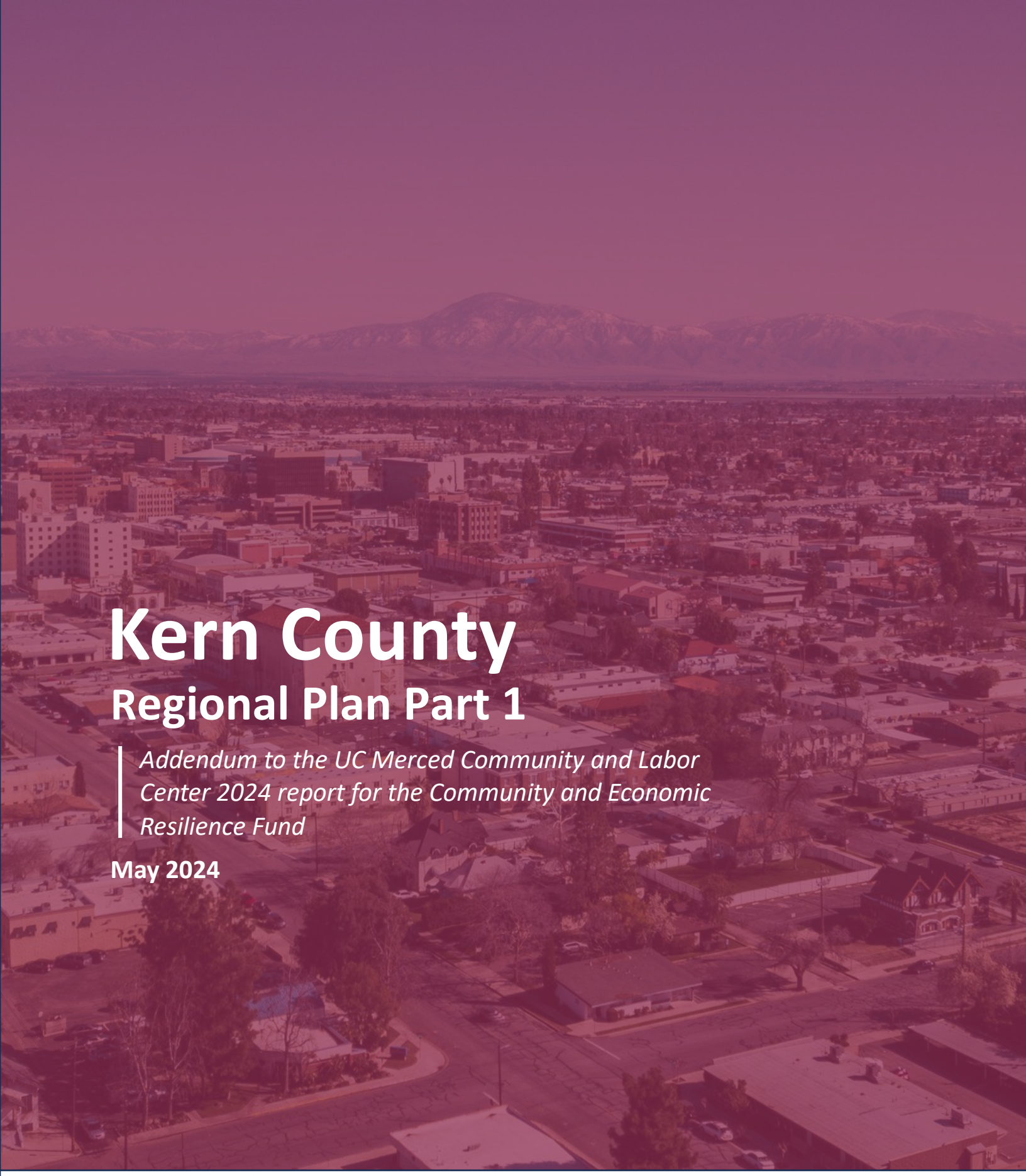


Kern County

Regional Plan Part 1

Addendum to the UC Merced Community and Labor Center 2024 report for the Community and Economic Resilience Fund

May 2024

SUBMITTED TO:

Governor's Office of Planning and Research

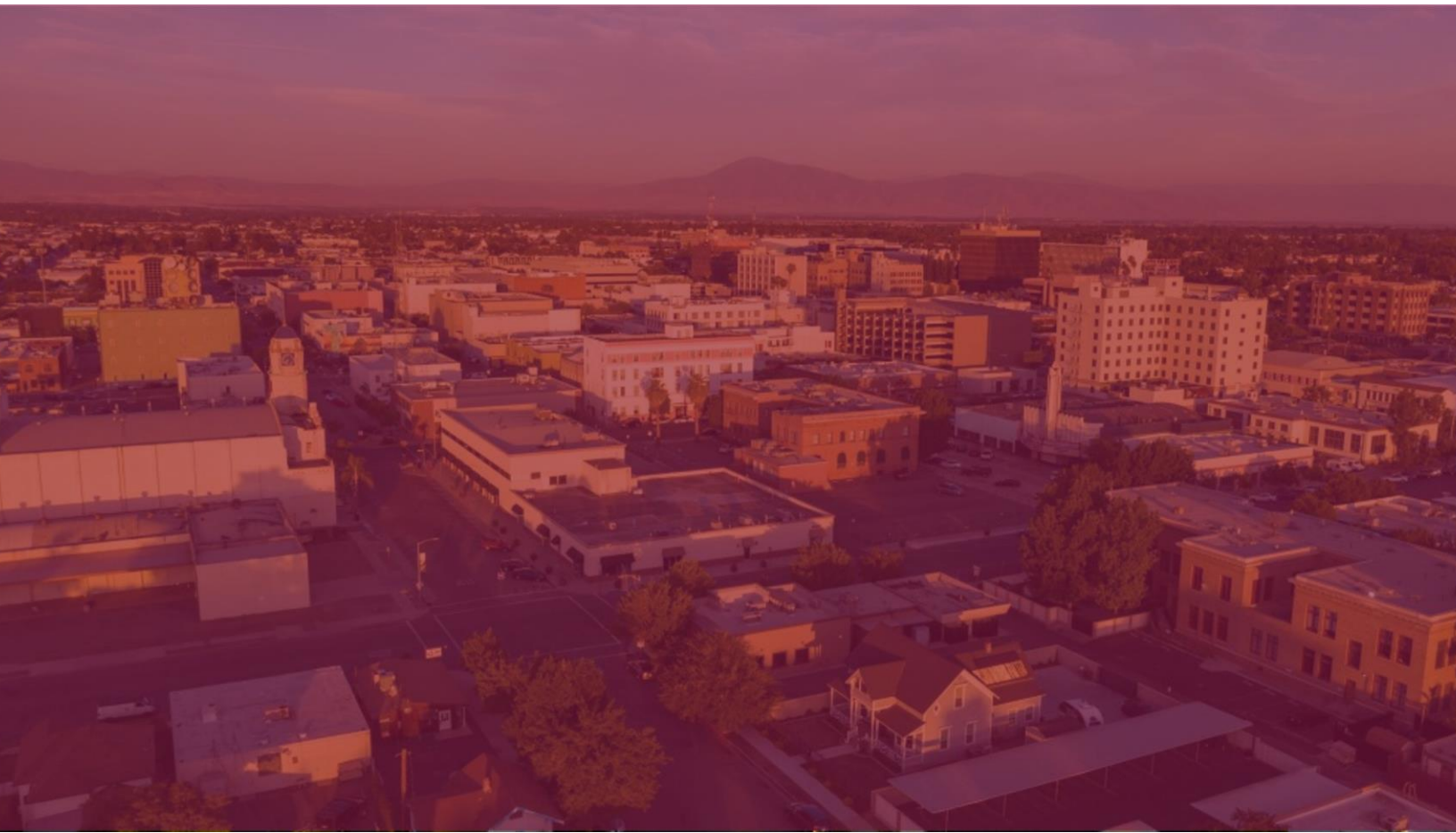
Kern Coalition

Community • Industry • Labor • Workforce Development

Table of Contents

ACKNOWLEDGEMENT TO THE UC MERCED COMMUNITY AND LABOR CENTER

Following the submission of the Kern County Regional Plan, Part 1 to the State of California Office of Planning and Research, the Kern Coalition received guidance from the California Jobs First Interagency Team to iterate on and resubmit an addendum to this report with key areas of feedback addressed. This document therefore serves as an addendum to the UC Merced Community and Labor Center's 2024 analysis, specifically the "Kern County Regional Plan, Part 1: A Report for the Community and Economic Resilience Fund." Notably, given the requirements and feedback provided by the California Jobs First Interagency team, this addendum necessarily uses entire sections of the UC Merced report where appropriate and properly cited. While we made diligent efforts to reference the original report wherever applicable (as well as other UC Merced reports from 2021 and 2022), we recognize the possibility of oversights and apologize in advance if any do arise. We extend our sincere appreciation to the UC Merced Community and Labor Center for their invaluable contributions.



Executive Summary

The first phase of the Regional Plan outlines the objectives, vision, and core principles of the Kern Coalition and the California Jobs First initiative. Insights outlined in this report incorporate public input from community and stakeholder engagements, regarding barriers to job access, emerging employment and industry prospects, and growing environmental and health issues. The information provided is primarily descriptive and should not be read as explicit investment recommendations in particular sectors of the economy.

As detailed in the above acknowledgements, this section draws from and compiles the findings from the original UC Merced Community and Labor Center's 2024 analysis, along with additional analysis included to respond to feedback from the California Jobs First Interagency team.

Stakeholder Outreach and Community Engagement Plan

This section outlines the governance structure of the Kern County Coalition (KCC) and highlights the community engagement strategies undertaken by the KCC to collect input from residents. This section also clarifies how community input and stakeholder perspectives are integrated through iterative processes and informs the creation process for the Regional Plan Part 1.

Stakeholder Mapping

This report provides a comprehensive stakeholder mapping, providing tools to recognize and involve key stakeholders, especially those involved with or impacting vulnerable groups. It pinpoints marginalized communities and the economic challenges they face, as well as significant climate and economic development projects and chances for collaboration (UC Merced Community and Labor Center 2024). Low levels of educational attainment, high unemployment rates, high vulnerabilities to undocumented residents, and insufficient healthcare options perpetuate economic challenges experienced by disinvested communities.

Regional Summary

Economy and Economic Development

This portion evaluates the economy in Kern County and its development, examining high- and low-earning occupations and industries. The analysis highlights that only a small fraction of the most profitable industries pay enough to address persistent issues like housing and food insecurity in Kern (UC Merced Community and Labor Center 2024). It evaluates the important sectors in Kern and their impact on the local economy and workforce. Key findings from this section include:

- Kern County's youthful population ranks third in California for median age, with a sizable proportion under 5 years old.
- The county is highly diverse, with Latinos making up over half the population and immigrants comprising one-fifth.
- The workforce is in transition, with older migrant workers being replaced by younger native-born individuals entering the labor market.
- In 2022, Kern County maintained a $43.8 billion economy, ranking 14th in California, while experiencing a 3.3% decrease in GDP, one of the state's largest declines.
- The economy heavily relies on oil production, ranking 7th nationally, with government, trade, farming, and education/health services as the largest employment sectors.
- The agriculture industry, including farming, fishing, and forestry, provides over 80,000 jobs, but many have relatively low average wages that do not meet the county's living wage standard for a household with two working parents and two children.

Climate and Environmental Impact

This section explores anticipated climate impacts and the vulnerabilities that emerge for Kern residents, and industries contributing to greenhouse gas emissions and environmental harm. The plan utilizes CalEnviroScreen to identify disadvantaged communities and potential sources of localized pollution, with agriculture, oil and gas, and transportation pinpointed as primary pollution sources (UC Merced Community and Labor Center 2024). Key findings from this section include:

- Climate change poses major risks including extreme weather events, health impacts, threats to agriculture, and job insecurity due to fossil fuel transitions.
- Vulnerable populations, including outdoor workers and low-income communities, are disproportionately affected, highlighting the need for targeted climate action.
- 92% of Kern County residents express concern for the environment and advocate for immediate government and business action.
- Strong support exists for sustainable job creation, including farming and low-carbon energy, especially in disadvantaged communities.
- Pollution challenges include high levels of air and water contamination from industrial and agricultural activities.
- Transportation emissions and pesticide use worsen pollution, with concerns regarding hazardous waste and groundwater contamination.
- Residents express interest in greenhouse gas reduction options, favoring clean drinking water investment.

Public Health Analysis

This section incorporates a Public Health Analysis, which identifies mortality rates and worker health concerns associated with different industries, emphasizing the risks posed by warehousing, agriculture, and energy sectors (UC Merced Community and Labor Center 2024). Here, we explore Kern County's vulnerability to COVID-19, exacerbated by factors such as low-income levels and job exposure risks. Key findings from this section include:

- Stark disparities exist in the health and working conditions of Kern County residents, especially in the agricultural and domestic work sectors, which have the lowest standards in the US labor market.
- Agricultural workers face hazardous conditions like extreme heat, lack of rest breaks, poor sanitation, wage theft, and pesticide exposure, resulting in a higher incidence of heat-related deaths and illnesses such as heart attacks and strokes.
- Kern County ranks poorly in California for overall health factors and outcomes, with lower life expectancy and higher rates of infant mortality compared to the

state average. Issues related to mental health, drug misuse, and homelessness are also prevalent.

- Urgent interventions and policy changes are needed to address these social determinants of health and improve the well-being and resilience of Kern County's diverse communities.

Labor Market Analysis

The labor market emphasizes the importance of raising industry-wide working standards to foster career pathways and economic resilience. The plan advocates for Kern High Road Labor Standards, which include sustainable wages, benefits, stable work schedules, and workplace health and safety measures (UC Merced Community and Labor Center 2024). Key findings from the Labor Market Analysis include:

- Labor provisions commonly used to enhance working conditions include living wages, comprehensive benefits, stable work schedules, workers' rights to join unions, grievance management systems, and skill attainment opportunities.
- Kern County lacks high local wages for workers in climate-related industries.
- In 2023, families with two adults and two kids in Kern County would need an hourly wage of $38.14 for a sole breadwinner or $25.02 for two working adults to avoid chronic housing and food insecurity, but only one of the top ten occupations in Kern County passed that threshold.
- 78% of Kern County workers consider healthcare benefits (health, dental, and vision insurance) "extremely important," tied for the highest rate among other benefits.
- 36% of workers in Kern County report that their employer does not offer healthcare coverage.
- Public subsidies aim to improve working conditions, such as the USDA's Farm Labor Stabilization and Protection Pilot Program, which provides $65 million to farm employees prioritizing increased benefits for workers.

Industry Cluster Analysis

In this section, the report highlights agriculture, warehousing, healthcare, low-carbon energy, and education industries as critical for economic and climate resilience efforts. The plan highlights the risk of worker displacement in agriculture and oil and gas industries, emphasizing the need to align investments with high-road principles (UC Merced Community and Labor Center 2024). Key findings include:

- Over the past five years, the county experienced notable job growth, especially in education and health services (+22.4%).
- Certain industries faced challenges during this period, with declines in mining and logging (-20.0%) and information (-15.0%).
- The onset of the COVID-19 pandemic caused large GDP declines in sectors like arts and entertainment (-41%), accommodation and food services (-21%), and oil & gas extraction (-17%), while agriculture (+20%) and utilities (+15%) showed resilience.
- By 2030, considerable job growth is expected across various sectors: trade, transportation, and utilities (+14,100 jobs); education and health services (+8,100); leisure and hospitality (+7,500); and government (+6,300).
- Five industries—agriculture, warehousing, healthcare, low-carbon energy development and carbon management, and education—stand out for facing unique challenges, contributing greatly to employment, and showing demand for job growth.

SWOT

Finally, the SWOT Analysis delineates the strengths, weaknesses, opportunities, and threats pertaining to the promotion of fair economic resilience and the sustainable growth of industry clusters in the region (UC Merced Community and Labor Center 2024). This evaluation is based on insights from the regional plan, stakeholder gatherings, and input received from the Kern Coalition.

Strengths

Kern County's strengths contributing to economic resilience and sustainable industry clusters include its strategic location, youthful population, robust community engagement, government investment in carbon capture, and vibrant entrepreneurial activity.

Weaknesses

Kern County faces multiple challenges, including low educational attainment hindering skilled employment, marginalized immigrant populations encountering language barriers and economic hardship, inadequate public transportation, insufficient access to childcare, limited resources for the formerly incarcerated and their families, and a shortage of new housing development alongside high unemployment rates.

Opportunities

Stakeholders explored opportunities for equitable economic resilience and sustainable industry growth. They identified several strategies: leveraging carbon capture for emission reduction, utilizing government investments for infrastructure and job creation, providing technical assistance grants through the Kern Coalition, aligning training programs with industry needs, addressing language course deficiencies, fostering art and cultural centers, and engaging seniors in tourism activities for mutual benefits.

Threats

Stakeholders identified key threats through engagement: groundwater shortages impacting communities and sectors like agriculture, opposition to low-carbon energy development and carbon management projects and warehouse developments due to environmental concerns, and persisting local economic disparities fueled by low educational attainment among BIPOC and undocumented populations.

INTRODUCTION

This document functions as an addendum to the UC Merced Community and Labor Center's 2024 analysis, focusing particularly on enhancing the "Kern County Regional Plan, Part 1: A Report for the Community and Economic Resilience Fund." It is noteworthy that we have considered the requirements and feedback provided by the California Jobs First Interagency team. Their guidance emphasized the importance of selecting the clearest and most relevant segments from existing reports and incorporating them into the final document, a task that we have diligently undertaken. Our overarching objective is to weave lived experience and community perspective with sound, quantitative data on what the regional opportunities are for job creation. As presented in the original UC Merced 2024 report:

> In response to the devasting effects of COVID-19 on communities and the economy and a rapidly changing climate, the State of California launched a $600 million Community Economic Resilience Fund – recently renamed California Jobs First (CA Jobs First) – to diversify local economies and build an equitable and sustainable economy across California's regions in the overall transition to a carbon-neutral economy. The program supports communities and coalitions in producing regional roadmaps for economic recovery and transition that prioritize the creation of accessible, high-quality jobs in sustainable industries. To achieve California Jobs First's desired outcomes for long-term economic resilience in the transition to a carbon-neutral economy, regional coalitions are being funded to convene and engage diverse stakeholders in a highly participatory planning process. These collaboratives must center workers and communities, prioritize equity, sustainability,

and job quality, and advance shared prosperity where workers and communities across California's diverse regions share equally in the benefits of a carbon-neutral future. Kern County is one of 13 regions throughout the state that received a planning grant.

The regional plan is designed to serve as a resource to the Kern Coalition and Governance Council and provide stakeholders with baseline data needed to co-create an inclusive economic development plan that delivers real, measurable results for the people and communities of Kern County. The purpose of the Regional Plan Part 1 is to identify challenges and opportunities for creating a more equitable, inclusive, and sustainable economy in Kern County. The Plan focuses on how workers and communities in Kern have been impacted by both the COVID-19 pandemic and by the adverse effects of climate change. In particular, the plan emphasizes traditionally marginalized workers and communities.

Kern County Coalition

The California Jobs First (CA Jobs First) planning is overseen by the Kern Coalition, consisting of five coordinating organizations: Kern Community College District (KCCD), B3K Prosperity, Kern Inyo Mono Central Labor Council (KIM CLC), Community Action Partnership of Kern (CAPK), and Building Healthy Communities (BHC) Kern, along with the Kern Community College District as the fiscal administrator. The Collective Partnership Agreement Letter (CPAL) is a good faith agreement between the regional convener (Kern Coalition) and diverse key stakeholders to work collaboratively on the initial Kern High Road Transition Collaborative (KHRTC), which will evolve throughout the planning and implementation phases into a formalized structure.

Mission, Vision, and Guiding Principles

The UC Merced Community and Labor Center (2024) analysis synthesized the Kern Coalition's mission and driving principles:

> The Kern Coalition's mission is to unify and bolster local efforts that advocate for the equitable attainment of good quality jobs that promote a resilient economy with positive health, social, and environmental outcomes in disinvested communities through diverse representation and direct investments leading to economic development strategies.

The vision of the Kern Coalition is to eliminate generational poverty and promote equitable, economic mobility for all in Kern County by ensuring investments dismantle systemic barriers. Economic inequity, environmental inequity, and health inequity are interrelated as all are rooted in systemic injustices that disproportionately affect marginalized communities. For example, low-income and communities of color are more likely to be exposed to environmental hazards and have limited access to quality healthcare, education, and good quality job opportunities. And this ultimately impacts the health outcomes and life expectancy of people living in disadvantaged communities.

Principles to Achieving Inclusivity in the Regional Plan

- "Economic Equity: Focus on eliminating barriers for all people, regardless of race, gender, or nativity, so that they can contribute to and access the opportunities of a strong, resilient economy."
- "Environmental Equity: Focus on projects that promote sustainability and do not cause harm to the environment."
- "Health Equity: Focus projects that prioritize holistic health and the health of the community."
- Workforce development is a crucial element in shaping the economic prosperity of any region, with the success of such efforts relying on the active participation and engagement of the community it seeks to serve. The Kern Coalition firmly believes that equity and inclusion must underpin all economic planning initiatives, making it essential to involve community stakeholders in workforce development endeavors. Through strategic partnerships with trusted community-based organizations, the Kern Coalition aims to uplift marginalized communities and ensure their voices are heard in shaping Kern County's economic future.

Creating Stronger Communities through Inclusion

Government support plays a crucial role in fostering community development. True transformative change is only possible when disenfranchised people are empowered to drive it. The Kern Coalition's implementation and development of its California Jobs First program endeavors to support all people, local governments, businesses, and community stakeholders in creating new economic plans that generate high-quality job opportunities that are accessible to all residents of Kern County. To

achieve this ambitious goal, the Kern Coalition recognizes the indispensable need to actively engage with the community and understand their unique needs and aspirations.

Partnerships with Community-Based Organizations

To ensure that the voices of underrepresented and marginalized communities are heard, the Kern Coalition actively collaborates with trusted community-based organizations. These organizations have a proven track record of providing outreach and education to marginalized communities and ultimately driving resident participation to the sub-regional meetings.

Uplifting Under-Voiced Community Needs

By engaging the community in workforce development, the Kern Coalition aims to uplift the needs of under-voiced segments of the population. These individuals often face barriers to accessing quality jobs, affordable healthcare, and social safety nets, making them particularly vulnerable to economic crises like the COVID-19 pandemic.

Creating Inclusive Economic Recovery Plans

The COVID-19 pandemic exposed the stark inequality that exists in communities lacking access to quality jobs and essential services. By involving the community in workforce development initiatives, the Kern Coalition ensures that recovery plans consider the diverse needs of the population, providing a fair chance for all to thrive.

Community Readiness for a Sustainable Future

In addition to addressing immediate economic challenges, CA Jobs First also focuses on mapping and supporting local community readiness for a transition towards a carbon-neutral future. Engaging the community in discussions around sustainability and environmental responsibility fosters a sense of ownership and responsibility among residents. It encourages them to actively participate in shaping a greener tomorrow while providing benefits from new opportunities and industries emerging in the sustainable sector. Engaging the community in workforce development efforts is not just essential; it is a moral imperative. The Kern Coalition's commitment to equity and inclusion in economic planning drives its partnerships with community-based organizations, ensuring marginalized voices are heard and uplifted. By actively involving the community in shaping economic strategies and fostering inclusive economic recovery plans, the Kern Coalition paves the way for a more resilient, equitable, and sustainable future for all residents of Kern County.

