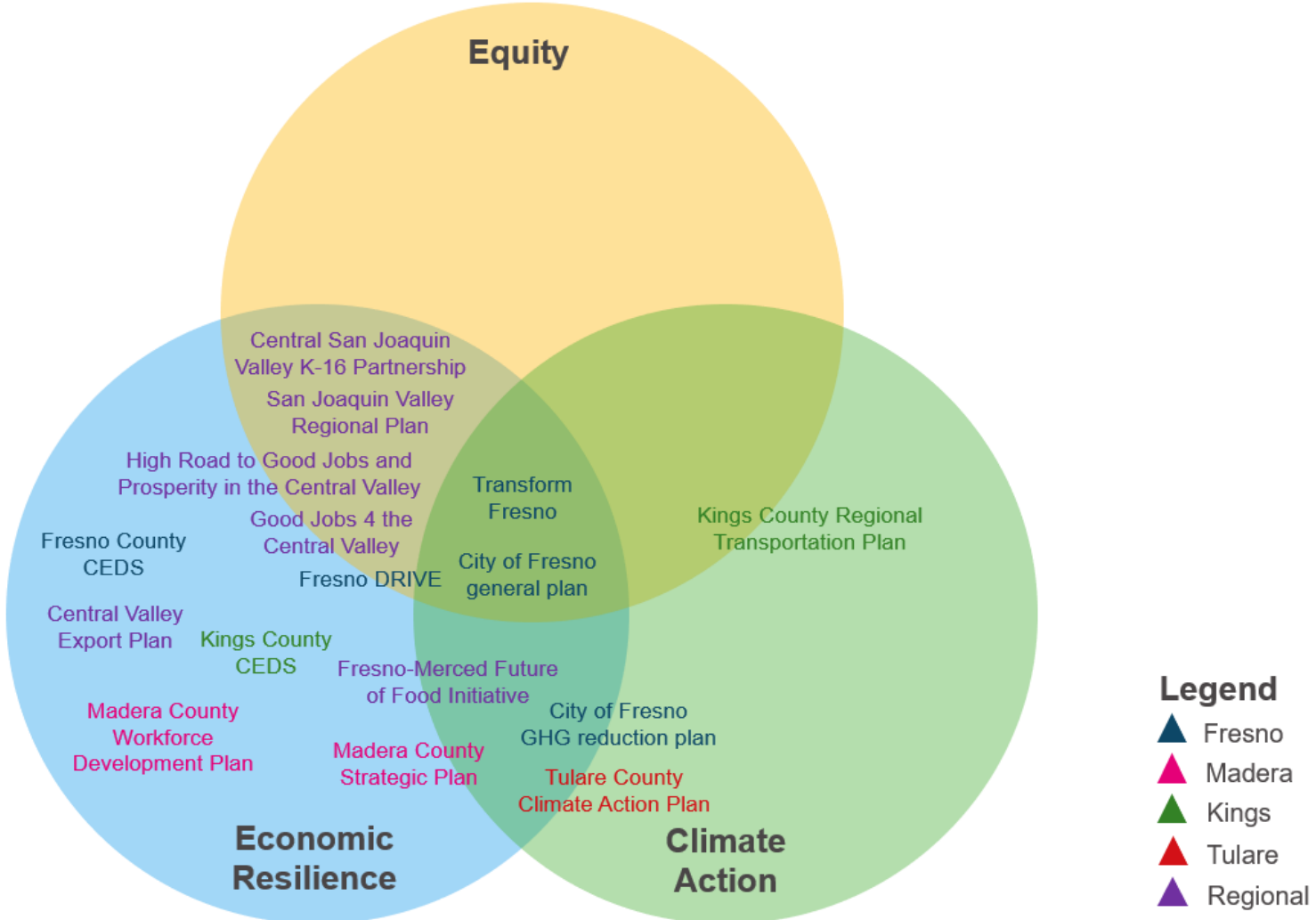
Organizations that Valley CERF Could Consider Engaging

- El Quinto Sol de America
- Community United Lanare
- Concerned Citizens of West Fresno
- Hmong Innovating Politics
- Root & Rebound
- Laotian American Community of Fresno
- San Joaquin Valley Rural Development Center
- Leadership Counsel for Justice and Accountability
- Fresno Building Healthy Communities
- Californians for Pesticide Reform
- Central California Environmental Justice Network
- Lideres Campesinas

Landscape Scan of Planning Efforts and Initiatives Relevant to CERF Goals

- Aim to contextualize CERF planning in the Central San Joaquin Valley
- Identified 10 state plans and 16 regional and subregional plans relevant to at least one of the three CERF goals
- Alongside plan review, conducted expert interviews with local leaders involved in the creation or implementation of seven of the 16 plans

Planning Activity in the Central San Joaquin Valley



State Planning Efforts

- California Climate Adaptation Strategy
- California Climate Scoping Plan
- California High Speed Rail
- California Inclusive Innovation Hubs
- California State Water Plan
- California Transportation Plan
- California Unified Strategic Workforce Development Plan
- Climate Action Plan for Transportation Infrastructure
- High Road Training Partnerships
- Putting California on the High Road: A Jobs and Climate Action Plan for 2030

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LANDSCAPE | What stood out to you from the information presented?

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LANDSCAPE | What is missing from the information presented?

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Moving Towards Research Phase 2: Outside Learning

Learning Effective Models and Best Practices

- An **economic framework** is a type of social system focused on production, distribution, and exchange of goods and services. Values and principles inform the policies that create and perpetuate the system and drive behavior.
- An **industry** is a group of organizations that are related based on their primary activities
- An **industry cluster** is a regional concentration of related industries

Learning Effective Models and Best Practices

- Identify and describe economic models that center economic resilience, equity, and climate action
- Identify and describe 3 to 5 industry clusters that demonstrate strong potential for creating and sustaining:
 - Meaningful opportunities for diverse independent businesses.
 - Family-supporting jobs for people with a range of work experience, educational attainment, and 'barriers' to employment.
 - Beneficial outcomes for climate resilience, ecological health, and environmental justice.

Learning Effective Models and Best Practices

§Economic Models:

§local economies, “triple bottom line” economies, cooperative economies, circular economies, “doughnut” economies, and fair-trade principles

§Industry clusters:

§responsible food systems, renewable energy and energy efficiency, “one water” management, and circular manufacturing

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Please rank your level curiosity about the following ECONOMIC FRAMEWORKS (1: highest - 5: lowest):

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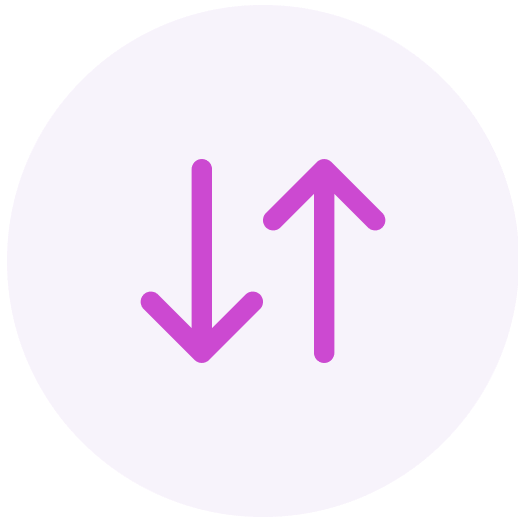
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What, if any, additional ECONOMIC FRAMEWORKS should we consider?

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Please rank your level curiosity about the following INDUSTRY CLUSTERS (1: highest - 4: lowest):

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What, if any, additional INDUSTRY CLUSTERS should we consider?

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Next Steps

Opportunities for Additional Review

- Full Baseline Report draft to be shared with all HRTC members on July 28th
 - Comments welcome 7/28 – 8/4
- HRTC members to participate in SWOT process in August HRTC meetings
- Revised Baseline Report to be finalized by August 30th



Community Economic Resilience Fund (CERF) Environment and Climate Report

Valley CERF July 2023 | Madera, Fresno, Tulare & Kings Counties

Kelly Kucharski & Karin Roux (Sierra Resource Conservation District),

Erin Capuchino (Yosemite-Sequoia Resource Conservation & Development Council)



What we're discussing today

- 1. Natural Resources of the Central San Joaquin Valley and Southern Sierra Nevada Mountain Range - Where*
- 2. Natural Resource Challenges/Climate Impacts - Drought, Flood, Wildfire, and Air Pollution - What, When, Why, & How?*
- 3. Local, State, and Federal Agencies - Data Sources*

Glossary of Key Terms and Additional Resources below Report

LAND, AIR, WATER

LAND

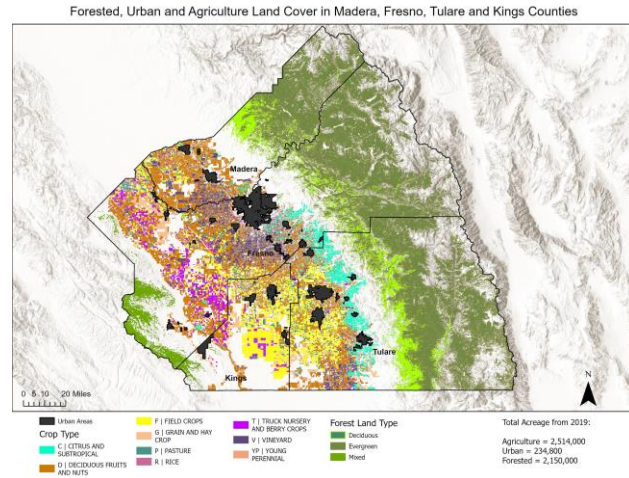
Valley CERF area of Four Counties (central San Joaquin Valley) = approx 14,310 square miles or 9,158,400 acres

Agricultural Land Cover = ~ 45% (4,157,977 acres)

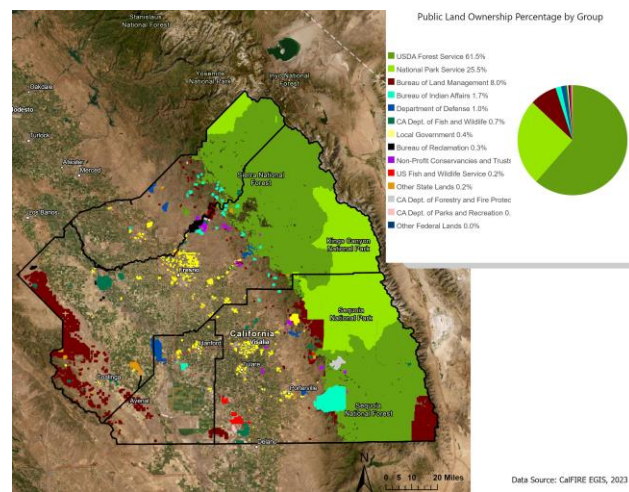
Forested Land Cover = ~ 23% (2,150,000 acres)

Urban Areas = ~ 3% (234,800 acres)

Other 29% variable includes surface water and privately-owned lands (inactive or use unknown)



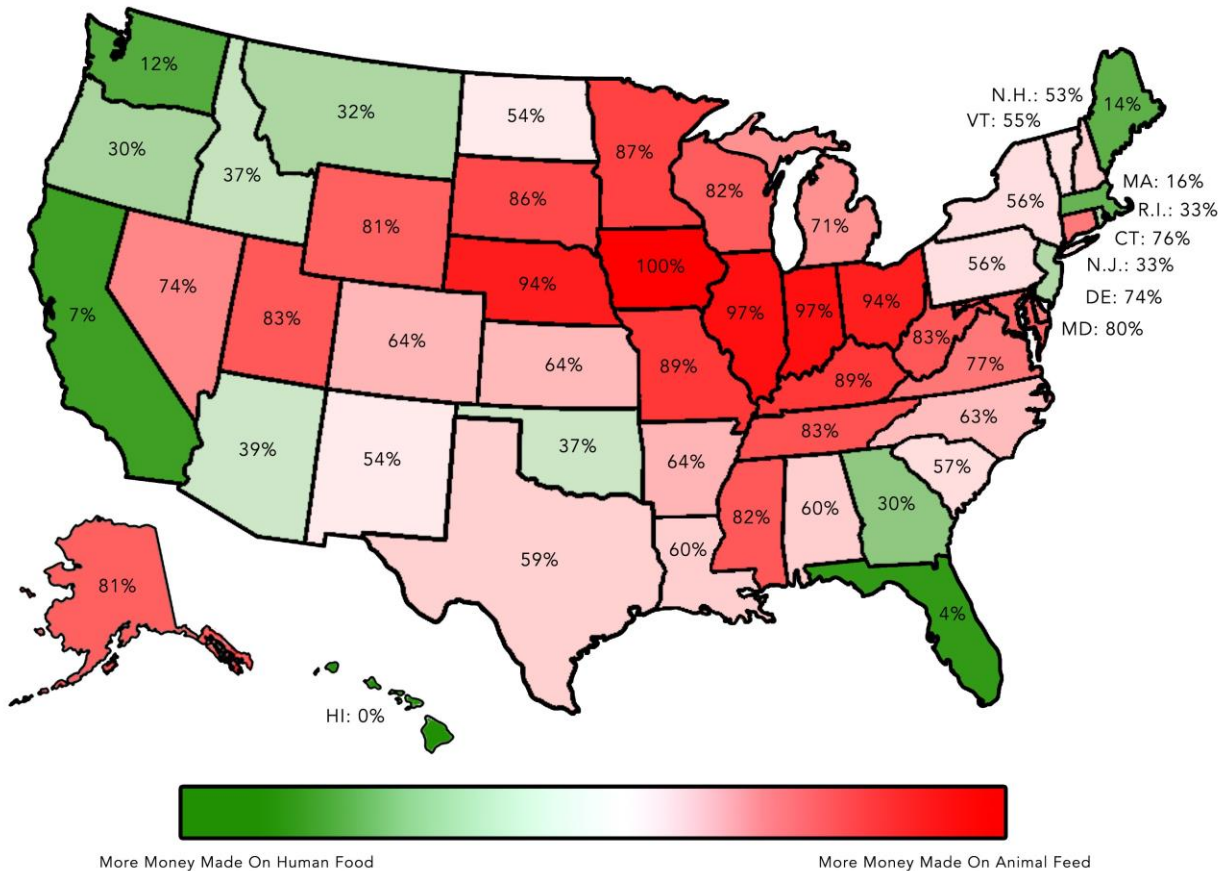
1 - Forested, Urban, and Agriculture Land Cover in Valley CERF. Credit Raini Patteson (YS RC&DC)



2 - Public Land Ownership Valley CERF. Credit Raini Patteson (YS RC&DC)

Human Food vs. Animal Feed

The percentage of each state's agricultural income derived from crops grown primarily for animal consumption



Created by Joe Satran of The Huffington Post. Data Source: USDA NASS, HuffPost Calculations. "Crops grown primarily for animal feed" refers to field corn, soybeans, hay, barley and sorghum. Income from tobacco, cotton and other non-edible crops is not included.

3 - A strong value of California's food system is that 93% of the food grown is direct-to-human food (fruits and vegetables) and is therefore more accessible. Only 7% of the food grown is fed to animals or used for other purposes. Versus for example, Iowa, where 100% of crops grown are fed to animals or used for other purposes such as creating ethanol.

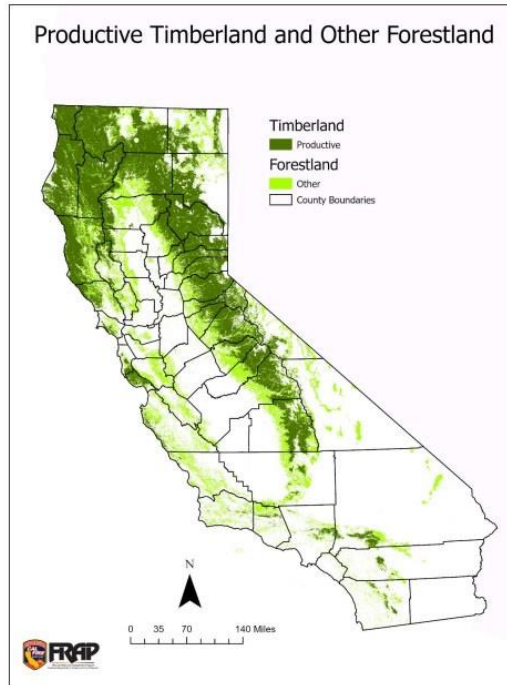


Figure 1. California forest and timberland as defined by CAL FIRE FRAP represents 32 million acres of forest land across all ownerships with 16.4 million acres are classified as timberland and 4.2 million acres of productive forest land in reserves. The federal government manages 57% of California's forest lands, with the remaining areas under state and local government (3%) or private management (40%).

The Sierra Nevada mountains are crucial to the health of Central Valley economy, providing most of the water (in the form of snow pack) that supports the Central Valley. Healthy forests are critical to plentiful and uncontaminated water for local communities and those in the foothills and Valley floor as snowmelt travels down through the watershed.

Historically, Valley CERF mountain communities were supported by the timber and mining industry. Now predominantly supported by tourism and recreation.

- Five National Wilderness Areas, including the world's largest grove of giant sequoia trees (Sequoia and Kings Canyon National Parks)
- Economy example: 1.2 million visitors to Sequoia and Kings Canyon National parks in 2020 spent \$96.7 million in communities near the park = 1,228 local jobs and contributed \$68.9 million to the local economy.

AIR



4 - Natural challenges of the San Joaquin Valley, such as the geography, topography and meteorology of the air basin, create a low capacity for air pollution. The Valley topography is shaped like a bowl that holds air with minimal ability for dispersion.

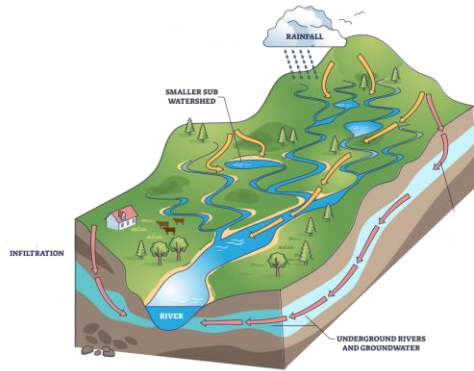
The San Joaquin Valley Air Pollution District¹ (SVAPCD) reports the air quality of the Los Angeles area is only marginally worse than the Valley's although about **10 times** more pollution is emitted in that region. The Bay Area's air quality is much better than the Valley's, even though about **6 times** more pollution is released there.

With the Valley's topography and stagnant, dry winters, it traps pollution under the inversion layer. Wind with rain events is what clears pollution. Source SJVAPCD 2021-2022 Annual Report.²

¹<https://ww2.valleyair.org/about#:~:text=Sources of Emissions in the San Joaquin Valley%2C 2020&text=Air quality in the Los,more pollution is released there.>

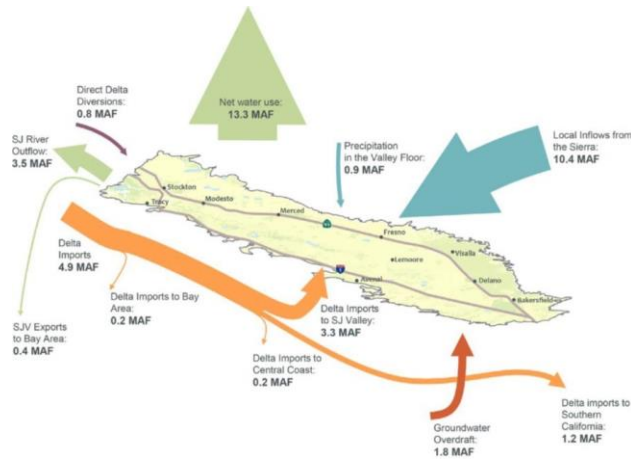
²<https://ww2.valleyair.org/outreach-and-education/information-and-documents/>

WATER



5 - Map Source: USGS California Water Science Center (<https://ca.water.usgs.gov/projects/central-valley/about-central-valley.html>)

Information on the California Aqueduct: <https://www.watereducation.org/aquapedia/california-aqueduct>



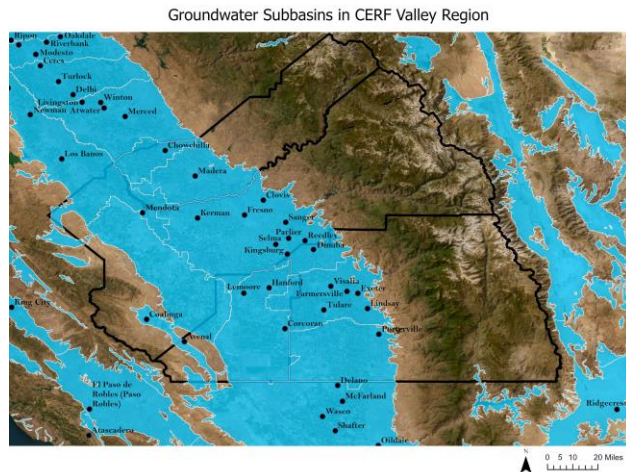
6 - The San Joaquin Valley's Water Balance: sources and uses (1986–2015)

<https://www.ppic.org/publication/water-stress-and-a-changing-san-joaquin-valley/>

Public Policy Institute of California - "Water Stress and a Changing San Joaquin Valley." Consumed water tends to remain constant, but water supply/inflow (precipitation and importing water from other regions) is highly variable.

(MAF = Million Acre Feet; a unit of measure

One Million Acre Feet = ~326 billion gallons (325,853,319,313.9 gallons))



7 - Groundwater Map Valley CERF. Credit Raini Patteson.

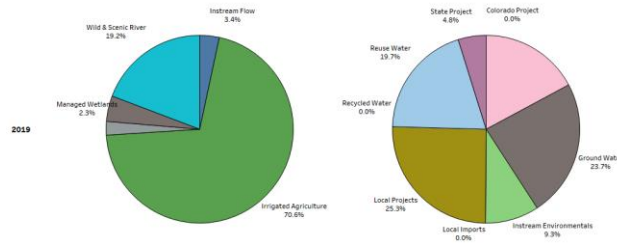
California's water supports three main sectors: cities and communities, agriculture, and the environment (rivers, wetlands, habitat).

On average Statewide, the proportion of water used by each sector:

- cities and communities = **11%** ,
- agriculture = **42%**, and
- environment = **47%**

In the Central Valley water use was:

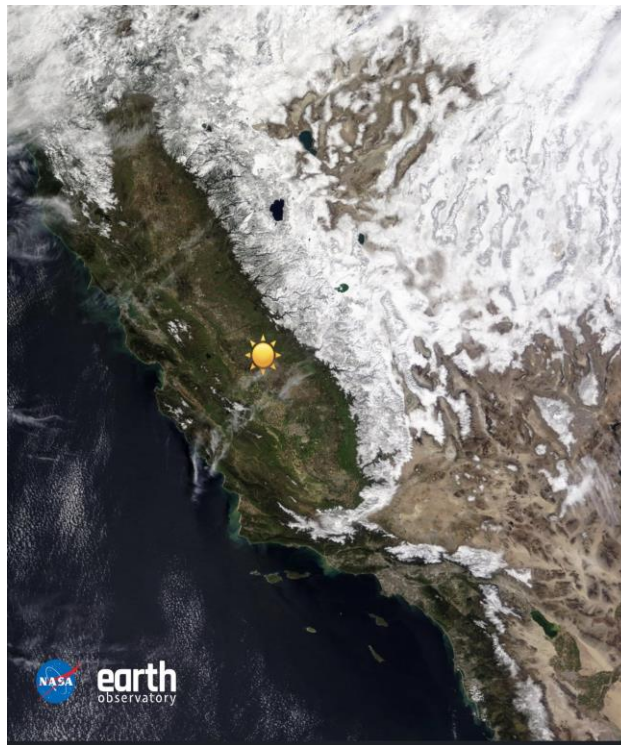
- cities and communities = **4.4%**
- Irrigated agriculture = **70.6%**, and
- environment = **25%**. Water Supply is majority Groundwater and Reuse Water. See Butterfly charts in Additional Resources below from the Department of Water Resources.