The Kern Coalition is committed to working with a variety of stakeholder groups to ensure long-term success. As such, it will work with local organizations committed to advancing local climate initiatives that advance environmental justice and include balanced representation from labor, business, community, government, and other stakeholders, including, economic development, philanthropy, education, and workforce partners. Together, these partners will form the Kern Coalition to plan for strong economies and opportunities that lead to high quality jobs accessible to all.

CA Jobs First provides the platform to develop transformative collaborations that will leverage resources and community assets to ensure communities are equitably represented with a focus on environmental, economic, and health equity. Diverse representation of stakeholders within the subregional collaboratives are key to identifying gaps and opportunities resulting in transformative change.

Governance Structure

The Kern Coalition was established to ensure comprehensive representation from key stakeholders such as labor, community, industry, workforce development, and education. This is reflected in its governance structure (Figure 1), which aims to include entities traditionally involved in economic development and those historically excluded.

Figure 1

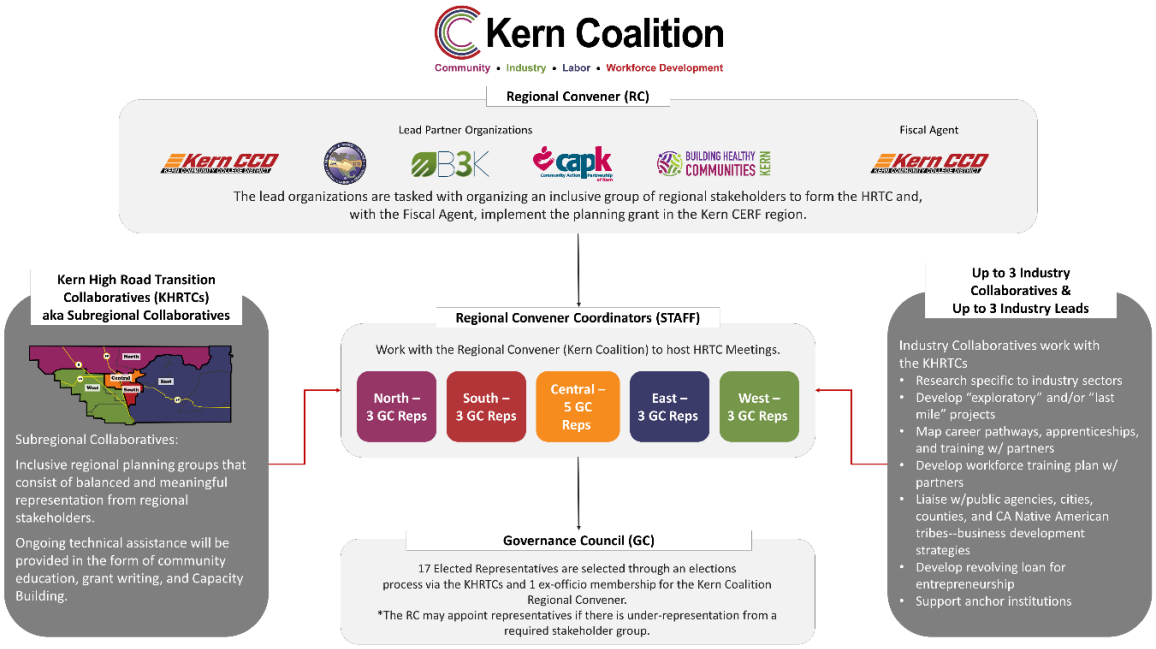


Figure 1: Kern Coalition Governance Structure

Regional Conveners (RC). The Coalition comprises five entities representing different sectors: B3K for business and industries, KCCD for workforce and education, CAPK and BHC for community, and KIM Labor Council for labor and workers. Kern Community College District serves as the fiscal agent (Figure 2).

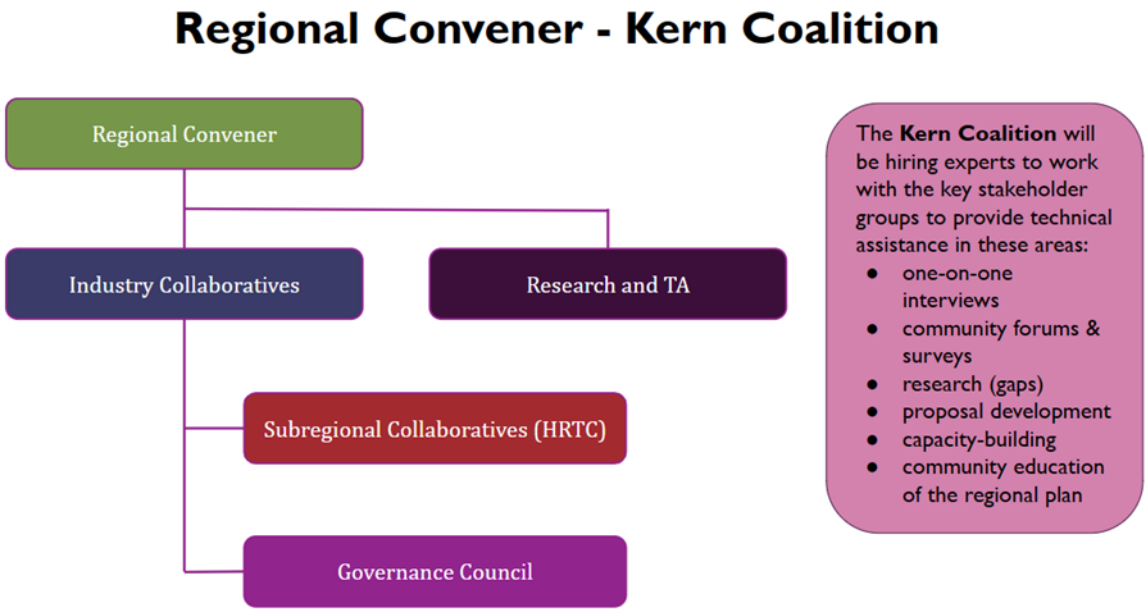


Figure 2: Regional Convener - Kern Coalition

Regional Convener Coordinators (STAFF) work alongside the Kern Coalition to facilitate HRTC Meetings, representing East Kern, West Kern, Central Kern, South Kern, and North Kern.

The Governance Council (GC). The Governance Council (GC) consists of 17 elected representatives chosen through a KHRTC-run elections process, along with one ex-officio member representing the Kern Coalition Regional Convener.

Kern High Road Transition Collaboratives (KHRTC). The Kern High Road Training Collaborative (KHRTC) is an inclusive collaborative comprising members from disinvested communities, labor, business, government, and other stakeholders. Representing each subregion, membership is open to all residents of Kern. Responsibilities include attending public meetings, providing input, electing representatives to the Governance Council, and potential involvement in advisory or subcommittees. The KHRTC facilitates meetings, supports regional economic and transition planning, conducts participatory outreach and engagement activities, and provides ongoing technical support to address disparities within

disinvested communities and organizations. This approach emphasizes balanced representation in regional planning and offers ongoing technical assistance such as community education, grant writing, and capacity building.

Industry Collaboratives and Leads. Industry collaboratives cooperate with KHRTCs to conduct industry-specific research, map career pathways and apprenticeships, partner on training initiatives, coordinate with public agencies, municipalities, counties, and California Native American tribes to devise business development strategies, establish revolving loans to foster entrepreneurship, and provide support to anchor institutions.

STAKEHOLDER OUTREACH & COMMUNITY ENGAGEMENT PLAN

The California Jobs First Initiative's Planning Phase I collected input from community stakeholders facing challenges prior to and after the pandemic on workforce and economic development. This part outlines the community outreach and engagement endeavors pertaining to the CA Jobs First program and how these insights were used to create a regional plan for generating quality jobs. Information was collected through Kern Coalition's outreach and engagement efforts and analyzed by the UC Merced Community and Labor Center (2024) analysis, leveraging three key avenues:

(1) The Kern Coalition Stakeholder Meetings: Five regional co-conveners coordinated engagement with diverse stakeholders.

(2) The Kern County Regional Strategies High Road Training Partnership Survey: A phone survey of a randomly selected sample of Kern County residents and workers. Conducted through the Kern Regional Strategies High Road Training Partnership, this offered insights into workforce development and training needs.

(3) The Dolores Huerta Foundation Community Needs Assessment Survey: A door-to-door community needs survey of a randomly selected sample of residents in Wasco, Arvin, Lamont, and East Bakersfield, which collected input on priorities and challenges.

More details on the community needs assessment survey data collection and methodology can be found in Appendix B and C, outlining how the team ensured a "random and representative sampling design."

Stakeholder Engagement Strategies

The UC Merced Community and Labor Center (2024) conducted and analyzed three engagement strategies as follows:

(1) Kern Coalition Stakeholder Meetings

From June 22, 2022, to September 1, 2023, the Kern Coalition engaged Kern residents and partners in thirty-two distinct public events. These events included twenty-six public meetings with the Kern sub-regions, five updates, and one webinar.

During the public engagement process, the Coalition conducted public education with the public and community organizations about CA Jobs First components and processes, including the planning and implementation phases. The Coalition made a conscious effort to increase public meeting accessibility and participation by holding subregional meetings in a hybrid (in-person and online Zoom) format with Spanish interpretation, rotating meeting facilitation between the co-convenors, and providing childcare to in-person participants.

During in-person meetings, the Kern Coalition grouped community members together to discuss five questions among each other. The facilitator then led discussion, in-person and over Zoom, and collected responses using Google Jamboard and through Zoom's chat function.

Between July 7, 2022, and July 21, 2022, the Kern Coalition kicked off the CA Jobs First project with a series of community engagement meetings in Bakersfield, Taft, Delano, Ridgecrest, Lake Isabella, and Arvin. Community members discussed five discussion questions centered around jobs, including:

1. What does a good job mean to you?
2. What job sectors do you think will provide the most opportunities?
3. What businesses/organizations would you like to see in your community?
4. What barriers have you observed that people report in not finding a job?
5. What can your community offer that will be beneficial for job creation?

During community engagement with the subregions, facilitators also solicited recommendations to increase community participation. Some of the recommendations for the coalition were to engage community by working with trusted community-based organizations and conduct outreach, engage students and parents, promote meetings and events, and use public platforms for greater public engagement. Members also suggested the coalition collaborate with other stakeholders such as the Chamber of Commerce. Lastly, they suggested making meetings accessible by continuing to provide interpretation, hosting meetings at varying times, using socially and culturally relevant outreach strategies, and continuing to host meetings through Zoom.

The Regional Plan is one step of a longer process and plan to systematically collect, organize, and incorporate community voice and guide research. Several steps are currently in place to ensure members' input in plans and data narrative. Technical Assistance experts will continue to coordinate with community members to document feedback, data collection, and the overall proposals.

(2) Kern County Regional Strategies High Road Training Partnership Survey

The UC Merced Community and Labor Center, together with the Kern-Inyo-Mono Central Labor Council and the Central Valley Worker Center, designed and conducted a Kern Community Needs Assessment survey, asking adult Kern residents' views on jobs, the environment, and policymaking. The survey was conducted via a random sample of phone lists and conducted by phone in English or Spanish. Overall, 813 respondents completed the survey. The largest number of respondents lived in Bakersfield (46.3%) and Delano (17%), with smaller numbers in Ridgecrest (8.5%), Shafter (6.3), California City (3.9%), McFarland (2.7%), Tehachapi (2.7%), Arvin (0.9%), Weldon (0.6%), Mojave (0.6%), Rosamond, Willow Springs (0.4%), and Wasco (0.1%).

(3) Dolores Huerta Foundation Community Needs Assessment Survey

The Dolores Huerta Foundation, with support from the UC Merced Community and Labor Center, conducted a community needs survey in three of the five Kern subregions, including Wasco (North region), Arvin and Lamont (South region), and East Bakersfield (Central region). The door-to-door random sample methodology allowed survey canvassers to reach hard to count populations such as immigrant communities and undocumented residents. The survey engaged over 800 residents.

The survey provides a snapshot of current priorities in Kern's disinvested towns around issues of the environment and economic development.

Integrating Stakeholder Engagement into Decision Making

During the Phase One Planning Process, efforts to engage the local community extended beyond simple information dissemination, aiming instead to foster meaningful dialogue and collaboration, as shown in Figure 3.

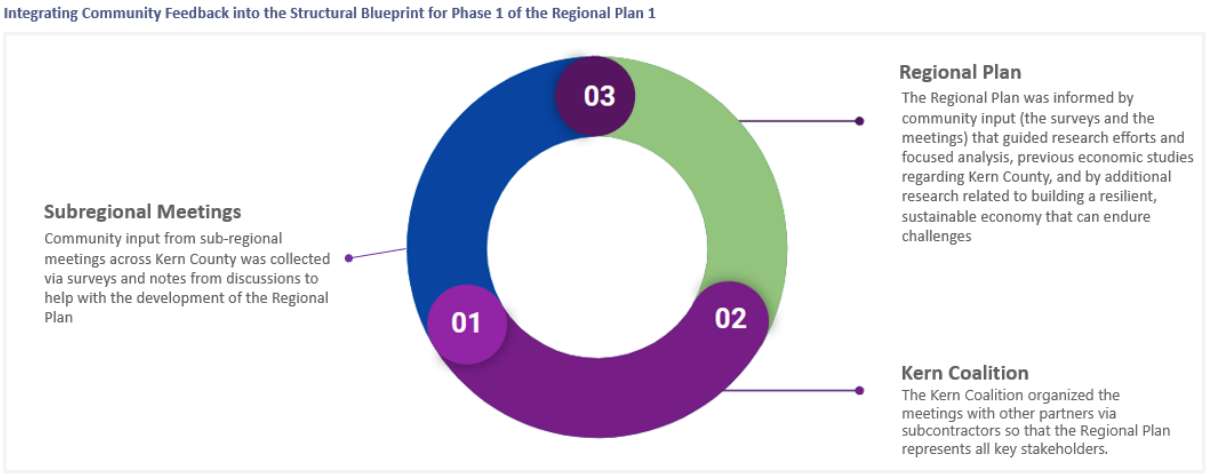


Figure 3: Integrating Community Feedback into the Structural Blueprint for Phase 1 of the Regional Plan

By incorporating this community input and stakeholder perspectives, the Kern County Jobs First Collaborative ensures that the Regional Plan Part 1 is responsive to the unique needs and aspirations of the local population. This provided opportunities for the stakeholders and community groups to actively contribute to decision-making and shape the direction of the Regional Plan Part 1 aimed at addressing their specific needs.

The plan's development is iterative, closely tied to the concerns voiced by both the community and stakeholders throughout the preceding two years. Utilizing various engagement avenues, the Coalition consistently seeks validation from the community, ensuring that this report and the analysis developed is responsive to their expressed concerns. Throughout the development of Part 2, we will maintain stakeholder engagement and seek ongoing community feedback to inform our findings and integrate them into the Regional Plan Part 2. This will be done through additional interviews and community focus group meetings.

Feedback obtained from surveys and stakeholder meetings played a crucial role in shaping the report. This input facilitated research efforts to highlight key needs in the Regional Summary, the identification of emerging industries, the selection of the five deep dive industries, the assessment of major occupations among the changing labor force and highlighting key opportunities for economic development within the SWOT analysis.

AREA 1.
STAKEHOLDER MAPPING

This stakeholder map highlights various groups, including community-based organizations, labor unions, economic and workforce development agencies, educational institutions, and industry associations. These stakeholders have a history of involvement in the region and can impact or gain from a progressive economy. The map evaluates each group's potential role in the CA Jobs First process and offers insights and strategies for engaging them effectively.

The UC Merced Community and Labor Center (2024) analysis synthesized the stakeholder mapping that will also be used in this report:

> Based on the State's objectives for community and worker-centered economic development and for the inclusion of voices that have been traditionally left out of economic planning, this stakeholder map identifies organizations or entities that serve or intersect with hard-to-reach populations in Kern County that are generally led out of economic planning processes in addition to stakeholders that are traditionally engaged in economic development initiatives. Prioritizing engagement with entities that intersect with hard-to-reach populations will help the Kern Coalition meet the key equity and inclusion objectives of CA Jobs First and support investments in underserved jurisdictions and populations.

The stakeholder map also identifies disinvested communities in the region and existing networks and aligned sustainability, climate, and economic development plans, strategies, and reports to ensure the CA Jobs First process complements existing state and federal infrastructure, climate, business, and workforce initiatives and investments.

A. Stakeholder List

The UC Merced Community and Labor Center (2024) analysis created a stakeholder map:

> The stakeholder map provides a snapshot of historically active stakeholders that can influence a High Road economy in the Kern County region and/or benefit from it. It provides a list of organizations and entities that are located in Kern County or that serve or benefit Kern County residents, workers, or businesses. See Appendix A. The list includes information on specific demographics or sectors served; the region, city or neighborhood served; and the issue area focus of each entity. The stakeholder categories included in the map are: 1) Direct Aid and Service Providers; 2) Base-Building Organizations; 3) Local Community Groups and Neighborhood Associations; 4) Advocacy and Philanthropic Organizations; 5) Labor Organizations and Unions; 6) Education and Training Providers and Programs; 7) Business and Economic Development Organizations; and 8) Industry and Trade Associations. The list identifies strategies for engagement and potential roles for each stakeholder category.
>
> *Direct Aid and Service Providers*
>
> This section focuses on entities that provide aid or services to target and hard to reach populations, including low-income residents, black, indigenous, and people of color, youth between the ages of 12 and 24, unemployed or under-employed residents, immigrants, farmworkers, and other vulnerable populations. While too numerous to list individually, schools, libraries, government institutions, community centers, and churches have a presence in most Kern County communities and can be especially important in reaching hard to reach populations or communities that may not have many established institutions.
>
> Organizations that provide direct services to vulnerable populations such as those providing mutual aid or supportive services directly to at-risk, hard to reach, or vulnerable populations may be best suited to play an outreach role or otherwise connect Kern residents and workers to the Kern CA Jobs First process. Community

institutions and service and aid organizations may be willing to provide physical or virtual space (i.e., newsletters, websites, or social media platforms) to help disseminate materials about CA Jobs First and share opportunities to participate in the planning and implementation process.

Individuals receiving aid or services face some of the greatest barriers to participation in civic engagement. To engage these populations, the Kern CA Jobs First Coalition should ensure that participation is accessible, requires minimal effort, and directly benefits participants. Strategies may include engaging individuals at the time they receive services or aid, such as providing hard copy surveys or questionnaires at physical locations, disseminating text or phone-based surveys, or providing stipends for resident participation.

Base-Building Organizations

Base-building organizations are those that build collective strength by enabling members of the community to influence systems that affect community conditions. These groups bring residents together to try to effect changes in community-level social, economic, and physical conditions. They align closely with CA Jobs First's stated purpose, and their involvement will be instrumental in engaging residents who are already committed to reducing inequities in social and economic systems. However, base-building organizations often operate outside established systems that they perceive as unfair or inaccessible. To engage these organizations, the Kern Coalition must build trust in the decision-making process and structure and demonstrate an understanding and commitment to systems change. Building trusting relationships over time is a critical component of working collaboratively with base-building organizations. The criteria this stakeholder map uses to determine whether an entity is a base-building organization include whether the organization uses community organizing as a strategy and whether it has an established membership or base of residents with whom it regularly engages or partners.

Local Community Groups or Neighborhood Associations

Local community groups and neighborhood associations can be important stakeholders because of their focus on improving local conditions, their high level of engagement on issues affecting their local communities, their knowledge of local demographics, and their expertise on the specific needs and priorities of their

community. Engaging these groups and their members can help the coalition assess needs gaps across the region, identify local priorities, and develop local proposals for possible implementation. Ensuring that residents across different areas of the county are engaged in the Kern CA Jobs First process will enable the coalition to meet the diverse needs of the county's sub-regions.

Advocacy and Philanthropic Organizations

Advocacy organizations are important partners because they can provide issue-area expertise, may have extensive knowledge of local conditions, concerns, and potential solutions, and likely intersect with residents, workers, or employers that are critical stakeholders for the Kern CA Jobs First program. These organizations can help with outreach, provide input on research, and provide local data to support the initiative. Advocacy and philanthropic organizations may be able to dedicate more time and attention to participating in the process if they believe it aligns with their organizational mission and priorities. Similar to the base-building groups, some advocacy groups will only participate if they trust the decision-making process and the Coalition's commitment to serving the public good. To align with the intent of CA Jobs First, this stakeholder map identifies organizations with a focus on social justice, climate and sustainability, community health, community development, philanthropy, economic justice, or the advancement of vulnerable or marginalized populations.

Labor Organizations and Unions

The goal of the CA Jobs First program is to support strategies to develop sustainable industries that create high-quality, broadly accessible jobs for all Californians. Labor organizations and unions are pivotal to the process since the CRF guidelines require that regional processes and plans must be worker-centered, inclusive of voices that have been left out of economic development decisions (which includes labor perspectives), and representative of all relevant stakeholders, including labor. Labor organizations can help identify local high road employers, suitable labor standards, apprenticeship program opportunities, and workforce training needs. Labor organizations can also provide critical outreach to Kern County workers.

Education and Training Providers and Programs

Education and training providers are critical stakeholders to ensure that workers and those entering the labor force are trained and prepared for the future labor market,

especially for employment in target sectors that will support Kern County's transition to a carbon neutral economy. Education and training providers can provide data on Kern County's existing education and training gaps, student interest areas, and areas of strength upon which to capitalize. Education and training providers and high road employers in the area can collaborate to ensure that local students and workers have established pathways to high road employment. Education and training providers can also identify strategies to reach and serve vulnerable and hard to reach populations to ensure the region increases opportunities for disadvantaged residents and promotes long-term shared prosperity.

Business and Economic Development Organizations

Business serving and economic development organizations have historically been engaged in economic and workforce development processes and are influential in local decision-making. While a key goal of the California Jobs First program is to center community and worker perspectives and include voices that have been traditionally left out of economic planning, it also requires a balanced representation of stakeholders, including economic development partners. The Coalition will need to develop strategies to include business and economic development organizations while providing space and building capacity for those who have not been traditionally at the table to engage fully in the process. Business and economic development organizations can advance the goals of CA Jobs First by helping to identify and engage high road employers and by identifying strategies to promote and attract high road employers to the region. Business and economic development organizations serving disadvantaged populations can also play a big role in identifying strategies to promote equitable business opportunities and pathways to shared prosperity.

Industry and Trade Associations

Kern County's economy is heavily influenced by several sectors that are unique to the region. Agriculture and oil production have historically been important drivers of the local economy. Given the primacy and wealth generation related to oil and agricultural production, stakeholders with financial ties to these sectors have traditionally been involved in economic development processes, local politics, and philanthropic efforts. The financial influence of these industries is important as these sectors contribute a substantial percentage of the local tax base and employ a sizable percentage of the local workforce (Plumer 2022). Industry stakeholders have a close

relationship with local elected officials and serve on many local boards, commissions, and nonprofits. While the California Jobs First program requires balanced representation, it should seek to include industry and trade associations that align with the programs' underlying goal to support the transition to a carbon neutral economy. to participate in the process and provide critical information on their priorities for the region as well as data on local wages, benefits, worker health and safety, and other worker issues.