8 - Use: 70% Agriculture and Supply of Water for San Joaquin and Tulare lake Regions. Department of Water Resources. ³

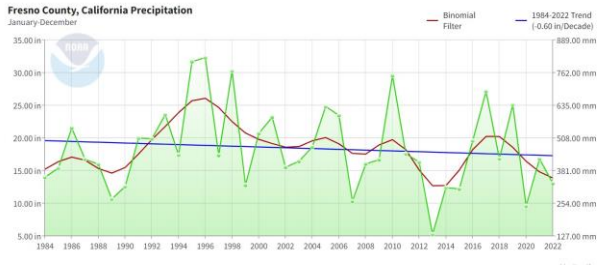
Natural Resource Challenges and Climate Impacts

Drought



9 - Record precipitation in California Winter of 2022/2023. Snowfall in the Sierra Nevada Mountains surrounding the Central Valley

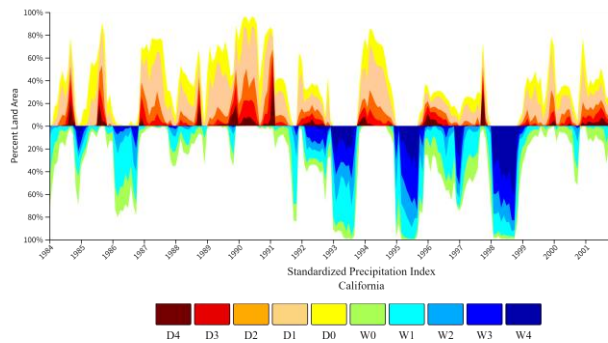
³<https://water.ca.gov/Programs/California-Water-Plan/Water-Portfolios>



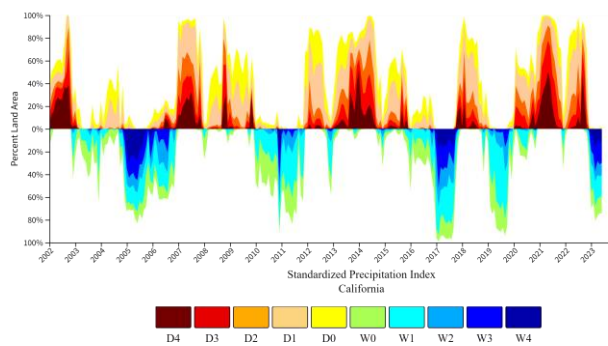
10 - Rainfall Trends in Valley CERF Region⁴

.605 drop per decade between 1984-2023 (39 year period)

.723 inch drop per century between 1895-2023 (128 year period)



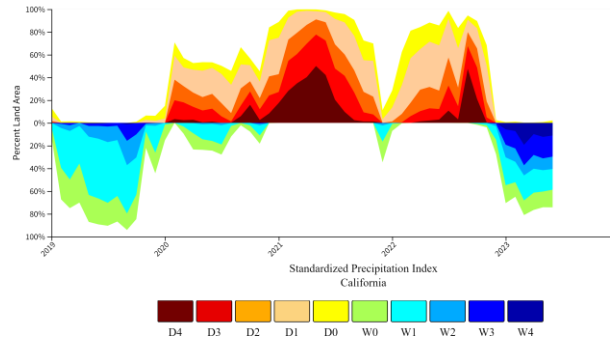
11 - 1984-2001 California Drought. Drought results from an imbalance between water supply and water demand. The Standardized Precipitation Index⁵ (SPI) measures water supply, specifically precipitation. SPI captures how observed precipitation (rain, hail, snow) deviates from the climatological average over a given time period—in this case, over the 9 months leading up to the selected date. Red hues indicate drier conditions, while blue hues indicate wetter conditions. Data are available monthly from 1895–present. <https://www.drought.gov/states/california>, <https://climatedataguide.ucar.edu/climate-data/standardized-precipitation-index-spi>



12 - 2002-2023 California Drought

⁴<https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series/CA-031>

⁵<https://www.drought.gov/data-maps-tools/us-gridded-standardized-precipitation-index-spi-nclimgrid-monthly>



13 - California 2018-2023.

Longer and more frequent periods of drought between rainy/wet winters impact the health of forests and limit the agricultural industry.

Wildfire- drought and other issues at the top of the watershed

Three factors significantly impacted the Sierra forests making them vulnerable to wildfire:

- decades of fire suppression and restrictions on logging;
- multiple years of extreme drought; and
- significant increase in the native bark beetle population led to unprecedented tree die-off across the Region.

California Tree Mortality - Trees are dying (usda.gov)⁶



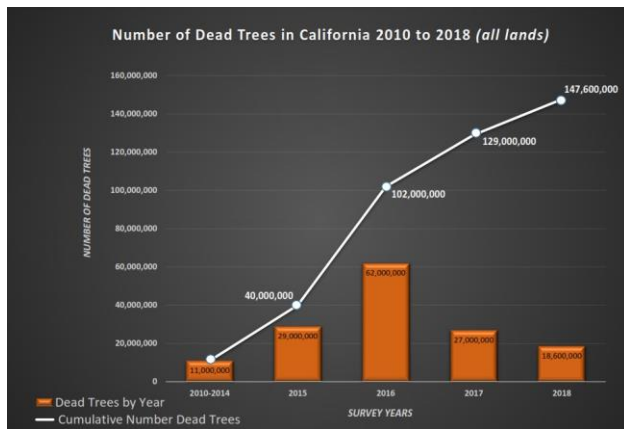
14 - Image of a heathy forest.

Unnamed lake below Anne Lake, Ansel Adams Wilderness: Photo: Joshua Courter

⁶<https://www.fs.usda.gov/detail/catreemortality/trees/?cid=fseprd573949>



15 - Image of an unhealthy forest. The total number of trees that have died due to drought and bark beetles is an historic 129 million on 8.9 million acres. Unhealthy forests due to drought, high tree mortality, and pest infestations. One tree takes average of 50 years to grow.



16 - <https://www.fs.usda.gov/detailfull/r5/home/?cid=FSEPRD613875&width=full>



17 - 2020 Creek Fire - 5th largest CA Wildfire in History. Burned 1/3 the size of the Sierra National Forest. Drought and High Tree Mortality.

Creator: Marcio Jose Sanchez | Credit: AP Copyright: Copyright 2020 The Associated Press. All rights reserved.

2021 Fires impacting SJVAPCD 8 Counties

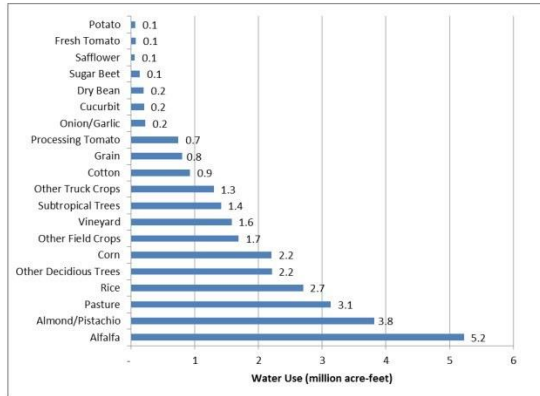


Figure 2. Applied water for California crops in 2010

19 - Applied Water for California Crops in 2010.

All crops except rice are grown here in Valley CERF area

Source: Pacific Institute⁷

Groundwater Depletion/Overdrafting

During years of drought, where surface water is limited, farmers have increasingly relied on groundwater to irrigate crops. As competition for groundwater grew, and with no state-level regulation on groundwater pumping, wells had to be drilled deeper and deeper in order to reach shrinking aquifers. The so-called "**Race to the Bottom**".

For example: Nearly 25 percent of all new irrigation wells installed in California over the last five years (2017-2021) were in Tulare (969) and Fresno (677) Counties.

Source: Groundwater Conditions Report Water Year 2021 (ca.gov)⁸

Land Subsidence is a loss of support below ground. In other words, sometimes when water is taken out of the soil, the soil collapses, compacts, and drops. This depends on a number of factors, such as the type of soil and rock below the surface.

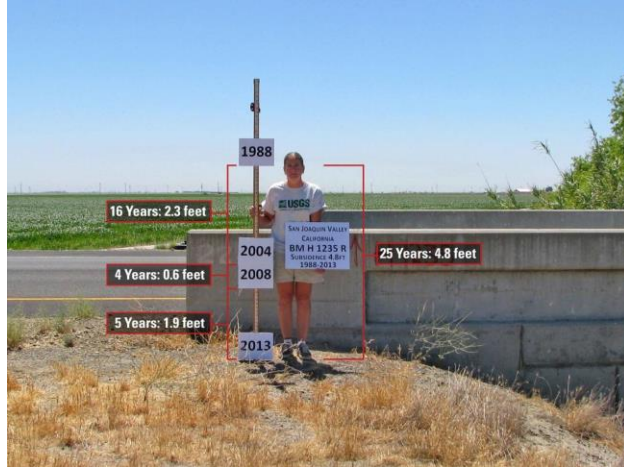
Land Subsidence ranges from sinkholes to an entire town sinking, and major infrastructure damage: The Town of Corcoran (7.47 square-mile area) has sunk 11.5 feet in the last 14 years; causing wells to collapse, flood zones to change, and damage to infrastructure. The carrying capacity of the California Aqueduct has been reduced by 20% since construction due to damage caused by land subsidence.

Sources: Groundwater Decline and Depletion | U.S. Geological Survey (usgs.gov)⁹; <https://www.ppic.org/blog/commentary-how-water-markets-can-help-california-bring-its-groundwater-into-balance/>

⁷<https://pacinst.org/wp-content/uploads/2015/04/CA-Ag-Water-Use.pdf>

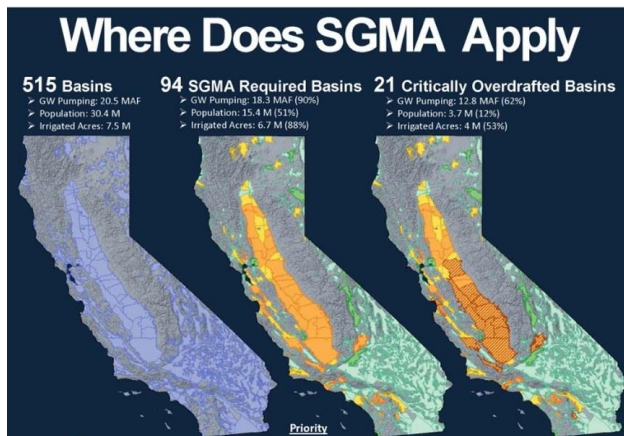
⁸<https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Data-and-Tools/Files/Statewide-Reports/Groundwater-Conditions-Report-Fall-2021.pdf>

⁹https://www.usgs.gov/special-topics/water-science-school/science/groundwater-decline-and-depletion?qt-science_center_objects=0#qt-science_center_objects



20 - Land Subsidence

California has experienced three droughts thus far in the 21st century (2001-2002, 2007-2009, and 2012-2016), bringing renewed subsidence to the San Joaquin Valley (<https://www.usgs.gov/centers/land-subsidence-in-california/science/land-subsidence-san-joaquin-valley>)

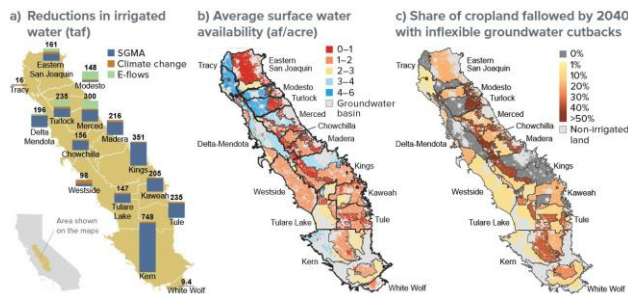
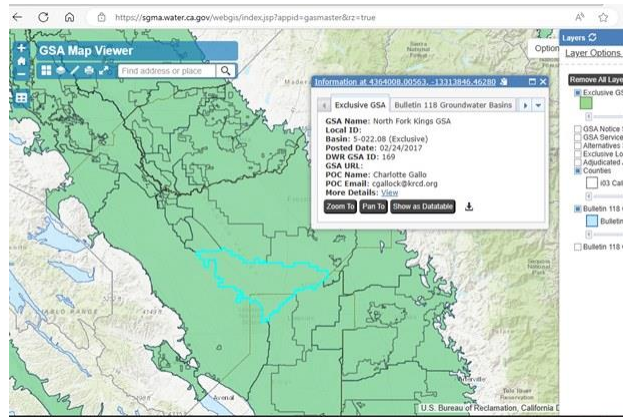


21 - The Sustainable Groundwater Management Act.

All Subbasins in the four County area are considered "Critically Overdrafted": an unsustainable amount of groundwater is being pumped out of the ground, depleting aquifers



22 - SGMA and Groundwater Sustainability Agencies: Groundwater-California's Vital Resource



23 - Water supply reductions will affect the entire San Joaquin Valley, and lands with less surface water face the highest risks of fallowing. Estimates are that implementation of SGMA will force between 500,000 and 1 million acres of farmland out of production to save groundwater.

<https://www.ppic.org/publication/policy-brief-the-future-of-agriculture-in-the-san-joaquin-valley/>



24 - Savory Pond Basin at S. Chestnut Ave and E. Lincoln Ave was completed and began operations in 2022 - Fresno Irrigation District

<https://www.fresnoirrigation.com/sgma>



25 - Central Basin site at W. Central Ave and S. Hughes Ave was completed in 2021, with operations beginning in 2022 - Fresno Irrigation District

Air Quality Influenced by Land Uses and Events

Greenhouse Gases (GHG) and Air Pollutants contribute separately to Air Quality.

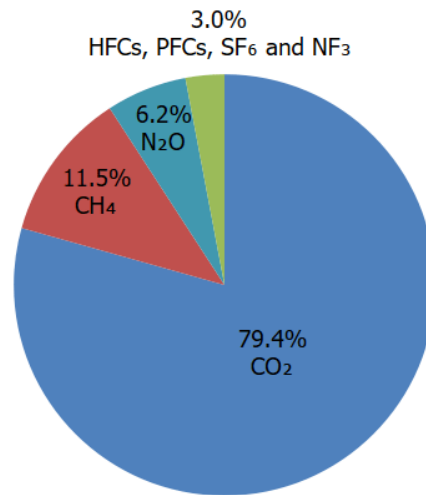
Greenhouse Gases can have a useful function but when in too high a concentration create a warming effect that can contribute to poor air quality. Human activities add to the levels of naturally occurring GHGs in our atmosphere.

- **Carbon dioxide** is released to the atmosphere when solid waste, fossil fuels (oil, natural gas, and coal), and wood and wood products are burned.
- **Methane** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from the decomposition of organic wastes in municipal solid waste landfills, and the raising of livestock.
- **Nitrous oxide** is emitted during agricultural and industrial activities, as well as during combustion of solid waste and fossil fuels.

Greenhouse gases that are not naturally occurring include byproducts of foam production, refrigeration, and air conditioning called chlorofluorocarbons (CFCs), as well as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs) generated by industrial processes.

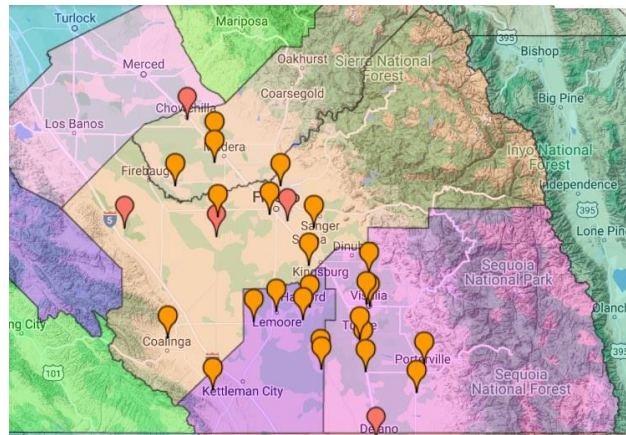
What are Greenhouse Gases? | US Department of Transportation¹⁰

¹⁰<https://www.transportation.gov/sustainability/climate/what-are-greenhouse-gases>

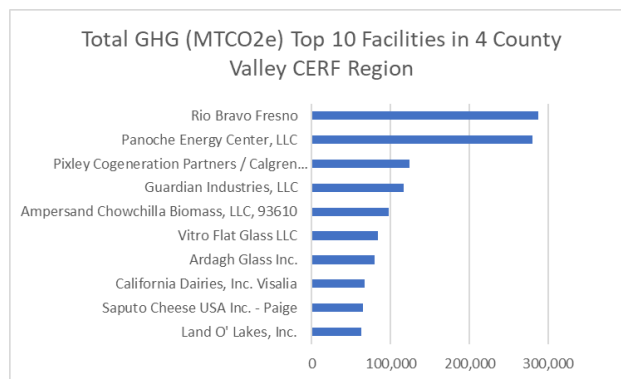


U.S. Environmental Protection Agency (2023). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2021

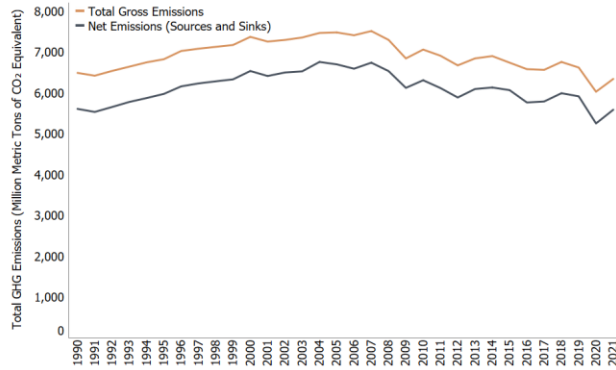
26 - <https://www.epa.gov/ghgemissions/overview-greenhouse-gases>



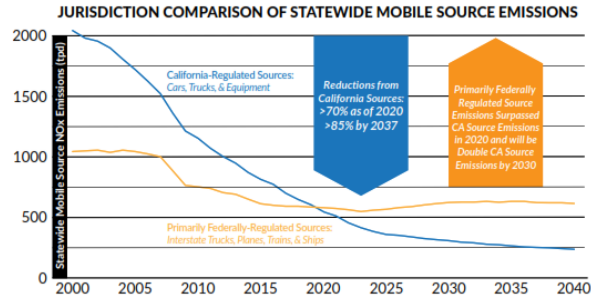
27 - Facility Locations For California Air Resources Board Valley CERF Total GHG County Emissions 2020. 58 Reporting Facilities. The tool only includes emissions data for facilities that have a release point physically located in California. The tool does not include GHG emissions from entities of transportation fuels, natural gas suppliers, or electricity importers which might also be covered by the Cap-and-Trade Regulation. <https://www.arb.ca.gov/carbapps/pollution-map/>



28 - Top 10 Valley CERF Air Pollution by Facility - Total GHG Emissions - 10 out of the 58 reporting facilities
<https://www.arb.ca.gov/carbapps/pollution-map/>



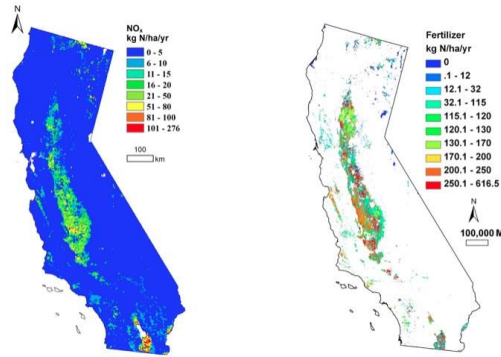
29 - Total US Greenhouse Gas Emissions 1990-2021 <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>



30 - Jurisdiction Comparison of CA Mobile Source Emissions - San Joaquin Valley Air Pollution Control District 2022 Annual Report



31 - Mobile Source Emission Projection - San Joaquin Valley Air Pollution Control District 2022 Annual Report



32 - These maps indicate levels of NOx emissions (left) and fertilizer applications (right) in California. (UC Davis)

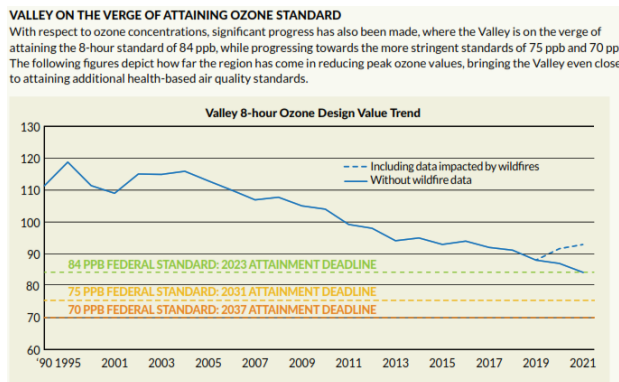
"Model and flight data suggested that 20 to 32 percent of NOx emissions comes from soils with heavy nitrogen fertilizer applications, while NOx emissions from natural soils account for 5 to 9 percent¹¹"

Air Pollutants

1. Ground-Level Ozone
2. Particulate Matter
3. Carbon Monoxide
4. Lead
5. Sulfur Dioxide
6. Nitrogen Dioxide

San Joaquin Valley Air Pollution Control District (SJVAPCD) reports a general trend toward better air quality and lowering the stationary sources of GHG Emissions.


However, SJVAPCD is still reporting some air pollution short of the increasing standards.



33 - Valley 8 Hour O-Zone Design Value Trend - San Joaquin Valley Air Pollution Control District 2022 Annual Report


¹¹<https://www.ucdavis.edu/news/smog-forming-soils>


IMPACTS OF WILDFIRE SMOKE



= PARTICULATE MATTER (PM)
 A complex mixture of extremely small particles made up of a number of components, including wildfire smoke, metals, dust and soot



How small?
 HUMAN HAIR = 50-70 µm
 (µm = microns in diameter)





= UNHEALTHY LEVELS OF PM
 The Valley's topography and stagnant, dry winters traps pollution under the inversion layer


What clears PM pollution?

 WIND
 +
 RAIN


CALIFORNIA IS AT RISK
FOR SEVERE AND INTENSE WILDFIRES

PM HARMS OUR HEALTH
 It can trigger or worsen health conditions


Lung Infections COPD Asthma Attacks
 Acute Bronchitis Heart Attacks Stroke
 COVID-19 Dementia




HOW CAN YOU PROTECT YOURSELF & OTHERS?




STAY INDOORS
IF YOU SEE OR SMELL SMOKE



REPLACE AIR FILTERS
MORE FREQUENTLY THAN USUAL



FACE MASKS
SOME MASKS MORE EFFECTIVE THAN OTHERS,
CHECK WITH YOUR HEALTH CARE PROVIDER



DO CONSULT YOUR DOCTOR
IF YOU ARE EXPERIENCING HEALTH
IMPACTS DUE TO POOR AIR QUALITY

www.valleyair.org/wildfires

34 - Wildfires in the region significantly impact the air quality of the District and the people who live in the region. Maintaining forest health conditions and implementing wildfire mitigation strategies is a priority that directly impacts air quality. <https://www2.valleyair.org/outreach-and-education/information-and-documents/>

Particulate Matter can trigger or worsen health conditions including lung infections, asthma attacks, COPD, Stroke, Acute Bronchitis, COVID19, Dementia



35 - The way that land, air, and water interrelate and interact are complex and endless.



36 - The scope and impact are as large as our beautiful Earth.

Key Terms/Glossary

Air Pollution: Air pollution is contamination of the indoor or outdoor environment by any chemical, physical or biological agent that modifies the natural characteristics of the atmosphere.

Aquifer: A water-bearing stratum of permeable rock, sand, or gravel.

Brownfield: A brownfield is a property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

Carbon Capture and Storage: Carbon capture and storage is a process in which a relatively pure stream of carbon dioxide from industrial sources is separated, treated and transported to a long-term storage location.

Carbon Credit: A tradable credit granted to a country, company, etc., for reducing emissions of carbon dioxide or other greenhouse gases by one metric ton below a specified quota.

Carbon Footprint: Many of our daily activities - such as using electricity, driving a car, or disposing of waste - cause greenhouse gas emissions. Together these emissions make up a household's carbon footprint

Carbon Sequestration: The long-term storage of carbon in plants, soils, geologic formations, and the ocean. Carbon sequestration occurs both naturally and as a result of anthropogenic activities and typically refers to the storage of carbon that has the immediate potential to become carbon dioxide gas.

Carbon: A nonmetallic chemical element that forms compounds with other elements and is a constituent of organic compounds in all known living tissues.

Climate: a region of the earth having specified climatic conditions, the average course or condition of the weather at a place usually over a period of years as exhibited by temperature, wind velocity, and precipitation.

Conservation: Planned management of a natural resource to prevent exploitation, destruction, or neglect.

Environment: The complex of physical, chemical, and biotic factors (such as climate, soil, and living things) that act upon an organism or an ecological community and ultimately determine its form and survival.

Environmental Justice: the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

Greenhouse Gases: any of various gaseous compounds (such as carbon dioxide or methane) that absorb infrared radiation, trap heat in the atmosphere, and contribute to the greenhouse effect.

GSA: Groundwater Sustainability Agency that is tasked with implementing the Sustainable Groundwater Management Act (SGMA)

MAF: Million Acre Feet

Natural Resources: Materials and capacities supplied by nature, such as mineral deposits, water, trees, and waterpower.

NOx: Nitrous Oxide

PM: Particulate Matter. Particulate matter is a complex mixture of extremely small particles made up of a number of components, including wildfire smoke, metals, dust, and soot.