The complete stakeholder list can be found in Appendix A.

B. State of Disinvested Communities

The UC Merced Community and Labor Center (2024) analysis identified disadvantaged communities within each subregion as shown in the following:

This section of the stakeholder map identifies and provides an overview of the state of disadvantaged communities in each subregion of Kern County, including information on key socioeconomic factors impacting the community, active organizations in the area that may provide a role in reaching out to local residents, and recommendations on local outreach strategies to ensure the active participation of stakeholders that will be impacted most by the successful implementation of the California Jobs First plans and investments. California defines disadvantaged communities as the areas throughout California which most suffer from a combination of economic, health, and environmental burdens. These burdens include poverty, high unemployment, air and water pollution, presence of hazardous wastes as well as high incidence of asthma and heart disease (Office of Environmental Health Hazard Assessment 2021) The state identifies these areas using CalEnviroScreen (CES), an analytical tool created by the California Environmental Protection Agency (CalEPA) that combines census tract-specific information into a relative score to determine which communities are the State's most burdened or "disadvantaged." This map identifies disadvantaged communities as census tracts within the top 25% of overall scores on CalEnviroScreen 4.0. The map also highlights socioeconomic factors for each community scoring in the top 25th percentile. The socioeconomic factors scored include educational attainment, which measures the highest level of education received by individuals in the census tract, the housing burden indicator which measures households that are both low-income and highly burdened by housing costs, the linguistic isolation indicator which

measures the number of limited-English speaking households, the poverty indicator which measures the number of households or individuals below the federal poverty level, and the unemployment indicator which measures the number of people who are over 16 years, out of work and able to work, excluding students, retired persons, and individuals who have stopped looking for work.

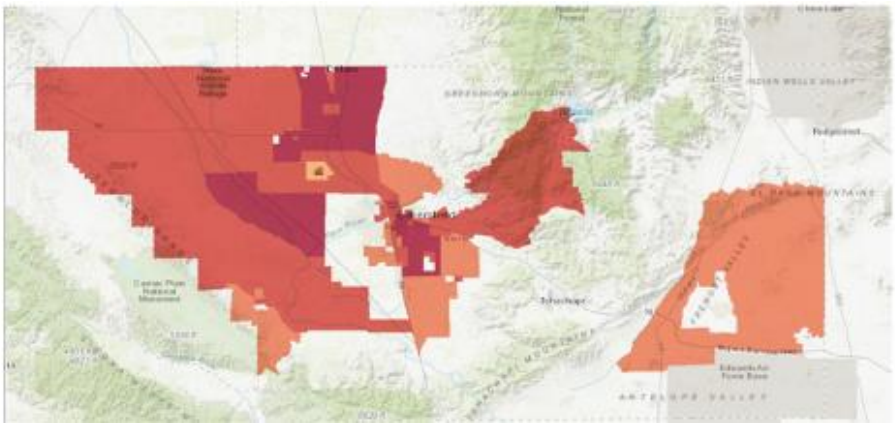


Figure 4: Top 25% Disadvantaged Communities in Kern County (CalEnviroScreen 4.0)

This section designates various outreach and engagement strategies for disadvantaged and hard to reach communities in Kern County and identifies where they could be most useful. The designations include:

- **Community Partner Outreach.** This strategy relies on trusted community partners to provide outreach to members of the community. This strategy can be employed where communities have a network of service providers and active community-based groups.
- **Isolated Community Outreach.** This strategy should be employed in communities that have few to no active community partners. These communities will likely be unincorporated with small population sizes. The outreach strategy should focus on schools, churches, and any government entities, which may be present even in communities where few other institutions operate.
- **Spanish First Engagement.** This strategy recommends that all materials, outreach, and meetings be written and spoken in Spanish (or other prevalent language) with translation available for English-speakers. This will require that individuals conducting the outreach and presentations be fluent in Spanish or other languages spoken by the community.

Meetings should be equipped with headsets and simultaneous-translation available to English-speakers.

- **Virtual Community Engagement.** This strategy can be employed when physical outreach is not possible due to community remoteness and isolation. Outreach can be done via remote access workshops, online surveys, phone banking, or text-based tools. Note that some areas may have limited internet access which will reduce the efficacy of some technology-based outreach tools.

East Kern Subregion

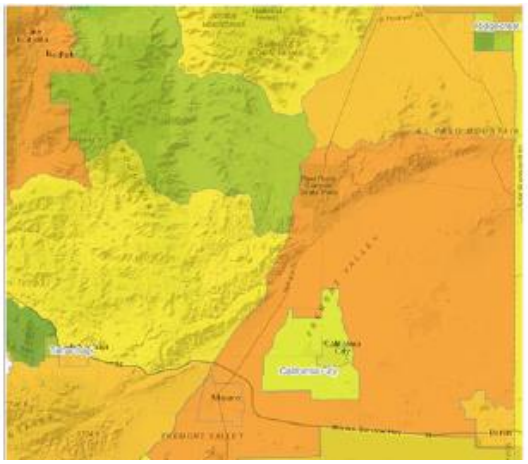


Figure 5: Disadvantaged Communities in East Kern County (CalEnviroScreen 4.0)

The East Kern subregion is geographically diverse, with portions spread across the Kern River Valley, the Tehachapi Mountains, and the high desert. It includes incorporated cities like California City, Ridgecrest, and Tehachapi and unincorporated communities like Lake Isabella, Boron, Mojave, and Rosamond. This subregion hosts considerable military and defense establishments such as the Mojave Air and Space Port, Edwards Air Force Base, and China Lake Naval Air Weapons Station, which contribute more than 21% of total employment in the region (Kern County 2017). While the vast majority of residents in this region have a high school diploma (84.9%), only 18.5% of East Kern residents aged 25 and above hold a bachelor's degree or higher, notably lower than state and national rates at 31% and 29.3% respectively (US Census Bureau 2021). Despite this, East Kern has a higher percentage of college-educated residents compared to other parts of Kern County. The median household income of $65,810 exceeds Kern's median income by 10% but falls well short of California's median of $91,905. East Kern's poverty rate of

15.2% is 25% higher than California's rate (US Census Bureau 2021a). This suggests that while East Kern residents may have a higher income compared to their Central Valley counterparts, they still face disparities when compared to the state.

The East Kern Subregion contains three disadvantaged communities: Bodfish, Lake Isabella, and Mojave. These communities are small, isolated, and remote from potential community partners. Nonetheless, several schools, churches and government institutions are present in these communities and can serve as potential partners or provide physical locations for outreach activities. The following graphs indicate the CalEnviroScreen (CES) score for each disadvantaged community, including the percentile for each socio-economic factor measured by CalEnviroScreen. A score of 80 would indicate that the census tract containing the disadvantaged community scores higher (i.e., worse) than 80% of other census tracts in California for that indicator.

Factor	Bodfish and Isabella	Mojave
CES Score	80	79
Education	58	70
Linguistic Isolation	N/A	69
Poverty	84	91
Unemployment	97	98
Housing Burden	36	62

Figure 6: East Kern CES Scores

West Kern Subregion

Encompassing a cluster of cities and census-designated places (CDPs) in the Valley such as Derby Acres, Lost Hills, Maricopa, McKitrick, Metler, and Taft, and the mountain communities of Frazier Park, Lebec and Pine Mountain Club. Every community in West Kern subregion is classified as disadvantaged. Just over 77% of residents in West Kern are high school graduates and 13.1% hold a bachelor's degree or higher (US Census Bureau 2021b). The median household income of $46,628 in West Kern County is notably lower than the Kern County median of $58,824, and far below California's median of $84,097 (US Census Bureau 2021c). The poverty rate of 27.4% in West Kern is double that of California's rate and 1.5 times higher than Kern's average. Fossil fuel extraction is the main driver of the local economy.

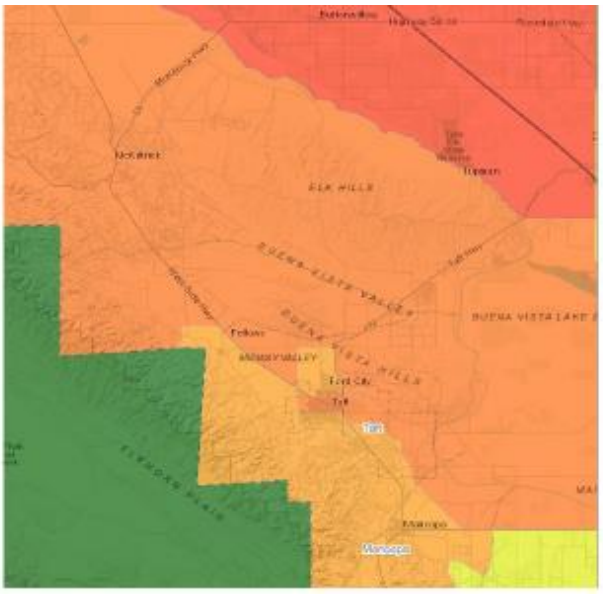


Figure 7: Disadvantaged Communities in West Kern County (CalEnviroScreen 4.0)

Every community in the Valley section of the West Kern Subregion scores in the top 25th percentile on CalEnviroScreen 4.0. The City of Taft is the largest community in the area, with a population of just under 10,000. The other unincorporated communities in the area have very few public services or institutions, making physical outreach to these very small communities difficult. The nearest potential partners to these communities are located in Taft or Buttonwillow, which are likely where residents of nearby unincorporated communities receive public services.

Factor	Taft	Ford City	Buttonwillow and Tupman	Fellows, Mckittrick, and Derby Acres	Maricopa
CES Score	82	79	96	81	77
Education	77	86	80	76	82
Linguistic Isolation	N/A	93	83	58	53
Poverty	81	99	86	70	92
Unemployment	43	94	89	88	89
Housing Burden	47	62	58	17	30

Figure 8: West Kern CES Scores

North Kern Subregion

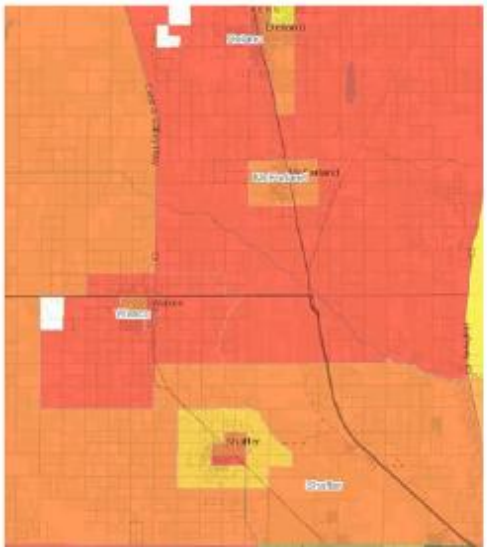


Figure 9: Disadvantaged Communities in North Kern County (CalEnviroScreen 4.0)

The North Kern subregion comprises cities and CDPs such as Lost Hills, Cherokee Strip, Delano, Lost Hills, McFarland, Mexican Colony, Shafter, Smith Corner, and Wasco. Most census tracts in this subregion meet the definition of disadvantaged. The North subregion is largely disadvantaged with very high levels of linguistic isolation and poverty and very low levels of educational attainment. Delano households have a median income of $47,845 (US Census Bureau 2021d) and Shafter has a median income of $56,111. Wasco and Delano-McFarland have SNAP participation rates surpassing state and national averages at 25% and 21%, respectively. North Kern is heavily reliant on agriculture.

Except for Lost Hills, there are many active community partners in the subregion, including base-building and local community groups that could potentially reach a large segment of the population. Many of these groups that are not yet engaged in the CA Jobs First process could greatly benefit from the effort.

Factor	Delano	Lost Hills	McFarland	Shafter (South)	Shafter (North)	Wasco
CES Score	80	86	86	90	83	80
Education	85	99	99	100	83	88
Linguistic Isolation	06	100	99	95	69	87
Poverty	81	96	97	99	85	87
Unemployment	93	62	92	86	82	89
Housing Burden	46	40	33	81	42	18

Figure 10: North Kern CES Scores

South Kern Subregion

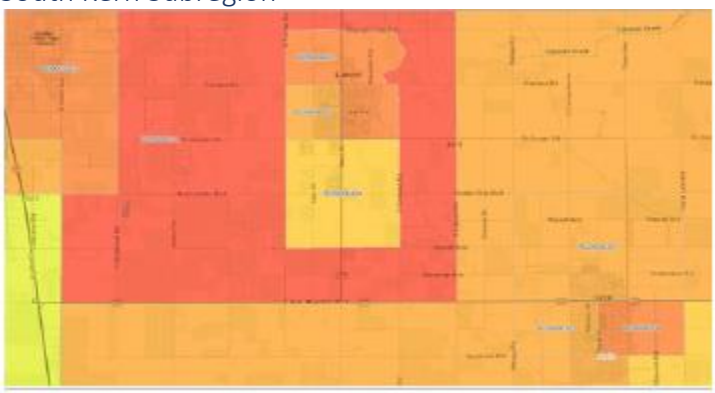


Figure 11: Disadvantaged Communities in South Kern County (CalEnviroScreen 4.0)

South Kern subregion comprises Valley-based cities and CDPs such as Arvin, Edmundson Acres, Fuller Acres, Greenfield, Lamont, and Weedpatch. The South subregion has similar characteristics to the North subregion and is largely disadvantaged with very high levels of linguistic isolation and poverty and very low levels of educational attainment. Racial and ethnic minorities account for 87.90% of the population in South Kern. An estimated 45% of residents possess less than a high school education. The South subregion has a poverty rate of 28.77% with 62.67% of households qualifying as low-income (US Census Bureau 2021e). Nearly 30% of children in the region live in poverty and approximately 40% of children live in single-parent households. The subregion is characterized by several leading industry sectors, including agriculture, food manufacturing and logistics.

Except for Arvin, all South subregion communities are unincorporated. Without local representation, residents in these communities have historically had less of a voice in local economic development decisions. Despite this, there are many active community partners in the Valley portion of the subregion, including base-building and local community groups who could potentially reach a large segment of the population. Many of these groups that are not yet engaged in the CA Jobs First process could benefit from the effort. There are fewer active community partners in the mountain region, requiring alternative community outreach and engagement strategies for Frazier Park, Lebec, and Pine Mountain Club.

Factor	Arvin	Lamont	Greenfield	Fuller Acres	Edmundson Acres
CES Score	87	89	89	97	75
Education	100	100	84	95	100
Linguistic Isolation	97	98	40	89	98
Poverty	100	95	89	90	94
Unemployment	87	87	88	83	84
Housing Burden	49	82	49	16	36

Figure 12: South Kern CES Scores

Central Kern Subregion

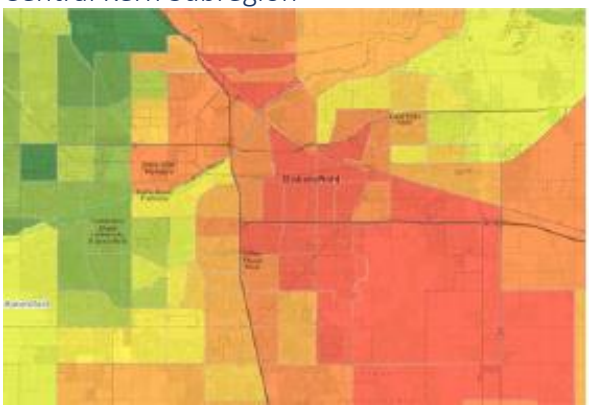


Figure 13: Disadvantaged Communities in Central Kern County (CalEnviroScreen 4.0)

The Central subregion consists of Bakersfield and surrounding areas. Bakersfield is the ninth most populated city in California and the second biggest city in the Central Valley, slightly behind Fresno. Bakersfield has large disparities in poverty rates among

different racial and ethnic groups. While the overall poverty rate is 16.1%, the percentages for specific groups vary considerably. White non-Hispanic residents have the lowest poverty rate at 10.5%, whereas Black residents face the highest rate at 28.6% (US Census Bureau 2021d). Nearby Oildale has a poverty rate of 30.5% despite having a median income of $49,490. A relatively low percentage of Bakersfield's population (25 years and over) has a bachelor's degree or higher (22%) compared to California's average (33%) (Kern County 2017). The Bakersfield area has been historically driven by oil and agriculture, even though it has a smaller proportion of workers in the agriculture and oil production sectors than other areas of the county due to the diversity of urban core businesses and services.

Bakersfield contains an impressive network of nonprofits, service providers, business organizations and associations, and government institutions. The considerable number of active community partners in the subregion, including base-building and local community groups, can potentially reach a large segment of the population. While the number of Bakersfield organizations serving entities are too numerous to list individually, the stakeholder list of the stakeholder map (see section 1.1) is a good reference to identify potential community partners. Downtown and Southeast Bakersfield areas include a sizable percentage of hard-to-reach populations and increased attention on outreach in these areas would further the goals of the Kern Coalition.

Factor	Oildale	Bakersfield – 93301	Bakersfield – 93304	Bakersfield – 93305	Bakersfield – 93306
CES Score	93	95	99	95	79
Education	84	79	86	98	97
Linguistic Isolation	14	40	83	91	90
Poverty	96	99	99	100	98
Unemployment	99	98	97	100	92
Housing Burden	81	72	88	96	82

Figure 14: Central Kern CES Scores (1/3)

Factor	Bakersfield – 93307	Bakersfield – 93309	Bakersfield – 93380	Bakersfield – 93383	Bakersfield – 93384
CES Score	98	76	88	99	87

Education	99	74	41	86	82
Linguistic Isolation	93	49	17	83	84
Poverty	98	89	73	99	89
Unemployment	99	38	86	97	85
Housing Burden	95	64	45	88	42

Figure 15: Central Kern CES Scores (2/3)

Factor	Bakersfield – 93385	Bakersfield – 93387	Bakersfield – 93388
CES Score	93	90	93
Education	99	97	84
Linguistic Isolation	88	89	14
Poverty	100	99	96
Unemployment	100	99	99
Housing Burden	93	73	81

Figure 16: Central Kern CES Scores (3/3)

C. Existing Networks and Regional Initiatives

According to the UC Merced Community and Labor Center (2024) analysis:

> The CA Jobs First program requires that regional coalitions coordinate, advance, and complement – without supplanting – state and federal investments, state-sponsored local and regional economic, workforce and community development programs, and mission-aligned initiatives. It also requires regional coalitions to connect to existing and emerging high road training partnerships. The stakeholder map identifies related programs and initiatives, including existing high road training partnerships, local climate initiatives and investments, workforce and economic development plans, and land-use planning initiatives. For each plan, program or initiative, the stakeholder map summarizes its goals, partners, and key findings or outcomes.

Kern Coalition - California Jobs First

Goals: The Kern Coalition is a collaborative of local organizations that formed to respond to the opportunities outlined by CJF to build on and leverage the expansive networks of all convener members to ensure all Kern County stakeholders are represented in decision-making.

Key Partners: Kern Community College District (Kern CCD), B3K Prosperity, Kern Inyo Mono Central Labor Council (KIM CLC), Community Action Partnership of Kern (CAPK), and Building Healthy Communities Kern.

Key Findings or Outcomes: Pending

HRTP High Road Training Partnership: Connecting Underrepresented Workers to High Road Jobs Project

Goals: The Energy Innovation Workforce Coalition, a Kern Community College District (KCCD)-led work group of community-based organizations, trainers, labor / union representatives, industry, and educators will develop and support work-based learning, internships, pre-apprenticeship, and apprenticeship in new and emerging energy industries. Over the next three years, this project will provide training to align with current and future increases in demand for workers as each sector scales up and projects become operational. This project is informed by HRTP training strategies, and community and worker priorities. Project design will ensure career pathways for new entrants as well as advancement for incumbent workers and supporting Kern County's economic and climate resilience.

Key Partners: Kern Community College District, Kern Inyo Mono Central Labor Council (KIM CLC), Kern Inyo Mono Building Trades Council (KIM BTC), International Brotherhood of Electrical Workers (IBEW).

Key Findings or Outcomes: Pending.

High Road Training Partnership - High Road to Regional Workforce Strategies: Kern County

Goals: The Regional Workforce Strategy project in Kern County brings together a coalition of key stakeholders, including those often excluded or under-valued in economic development planning and workforce training opportunities, to develop a community- and worker-centered Strategic Workforce Development Plan.

Key Partners: Kern Community College District; Bakersfield College; Center on Race, Poverty & the Environment; UC Merced Community and Labor Center; Kern, Inyo, and Mono Counties Central Labor Council; Kern, Inyo, Mono Building Trades Council; Committee for a Better Arvin; Committee for a Better Shafter; Comite Progreso de Lamont; Delano Guardians

Key Findings or Outcomes: While the final report is pending, an interim report, The Future of the State: Kern County's Young, Growing, Diverse Population and Dynamic Economy finds: 1) Between 2000 and 2019, Kern's population grew by 41%, and its workforce grew by 51%, both third-highest in the state; 2) Kern's workforce will quickly change, from many migrants to many native-born workers; 3) Since 2009, 22 of 30 industries in Kern experienced job growth (among the highest were: warehousing (552%); animal production (220%); non-oil and gas mining (215%); forestry, fishing and hunting (193%); building services (90%), and utilities (72%)); and 4) Kern workers' earnings decline have been singularly worst among all California counties – since 1979 Kern workers' median wages have declined 13% while every other county has seen wage growth.

High Road Training Partnership – California Legacy High Road to Oil Well Capping

Goals: This strategic partnership aims to bring high-paying, high-quality employment to a region that has become increasingly exposed to economic decline as the state moves away from oil and gas extraction toward more sustainable and environmentally compatible energy sources.

Key Partners: Operating Engineers Union Local 12; Laborers LiUNA/ Local 220; California Legacy Well Services, LLC and principals; Fresno Regional Workforce Development Board; A Better Bakersfield and Boundless Kern (B3K) Prosperity

Key Findings or Outcomes: Pending

A Better Bakersfield and Boundless Kern (B3K)

Goals: To cut the number of local children in struggling families in half by creating 100,000 more quality jobs in Kern County by 2031 and developing pathways to access them.

Leadership Team: A diverse group of executives representing the private and public sectors and community organizations, such as Valley Strong Credit Union, Tejon Ranch Co., Tel-Tec Security Systems, City of Bakersfield, County of Kern, Bolthouse Properties, Cornerstone Engineering, IBEW Local 428, Dignity Health, Kern Health Systems, United Farm Workers and CSUB

Findings or Outcomes: B3K identified four opportunity industries in which it found that Kern County can be most competitive for investment and growth, and where the share of Quality Jobs is the highest: Business Services, Aerospace, Advanced Manufacturing, and Energy and Carbon Management. Additionally, B3K identified a critical need for investment in entrepreneurship and business ecosystem supports. B3K's Market Assessment found 1) Kern needs to engage in ambitious collective action, invest in public goods to address economic and social challenges, and create mechanisms for accountability; 2) Kern needs to more fully direct economic and workforce development efforts towards growing and sustaining a broader range of priority clusters; 3) Kern needs to enhance resources supporting entrepreneurs and other general enablers of business dynamism; and 4) Kern needs to expand access to leadership tables and ensure governance reflects its increasingly diverse population. B3K also produced a Strategy Report, which includes an activation plan for pursuing inclusive economic development and deep prosperity in the Bakersfield-Kern region.