Preservation: The activity or process of keeping something valued alive, intact, or free from damage or decay.

Recharge: Groundwater recharge occurs when water from rainfall and snowmelt soaks into the ground. Irrigation Districts allow water to be reintroduced into the underground aquifers through percolation. Groundwater is often pumped out of the ground for residential and agricultural uses, which lowers the available groundwater supply. When groundwater recharge occurs, it replenishes aquifers.

SGMA: Sustainable Groundwater Management Act

Stewardship: The careful and responsible management of something entrusted to one's care.

VOC: Volatile Organic Compounds

Watershed: A watershed is an area of land that channels rainfall, snowmelt, and runoff into a common body of water. The term “watershed” is often used interchangeably with “drainage basin,” which may make the concept easier to visualize. The easiest way to envision a watershed is to think of a bowl. Any water at the high points of the bowl will flow to the lowest point, no matter how big the bowl is.

Contact Us

Sierra Resource Conservation District

(559) 855-5840 | office@sierrarc.com | P.O. Box 693 Auberry, CA 93602

Yosemite-Sequoia Resource Conservation and Development Council

Additional Resources



CALIFORNIA CLIMATE COMMITMENT

New, World-Leading Climate Action

- The California Climate Commitment, Governor Newsom's comprehensive plan to:
 - Cut pollution, transition away from big oil
 - Deliver clean, reliable, and affordable energy
 - Save Californians money and create prosperous communities
 - Protect Californians from extreme heat, wildfires, and drought

37 - Context for why we are gathered here in this CERF process

The State's comprehensive plan to fight climate change and enact new measures that cut pollution, deploy clean energy and new technologies, and protect CA from harmful oil drilling

New World-Leading Climate Actions

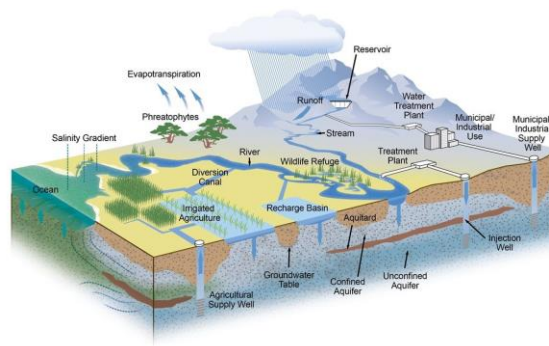
- Carbon Neutrality
- 100% Clean Electric Grid
- Removing Carbon Pollution
- Enlisting Nature

Prior to European settlers, many tribal nations were living throughout what is now referred to as the Central Valley. There are active tribal communities in rancherias and throughout the Central Valley.

Native-Land.ca | Our home on native land¹³

Federally recognized tribes in Central California:

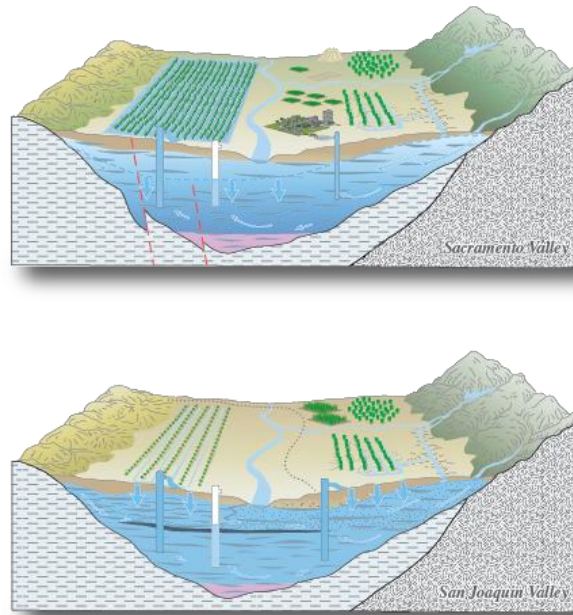
Bear River Band of the Rohnerville; Rancheria Benton; Paiute Reservation; Berry Creek Rancheria; Big Pine Paiute Tribe of the Owens Valley; Big Sandy Rancheria; Big Valley Rancheria; Bishop Paiute Tribe; Bridgeport Indian Colony; Buena Vista Rancheria; Cahto Tribal Executive Committee; California Valley Miwok Tribe; Chicken Ranch Rancheria; Cloverdale Rancheria; Cold Springs Rancheria; Colusa Rancheria; Cortina Rancheria; Coyote Valley Reservation; Dry Creek Rancheria; Elem Indian Colony; Enterprise Rancheria; Federated Indians of Graton Rancheria; Fort Independence Reservation; Greenville Rancheria; Grindstone Rancheria; Guidiville Rancheria; Habematolel Pomo of Upper Lake; Hopland Reservation; Lone Band of Miwok Indians; Jackson Rancheria; Lone Pine Paiute Shoshone Reservation; Lower Lake Rancheria; Lytton RancheriaManchester-Point Aren; Band of Pomo Indian; sMechoopda Indian Tribe of the Chico Rancheria; Middletown Rancheria; Mooretown Rancheri; aNorth Fork Rancheria; Paskenta Band of Nomlaki Indians; Picayune Rancheria of Chukchansi Indians; Pinoleville Reservation; Potter Valley Tribe; Redwood Valley Reservation; Robinson Rancheria; Round Valley Reservation; Rumsey Yocha Dehe Winton Nation; Santa Rosa Rancheria



¹²<https://chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.gov.ca.gov/wp-content/uploads/2022/09/Fact-Sheet-California-Climate-Commitment.pdf>

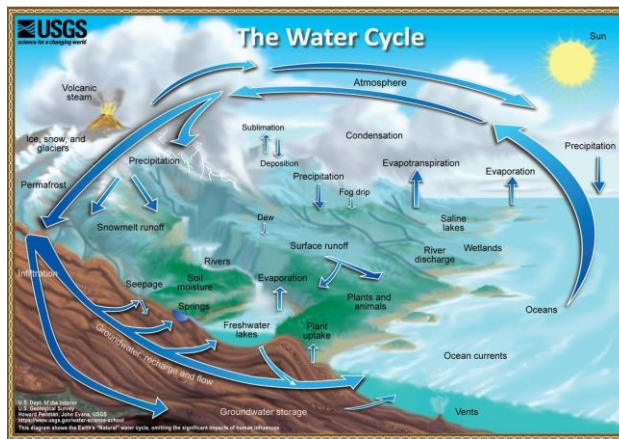
¹³<https://native-land.ca/>

38 - <https://water.ca.gov/library/modeling-and-analysis>



39 - <https://ca.water.usgs.gov/projects/central-valley/central-valley-hydrologic-model.html>

Estimates on recharge needs?





40 - Use and Supply of Water for San Joaquin and Tulare lake Regions. Department of Water Resources. ¹⁴

RANK	Top Ten Crops		2021	2020
			TOTAL VALUE	RANK
1	Almonds	\$ 1,441,392,000	1	
2	Grapes	\$ 1,348,592,000	2	
3	Pistachios	\$ 722,064,000	3	
4	Poultry*	\$ 537,764,000	4	
5	Milk	\$ 484,548,000	5	
6	Tomatoes	\$ 417,863,000	8	
7	Cattle & Calves	\$ 417,580,000	6	
8	Garlic	\$ 286,110,000	7	
9	Oranges	\$ 239,517,000	9	
10	Peaches	\$ 231,978,000	10	

Includes commodity totals reported in the "Other" categories such as organic, by products, processed etc.
* Includes Turkeys, Chickens, Ducks, Geese, Gamebirds & Eggs

41 - Fresno County Top 10 Crop Report

¹⁴<https://water.ca.gov/Programs/California-Water-Plan/Water-Portfolios>

2021 RANKING	COMMODITY	TOTAL VALUE	2020 RANKING
1	Milk	\$1,943,043,000	1
2	Oranges - Navels & Valencia's	\$1,224,885,000	2
3	Grapes	\$683,601,000	4
4	Cattle & Calves	\$633,600,000	3
5	Pistachio Nuts	\$560,120,000	5
6	Tangerines	\$431,520,000	6
7	Almonds - Meats & Hulls	\$355,710,000	7
8	Lemons	\$347,130,000	8
9	Peaches - Cling & Freestone	\$196,863,000	10
10	Corn - Grain & Silage	\$181,792,000	9

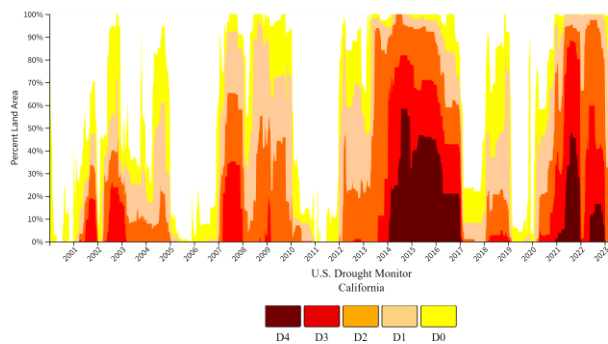
42 - Tulare County

2021 RANKING	COMMODITY	TOTAL VALUE	2020 RANKING
1	Milk	\$1,943,043,000	1
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10	Corn - Grain & Silage	\$181,792,000	9

43 - Kings County

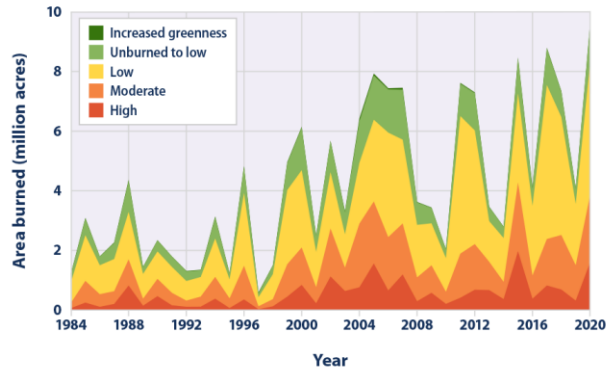
Year: 2021; Total Ag Value: \$2,045,495,000	
Almonds, Nuts & Hulls	\$760,205,000
Milk	330,812,000
Grapes	252,743,000
Pistachios	252,312,000
Pollination	66,744,000
Cattle & Calves	51,758,000
Mandarin/Tangerine	32,132,000
Replacement Heifers	31,008,000
Corn Silage	28,090,000
Figs, All	28,041,000

44 - Madera County



45 - Historical Drought Conditions in California. The U.S. Drought Monitor (2000–present) depicts the location and intensity of drought across the country. Every Thursday, authors from NOAA, USDA, and the National Drought Mitigation Center produce a new map based on their assessments of the best available data and input from local observers. The map uses five categories: Abnormally Dry (D0), showing areas that may be going into or are coming out of drought, and four levels of drought (D1–D4). Learn more¹⁵.

¹⁵<https://www.drought.gov/data-maps-tools/us-drought-monitor>

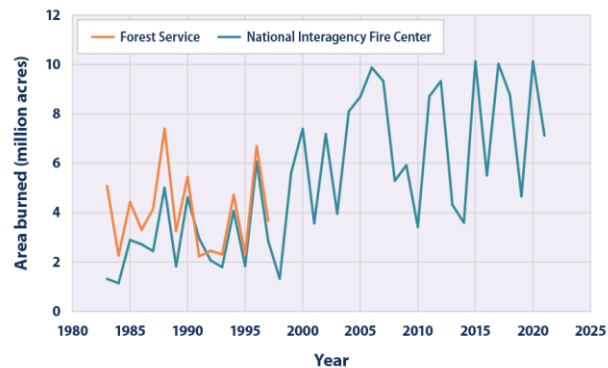


46 - This figure shows the increasing severity and impact of wildfires.

Distribution of acreage burned by large wildfires, based on the level of damage caused to the landscape—a measure of wildfire severity. Large wildfires are defined as fires with an area larger than 1,000 acres in the western United States and 500 acres in the eastern United States. The total acreage shown in Figure 3 is slightly less than the total in Figure 2 because Figure 3 is limited to large fires and because a few areas did not have sufficient satellite imagery to allow damage to be assessed.

Data source: MTBS, 2022¹⁶

Web update: July 2022 <https://www.epa.gov/climate-indicators/climate-change-indicators-wildfires>



47 - This figure shows annual wildfire-burned area (in millions of acres) from 1983 to 2021. The two lines represent two different reporting systems though the Forest Service stopped collecting statistics (orange line) in 1997 and is not planning to update them, those statistics are shown here for comparison.

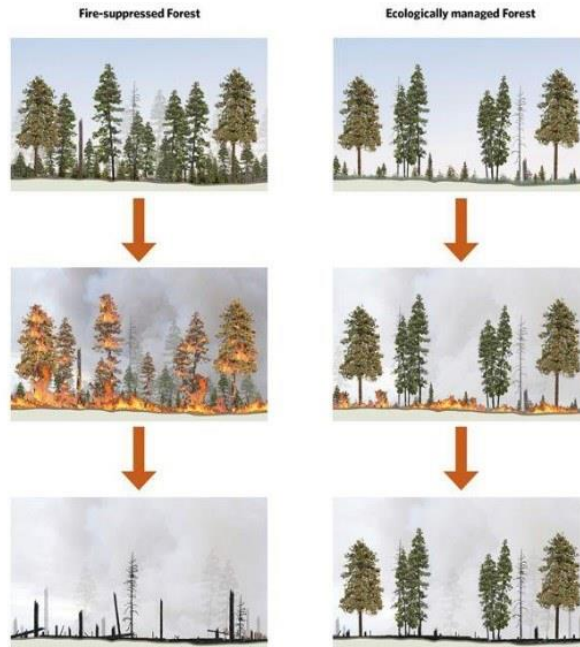
Data source: NIFC, 2022;¹⁷ Short, 2015²⁴

Web update: July 2022 <https://www.epa.gov/climate-indicators/climate-change-indicators-wildfires>

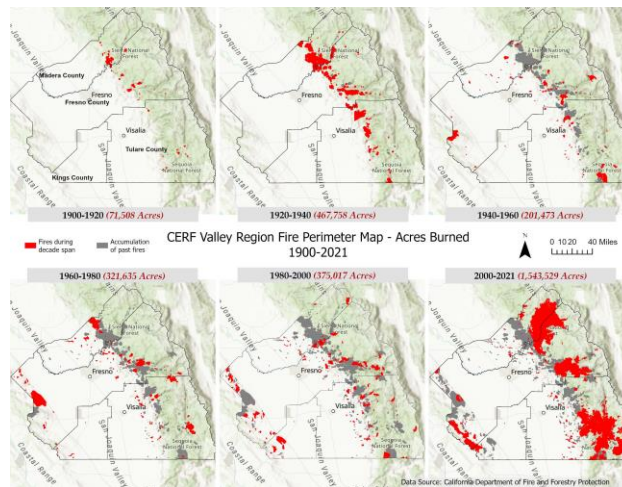
¹⁶<https://www.epa.gov/climate-indicators/climate-change-indicators-wildfires#ref25>

¹⁷<https://www.epa.gov/climate-indicators/climate-change-indicators-wildfires#ref23>

¹⁸<https://www.epa.gov/climate-indicators/climate-change-indicators-wildfires#ref24>



48 - Ecological Forest Management Model



49 - This image tells a story. All of us in this room have been stuck inside our homes due to the horrible air quality created by wildfires as more acres have burned in the last 20 years than the 100 years before. Why? Man, and Nature.

The majority of mills were shuttered in the 80's, 20 years of fire suppression and lack of fuel removal, bark beetle tree mortality and historic drought culminated in uncountable wildfires. Natural resource issues created by this perfect storm include destruction of protected habitat, death of protected animals, and watershed contamination from fires that flow down into the valley affecting irrigation. Other issues the fires created are infrastructure damage and destroyed tourism and recreational opportunities. In an attempt to protect the forests, closures of local sawmills impacted the economy greatly as well with loss of jobs, higher lumber prices and higher costs of homes.

0 = abnormal dry

1 = moderate drought

2= severe drought

3= extreme drought

4= exceptional drought

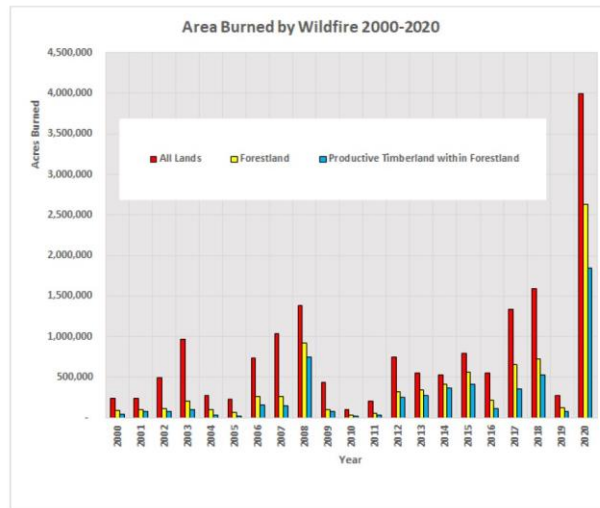
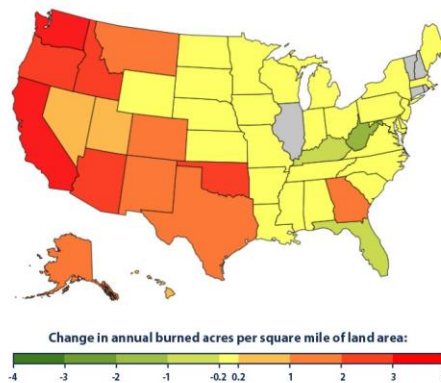


Figure 2: Wildfire acres burned statewide; all-lands (red); the portion of wildfire that occurred in forestland (yellow); the portion of wildfire that occurred in timberlands (blue), annualized 2000-2020. *Note that acres burned does not indicate level of fire severity.

Change in Annual Burned Acreage by State Between 1984-2001 and 2002-2020



States colored light gray did not have any fires that were large enough to be included in this analysis.

Data source: MTBS (Monitoring Trends in Burn Severity), 2022. Direct download. Accessed June 2022. www.mtbs.gov/direct-download.

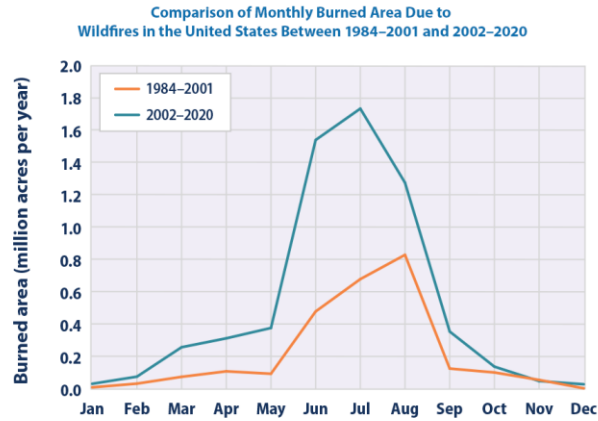
For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at www.epa.gov/climate-indicators.

50 - This map shows how the number of acres burned in each state as a proportion of that state's total land area has changed over time, based on a simple comparison between the first half of the available years (1984-2001) and the second half (2002-2020). Click each state to reveal the data. For reference, there are 640 acres in a square mile; therefore, a change of 6.4 acres per square mile would mean that burned area increased by 1 percent of a state's total land area. A few states did not have any fires that were large enough to be included in this analysis.

Data source: MTBS, 2022¹⁹

Web update: July 2022

¹⁹<https://www.epa.gov/climate-indicators/climate-change-indicators-wildfires#ref27>



Data source: MTBS (Monitoring Trends in Burn Severity), 2022. Direct download. Accessed April 2022. www.mtbs.gov/direct-download.

For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at www.epa.gov/climate-indicators.

51 - This figure compares the annual distribution of burned area due to wildfires in the United States between the first half of the period of measurement (1984–2001) and the second half (2002–2020).

Data source: MTBS, 2022²⁰

Web update: July 2022 <https://www.epa.gov/climate-indicators/climate-change-indicators-wildfires>

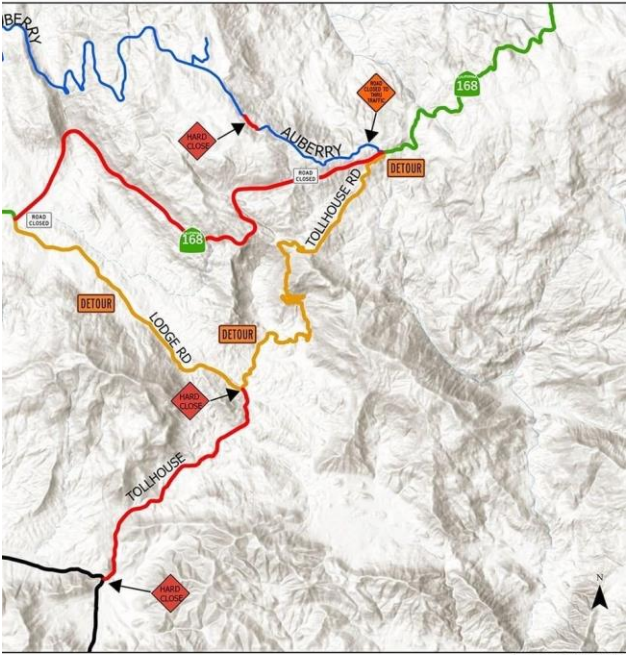


²⁰<https://www.epa.gov/climate-indicators/climate-change-indicators-wildfires#ref28>

Natural Resource issues moving down through the watershed: Post-Fire
Debris Flow, Erosion, Floods



52 - Fresno County 2023



Legend Updated 1/9/23



County Road Closure

53 - Road Closures HWY 168 Fresno County Due to Debris Flows in Post-Fire, High Precipitation Conditions 2023



54 - 2023 Rockslide HWY 168 Fresno County



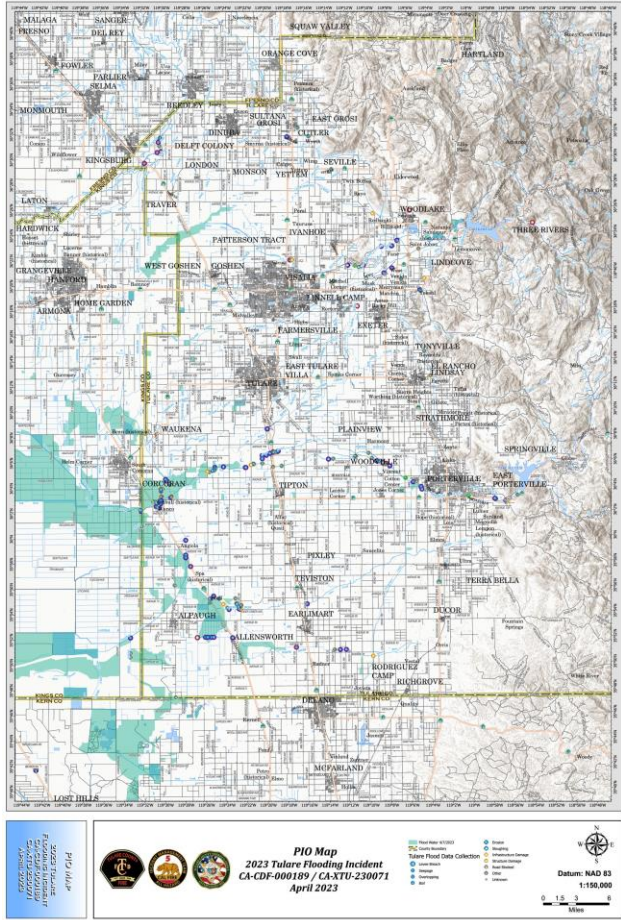
55 - A flooded street in Merced Jan 2023 from the Central Valley Flood Protection Plan Update 2022. ²¹

Over the last 60 years, California has experienced more than 30 major flood events, resulting in more than 300 lives lost, more than 750 injuries and billions of dollars in disaster claims.