Transformative Climate Communities: Southeast Strong Project

Goal: The Southeast Strong's TCC grant will bring transformative change to the historically disadvantaged community of Southeast Bakersfield by investing in community proposed projects around themes of equitable housing and neighborhood development, mobility and urban greening, and workforce development and economic opportunities.

Key Partners: City of Bakersfield, Housing Authority of the County of Kern (HACK), Community Action Partnership of Kern, Habitat for Humanity – Golden Empire, Circle of Life Development Foundation (dba MLK CommUNITY Initiative), GRID Alternatives, Kern Community College District, Golden Empire Affordable Housing Inc., Bakersfield Senior Center, Building Healthy Communities, Community Interventions, County of Kern Employers' Training Resource, Kern County Black Chamber of Commerce, Mission Community Services Corporation, Ventura County Community Development, 3C Capital Funding, Greater Bakersfield Legal Assistance

Key Findings or Outcomes: The Southeast Strong Project was awarded $22,125,000 to work on nine integrated projects, including affordable housing, a mixed-use senior center, low-income energy efficiency program, garden collaborative and re-imagining a park; safe routes to schools and corridor improvements, urban greening, and senior apartments. The project includes six "transformative elements," including data collection and indicator tracking; community engagement; displacement avoidance; workforce development and economic opportunities; climate adaptation and resilience; and leveraging of funding from additional sources.

Prosperity Neighborhood Project

Goal: The Project will focus on revitalizing East Bakersfield by 1) making infrastructure investments that will include walkability improvement projects, enhanced crosswalks, street and alley pavement, and bike lanes; 2) investing in private property improvements including a Facade Improvement Program, infill development, home rehabilitation, and blighted property acquisition; 3) creating economic opportunity to move families out of poverty by creating asset-building strategies and wealth building, and partnerships with trade schools, colleges, and universities; and 4) raising the quality-of-life indices by investing in early childhood education to improve the literacy rate, collaborating with Public Health and other partners to improve wellness, and creating community capacity through partnerships with local community-based organizations.

Key Partners: City of Bakersfield

Key Findings or Outcomes: Pending

Shafter Community Air Monitoring Plan and Community Emissions Reduction Program

Goal: The California Air Resources Board's Community Emissions Reduction Program strives to reduce exposure in communities most impacted by air pollution. Community stakeholders work together to develop and implement new strategies to measure air pollution and reduce health impacts. The program also provides funding to support early actions to address localized air pollution through targeted incentive funding to deploy cleaner technologies in the community.

Key Partners: Representatives from Central California Environmental Justice Network, the Association of Irritated Residents, Latin Leaders of Kern County, Center on Race, Poverty & the Environment, California Resources Corporation, Forever Board California Inc., Kern County Works Department, Kern County Supervisors Office, City of Shafter

Key Findings or Outcomes: The community steering committee developed the Community Emissions Reduction Program. The Program focuses on reducing exposure to fine particulate matter (PM2.5), toxic air contaminants (TAC), and oxides of nitrogen (NOx). Reduction strategies target a variety of sources including passenger cars, residential energy use, heavy-duty trucks, oil and gas systems, fugitive dust, and agricultural sources including pesticides. The steering committee identified 52 specific strategies that include community-centric investments, enhanced enforcement, increased outreach and training, cross-agency collaboration, and regulatory amendments.

Arvin/Lamont Community Air Monitoring Plan and Community Emissions Reduction Program

Goal: The California Air Resources Board's Community Emissions Reduction Program strives to reduce exposure in communities most impacted by air pollution. Community stakeholders work together to develop and implement new strategies to measure air pollution and reduce health impacts. The program also provides funding to support early actions to address localized air pollution through targeted incentive funding to deploy cleaner technologies in the community.

Key Partners: Representatives from Central California Environmental Justice Network, Center on Race, Poverty & the Environment, Central California Asthma Collaborative, Leadership Counsel for Justice and Accountability, Grimmway Enterprises Inc, Greater Lamont Chamber of Commerce, Stenderup Ag Partners, Kern Oil & Refining Co., Recology, Kern County Public Works, City of Arvin, Kern County Agricultural Commissioner, Kern County Planning Department, Caltrans

Key Findings or Outcomes: San Joaquin Valley Air Pollution Control District approved the Arvin/Lamont Community Emissions Reduction Program. The CERP includes numerous strategies for implementation in Arvin/Lamont, including incentive funding measures, public engagement strategies, enforcement strategies, and regulatory strategies. This CERP anticipates investing over $30 million in emission reduction incentives, and a variety of other clean air projects in the Arvin/Lamont AB 617 Community area. All 31 measures are projected to reduce approximately 136 tons of PM2.5, 421 tons of NOx, and 161 tons of VOCs in Arvin/Lamont, as well as significant reductions in air toxics emissions in the community, particularly with respect to diesel particulate matter from mobile sources, the main contributor to community air toxics health risk.

Communities Local Energy Action Program - Kern County

Goal: Create an interactive website with technical and economic information on a variety of industries with carbon dioxide (CO_2) capture that could utilize subsurface resources in Kern for permanent CO_2 storage. The website explains potential benefits and impacts if developed within a Carbon Management Business Park (CMBP) sited in Kern County.

Key Partners: Kern County Planning and Natural Resources Department,
Climate Now/Blue Engine, Lawrence Livermore National Laboratory, University of Utah, New Mexico Tech

Key Findings or Outcomes: The Kern County Planning and Natural Resources Department released its interactive website, What is a Carbon Management Business Park?

Alliance for Renewable Clean Hydrogen Energy Systems (ARCHES)

Goals: Leveraging California's size and diverse geography and economy to produce, transport, store, and use Hydrogen at scale, providing an ideal Hydrogen test-bed for the nation.

Key Partners: University of California Office of the President, Governor's Office of Business and Economic Development, the State Building and Construction Trades Council and Renewables 100 Policy Institute

Key Findings or Outcomes: ARCHES will steer up to $1.2 billion in federal funding toward 39 hydrogen infrastructure projects up and down the state, including several that are believed to be located in Kern County.

Aera Direct Air Capture Hub

Goal: Feasibility study for a regional direct air capture (DAC) hub at Aera Energy's Belridge oil field in Kern County, California. Kern would capture carbon emissions from the atmosphere and safely transport and store them in Aera's Carbon Frontier sequestration site. The hub would integrate capture, low-carbon energy sources, transportation, and sequestration infrastructure to build an innovative low-carbon supply chain.

Key Partners: Aera Federal, LLC, Battelle, Mosaic Materials and Carbon Capture

Key Findings or Outcomes: US Department of Energy is providing $2,785,578 in funding for the feasibility study. The study is pending.

Western Regional Direct Air Capture Hub

Goal: Development of a feasibility study of a potential DAC hub initially focused on Kern County, California and adjacent counties. The proposed hub would build upon existing low-carbon technology pilots and other proposed projects planned to occur at Chevron's San Joaquin Valley assets.

Key Partners: Chevron New Energies

Key Findings or Outcomes: Department of Energy is providing $3,000,000 in funding for the feasibility study. The study is pending.

Community Alliance for Direct Air Capture

Goal: Develop a comprehensive assessment of the technical, social, and governance feasibility of establishing a Community Alliance for Direct Air Capture in the Southern San Joaquin Valley in California. The project includes a diverse group of technology companies, research organizations, and community partners that will collaboratively develop a DAC hub that achieves technology goals and delivers meaningful community benefits.

Key Partners: Center for Law, Energy, and the Environment (CLEE) at the University of California, Berkeley, Carbon 180, AECOM, AirMyne, Blue Planet, California State University, Bakersfield, Capture6, CarbonBuilt, Clean Energy Systems, Data for Progress, Electric Power Research Institute, California State University, Fresno, Lawrence Berkeley National Laboratory, Mosaic Materials, Origen, Project 2030, PSE Healthy Energy, Rondo Energy, Valley Onward

Key Findings or Outcomes: The US Department of Energy is providing $2,999,999 in funding for the assessment. The assessment is pending.

California Direct Air Capture Hub

Goal: Design and plan the initial deployment and future development of CalHub, a regional DAC hub comprising both a planned storage site and pipeline transport of CO_2. The project will study low-to-zero carbon-emitting sources of energy.

Key Partners: Electric Power Research Institute, Inc., California Resources Corporation, Climeworks, Avnos, SoCalGas, Kern Community College District, the National Renewable Energy Laboratory, Lawrence Livermore National Laboratory, University of Michigan, and California State University, Bakersfield

Key Findings or Outcomes: The US Department of Energy is providing $11,829,634 in funding for designing the California Direct Air Capture Hub. The design is pending.

California Renewable Energy Laboratory

Goal: Connect industry, governmental agencies, and workers, including disinvested communities and high-road training partnerships, with the most up-to-date information regarding carbon management technologies, clean energy innovation and microgrid and energy storage technologies, and clean transportation including hydrogen fuel and electrical vehicle technologies that will shape the regional and statewide economy for decades to come.

Key Partners: Valley Strong Credit Union, California Resources Corporation, Carbon TerraVault, NREL, UC Riverside, Project Development Solutions

Findings or Outcome: The state is provided $50 million in funding for CREL. The project is ongoing.

Other Notable Reports and Plans

- UC Davis Center for Regional Change, Kern County: Geography of Inequity and Opportunities for Action
- Kern Economic Development Corporation, Strategic Plan 2020-2023
- Kern County, Strategic Plan 2021-2026
- Kern County, Economic Diversification Plan for East Kern County - February, 2017
- City of Bakersfield, Economic Development Strategic Plan
- Kern County, Comprehensive Economic Development Strategy (CEDS), October 31, 2021
- Kern County; Economic Diversification Plan, East Kern County, 2017
- Data USA, Kern County, CA
- Fresno Economic Development Corporation, California Central Valley Export Plan
- San Joaquin Valley and Associated Counties Regional Planning Unit, San Joaquin Valley Regional Plan for 2021-24
- Kern Community College District, Workforce Development Plan

D. Opportunities for Collaboration and Partnerships

According to the UC Merced Community and Labor Center (2024) analysis:

> The Kern Coalition should strive to collaborate with local initiatives and partnerships that align with the program's goals of equity and inclusion, transition to a carbon-neutral economy, and growth of high road jobs and sectors such as the three High Road Training Partnership programs in the region – the High Road to Regional Workforce Strategies: Kern County project and the California Legacy High Road to Oil Well Capping project. The Coalition would also benefit from partnering with initiatives that have conducted outreach to or collected information from Kern residents on issues around climate, jobs, and community needs to supplement the Kern CA Jobs First Coalition's community engagement efforts. The Coalition should access and analyze any existing community needs assessment and survey efforts. Two ongoing community data collection efforts include the Center on Race Poverty & the Environment's pending Kern County People's Plan which involves community needs assessments that identify community infrastructure, employment, and environmental priorities in Delano, Shafter, Lamont and Arvin; and the Dolores Huerta Foundation's pending Regional Community Needs Assessment based on community survey collection in Arvin, East Bakersfield, Wasco, and Lamont/Weedpatch. Local community-based climate and pollution reduction initiatives can also inform and supplement Kern Coalition's process. These include the Transformative Climate Communities initiative in East Bakersfield and the Community Emissions Reduction Programs in Shafter, Arvin, and Lamont.

AREA 2.
REGIONAL SUMMARY

The Regional Summary provides a comprehensive overview of the economic, public health, and climate-related context for the region, analyzing key demographic shifts, socioeconomic conditions, vulnerabilities, and potential opportunities. By synthesizing a wide range of relevant information, the summary paints a holistic picture of the region's current state and emerging trends to serve as a crucial resource for developing sustainable, equitable, and prosperous solutions tailored to the region's unique characteristics and challenges.

Within this section, the content is divided into three main subsections. First, we delve into the economy and economic development, examining shifts in the county's population and labor force, labor force resilience and the effects of recent economic shocks, employment and GDP by industry, and top occupations as well as their associated wages. Second, we examine the county's climate and environmental risks and impacts, considering both short- and long-term impacts of climate change, diving more deeply into sources and impacts of pollution and greenhouse gas emissions. Third, we examine a range of public health issues impacting the community, including chronic illnesses, communicable diseases, mental health challenges, and environmental factors that affect overall health and wellbeing. Afterwards, we acknowledge data limitations inherent in our study.

Key Findings

Kern County's population growth and demographic changes have had profound implications for the region's economic and climate resilience, presenting both opportunities and risks. While the growing population has expanded the local labor pool to support industries reliant on immigrant workers, workforce aging poses challenges in recruiting and retaining younger native-born workers, potentially disrupting key economic sectors. Even more, Kern County households have faced heightened exposure to public disasters, including climate-related events, further exacerbated by the disproportionate impacts of the COVID-19 pandemic. This underscores the need for holistic strategies that address the nuanced interplay between demographic shifts, economic needs, and climate resilience.

Regarding the county's economic development, Kern County's population skews young, boasting the third-youngest median age in California, with a sizable percentage under five years old. Kern also exhibits notable diversity, with over half of its residents being Latinos, and immigrants constitute one-fifth of the population. However, the county's economic landscape, driven largely by oil production, faces challenges, with a concerning decline in GDP and many top employment sectors offering relatively low wages that fall short of the county's living wage standard.

Kern County faces multiple climate change risks, including extreme weather events, health impacts, agricultural challenges, and job insecurity due to fossil fuel transitions, disproportionately affecting vulnerable communities. Even though residents are very concerned about the environment and support quick action and sustainable job creation, pollution problems continue due to industrial, transportation, and agricultural activities. This calls for immediate action to protect public health and reduce environmental damage, especially greenhouse gas emissions.

Kern County residents face serious health and working condition disparities, particularly in agriculture and domestic work sectors, which have some of the lowest labor standards in the US, increasing health risks. Agricultural workers face hazards like extreme heat, wage theft, and pesticide exposure, contributing to higher incidences of heat-related deaths and illnesses. Kern County ranks poorly in health factors and outcomes, with lower life expectancy and higher rates of infant mortality, along with mental health issues and homelessness, underscoring the need for targeted interventions to address social determinants of health and improve community well-being.

Section 2.1 Economy and Economic Development

A. Introduction

This section explores the implications of demographic changes on job opportunities and emerging industries, such as the aging of immigrant worker populations and the rise in the number of young workers. We also analyze vulnerabilities in the labor force, shifts in employment across major industries, and primary occupations in Kern County, in response to recent economic disruptions and regional changes.

B. Key Findings

Kern County has a relatively young population, with the third-youngest median age in California and a high proportion of residents under 5 years old. The county is also highly diverse, with Latinos making up over half the population and immigrants comprising one-fifth of residents. Kern's workforce is set to change, as older migrant workers are replaced by a growing number of native-born younger workers entering the labor force.

Kern County's $43.8 billion economy in 2022 ranked 14th in California, though its 3.3% GDP decrease was among the state's worst. The county's economy is heavily influenced by its status as the 7th largest oil producer nationally, with government, trade, farming, and education/health services as its largest employment sectors. The agriculture industry, including farming, fishing, and forestry occupations, dominates Kern County's employment landscape, accounting for over 80,000 jobs. Many of these top occupations, particularly in agriculture, offer relatively low average wages that fail to meet the county's living wage standard for a household with two working parents and two children.

C. Population

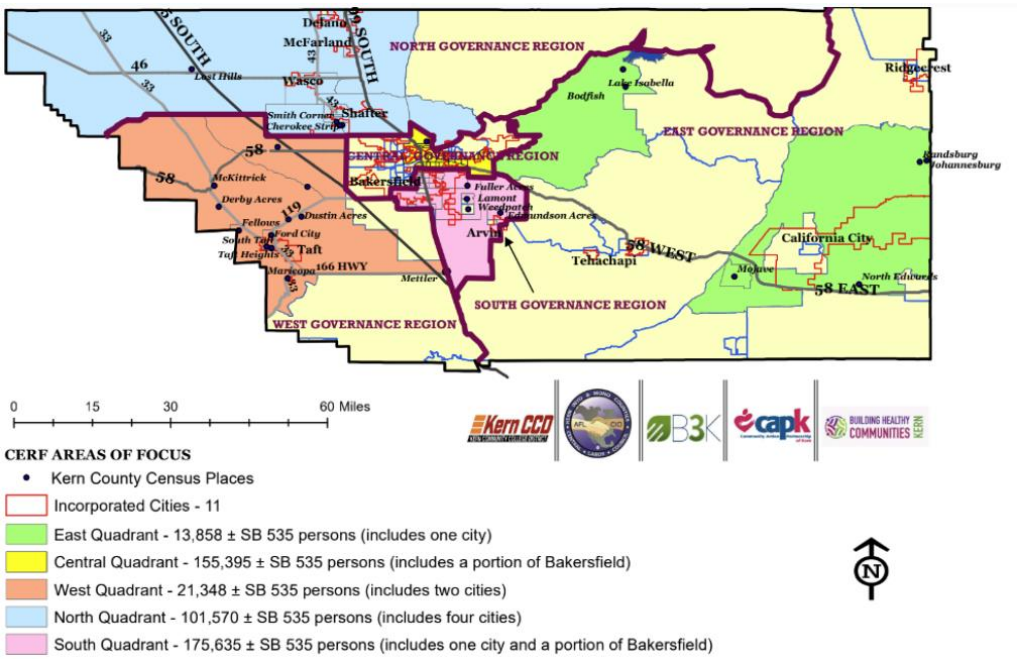


Figure 17: Demographic per Subregion in Kern County (Kern County Coalition Meetings Presentation 2022)

While California has long been associated with demographic growth, even during the pandemic, it has had a declining population in recent years. In contrast, based on annual estimates of the population according to the US Bureau Census, Kern County and the broader San Joaquin Valley region have been experiencing tremendous population growth and demographic change in recent decades (UC Merced Community and Labor Center 2024). As of 2023, Kern County had a relatively young population, with a median age of just

32 years as shown in (

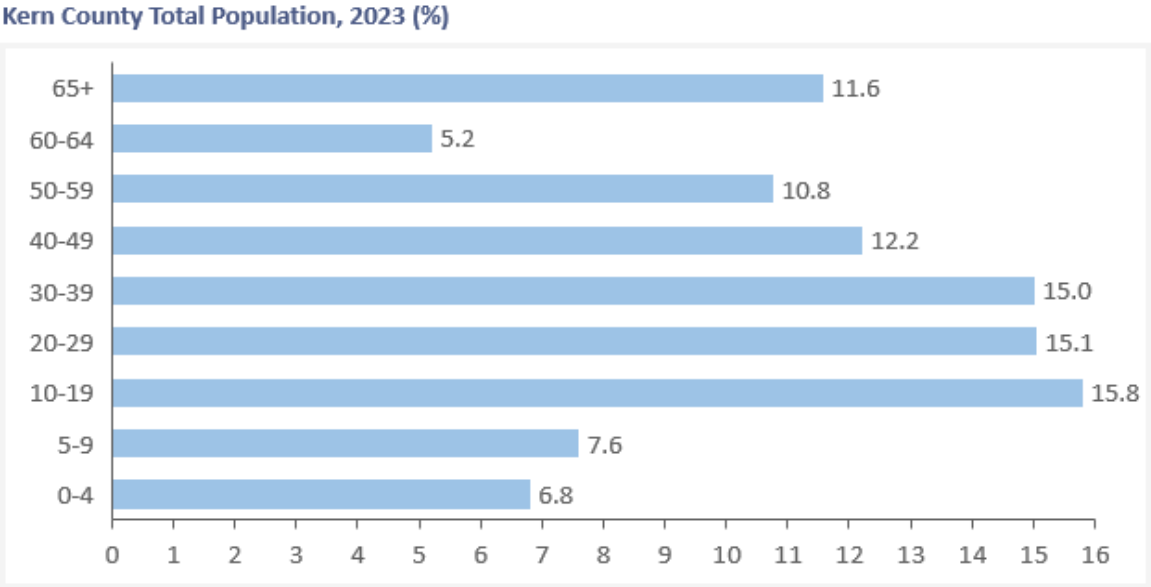


Figure 18: Age distribution of total population for Kern County, 2023)(GIS Planning, 2023). This young demographic was further reflected in the high proportion of children in the county. In fact, approximately 6.9% of Kern County residents were under the age of five, and 28.4% were under 18 years old (2022 ACS 5-Year Estimates Subject Tables). According to the UC Merced Community and Labor Center analysis, this under-18 share was the fifth highest in California, surpassed only by other predominantly rural counties like Tulare (30.8%), Imperial (30.2%), Kings (29.8%), and Merced (29.7%) (UC Merced Community and Labor Center analysis of IPUMS-USA American Community Survey, 2019, 1-year Public Use Microdata Series).

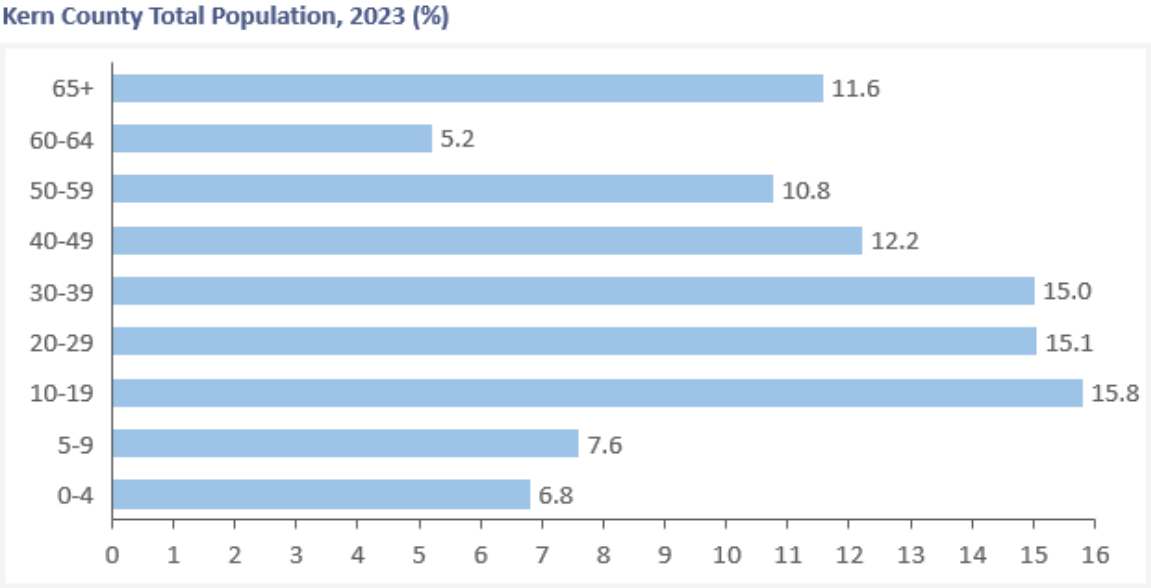


Figure 18: Age distribution of total population for Kern County, 2023

Based on US Census data, Kern County's population grew by 37% between 2000 and 2019, which according to the UC Merced Community and Labor Center (2024) analysis was "the third-highest rate in the state" and that "such dramatic population growth fueled tremendous economic and labor market growth." Between 2000 and 2019, Kern County employment grew by approximately 33%. Similarly, Figure 19 show that projections from 2019 baseline data estimate the total Kern population will grow to about 930,000 by 2030 (GIS Planning, 2023).