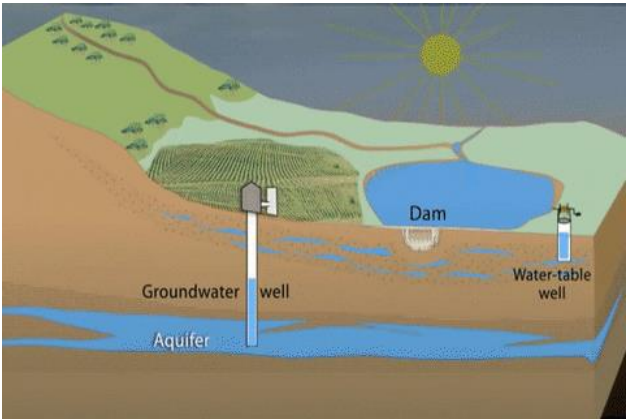
Today, more than 7 million Californians, or 1 in 5, live in the 500-year floodplain, and approximately \$580 billion in assets (crops, structures, and public infrastructure) are exposed to flooding. This estimate does not include the impacts of future development, population changes, climate change, or costs due to loss of major infrastructure and critical facilities, as well as losses to state commerce. Department of Water Resources. ²²

²¹<https://water.ca.gov/Programs/Flood-Management/Flood-Planning-and-Studies/Central-Valley-Flood-Protection-Plan>

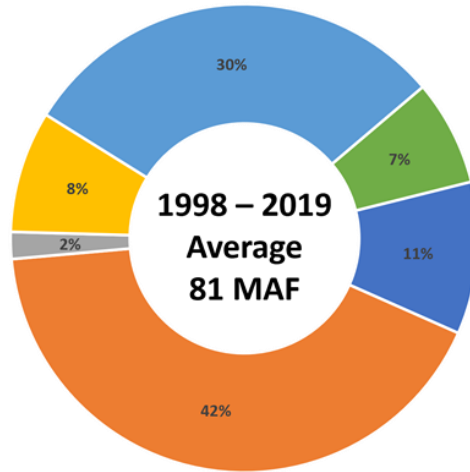
²²<https://water.ca.gov/Programs/Flood-Management/Flood-Planning-and-Studies>



56 - Tulare County 2023 Flood Events <https://tularecounty.ca.gov/rma/public-works/flood-information/>



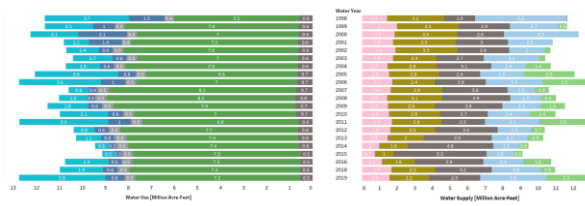
(559) 580-3042 | info@ysrcandd.org | 40108 HWY 49, Ste. C #298 Oakhurst, CA 93644



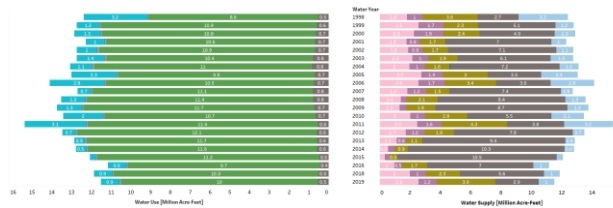
- Urban
- Agriculture
- Managed Wetlands
- Instream Flow Requirements
- Wild & Scenic River Flows
- Minimum Required Delta Outflow

57 - Where Does California's Water Go? ²³

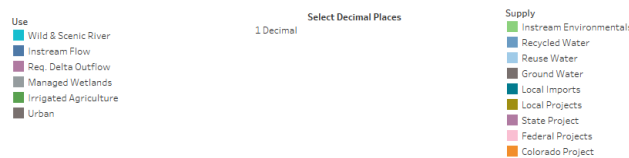
This statewide ratio varies widely depending upon whether a year is wet or dry. In wet years, the proportion that serves environmental purposes can be 60 percent or more, while in dry years that proportion drops to roughly one-third. Water often serves double duty; water allocated for one purpose is often reused for other purposes downstream. Water often has multiple benefits across sectors.



58 - San Joaquin Region Water Use and Supply MAF 1998-2019



59 - Tulare Lake Region Water Use and Supply MAF 1998-2019



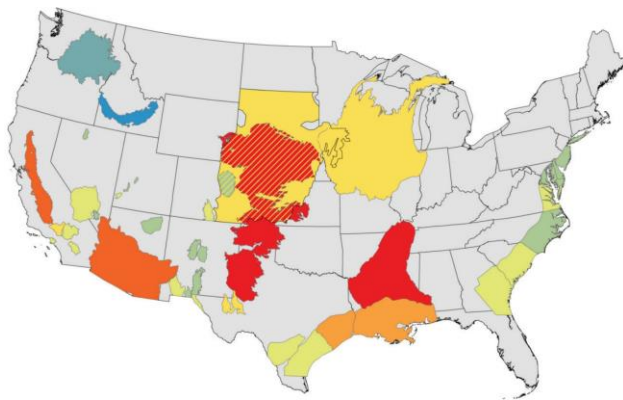
²³<https://water.ca.gov/Programs/California-Water-Plan/Water-Portfolios>



https://youtu.be/Vtr07_bZKlq

60 - Groundwater: California's Vital Resource

https://www.youtube.com/watch?v=Vtr07_bZKlq&t=190s, <https://water.ca.gov/programs/groundwater-management/sigma-groundwater-management>



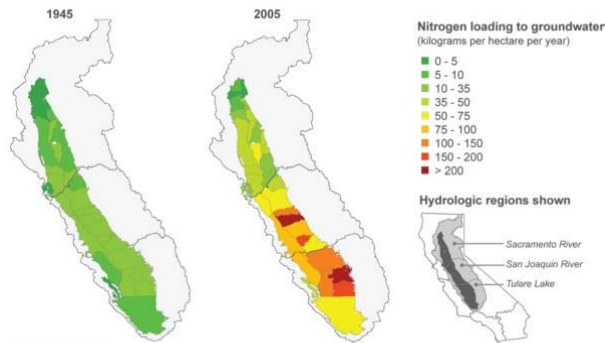
61 - Total groundwater depletions (in cubic km) for major aquifers in the contiguous U.S. from 1900-2008. Red 150-400; dark orange 50-150; light orange 25-50; dark yellow 10-25; light yellow 3-10; green 0-3; blues indicate net recharge. Image Credit: USGS <https://www.americangeosciences.org/geoscience-currents/groundwater-use-united-states>

SGMA outlines six “undesirable results” to be avoided:

- Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply
- Significant and unreasonable reduction of groundwater storage
- Significant and unreasonable seawater intrusion
- Significant and unreasonable degradation of water quality
- Significant and unreasonable land subsidence
- Groundwater-related surface water depletions that have significant and unreasonable adverse impacts on beneficial uses of surface water.

Water supply reductions will affect the entire San Joaquin Valley, and lands with less surface water face the highest risks of falling. Estimates are that implementation of SGMA will force between 500,000 and 1 million acres of farmland out of production to save groundwater.

FIGURE 11
Nitrate contamination of groundwater is a widespread problem in the San Joaquin Valley

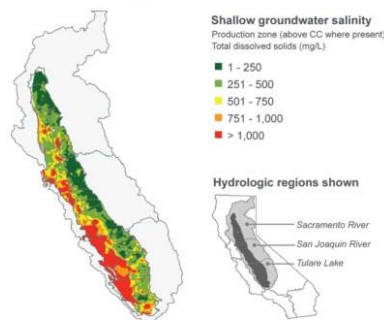


SOURCE: Harter et al. (2016).
NOTES: Thirty-five kilograms of N per hectare per year (about 31 pounds per acre) is a benchmark to separate "low-intensity" from "high-intensity" loading (Viers et al. 2012). All areas shaded in yellow, orange, and red are experiencing high-intensity loading.

62 - Nitrate Contamination of Groundwater in California 1945 and 2005

<https://www.ppic.org/publication/water-stress-and-a-changing-san-joaquin-valley/>

FIGURE 12
Salinity is a growing problem for crop productivity on the San Joaquin Valley's west side



SOURCE: CV-SALTS, "High Resolution Ambient Water Quality Mapping," Draft, May 2016.
NOTES: The figure shows shallow groundwater salinity on the valley floor. Levels above 1,000 milligrams per liter of total dissolved solids (TDS, a measure of salinity) increasingly limit crop yields and crop choices. CC is Corcoran clay.

63 - Shallow Groundwater Salinity

<https://www.ppic.org/publication/water-stress-and-a-changing-san-joaquin-valley/>

Categories of Greenhouse Gases²⁴

- Carbon Dioxide CO₂
- Methane CH₄
- Nitrous Oxide NO_x
- Fluorinated Gases (hydrochlorofluorocarbons (HCFCs), hydrofluorocarbons (HFCs), etc.)

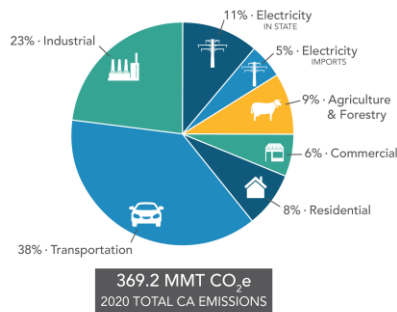
Global Warming Potentials²⁵

- Carbon Dioxide: 1 (standard)
- Methane: 27-30 over 100 years

²⁴<https://www.epa.gov/ghgemissions/overview-greenhouse-gases>

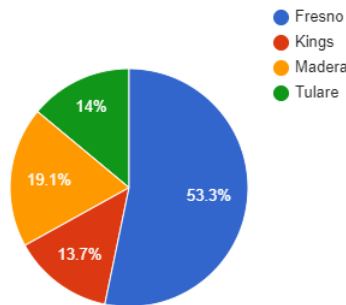
²⁵<https://www.epa.gov/ghgemissions/understanding-global-warming-potentials>

- Nitrous Oxide: 273 X over 100 years
- Fluorinated Gases: thousands or tens of thousands



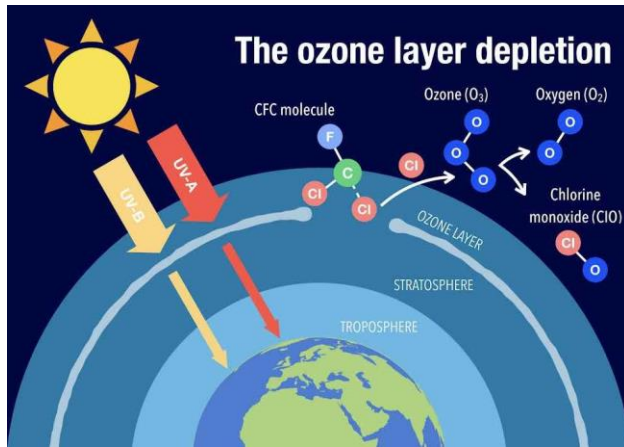
64 - Graphic: California's greenhouse gas emissions in 2020 broken out by economic sector <https://ww2.arb.ca.gov/ghg-inventory-data>

Facility Total GHG Emissions (MTCO2e) by County



65 - Total GHG Emissions for Valley CERF Counties in 2020 https://www.arb.ca.gov/carbapps/pollution-map/?_ga=2.13829239.1385387469.1688419656-307457568.1688173584#²⁶

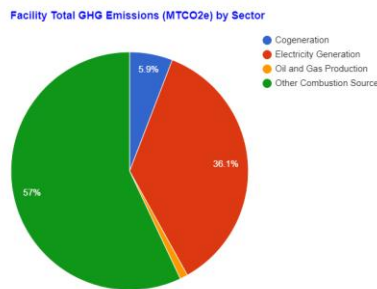
²⁶https://urldefense.proofpoint.com/v2/url?u=https-3A_www.arb.ca.gov_carbapps_pollution-2Dmap_-3F-5Fga-3D2.13829239.1385387469.1688419656-2D307457568.1688173584-23&d=DwMFaQ&c=euGZstcaTDllvimEN8b7jXrwqOf-v5A_CdpnVfiiMM&r=cYh6KnF9t5FW2BMSBoHnyRBb6n_S9k-kMV7BcWUr350&m=dFQQ9mV61MVG7icpymbcOJdPfhJPn0rLgG16VsWHCwFamUG7NyOPQqOgV8FGyhMS&s=uqFRaUngLyARQwV8f2gc5uwtiMm11skZ7GvtG2CgTEY&e=



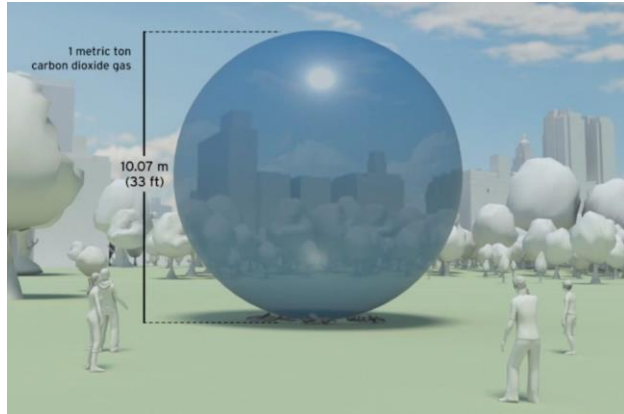
66 - Fluorinated Gases are GHGs and deplete Stratospheric Ozone. Ozone at the Stratospheric level is good to protect Earth from the sun. <https://dailysweden.com/ozone-layer-in-recovery-path-scientists/>