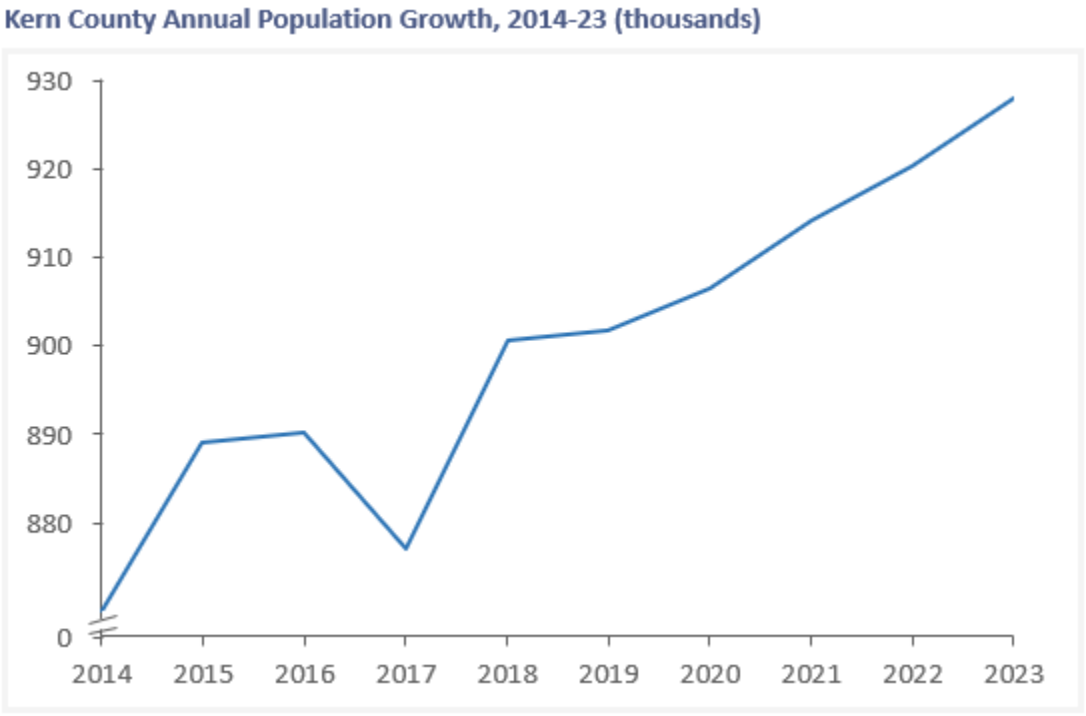


Figure 19: Annual Population Growth, 2014-2023 (thousands) (GIS Planning, 2023)

Roughly 450,000 individuals, constituting approximately half of the population, inhabit areas characterized by disinvestment. Amidst these regions, there stands one distinguished enclave of federally recognized tribal land, home to the Tejon Indian Tribe (Kern County Comprehensive Economic Development Strategy (CEDS), 2021). According to a study conducted by Building Healthy Communities (BHC), Latino residents in Kern are currently estimated to be numbered at 477,787, more than half (55%) of the county's residents and the fifth-highest percentage in the state (National Equity Atlas, California Immigrant Data Portal (CIDP)). Approximately one in three residents (30%) were non-Hispanic white, while a much smaller minority of residents were Asian (5.5%), Black (5.2%), or persons who self-identified as another race (3%). Latino residents constitute 15% more of Kern County's population compared to the statewide demographic, with projections indicating a notably accelerated growth rate within the county (Figure 20 and Figure 21). In contrast, white residents make up only 4% less of Kern County's population than the California average and are anticipated to decline in numbers at a comparable pace. Values for the remaining racial groups are projected to remain relatively constant for the next 50 years (National Equity Atlas, California Immigrant Data Portal (CIDP), and GIS Planning, 2023). According to UC Merced Community and Labor Center (2024) analysis, Kern County's demographic diversity was reflective of the broader patterns seen across the San Joaquin Valley region. Like much

of the surrounding area, Kern County exhibited a unique population composition compared to other parts of California. According to the UC Merced Community and Labor Center (2024) analysis, when considering California overall, the proportion of Latino residents (38%) was less than that of Kern County, whereas the percentage of Asian residents (15%) was greater.

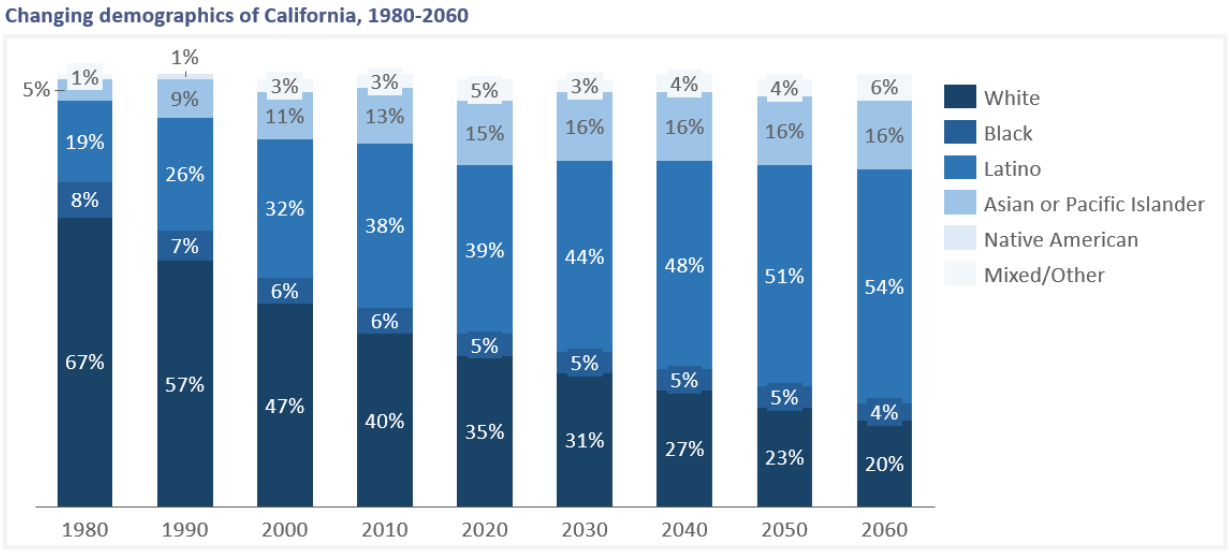


Figure 20: Changing Demographics of California, 1980-2060 (National Equity Atlas, California Immigrant Data Portal (CIDP))

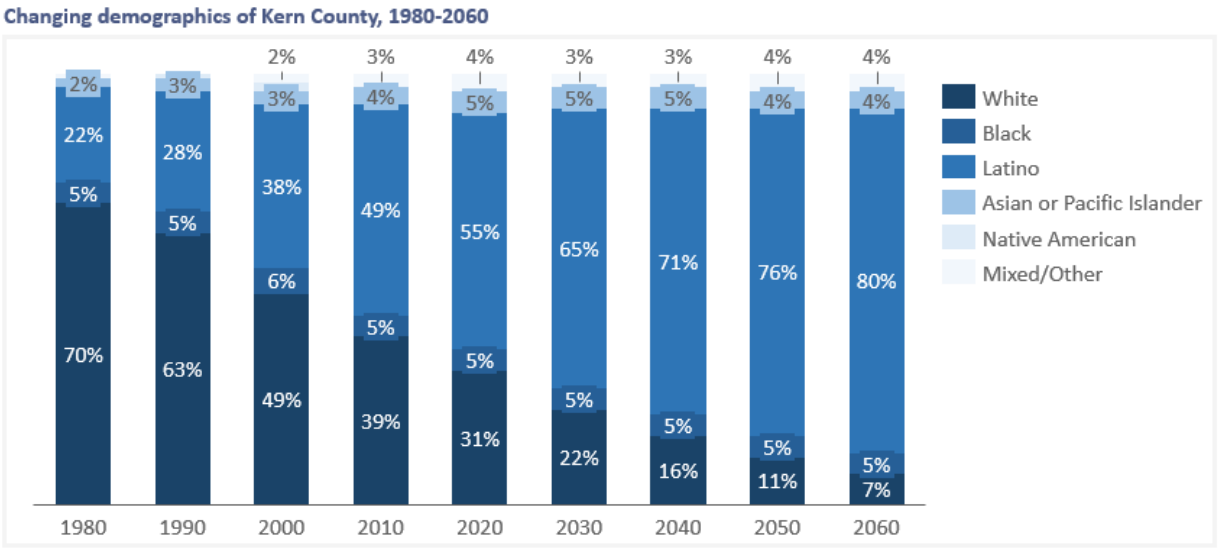


Figure 21: Changing Demographics of Kern County, 1980-2060 (National Equity Atlas, California Immigrant Data Portal (CIDP))

According to the UC Merced Community and Labor Center 2024 analysis, Figure 22 shows that 96% of the newcomers to the county were Latino, 8% were Asian, and 6% belonged to other racial groups, while 10% of those who left were white (UC Merced Community and Labor Center 2024, National Equity Atlas, California Immigrant Data Portal (CIDP), Building Healthy Communities (BHC) Kern County & Bakersfield Indicators). Based on these values, the labor market in Kern County will undergo significant changes due to population growth and shifting demographics, characterized by a decrease in the number of white and immigrant workers and a rise in the population of native-born Latino workers (UC Merced Community and Labor Center 2024).

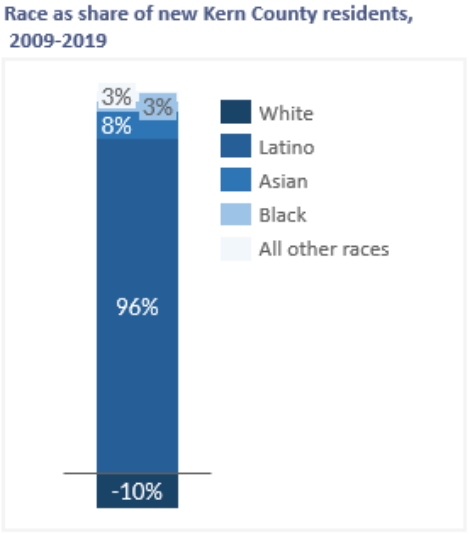


Figure 22: Race as share of new residents, 2009-2019 (UC Merced Community and Labor Center analysis of IPUMS-USA American Community Survey, 2009 and 2019, 1-year Public Use Microdata Series)

D. Labor Force and Vulnerabilities

Kern County had an average labor force of an estimated 397,000 workers according to the California Employment Development Department data, of which approximately 357,000 are employed on average in 2024. According to UC Merced Community and Labor Center (2024) analysis, "Kern County suffers from high levels of social and economic inequality, leaving it vulnerable to the shocks of major public disasters." Around 467,806 individuals, constituting 51% of Kern County's population, grapple with unemployment, underemployment, and/or high poverty due to disinvestment (The State of California Employment Development Department (EDD), 2023). Figure 23 illustrates the demographic composition of Kern County's working-age population (aged 14-24 and 25-64), where Latino residents constitute the majority followed by White residents. Latinos constitute a larger proportion of the working class aged 14-24 compared to whites, a trend that contrasts with their

representation in the working class aged 25-64. Consequently, they form a large portion of the young working population, yet they typically earn among the lowest wages compared to other racial groups (Figure 24). Conversely, Black residents, comprising only 5-6% of the workforce aged 14-65, earn the third highest hourly wage among racial and ethnic groups. Regardless, they confront one of the highest poverty rates among all racial groups in Kern County (Figure 25) (Building Healthy Communities (BHC) Kern County & Bakersfield Indicators, National Equity Atlas, and California Immigrant Data Portal (CIDP)).

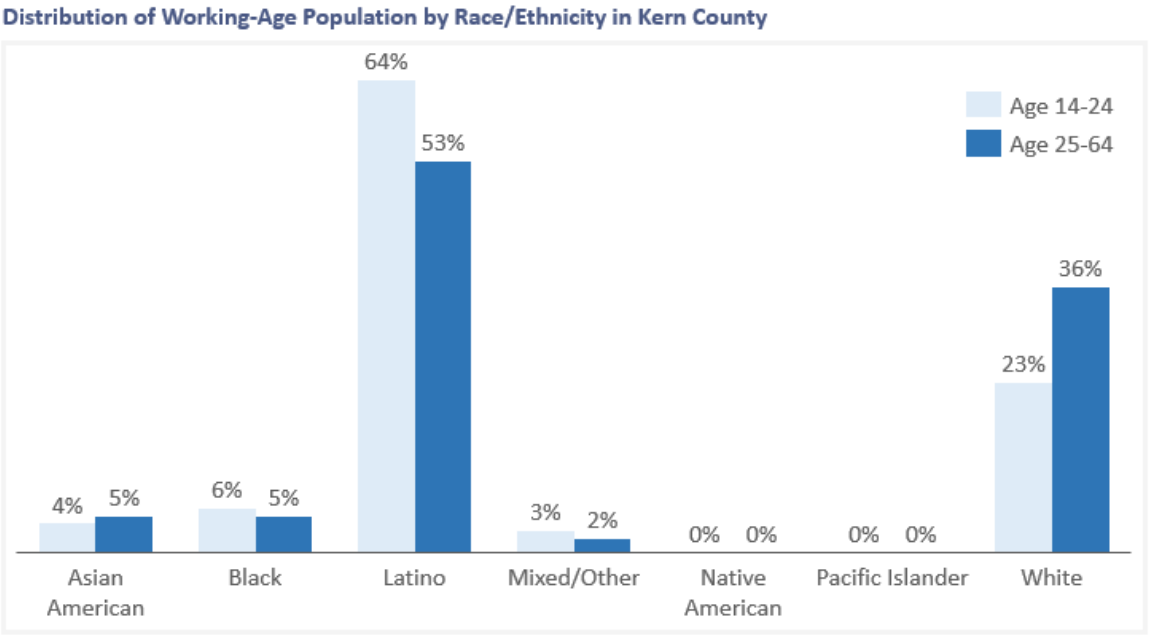


Figure 23: Distribution of Working-Age Population by Race/Ethnicity in Kern County (Building Healthy Communities (BHC) Kern County & Bakersfield Indicators, National Equity Atlas, and California Immigrant Data Portal (CIDP))

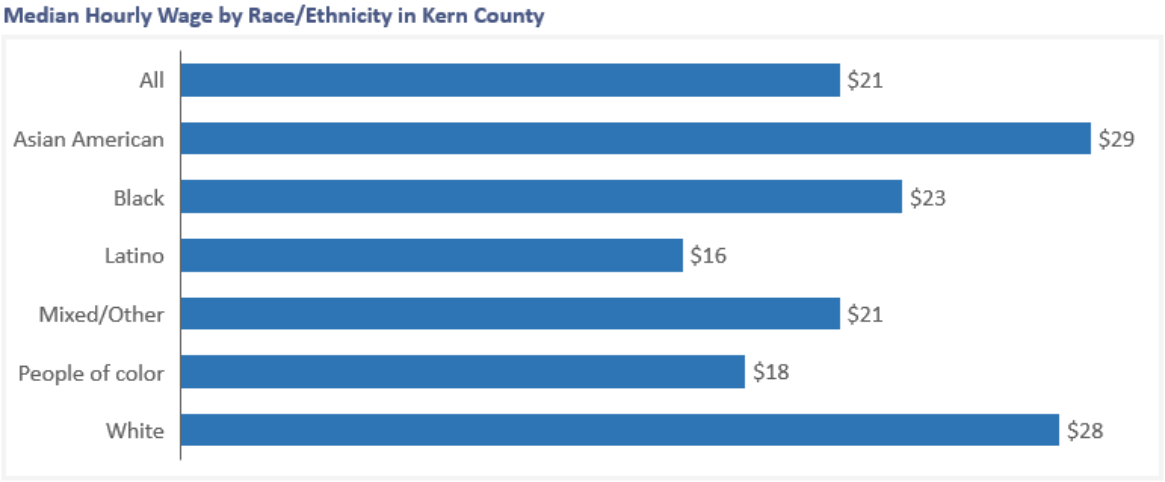


Figure 24: Median Hourly Wage by Race/Ethnicity in Kern County (Building Healthy Communities (BHC) Kern County & Bakersfield Indicators, National Equity Atlas, and California Immigrant Data Portal (CIDP))

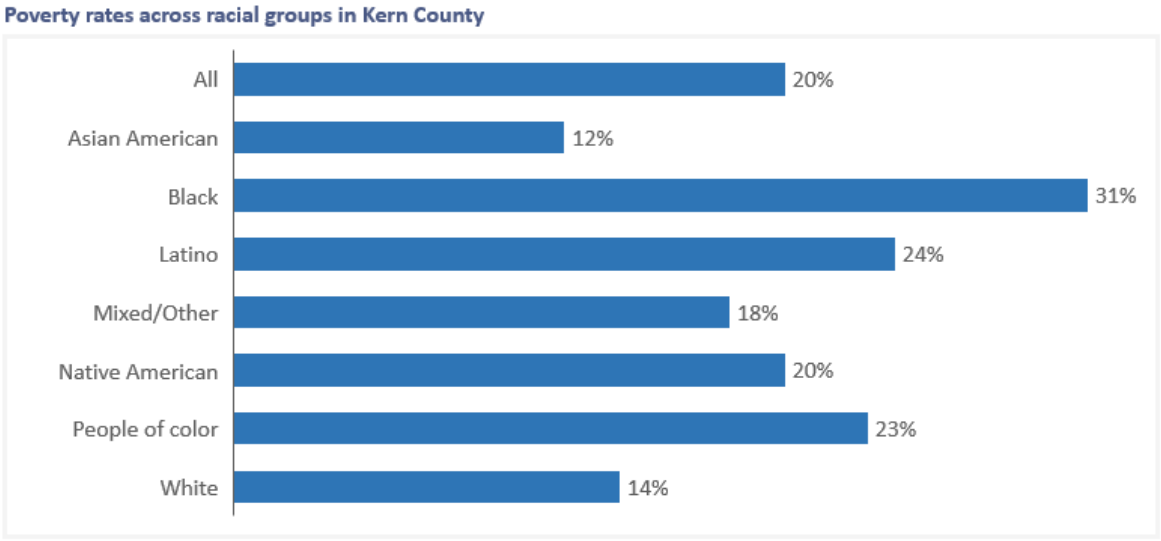


Figure 25: Poverty rates across racial groups in Kern County (Building Healthy Communities (BHC) Kern County & Bakersfield Indicators, National Equity Atlas, and California Immigrant Data Portal (CIDP))

According to the City of Bakersfield Economic Development Strategic Plan (2021), Bakersfield's population is forecasted to surge by 35% between 2020 and 2035, accompanied by a projected 25% rise in job opportunities during the same period (as shown in Figure 26). These major growth trends signify a pressing need for comprehensive urban planning and infrastructure development to sustainably accommodate the expanding population and employment demands (Kern Economic Journal, 2021). When questioned about the duration they could financially support themselves in case of job loss, the typical Kern County employee stated they could manage for up to three months at most (UC

Merced Community and Labor Center (2024) analysis on the Kern County Regional Strategies High Road Training Partnership Survey).

Location	Unemployment Rate (%)	Location	Unemployment Rate (%)
Kern County	10.47%	McFarland	14.17%
Arvin	10.17%	Mojave	19.37%
Bakersfield	7.83%	Oildale	15.87%
California City	20.13%	Ridgecrest	3.83%
Delano	28.40%	Rosamond	11.00%
Edwards	9.30%	Shafter	9.73%
Frazier Park	12.90%	Taft	5.30%
Lake Isabella	17.23%	Tehachapi	7.87%
Lamont	9.53%	Wasco	14.70%

Figure 26: Unemployment Rate of Select Cities in Kern County, 2021 (Kern Economic Journal, 2021)

The UC Merced Community and Labor Center (2021) analysis of American Community Survey data for the 2014-2019 periods indicated that Kern County faced challenges going into the pandemic, such as elevated levels of income below the poverty line, a workforce in high-risk industries with limited health insurance coverage, employment in sectors with high COVID-19 exposure risks, limited access to support systems, low rates of immigrant naturalization, and high rates of rent burden and poverty. Amid the COVID-19 pandemic, Kern County witnessed a 21.5% surge in fatalities, surpassing the statewide average of 18.5% and ranking as the 12th highest among the 58 counties in California (UC Merced Community and Labor Center 2021). By 2021, more than half (51%) of Kern County workers had encountered unemployment, with the median year of their most recent job loss being 2020, likely attributed to the initiation and aftermath of the pandemic (UC Merced Community and Labor Center 2024).

Given the large disparities in income gains observed across different segments of the population, it is not surprising that low-income adults in Kern County were disproportionately impacted by the economic fallout of the COVID-19 pandemic, having a greater impact on Kern residents' health and economic well-being.

- Foreign-Born Naturalization Rates. The naturalization rate among eligible-to-naturalize adults was approximately 56% in Kern County, which is comparably lower

than the nearly 71% across the state of California, according to estimates based on 2019 data (National Equity Atlas, California Immigrant Data Portal (CIDP)). Based on the 2022 American Community Survey 1-Year Estimates (Figure 27), approximately 41% of the Kern Foreign-born population are estimated to be naturalized US citizens. In Kern County, those of Hispanic or Latino heritage exhibited the lowest naturalization rate at 47% among other racial groups (National Equity Atlas, California Immigrant Data Portal (CIDP)). "Many immigrant workers during the pandemic were undocumented, and—as the only group federally prohibited from receiving federal aid—had no access to stimulus checks or unemployment relief" (UC Merced Community and Labor Center 2024).

	2020	2022
Naturalized US citizen	37.50%	40.90%
Not a US citizen	62.50%	59.10%

Figure 27: Naturalization of Foreign-Born Population in Kern County (2020 American Community Survey 5-Year Estimates)

- Immigration Status and Employment. Immigrants, particularly undocumented individuals, are predominantly employed in agriculture, with 33% of immigrants and 53% of undocumented workers in this sector. In contrast, most US-born workers do not work in agriculture, with only 6% involved in this field (Building Healthy Communities (BHC) Kern County & Bakersfield Indicators, National Equity Atlas)(Figure 29). Additionally, as the primary racial demographic among undocumented residents, Figure 28 and Figure 29 illustrate that Latino workers form the largest segment within the agricultural sector (National Equity Atlas and California Immigrant Data Portal (CIDP)). This demonstrates the importance to prioritize initiatives aimed at providing immigrant workers with access to benefits and clear career trajectories. By doing so, we enhance economic security for immigrants and uplift the entire workforce of California, fostering a more inclusive and prosperous society. Among those nearing retirement (aged 55-64), an estimated 34% of workers are immigrants. But among those entering the workforce (aged 18-24), only an estimated 10% of workers are immigrants (2022 ACS 1-Year Estimates Subject Tables).