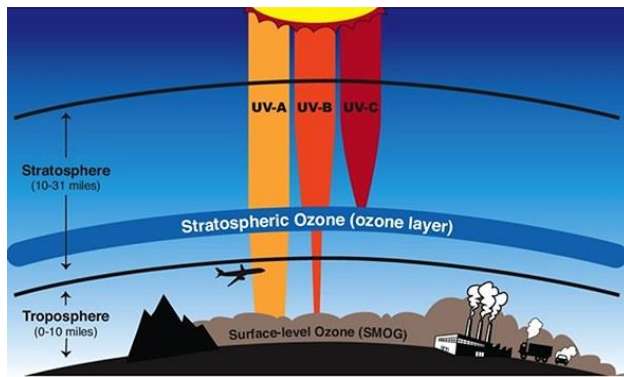
67 - https://climate.nasa.gov/climate_resources/188/graphic-the-greenhouse-effect/



68 - Total GHG Emissions for Valley CERF by Sector 2020

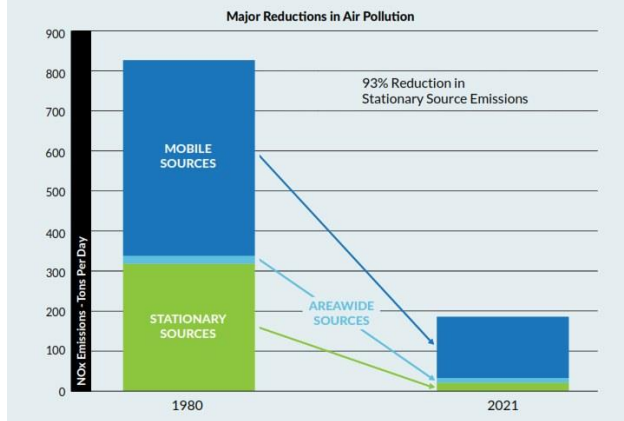


69 - Visual of 1 ton of CO2 Emissions. Image by Carbon Visuals, "THE CASE FOR CARBON CAPTURE & STORAGE" 2015
<https://www.tapio.eco/blog/what-represents-one-ton-co2-emissions/>²⁷

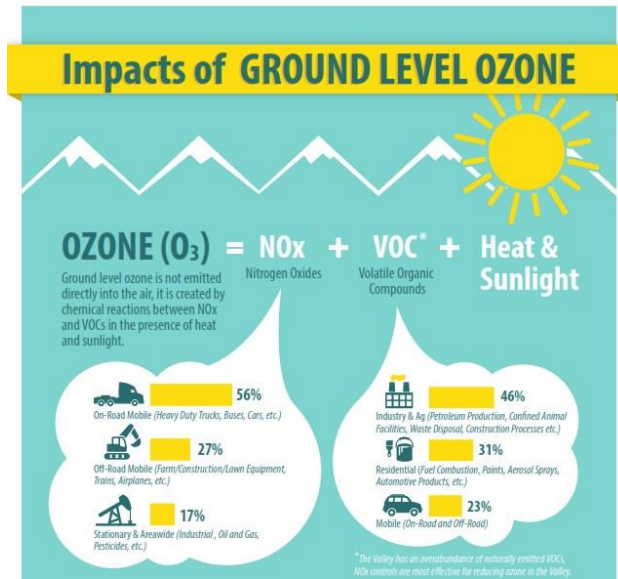


70 - <https://scied.ucar.edu/learning-zone/atmosphere/ozone-layer>

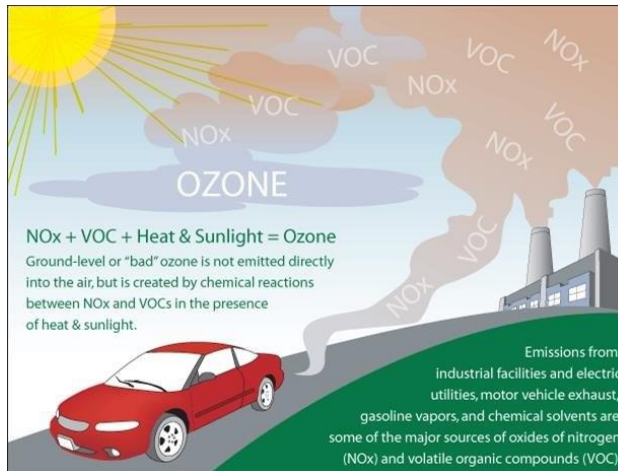
Through these ongoing efforts by the District, and significant efforts by CARB to reduce emissions from mobile sources, NOx emissions across the Valley have been reduced by over 75%, while stationary source emissions, which are under the District's jurisdiction, have been reduced by over 93% since 1980. Although significant progress has been made in reducing emissions, substantial additional emissions reductions are still needed to meet all of the federal PM2.5 and ozone standards. These additional reductions will be needed across the Valley as the population across the region continues to grow, bringing additional vehicle emissions, goods movement emissions, and other emissions.



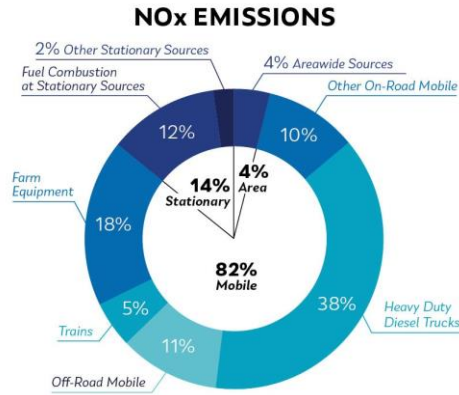
²⁷https://urldefense.proofpoint.com/v2/url?u=https-3A_www.tapio.eco_blog_what-2Drepresents-2Done-2Dton-2Dco2-2Demissions_&d=DwMfaQ&c=euGZstcaTDllvimEN8b7jXrwqOf-v5A_CdpgnVfiiMM&r=cYh6KnF9t5FW2BMSBoHnyRBb6n_S9k-kMV7BcWUr350&m=dFQQ9mV61MVG7icpymbcOJdPfhJPn0rLgG16VsWHCwFamUG7NyOPQqOgV8FGyhMS&s=egNiNcsuVwSSATZ0TBVwGGdAvpSnvA1k5-HLF-XGIPQ&e=



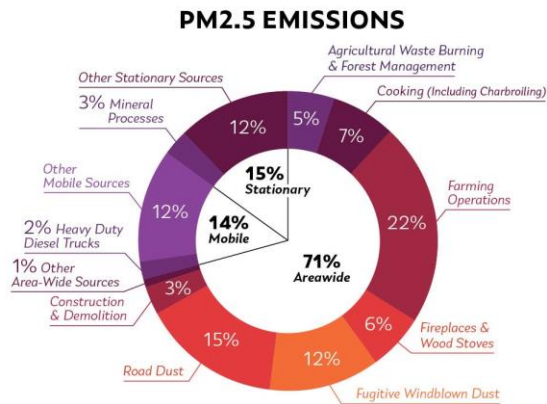
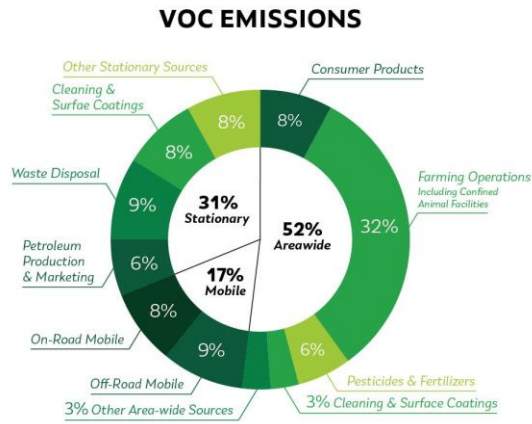
72 - <https://ww2.valleyair.org/outreach-and-education/information-and-documents/>



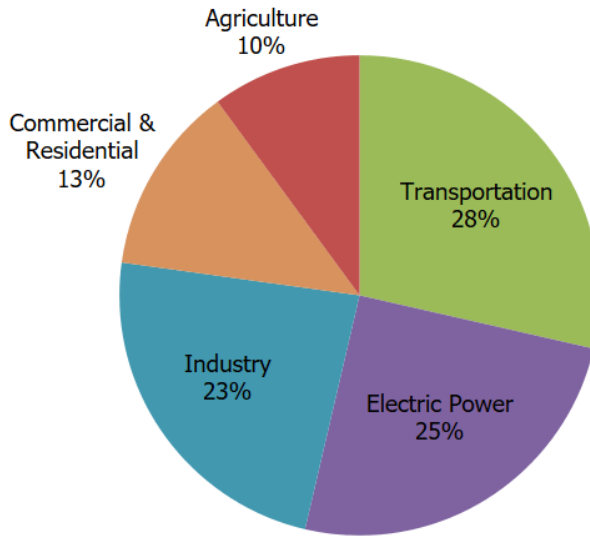
73 - What is Ozone and what is bad ozone? <https://www.epa.gov/ground-level-ozone-pollution/ground-level-ozone-basics>



74 - Sources of Emissions in the San Joaquin Valley, 2020²⁸



²⁸<https://ww2.valleyair.org/about#:~:text=Sources of Emissions in the San Joaquin Valley%2C 2020&text=Air quality in the Los,more pollution is released there.>



75 - Total US Greenhouse Gas Emissions by Economic Sectors in 2021. <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>

The American Lung Association "State of the Air" 2022

Particle pollution, also called particulate matter (PM), is a mixture of tiny solids or liquid droplets that includes smoke, soot, dirt, and dust floating in the air.

Most Polluted Places to Live

In addition to the 25 worst cities for each pollutant listed above, the 25 most polluted counties for ozone and particle pollution are ranked in the tables below:

Daily PM			Annual PM			Ozone		
Ranking	State	County	Ranking	State	County	Ranking	State	County
1	CA	Fresno	1	CA	Monterey	1	CA	San Bernardino
2	CA	Mono	2	CA	Kern	2	CA	Riverside
3	CA	Kern	3	CA	Kings	3	CA	Los Angeles
4	CA	Kings	3	CA	Tulare	4	CA	Kern
5	AK	Fairbanks North Star	5	OR	Hamilton	5	CA	Tulare
6	CA	Inyo	5	CA	Plumas	6	CA	Fresno
7	CA	Sierra	7	CA	Fresno	7	AZ	Maricopa
8	OR	Wash	8	CA	Stanislaus	8	CA	San Diego
9	CA	Stanislaus	9	CA	San Bernardino	9	CO	Jefferson
10	CA	San Joaquin	10	OR	Jackson	10	TX	Harris
11	CA	Tehama	11	CA	Riverside	11	CA	El Dorado
12	CA	Madera	11	CA	San Joaquin	11	CA	Kings
13	CA	Colusa	13	CA	Madera	13	UT	Salt Lake
14	CA	Butte	14	MT	Lincoln	14	NV	Clark
15	CA	Sacramento	15	CA	Merced	15	CA	Maricopa
16	CA	Los Angeles	16	AK	Fairbanks North Star	16	CA	Orange
17	CA	Merced	16	CA	Los Angeles	17	CA	Madera
18	CA	Maricopa	18	AZ	Pinal	18	NM	Doña Ana
19	CA	Placer	19	CA	Butte	19	CA	Stanislaus
20	CA	Nevada	19	OR	Josephine	20	CT	Fairfield
21	CA	Plumas	21	CA	Imperial	21	CA	Imperial
21	CA	Sutter	22	WA	Okanogan	22	NM	Solih
23	WA	Okanogan	22	CA	Sacramento	23	CO	Douglas
24	CA	Calaveras	24	CA	Sutter	24	AZ	Pinal
25	CA	Alameda	25	OH	Hamilton	25	IL	Cook
25	CA	Contra Costa				25	CA	Merced
						25	TX	Tarrant

Fourteen counties received failing grades for all 3 measures of pollution: Butte, Fresno, Imperial, Kern, Kings, Los Angeles, Madera, Merced, Riverside, San Bernardino, San Joaquin, Stanislaus, and Tulare in California, and Pinal in Arizona.