Additionally, the UC Merced Community and Labor Center 2024 analysis also found the following:

- Elevated COVID-19 Exposure in the Workplace: In Kern County, more than a quarter (27.7%) of employees worked in occupations with the highest risk of COVID-19 transmission, ranking sixth highest among California counties.
- Vulnerable Workers and Income Disparity: From 2014 to 2018, workers in COVID-19 high-risk sectors in the Central Valley were disproportionately immigrant (45.2% vs. 25.6%), non-citizen (31.5% vs. 13.3%), resided in larger households (3.9 vs. 2.1 persons), and experienced a poverty rate nearly double (18.1% vs. 10.6%) that of other workers (Padilla et al., 2021). In 2019, their earnings were significantly lower compared to other workers ($23,000 vs. $32,000).
- Vulnerable Workers and Healthcare Coverage: High-risk workers in Kern County earned even less ($20,000 vs. $30,000) and were less likely to have health insurance coverage (85.4% vs. 89.5%) compared to their counterparts. This exacerbated their challenges during the pandemic.

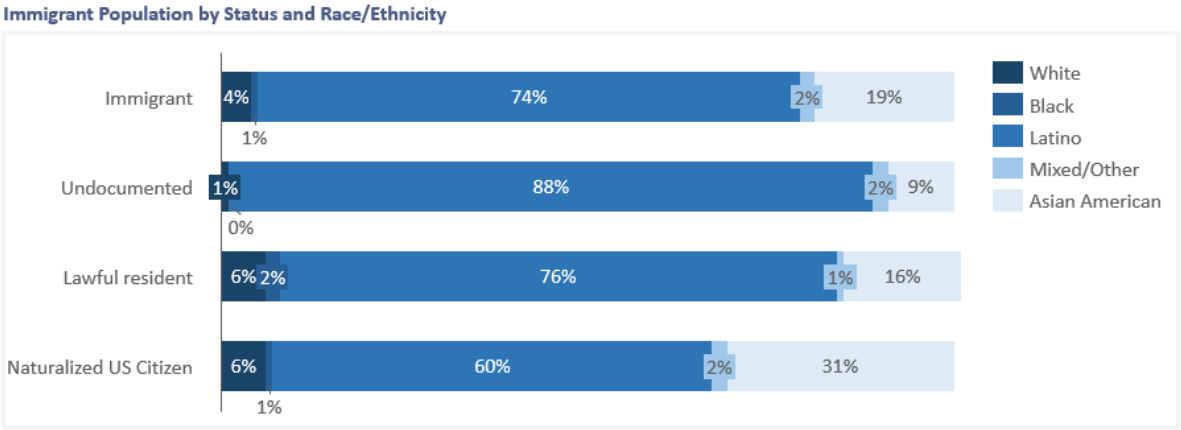


Figure 28: Immigrant Population by Status and Race/Ethnicity (National Equity Atlas, California Immigrant Data Portal (CIDP), and Building Healthy Communities (BHC) Kern County & Bakersfield Indicators)

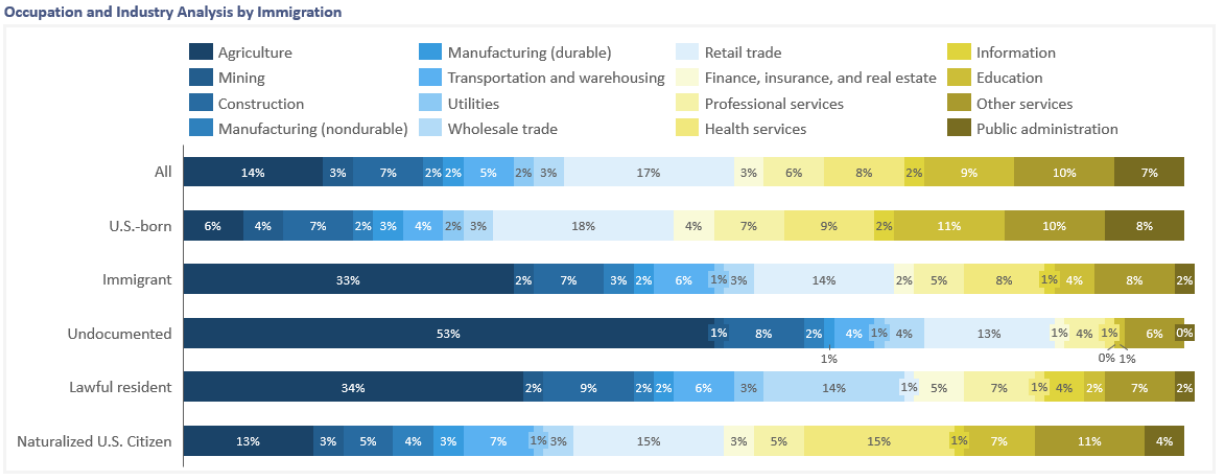


Figure 29: Occupation and Industry Analysis by Immigration (National Equity Atlas, California Immigrant Data Portal (CIDP), Building Healthy Communities (BHC) Kern County & Bakersfield Indicators)

- Elevated Unemployment Rates Among Black, Latina, and Immigrant Women. Amid the peak of the pandemic's economic downturn, California witnessed exceptionally high rates of job loss among Black (25.4%) and Latina (28.9%) women, as reported by Flores and Padilla in 2020. The impact was most severe for non-citizen immigrant women (36.3%), many of whom were undocumented and lacked access to financial safety nets (National Equity Atlas, California Immigrant Data Portal (CIDP)).
- Unclaimed Financial Assistance. Even eligible Kern County residents often failed to access available aid. The region missed out on an estimated $951 million in unclaimed federal stimulus payments, ranking second in the state behind only Los Angeles, which lost $1.55 billion (Augustine et al. 2021).

The study also revealed that households in Kern County were particularly susceptible to significant public disasters, including climate-related events such as extreme heat, wildfires, droughts, or floods, due to the following factors.

- Large and Low-Wage Households. In Kern County, the mean household income is around $89,500 and the median household income stands at around $66,000, much lower than California's median of $91,551. The mean income (and GDP per capita) provides a broad measure of economic output which can be skewed by high wage jobs, obscuring income inequalities. In contrast, the median income is more representative of the county's income distribution. Recognizing the discrepancies between these two indicators highlights important socioeconomic

challenges faced by households within the region. In 2022, Kern County witnessed a troubling rise in its household poverty rate from 16.5% to 17.9%, while the state's poverty rate remained lower at 12.2%. The average household size in Kern County for 2022 was 3.14, with 42.8% of households consisting of one or more individuals under the age of 18. These statistics, sourced from the US Census Bureau Kern County Profile (Figure 30), suggest that many households contend with lower incomes and face increased social and economic pressures due to larger family sizes and greater dependence on limited resources.

Household Income	Percentage
Less than $10,000	5.5
$10,000 to $14,999	4.6
$15,000 to $24,999	7.7
$25,000 to $34,999	9
$35,000 to $49,999	12.1
$50,000 to $74,999	17
$75,000 to $99,999	13.4
$100,000 to $149,999	16
$150,000 to $199,999	7
$200,000 or more	7.7
Median income (dollars)	$66,234
Mean income (dollars)	$89,459

Figure 30: Kern County Household Income Distribution, 2022 (United States Census Bureau)

- Wage Gap: The earnings of women in Kern County's year-round, full-time workforce fall behind those of men, with women earning $36,323 compared to men's $44,022. The wage gap translates to women earning 83 cents for every dollar earned by their male counterparts as reported in the 2020 Report on the Status of Women and Girls in Kern County (The 2020 Report on the Status of Women and Girls in Kern County). Even more, while immigrants are engaged in the workforce at nearly identical rates as US-born workers, the largest gap lies in gender, as only 59% of female immigrants participate in the labor force (National Equity Atlas, California Immigrant Data Portal (CIDP)).
- High Rent Burden. The median gross rent in Kern County was estimated at $1,208 in 2022, lower than the $1,870 median rent for the rest of California (American Community Survey 1-Year Estimates). However, approximately 55% of all Kern County households were rent burdened—spending over 30% of household income on rent. Black renters face a much higher burden at 66%. Among owners,

29% also grapple with housing burden, particularly impacting immigrant (36%), Black (38%), Latinx immigrant (38%), and white immigrant (36%) homeowners. These figures closely align with statewide statistics (National Equity Atlas, California Immigrant Data Portal (CIDP)).

Additionally, the UC Merced Community and Labor Center 2024 analysis also found the following:

- Elevated Utility Expenses: The significant costs of utilities contribute to a considerable number of households in the area earning below a living wage. Despite comparatively lower regional incomes, renters in the Central Valley faced the second highest median annual utility expenses in the state, amounting to $2,720. Similarly, Kern County renters and households experiencing high rent burdens faced the second highest median annual utility costs in the Central Valley, at $2,300 and $2,280 respectively (UC Merced Community and Labor Center 2021).

E. Business and Industry

According to analysis from the UC Merced Community and Labor Center 2024 report, in 2022, Kern County's economy yielded $43.8 billion in Gross Domestic Product (GDP) (US Bureau of Economic Analysis 2023). This positioned it fourteenth in California, although its GDP declined (-3.3%) from the previous year ranked eighth worst among the state's 58 counties (UC Merced Community and Labor Center 2024). Today, Kern County's economic identity is shaped very much by its history as an oil-producing county (Plumer 2022). Kern is the nation's seventh-largest oil-producing county, producing 326,000 barrels of oil per day (Aera Energy 2021).

Figure 31 shows the distribution of Kern County employment by industry sectors, according to the State of California Employment Development Department (EDD). The largest share of employment, at 21.2%, is in government, which makes up nearly 70% of employment along with Trade, transportation, and utilities (17.3%), farm (15.4%), and private education and health services (14.1%).

Sector	Jobs	Share
Total All	345,400	100.0%
Government	73,300	21.2%
Trade, transportation, and utilities	59,900	17.3%
Farm	53,100	15.4%

Private Education and Health Services	48,600	14.1%
Leisure and Hospitality	29,200	8.5%
Professional and Business Services	27,400	7.9%
Construction	15,600	4.5%
Manufacturing	12,400	3.6%
Other Services	9,000	2.6%
Mining and logging	7,600	2.2%
Financial Activities	7,600	2.2%
Information	1,700	0.5%

Figure 31: Kern County Employment by Industry Sector (The State of California Employment Development Department (EDD), 2023)

According to data from the Public Policy Institute of California in 2021, nearly 70% of forthcoming jobs in the next decade will emerge in high-growth fields, which are defined as sectors having a greater proportion of total employment in 2020 compared to 2010. Approximately 30% of these new positions in high-growth industries are projected to necessitate some level of college education, while an almost equivalent portion will mandate a minimum of a bachelor's degree (National Equity Atlas and California Immigrant Data Portal (CIDP)).

Kern County's total GDP was $43.8 billion as of 2022, with Private Goods-Producing Industries contributing 16.9B (29%), Government and Government Enterprises comprising $9.2 billion (16%) and Private Service-Producing Industries making up $25.5 billion (44%) as illustrated in Figure 32.

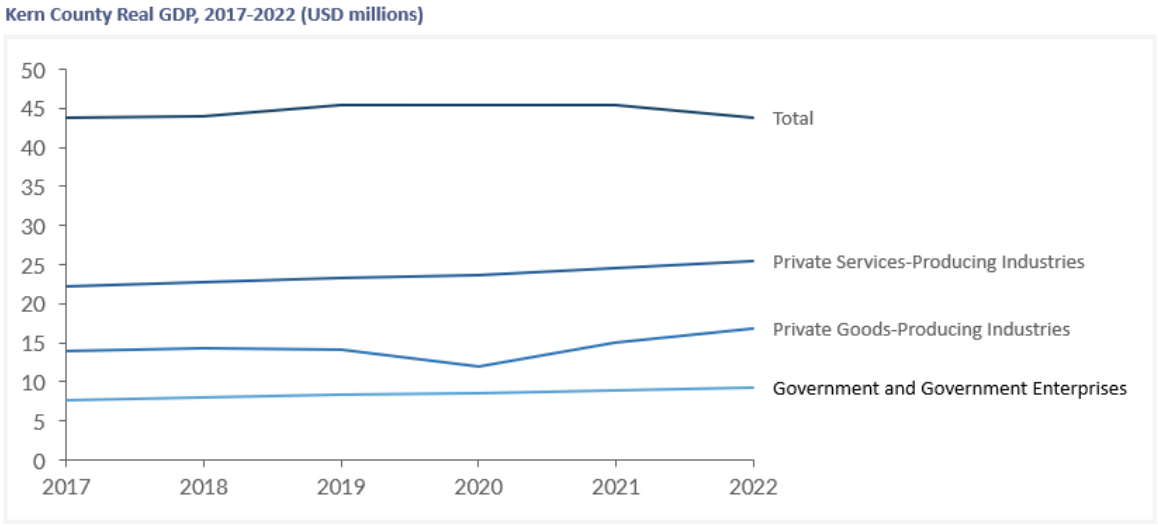


Figure 32: Kern County Real GDP (US Bureau of Economic Analysis, Real Gross Domestic Product)

Nearly 85% of businesses in Kern County employ fewer than ten employees. Figure 33 shows establishments by number of employees in 2023 while Figure 34 and Figure 35 show the private and public employers, respectively. Kern County's top employers in 2020, each employing 3500-5000 Kern County workers, were Amazon (5000 employees), Grimmway Farms (4000 employees), and The Wonderful Company (3800 employees). The top public employers were the County of Kern (260,000 employees), City of Bakersfield (183,350 employees), and Naval Air Warfare (China Lake) (4100 employees).

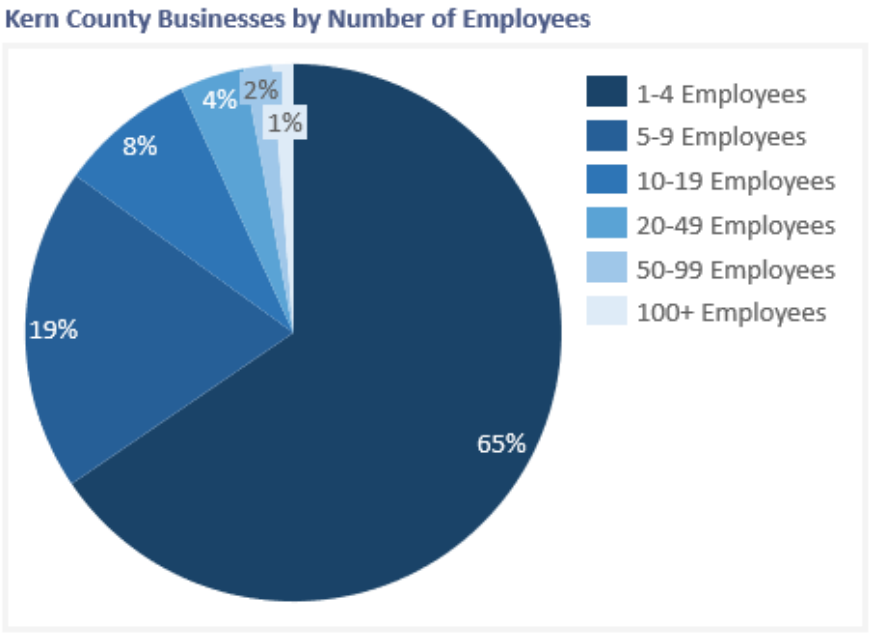


Figure 33: Kern County Businesses by Number of Employees (GIS Planning, 2023)

Company Name	Number of Employees
Amazon	5,000
Grimmway Farms	4,000
Wonderful Company	3,800
Dignity Health	3,300
Guimarra Companies	3,000
Dreyer's Ice Cream	1,200
Ross Dress for Less Distribution	1,200
Aera Energy	1,100

Figure 34: Kern County Top Private Employers, 2020 (Central California Economic Development Corporation, 2024)

Organization Name	Number of Employees
County of Kern	22,024
City of Bakersfield	6,282

Naval Air Warfare (China Lake)	4,100
Edwards Air Force Base	4,000
Kern County High School District	3,500
Kern County Superintendent of Schools	1,500
California State University, Bakersfield	2591

Figure 35: Kern County Top Public Employers, 2020 (Central California Economic Development Corporation and Government Compensation in California)

Additionally, as the UC Merced Community and Labor Center 2024 analysis also found:

> As explored in more detail below, in Area 4 Industry Cluster Analysis, several industries are projected to experience high rates of job growth by 2030. Among these, trade, transportation, and utilities show the highest projected job growth, with an estimated increase of 14,100 jobs by 2030, representing a 26.8% growth from the base year employment estimate in 2020. Education and health services (19.9% expected increase from 2020 to 2030), leisure and hospitality (32.3%), and the government (9.6%) are all expected to grow considerably and maintain important employment pipelines. Mining and logging are expected to lose around 1,900 jobs, a 20% decrease in existing jobs. Similarly, total farm employment (-2.9%), manufacturing (-3.9%), and information (-15%) are also all expected to decline, while not as drastically.

F. Occupations

Figure 36 lists the top occupations in Kern County in terms of number of jobs. Farming-related occupations (Farming, Fishing, and Forestry Occupations as well as Farmworkers and Laborers, Crop, Nursery, and Greenhouse) by far represent the largest number of jobs, with over 80,000 employees. Additional leading occupations include Transportation and Material Moving occupations (35,000 employees), Office and Administrative Support (29,000 employees), Food Preparation and Serving-Related occupations (26,000 employees), and Sales and related occupations (23,000 employees).

These occupations, especially those related to agriculture, offer some of the lowest average wages for employees. Farming, Fishing, and Forestry occupations paid on average only $16.73 hourly, while Farmworkers and Laborers, Crop, Nursery, and Greenhouse workers earn on average $16.44 per hour. Other top occupations earn slightly higher average wages: $21.69/hour for Transportation and Material Moving occupations, $23.19/hour for Office and Administrative Support occupations, and $17.06/hour for Food Preparation and Serving-related occupations.

None of the top five occupations in Kern had mean earnings above the county's "living wage" for a household with two working parents and two children (in 2022, $25.07 per hour, or $52,146 per year) (MIT Living Wage Calculator 2023). In families with two adults and two children, a sole breadwinner would have had to have earned an hourly wage of $38.14 to avoid chronic and severe housing and food insecurity; only one of the top ten occupations in Kern County (Healthcare Practitioners and Technical occupations) passes that threshold.

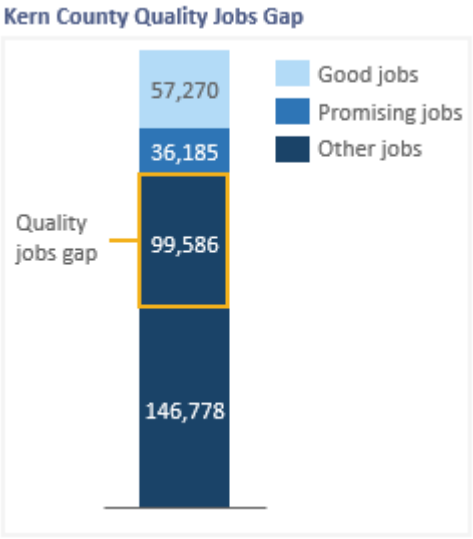
Occupational Title	Number Employed	Mean Wage (Hourly)
Farming, Fishing, and Forestry Occupations	41,440	$16.73
Farmworkers and Laborers, Crop, Nursery, and Greenhouse Occupations	39,130	$16.44
Transportation and Material Moving Occupations	35,090	$21.69
Office and Administrative Support Occupations	29,110	$23.19
Food Preparation and Serving-Related Occupations	26,200	$17.06
Sales and Related Occupations	22,570	$22.48
Educational Instruction and Library Occupations	22,530	$34.50
Healthcare Support Occupations	17,800	$17.63
Healthcare Practitioners and Technical Occupations	15,400	$53.65
Construction and Extraction Occupations	15,000	$31.72
Management Occupations	14,580	$59.57
Business and Financial Operations Occupations	13,360	$41.09
Installation, Maintenance, and Repair Occupations	12,380	$30.33
Home Health and Personal Care Aides	11,390	$15.52
Production Occupations	10,730	$24.20

Figure 36: Kern County Top Occupations by Employment (California Employment Development Department, 2023)

High-wage industries in Kern are primarily centered around healthcare and professional services. Occupations like OB-GYN, Family Medical Doctor, Psychiatrist, and Pediatrician are among the highest-paying professions, with hourly rates exceeding $100 (Kern Coalition CERF Regional Summary, 2023). These positions require specialized education and training, contributing to their higher compensation. Chief Executives, Architectural Engineer Managers, Dentists, Computer and Information System Managers, and Internal Medicine Physicians also fall into the high-wage category, with hourly rates ranging from $70 to $90. These high-wage industries, particularly in the healthcare sector, account for approximately 10% of employment opportunities in Kern County. While the percentage of opportunities

may not be high, these industries offer substantial compensation to the workforce employed within them.

Considering "good jobs" as defined by the B3K Market Assessment Data Book and Findings report (2021), meaning jobs that pay a sufficient annual wage, offer health insurance, and offer a stable opportunity for future good employment, Kern County faces a gap of nearly 100,000 good jobs compared to the number of workers (



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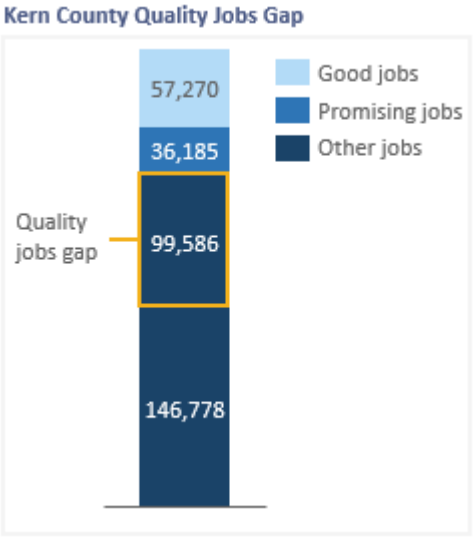


Figure 37: Kern County Quality Jobs Gap (Kern Coalition CERF Regional Summary, 2023)

Earnings levels in Kern County are highly correlated with race, and median earnings for Hispanic, Black, and Asian workers have been consistently lower than those of White workers, as shown below in Figure 38.

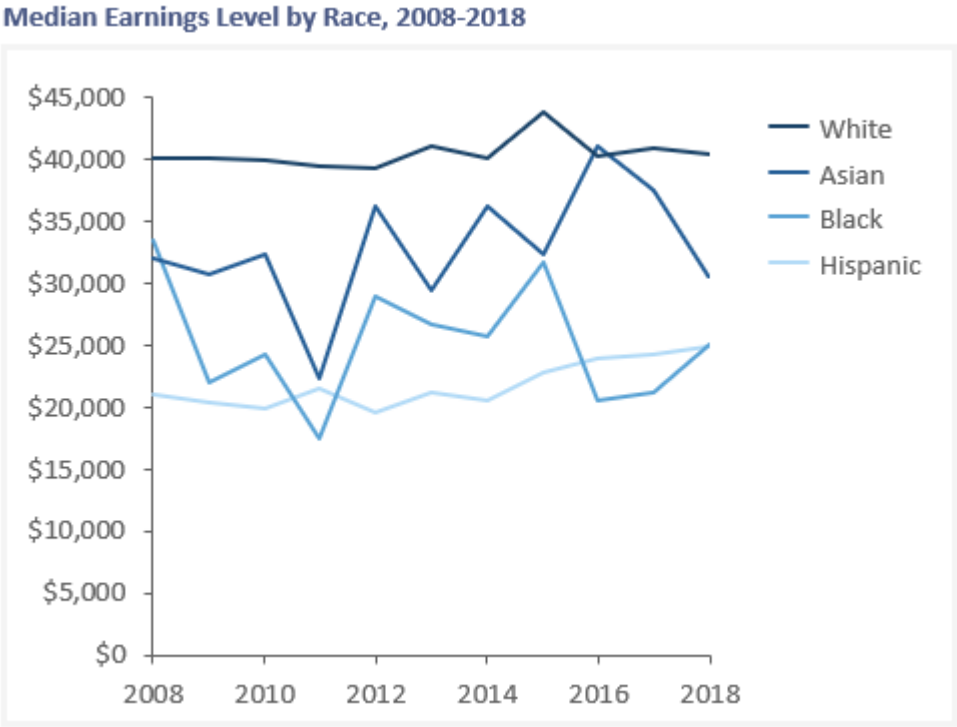


Figure 38: Median Earnings Level by Race, 2008-2018 (Kern Coalition CERF Regional Summary, 2023)

The earnings disparity based on educational attainment is substantial. Individuals with a bachelor's degree earn a median income of $58,600, almost double than those with just a high school diploma at $29,200, and even more so compared to those without a high school diploma, who only earn $20,000 on average (Kern Coalition CERF Regional Summary, 2023). This highlights the impact of education on earning potential in Kern, proving that such disparities in educational attainment can have far-reaching implications for the future workforce and economic prospects, potentially perpetuating cycles of poverty.

In the Kern Council of Governments (COG) 2024 Community Survey, residents were asked to think about the next 20 years and rate the importance of a group of issues that would impact improving future quality of life in Kern County. "Creating more high paying jobs" (mean score of 3.48/4) was given an "Extremely important" rating from two-thirds of residents.

Figure 39 shows that Kern County's population is mostly educated at the high school level, with over 75% of the population having at least graduated high school, while only 19% having completed a bachelor's or graduate degree.

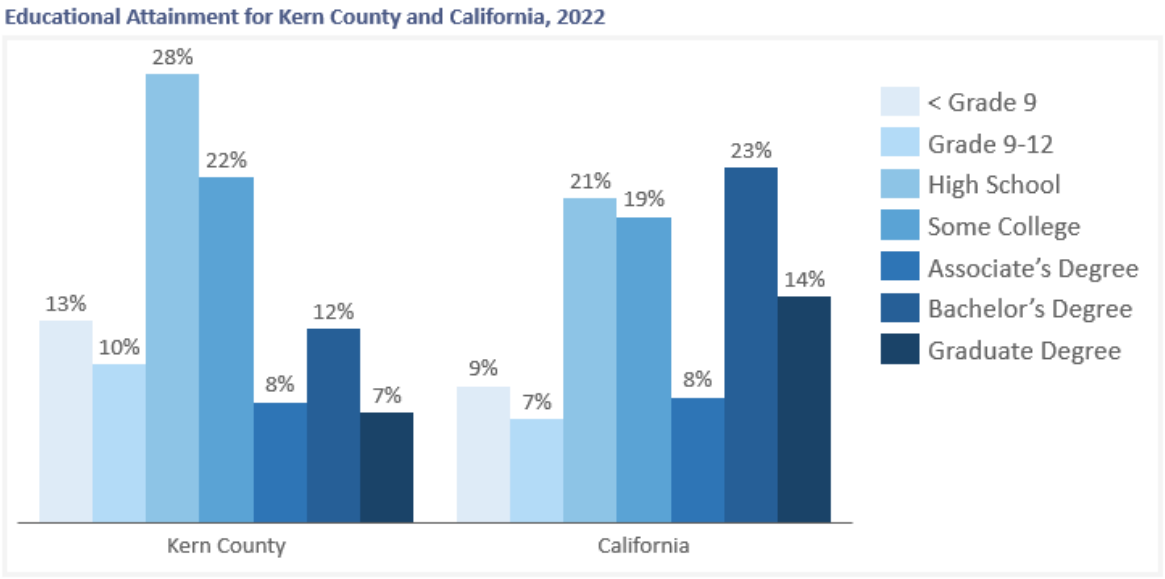


Figure 39: Educational Attainment for Kern County and California, 2022 (GIS Planning, 2023)

Section 2.2 Climate and Environmental Impact

A. Introduction

The effects of global warming are anticipated to be felt extremely by communities in Kerm County. Extreme weather will likely worsen the region's air pollution, including a rise in carbon dioxide levels, seriously impacting the residents and the economy (Swain et al. 2018). This section evaluates the potential threats of climate change on Kern residents.

B. Key Findings

Climate change poses alarming risks to Kern County, including extreme weather events like floods and wildfires, health impacts such as heat-related illnesses and respiratory diseases, threats to agricultural production leading to economic decline and food insecurity, and job insecurity due to transitions away from fossil fuels. Vulnerable populations, including outdoor workers and low-income communities, are disproportionately affected, yet there is a lack of comprehensive planning to address these issues, highlighting the need for targeted climate action and investment in the region.

Kern County residents overwhelmingly express deep concern for the environment, with 92% indicating some level of worry. They strongly advocate for immediate action from both

government and business sectors to address various environmental issues, including water and air quality, drought, wildfires, and climate change. There is widespread support for public investment in sustainable job creation, with high encouragement for initiatives such as sustainable farming, low-carbon energy development and carbon management, and public transportation, especially within disadvantaged communities.

Kern County grapples with substantial pollution challenges, including high levels of air and water contamination. Industrial activities like oil and gas production and agriculture contribute to pollution, impacting public health, especially in disadvantaged communities. Transportation emissions and pesticide-use exacerbate these issues. CalEnviroScreen data shows widespread pollution across census tracts, with critical concerns about hazardous waste, solid waste, and groundwater contamination. Addressing these challenges requires urgent action to protect public health and support affected communities.

Greenhouse gases, stemming from industrial, transportation, agricultural, and residential activities in Kern County, are major contributors to environmental degradation, including rising temperatures and increased climate-related risks like droughts and flooding. Kern County residents surveyed expressed interest in investment across greenhouse gas reduction options, showing a slight preference for investment in clean drinking water and slightly lower interest in flood control infrastructure investments.

C. Impacts of Climate Change

According to the UC Merced Community and Labor Center (2024) analysis:

> As it continues to progress, climate change will potentially trigger historic floods and storms that result in drowning, electrocution, fire, explosion, property destruction, exposure to toxics, post-traumatic stress, food insecurity, property destruction, housing insecurity and displacement (Neil et al. 2017). Extreme heat manifests in short or sustained high heat waves escalated by photochemical reactions that produce smog and ground level ozone, which can cause heat stroke, cardiovascular failure, respiratory diseases, and even death. In addition, droughts lead to excess pumping of depleted groundwater sources and the lowering of water tables, increasing the presence of toxic contaminants in drinking water—such as industrial chemicals (e.g., pesticides) or minerals (e.g., arsenic)—leading to cancer, liver, or kidney problems among those that depend upon that water.

Shifting water tables and land may also place pressure on public water infrastructure and, during atmospheric rains, increase the risk of infrastructure failure and floods. Larger floods and rising sea levels may damage businesses and public buildings, schools, recreational sites as well as impede the transportation of goods between Kern County and other parts of the state, country, and the international market. Increasing greenhouse emissions and other pollutants enabling climate change equally to promote forced migration and civil conflicts. The overall climate change situation has worrying impacts on both the environmental, physical, social, mental, emotional, and occupational wellbeing of Kern County residents as well as the security, business, and economy of the county.

Even though climate change has enormous impacts on the entire state of California just like other parts of the world, its repercussions on the people of Kern may be considered more precarious due to the county's heavy reliance on agriculture and the oil and gas sector (Advancement Project 2019). Experts have predicted that the county will experience even worse hydroclimatic extremes characterized by higher daily temperatures, heatwaves, wildfires and diminishing snow with severity by the 2050s (Advancement Project 2019). Extreme droughts are predicted to render water availability for agricultural irrigation scarcer, produce more dust storms that create the conditions favorable for extensive wildfires that would in turn disrupt services like energy transmissions. Continuous climate change will produce floods with damaging consequences for business, public and private facilities and hence loss of revenue and sources of income for businesses and the people of Kern respectively. Kern County ranks as one of the counties with the poorest air quality in the nation (Center for Biological Diversity 2021), yet under forecasts of an escalating climate crisis increased food insecurity, health challenges and poor water quality for domestic use are also anticipated to occur.

The greatest immediate and long-term potential impacts of climate change on the people of Kern County are, and continue to be, record heat, catastrophic wildfires and wildfire smoke, excessive drought, epic floods, and the worst air quality in the nation. Such climate issues have profound implications for water access, agricultural production, economic transitions, unemployment, and populations lacking a safety net, to name a few.

While climate change has already escalated in recent years, experts predict that climate conditions will further worsen by the 2050s (Fernandez-Bou et al. 2021). They predict that Kern County will experience higher daily temperatures and more heat waves, resulting in increasing wildfires and big reductions in snowpacks. Winter temperatures are forecasted to increase by 3-4 degrees Fahrenheit; summer by 5-6 degrees; heat waves to last longer by 3-5 days; and precipitation to decrease by 1-2 inches by 2050. (Ramos 2020, Advancement Project 2019). Also, wildfires are anticipated to increase by four to six times above current wildfire season averages while snowpacks are projected to decrease by approximately nine inches, resulting in less than four-inch snowpacks by 2090 (Advancement Project 2019). Also, droughts are expected to become more frequent and intense as precipitation drops, and as wildfires and floods escalate. Experts also predict that weather conditions will result in water scarcity for irrigation and intense cold snaps.

The impacts of climate change on the people of Kern County differ based on demographic characteristics, including age, class, and race. According to the Environmental Defense Fund's Climate Vulnerability Index, Kern County ranks in the 94th percentile nationally for the vulnerability of its population to climate change factoring in health, the environment, social and economic vulnerabilities, and infrastructure (the sixth highest in the state out of 58 counties) (Environmental Defense Fund 2023). The most vulnerable to climate change include the very old, the very young, those with fragile health conditions, outdoor field workers, people without means of evacuations, low-income earners, individuals without access to air conditioners, the disabled, those with English language barriers, and people living in communizes with no green spaces (Ramos 2020, Neil et al. 2017). In terms of race, Latinos (constituting about 52% of the population) followed by Black people (5%), Asian people (5%) and other people of color (Indian Americans/non-whites, about 2% of the county population) are more vulnerable to climate change effects than White counterparts (Advancement Project 2019). People who fall within many of these categories may experience multiple risk factors that heighten their vulnerability to climate change.

The above groups of Kern County residents are particularly vulnerable because they often have poor infrastructure, limited access to public services, and lack transportation options. These make emergency response challenging, while exposing them to more climate change harms that aggravate their current conditions

(Advancement Project 2019). It is estimated that about 10% of households are linguistically isolated—they do not have a single person above the age of fourteen with English proficiency (National Equity Atlas, California Immigrant Data Portal (CIDP), CalEnviroScreen 4.0). Also, as of 2010, less than 7% of families in these groups owned a car, a necessary resource to move should weather conditions mandate emergency evacuation. An overwhelming majority of people within these groups are at greater risk of heat-related illnesses, poor air quality, displacement, psychological distress, depression, and death.

Climate related impacts and vulnerabilities pose a severe threat to the population in Kern County, where only four of the California state-designated Disadvantaged Communities (DACs) in the county are covered by a city level Climate Action Plan (CAP)–all in the city of Delano. Hence, nearly 95% of the most pollution-impacted communities have no formalized planning in place to protect vulnerable populations from climate change and only 52,000 out of the 917,000 residents of the county are covered by a CAP (less than 6%). Using the US Environmental Protection Agency (EPA) 2022 Environmental Justice Screening Tool, over two-thirds (72%, 101 of 151 census tracts) of the Census Tracts are designated as Disadvantaged in Kern (EPA 2022).

Kern County's disadvantaged profile lets it receive federal and state funding for climate-related investments. Indeed, as of 2021, the county has already received over $19 million dollars in climate investments. A county level climate investment plan involving key community and labor sector stake holders could lead to much more civic participation in the regions most impacted by pollution and climate change.

Occupational Impacts:

In general, outdoor workers are at greater risk from climate-related impacts. Farmworkers are exposed to extreme heat in Kern County and are at heightened risk of acute and chronic heat-related health conditions. Reports indicate that in 2010 approximately 48,620 outdoor workers, mostly farmers, were exposed to heat waves (Advancement Project 2019, O'Rourke 2023) and between 2005 to 2010, 193 people visited the emergency room for heat-related illnesses (Neil et al. 2017). This translates into twenty-four emergency room visits per 100,000 persons, which is 2.4 times the statewide rate of ten emergency room visits per 100,000 persons (Neil et

al. 2017). Outdoor workers experience a heightened risk of respiratory and cardiovascular diseases from wildfires. Smoke from wildfires contains chemicals, gases and fine particles that can harm health. The greatest hazard comes from breathing fine particles in the air, which can reduce lung function, worsen asthma and other existing heart and lung conditions, and cause coughing, wheezing and difficulty breathing (Cal/OSHA 2021). Rising temperatures favor agricultural pests, diseases, and disease vectors. Climate change has already made conditions more conducive to the spread of certain infectious diseases, including Lyme disease, water-borne diseases, and mosquito-borne diseases (Mojahed and Mohamadkhani 2022). Outdoor workers are at increased risk for vector-borne illness. Between 2015 and 2019, seventy-nine cases of severe vector-borne illnesses characterized by fever, headaches, rash, muscle weakness, nausea, and vomiting were registered in Kern County (Advancement Project 2019). Finally, climate-induced extreme weather events interrupt work. According to the 2023 Dolores Huerta Foundation Community Needs Assessment, in Arvin, East Bakersfield, Wasco, and Lamont/Weedpatch, over one in five households reported interruption of work due to extreme heat days in the past year and over one in ten households reported loss of work due to flooding (see Appendix B).

Agricultural Production

Annual water supply is projected to reduce 20% by 2040; as such, about 900,000 acres of farmlands or 50% in some towns may be fallowed (Escriva-Bou et al 2022, Escriva-Bou et al 2023). This may pose a severe challenge to Kern's agricultural industry, with varying consequences for different categories of crops. Almond production, for example, will not be greatly affected by the climate crisis due to the crop's ability to survive in such weather conditions. But other crops like pistachios, grapes, carrots, and oranges will be severely affected by the extreme climate condition (Cox 2020). Weathered heatwaves and cold snaps in recent years have lowered the quality of crops like cherries and reduced pollination (Cox 2023b). Higher temperatures reduce the chill time trees like pistachios require to produce, while other crops such as carrots do not do well in extreme hot weather conditions. Such a decline in the production of these crops will hurt the economy of the county, as the county makes about $7.25 billion gross output per year from agriculture (Cox 2020). Any reduction in productive agricultural land will result in lost wages and employment. Finally, food insecurity will be high as Kern County already experiences food challenges. In 2016, about 13.6% of residents experienced food challenges

(Advancement Project 2019). The anticipated decline of the agricultural sector due to climate change, and its expected fallowing of about 900,000 acres of farmlands in the San Joaquin Valley, is projected to lead to a 2.3% decline of the economy of Kern County by 2040 (Escriva-Bou et al. 2023).

Job and Income Insecurity

According to the UC Merced Community and Labor Center (2024) analysis:

> As one of the nation's leading counties in oil, gas, and food production, Kern County relies heavily on the oil, gas, and agricultural sectors as primary sources of employment. Efforts to address climate change necessitate a shift from fossil fuels to low-carbon energy development and carbon management to mitigate the worsening climate crisis. This transition poses a risk of job displacement for workers in the oil and gas industry, given its susceptibility to fluctuations in the fossil fuel market (UC Merced Community and Labor Center 2024). The county, which already struggles with low wages, may face further declines in income as high-paying jobs in the oil and gas sector diminish (US Department of Energy 2022). The transition from fossil fuels is expected to significantly reduce property tax revenues in Kern County, potentially resulting in cuts to public services and jobs in the public sector.

Overall, Figure 40 demonstrates that most residents are very concerned or extremely concerned about the environment, and strongly support the state playing an important role in creating better jobs and improving environmental conditions based on results from the Kern County Regional Strategies High Road Training Partnership Survey. When residents were asked, "How concerned are you about the environment, from a scale of 1 (not at all concerned) to 4 (extremely concerned)?" two in three residents expressed that they were either "extremely concerned" (38%) or "very concerned" (28%) about the environment. Another one in four residents expressed they were somewhat concerned (27%). Altogether, 92% of residents expressed some level of concern for Kern's environment (Kern County Regional Strategies High Road Training Partnership).

	All Localities	Arvin	East Bakersfield	Wasco	Lamont/ Weedpatch
Not at all concerned	8%	7%	7%	11%	6%
Somewhat concerned	36%	28%	35%	42%	40%

Very/extremely concerned	56%	65%	58%	47%	55%

Figure 40: Level of Concern for the Environment by Region (UC Merced Community and Labor Center analysis of Dolores Huerta Foundation Community Needs Assessment 2023)

There was remarkable support for government and/or business to immediately address a wide range of environmental issues in Kern. Residents were also asked, "How important will it be for government and/or business to address these issues within the next two years?" during the Kern County Regional Strategies High Road Training Partnership Survey. As shown in Figure 41, most respondents expressed that it was "extremely important" for government and/or business to address water quality (74%), drought (71%), air quality (69%), wildfires (68%), excessive heat (61%), climate change (56%), and pesticide exposure (55%) in the next two years. Including "very important" responses, a large majority (between 77%-92%) expressed that government and business should address the environmental issues mentioned above within the next two years.

A minority (31%) of respondents state that flooding was "extremely important" to address the issue within the next two years—yet another 21% expressed that flooding was "very important" to address.

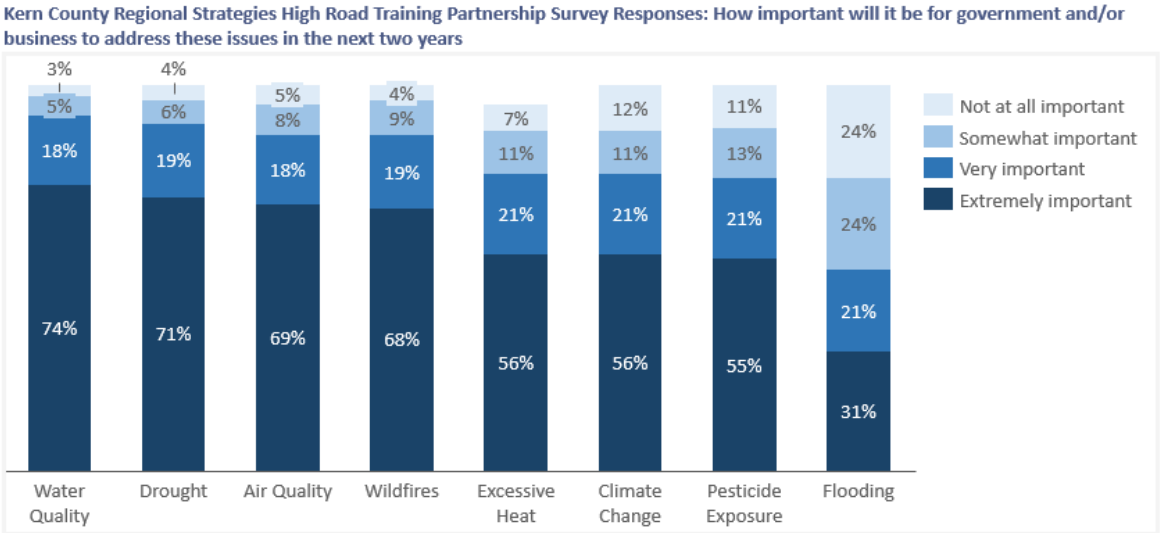


Figure 41: Kern County Regional Strategies High Road Training Partnership Survey Responses: How important will it be for government and/or business to address these issues in the next two years? Region (UC Merced Community and Labor Center analysis of HRTP Community Needs Assessment Survey, 2022)

According to the Kern County Regional Strategies High Road Training Partnership Survey, most Kern residents were supportive of more tax dollars being invested to create quality jobs in more environmentally sustainable forms of development, by wide margins (Figure 42). When told, "The government might invest more tax dollars to create quality jobs," Kern residents expressed encouragement for greater public investment for quality jobs in sustainable farming (83%), reforestation (81%), renewable energy (77%), retrofitting buildings (76%), public transportation (73%), zero emission fleets (62%), zero emission trucks/vans (60%), and zero emission passenger vehicles (59%). They also expressed encouragement for high-speed rail (53%). Responses discouraging public investments in these areas were very low, ranging between 9% (sustainable farming) and 30% (high speed rail).

Figure 42 provides information on where disinvested communities would prioritize government climate and environmental investments to create high quality employment, such as from the Inflation Reduction Act (IRA), California Climate Investments (AB 1550, SB 535), and CA Jobs First. There is widespread local support for job creation based on community needs within Kern County Disadvantaged Communities (DACs).

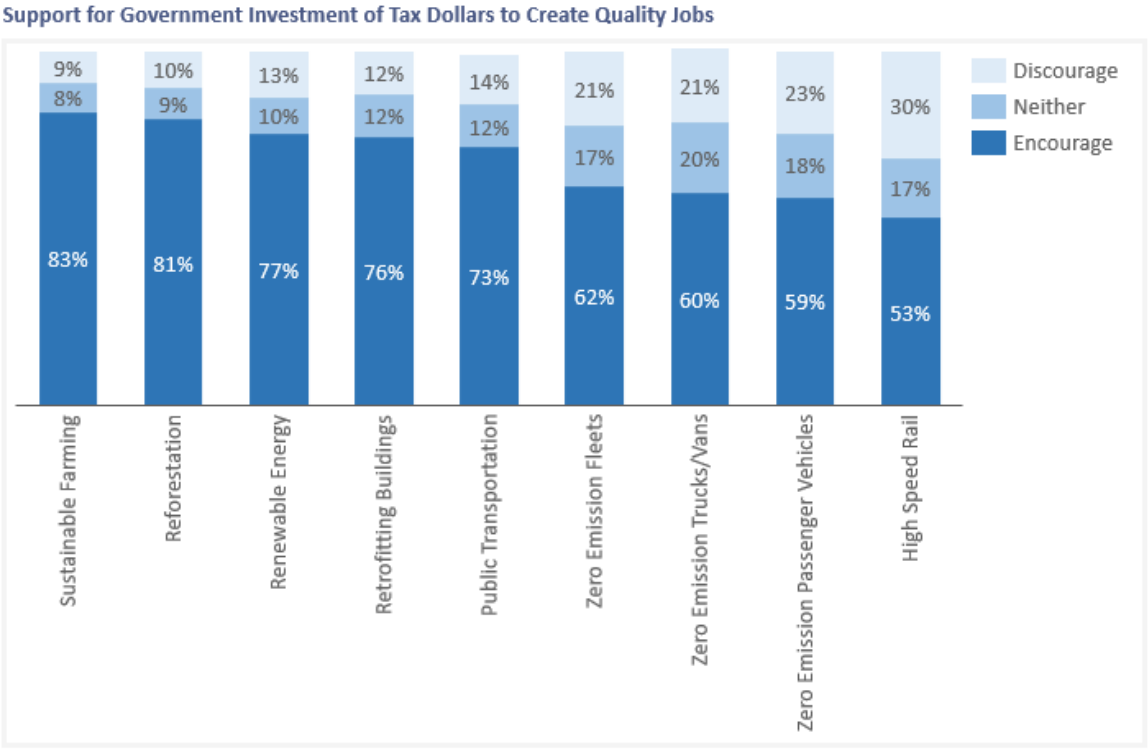


Figure 42: Support for Government Investment of Tax Dollars to Create Quality Jobs (UC Merced Community and Labor Center analysis of HRTP Community Needs Assessment Survey, 2022)

Results from the 2023 Dolores Huerta Foundation Community Needs Assessment also showed widespread public support for state climate investments. Most Kern County residents are very or extremely concerned with the environment, express support for government investment in every type of major high road training partnership presented to them, and feel it is extremely important that government and/or business address a range of major environmental challenges within the next two years.

D. Pollution

According to the UC Merced Community and Labor Center (2024) analysis:

Kern County's air pollution, measured in particulate matter, is among the highest in the United States, coming in as the second highest of the 3,108 counties in the United States according to one national ranking. High concentrations of particle pollution are associated with increased hospitalizations, asthma attacks, cardiovascular disease, lung cancer, COPD, heart attacks, and premature death. In 2012, 14% of Kern County adults (out of which 92% were people of color) were

diagnosed with asthma (Advancement Project 2019). Other pollution-related diseases such as cancer, and preterm births are also common in Kern County due to the poor air quality (Center for Biological Diversity 2021). In the Kern Council of Governments (COG) 2024 Community Survey, residents cited poor air quality as their third least favorite thing about their current city or town. Water quality in Kern is also among the worst in the state. The index for drinking water contaminants in the San Joaquin Valley was 742 for the years 2011 to 2019 (San Joaquin Valley Public Health Consortium 2022). Groundwater wells are easily contaminated by agricultural runoff and fuel byproducts like nitrogen oxide (State of California Department of Justice 2019).

The county's industrial sectors contribute to and exacerbate poor health conditions in Kern. Some of Kern's oil and gas production facilities and wells are sited in close proximity to disadvantaged communities, increasing their risk of exposure to toxic air contaminants and fossil fuel byproducts. Construction and operation of production wells increase fugitive emissions. In addition, many wells still use diesel-powered construction equipment that emit toxic pollutants and further exacerbate local emissions. These emissions, combined with leaks, generate odors that have considerable health impacts.

The county generates about 0.16 tons of air diesel particulate matter pollution per year (San Joaquin Valley Public Health Consortium 2022) while diesels, gasoline, and other byproducts of combustion fuels from cars (transport sector) emit monoxide (CO), lead, nitrogen dioxide (NO2), particulate matter, ozone, and sulfur dioxide (SO2) into the atmosphere (Sulbaran and Sarder 2013). These gases are harmful to human health and the environment. Nitrogen oxide, for example, is noted for posing higher risk of cancer, heart conditions and respiratory problems particularly in children and elderly as well as being a major water pollutant. These transportation-related emissions may increase as the county welcomes mega warehousing projects that involve the movement of fleets of trucks to and from the county.

Farmworkers and communities near agricultural fields may be exposed to pesticides, including Latino children who are more likely to attend schools exposed to pesticides when compared to white and wealthier residents (Hartzog et al. 2017). Dairies farms pose a particular threat to the region's air and water quality. They also emit

ammonia, hydrogen sulfide, particulate matter, volatile organic compounds, and hazardous air pollutants, as well as unpleasant odors.

In this next section, we examine CalEnviroScreen census-level data to better understand the localized impact of pollution on Kern communities. CalEnviroScreen is a science-based method for identifying impacted communities by measuring pollution exposure and its effects, as well as health and socioeconomic status, at the census-tract level. CalEnviroScreen measures environmental exposures (ozone, particulate matter 2.5, drinking water, diesel particulate matter, traffic, lead, pesticides, toxic releases), environmental effects (cleanup sites, groundwater threats, hazardous waste, impaired water bodies, and solid waste), sensitive populations (low birth weight, asthma, cardiovascular disease) and socioeconomic factors (linguistic isolation, poverty, unemployment, housing burden) to present a relative ranking of cumulative impacts and community vulnerability across census tracts in the state of California.

CalEnviroscreen 4.0 reports that 73 of the 151 Census Tracts (48%) in Kern County are designated as Disadvantaged Communities (DACS) by SB 535 (Office of Environmental Health Hazard Assessment 2021). DACs are low-income communities that suffer from heightened levels of environmental hazards. Nearly half of the census tracts in the county are burdened by multiple sources of pollution while simultaneously experiencing limited economic resources. Kern County contains a total of 151 census tracts, and this next section identifies the number of census tracts within Kern County that score in California's top 25% for each environmental exposure, environmental effect, and sensitive population indicator, as outlined in Figure 43. This section also summarizes what each indicator measures, the health impacts or risks associated with each indicator, the likely sources of environmental exposures or effects in Kern, and any distributional pattern of high scoring census tracts in Kern County.

Indicator	Number of Tracts
Ozone exposure	150
Asthma	81
Low birth weight	50
Cardiovascular disease	113
Pesticides	23

Drinking water	53
Lead from Housing	48
Cleanup sites	21
Groundwater threats	21
Hazardous waste	36
Impaired waters	0
Solid waste	31

Figure 43: Number of Kern County Census Tracts in Top 25% for CalEnviroScreen Indicators (out of 151) (California Office of Environmental Health Hazard Assessment, CalEnviroScreen 4.0)

Environmental Exposures

Environmental exposures generally involve movement of chemicals from a source through the environment (air, water, food, soil) to an individual or population. CalEnviroScreen uses data relating to pollution sources, releases, and environmental concentrations as indicators of potential human exposures to pollutants. CalEnviroScreen uses eight indicators to assess environmental exposures. They include:

- *Ozone:* Virtually every census tract in Kern County is in the top 25% of California census tracts most impacted by ozone pollution (150/151 census tracts). Ozone pollution causes numerous adverse health effects, including respiratory irritation and exacerbation of lung disease. Ozone is formed when heat and sunlight cause chemical reactions between oxides of nitrogen and volatile organic compounds. These pollutants are commonly emitted from vehicles, power plants, refineries, chemical plants, and other industrial sources. The region's geography and pollution from agriculture, oil drilling operations, vehicular traffic, and large industrial facilities are likely responsible for much of Kern County's ozone pollution.
- *Particulate Matter 2.5:* One hundred and seventeen (117) Kern County census tracts score in the top 25% of census tracts most impacted by fine particle pollution. Particulate matter pollution, and fine particle (PM2.5) pollution in particular, has been shown to cause numerous adverse health effects, including heart and lung disease. PM2.5 contributes to substantial mortality across the state. These pollutants are commonly emitted from agricultural operations, industrial processes, combustion of wood and fossil fuels, construction and demolition activities and road dust. The

region's geography and pollution from agriculture, diesel trucks, rail freight, and traffic on the I-5 and Highway 99 are likely responsible for much of Kern County's fine particle pollution. Census tracts in North, South, and Central Kern, and Taft are high scoring for this indicator.

- *Drinking Water:* Fifty-three (53) Kern County census tracts score among the top 25% of census tracts most impacted by drinking water contaminants. Contaminants may be introduced into drinking water sources in many ways, including natural occurrence, accidental discharge, industrial release, agricultural runoff, and certain water disinfection methods. In agricultural areas such as Kern County, nitrate from fertilizer application or animal waste can leach into groundwater and cause contamination of drinking water wells. Elevated levels of nitrate in drinking water are associated with methemoglobinemia (blue baby syndrome) and may be associated with birth defects and miscarriages. Arsenic, a known human carcinogen, is a naturally occurring contaminant often found in groundwater in arid and semiarid regions such as the San Joaquin Valley. Exposure to arsenic through drinking water is associated with elevated lung and bladder cancer rates, especially with early-life exposures. Most Central Valley and mountain census tracts other than Bakersfield, Delano, McFarland, and Tehachapi score high for this indicator.
- *Lead from Housing:* Forty-eight (48) census tracts score among the top 25% of census tracts most impacted by lead from housing. Exposure to lead through paint is the largest source of lead exposure for children. Historically, lead was used as a primary ingredient in house paint. Lead persists in older buildings containing lead paint, as well as old plumbing and contaminated soil. This indicator measures two known risk factors: age of housing and children living in low-income households. Census tracts in Delano, McFarland, Wasco, Shafter, Ford City, Maricopa, Arvin, Lamont, Bakersfield, Mojave, China Lake, and Boron score high for this indicator.
- *Pesticides:* Thirty-eight census tracts in Kern score among the top 25% of census tracts most impacted by pesticide use. Communities near agricultural fields, primarily farm worker communities, may be at risk for exposure to pesticides. Drift or volatilization of pesticides from

agricultural fields can be a substantial source of pesticide exposure. Pesticide use, especially use of volatile chemicals that can easily become airborne, can serve as an indicator of potential exposure. High use of pesticides has been correlated with both exposure and acute pesticide-related illness, and there is evidence for an association with chronic disease outcomes. Most Central Valley census tracts other than the urban cores of Bakersfield and Delano score high for this indicator.

- *Diesel Particulate Matter:* Twenty-three (23) census tracts in Kern scored in the top 25% of census tracts most impacted by diesel particulate matter. Diesel particulate matter (diesel PM) occurs throughout the environment from both on road and off-road mobile sources and some stationary sources. Major sources of diesel PM include trucks, buses, cars, and locomotive engines. Diesel PM is concentrated near ports, rail yards and freeways where many such sources exist. Exposure to diesel PM has been shown to have numerous adverse health effects including irritation to the eyes, throat and nose, cardiovascular and pulmonary disease, and lung cancer. Children and those with existing respiratory disease, particularly asthma, appear to be especially susceptible to the harmful effects of exposure to airborne PM from diesel exhaust, resulting in increased asthma symptoms and attacks along with decreases in lung function. Bakersfield, Delano, and Wasco score high for this indicator.
- *Traffic:* Two (2) census tracts in Kern score in the top 25% of census tracts most impacted by traffic. Traffic is the primary source of air pollution, where exhaust from vehicles contains many toxic chemicals, including nitrogen oxide, carbon monoxide, and benzene. Traffic exhaust also plays a role in the formation of photochemical smog. Health effects of concern from these pollutants include heart and lung disease, cancer, and increased mortality. The two high scoring census tracks are in northern Bakersfield near Alon Refinery where HWY 99 intersects with HWY 58/178.
- *Toxic Releases from Facilities:* One census tract in Kern scores in the top 25% of census tracts most impacted by toxic releases. Air monitoring data at hundreds of locations across the United States have identified over a dozen hazardous air pollutants at concentrations that exceed California cancer or non-cancer benchmarks. Many of the locations found to have

elevated levels are near major industrial sources, and many of the chemicals monitored are emitted from these facilities. The high scoring census track for toxic releases is the one containing the Clean Harbors Hazardous Waste Landfill between Buttonwillow and McKitrick.

Environmental Effects

Environmental effects include environmental degradation, ecological effects and threats to the environment and communities. Effects can be immediate or delayed. Living in an environmentally degraded community can lead to stress, which may affect human health. In addition, the mere presence of a contaminated site or high-profile facility can have tangible impacts on a community, even if actual environmental degradation cannot be documented. Such sites or facilities can contribute to perceptions of a community being undesirable or even unsafe. CalEnviroScreen scores environmental effects at half the weight of environmental exposures to account for the lack of established exposure pathways. CalEnviroScreen measures five environmental effects, only four of which are relevant to Kern County (there are no census tracts that score high for impaired surface water bodies in Kern County). They are:

- *Hazardous Waste Generators and Facilities:* Thirty-six (36) census tracts in Kern score in the top 25% of census tracts most impacted by hazardous waste generators and facilities. Hazardous waste is by definition potentially dangerous or harmful to human health or the environment. Hazardous waste facilities may negatively affect perceptions of surrounding areas in ways that have economic, social and health impacts. Studies have also found health effects, including diabetes and cardiovascular disease, associated with living in proximity to hazardous waste sites. Unincorporated East Kern, Tehachapi, Arvin, Bakersfield, and unincorporated North and West Kern census tracts score high in this indicator.
- *Solid Waste:* Thirty-one (31) census tracts in Kern scored in the top 25% of census tracts most impacted by solid waste sites and facilities. Solid waste sites include landfills, transfer stations, material recovery facilities, composting sites, transformation facilities, waste tire sites, and closed disposal sites. Solid waste sites can have multiple impacts on a community. Waste gases like methane and carbon dioxide can be

released into the air from disposal sites for decades, even after site closure. Composting, treatment, and recycling facilities may raise concerns about odors, vermin, and increased truck traffic. Odors and the known presence of solid waste may impair a community's perceived desirability and affect the health and quality of life of nearby residents. Unincorporated areas across the county score high for this indicator.

- *Clean Up Sites:* Twenty-one (21) census tracts in Kern score in the top 25% of census tracts most impacted by brownfields or clean-up sites. Sites undergoing cleanup actions by governmental authorities or by property owners have suffered environmental degradation due to the presence of hazardous substances. These sites pose a risk to people who may come into contact with these substances. Some of these sites are underutilized due to cleanup costs or concerns about liability. The impacted census tracts are in Eastern and Western Kern, along with Delano, Wasco, Shafter, and Bakersfield.
- *Groundwater Threats:* Twenty-one (21) census tracts in Kern score in the top 25% of census tracts most impacted by groundwater threats. Many activities can pose threats to groundwater quality. These include the storage and disposal of hazardous materials on land and in underground storage tanks at various types of commercial, industrial, and military sites. Thousands of storage tanks in California have leaked petroleum or other hazardous substances, degrading soil and groundwater. Storage tanks are of particular concern when they can affect drinking water supplies. Dairy farms and concentrated animal-feeding operations, which produce large quantities of animal manure, pose a threat to groundwater. Other activities that pose threats to groundwater quality include produced water ponds, which are generated as a result of oil and gas development. Impacted census tracts are distributed throughout the county.

E. GHG Emissions

According to the UC Merced Community and Labor Center (2024) analysis:

> Though naturally occurring processes produce greenhouse gases (GHGs), human activities generate the bulk of the gases that have accumulated over time and trap great amounts of heat in the atmosphere thereby causing temperatures to rise (SJVAPCD 2012). The COVID-19 period can attest to the role of human activities in

GHG emissions. For instance, the California Air Resource Board (2023) reported that GHG emissions dropped in the state of California between 2019 and 2020, when human activity decreased due to COVID-19 restrictions; conversely, emissions increased from 2021 when COVID-19 restrictions lifted, and human activities resumed.

Greenhouse gases refer to gases with the potential to warm up the planet and cause critical shifts in global temperatures. The state of California is the world's twelfth- and the United States of America's second- greatest emitter of GHG emissions (Eastern Kern Air Pollution District, 2017). The rising temperatures (due to human activities) result in anthropogenic extremes characterized by intensive and extensive droughts, shrinking glaciers and ice, rising sea levels and flooding. According to the United States Environmental Protection Agency (EPA), and as seen in 2021, the nation generates about 6,340 million metric tons of greenhouses gases per year. The sectors most responsible for the nation's GHG emissions include the industry sector (generating about 30% of total emissions), transportation (28%), electricity production (25%), the commercial and residential sector (producing 13% of emissions), land and forestry use (12%), and the agricultural sector (10%) (US Environmental Protection Agency 2022).

In the state of California, the Air Board has identified carbon dioxide (CO_2), methane (CH4), nitrous oxide (N2O), sulfur hexafluoride (SF6), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and nitrogen trifluoride (NF3) as some of the main sources of GHG emission in the state (California Air Resource Board 2023). Contradicting the EPA's nation-wide report stating that the industry sector is leading in GHG emission, the California Air Resource Board finds the transportation sector to be the highest emitter in California. In California, transportation generates 39% of the state's total emissions, followed by industry (22%), state electricity (11%), agriculture and forestry (8%), residential emission (8%), commercial activities (6%), and electricity import (5%) (California Air Resource Board 2023b).

In terms of transportation, emissions from car tail pipes, intrastate aviation and other sources of transportation are responsible for the amount of GHG emissions in this sector in California. At the level of industry, oil extraction, petroleum refining, oil pipelines and cement plants include some of the key sources of GHG emission in this category. For electricity-based GHG emissions, in-state generation (including

industrial and commercial co-generation activities such as fossil powered electricity generation) and imported electricity are key emitters in the sector. Residential and commercial GHG emissions involves emissions resulting principally from fossil gas combustion and other gases used for cooking, water heating, steam generation, residential fertilizer application, meter gas leaks, refrigeration, and air conditioning. Commercial waste recycling or waste management processes and landfills produce gases that also accumulate to increase GHG emissions. In the agriculture sector, GHG emissions come from enteric fermentation processes, livestock (particularly dairy) manure management, soil preparation, crop fertilization, crop residue burning and fuel combustion in water pumping, building heating, commodity processing and tractor use.

Kern County and Significant Sources of Greenhouse Gas Emissions

In Kern County, a San Joaquin Valley Air Pollution Control District (SJVAPCD) (2012) report revealed that the county generated about 27 million metric tons of GHG emissions, and more yearly, since 2005. The institute also forecasted that GHG emissions from the electricity sector will, in the future, top the chart with 31% of total emissions, while fossil fuels will drop to 26%; transportation will decrease to 9%; agriculture, forestry and land use will increase from 8% to 10%; industrial processes from 7% to 10% and waste management and other sources to 2%. According to the report, the main sources of GHG emissions include the following:

- Fossil Fuel Industry Emissions: The fossil fuel industry in Kern County is responsible for 40% of the 27 million metric tons of GHG generated in Kern County. The industry's GHG emission rate is particularly influenced by the oil and gas sector and involves natural and waste gas, residual oil, LGP, fugitive oil and gas refining, petroleum production, fugitive natural gas transmission and distribution and all other refining processes.
- Electricity Production and Consumption Emissions: The fossil fuel industry is closely followed by electricity production and consumption generating 22% of gas emissions in Kern County. Electricity generated GHG emissions include the production of electricity in Kern County that is consumed within and outside the county and actual county consumption. This sector has subsectors involved in electricity production such as natural gas, petroleum, waste and biogas, and low-carbon energy development and carbon management systems.

- Transportation Sector Emissions: The transportation sector comes after the electricity sector and produces 17% of GHG in the county. The county's transport emissions are generated from on-road gasoline and diesel emissions from cars, off-road gasoline and diesel, on-road CNG and LPG, marine vessel and water shaft, and rail and aviation/airport activities. In terms of land transportation alone, Kern County is surrounded by mountains with a major transportation corridor running through it to other parts of the state. Emissions from transportation in the county may experience exponential increase, as in recent years the county has become home to over fifty mega warehousing and distribution facilities involving heavy duty truck around-the-clock (twenty four hours a day, and seven days a week) movement of goods to and from Kern to other parts of California and the nation (Kern Economic Development Corporation, 2023).
- Emissions from Agriculture, Forestry and Land Use: Agricultural practices, forestry and land use constitute another category of human activities that greatly shape GHG emissions in Kern County. This sector generates 8% of the total greenhouse gas emissions in the county. In agriculture, fuel combustion, enteric fermentation, manure management, ag burning, ag soils-livestock, ag soils-liming, ag soils-fertilizers, ag soils-crops, and carbon flux common in agricultural processes generate GHG. Forested landscape, non-farm fertilizer (settlement soils), wildfires and range improvements, and prescribed burns and hazards reduction burns are the key sources of emissions in forestry and land use.
- Industrial Emissions: Industrial processes are also key sources of GHG emissions in Kern County, producing 7% of all emissions in the county. Industrial production, particularly those involving cement production, lime, and semiconductor manufacturing, substitutes for ozone depletion, electrical distribution and transmission, cordon-dioxide, limestone and dolomite and soda ash consumptions, hydrogen production, and coal mining operations are noted for producing many gases that rise into the atmosphere and contribute to global warming.
- Residential and Commercial Activity Emissions: Residential and commercial activities constitute another key sector generating an alarming amount of GHG emissions in Kern County, as seen in its 5% GHG

emission production rate. The main sources of emission in this sector include coal/coke, natural gas, oil, wood burning, and liquified petroleum gas (LPG) with Kerosine adding to the list for residential emissions.

- Waste Management and Other Sources: Although it contributes a lesser amount to GHG emissions, the sector cannot be left out due to its rapid expansion in recent years and its impact on Kern County air quality and the environment. The waste management sector and other sources are responsible for 2% of GHG emissions in Kern County. Landfills and wastewater management generate a bulk of the GHG emissions in the waste management sector while other sources of GHG emissions like composting, resource recovery, military bases, aircraft, and nitrogen disposition also increase emissions.

Sector	Mean Score (1-4)
Clean drinking water	3.68
Protections from air pollution	3.61
Job creation	3.60
More parks and recreational space	3.60
Infrastructure protections from extreme heat	3.59
Flood control infrastructure	3.54

Figure 44: Preferences for Investments of State Greenhouse Gas Reduction Funds (UC Merced Community and Labor Center analysis of Dolores Huerta Foundation Community Needs Assessment 2023)

Kern County residents surveyed expressed strong interest in investment across greenhouse gas reduction options (Figure 44). Residents showed a slight preference for investment in clean drinking water, and slightly lower interest in flood control infrastructure investments (UC Merced Community and Labor Center 2024).

Section 2.3 Public Health Analysis

A. Introduction

This public health analysis explores Kern County's baseline public health, discussing social determinants of health and examines social inequities in living conditions that drive inequitable health outcomes in the region. The report identifies the underlying drivers of these inequities, setting the stage for informed decision-making and targeted interventions to address the pressing public health challenges facing Kern County.

B. Key Findings

The analysis reveals stark disparities in the health and working conditions of Kern County's residents, particularly among those employed in the agricultural and domestic work sectors. These jobs are characterized by the lowest standards in the US labor market, exposing workers to dangerous health risks.

Agricultural workers face a range of hazardous conditions, including extreme heat, lack of rest breaks, poor sanitation, wage theft, and pesticide exposure. These factors have contributed to a higher incidence of heat-related deaths and other sudden fatalities linked to heat-related illnesses, such as heart attacks, strokes, and cardiovascular diseases.

Kern County ranks among the lowest in California for overall health factors and outcomes. The county has a lower life expectancy and higher rates of infant mortality compared to the state average. The following analysis identifies elevated levels of issues related to mental health, drug misuse, and homelessness, which significantly impact the well-being of Kern County's residents.

These findings underscore the urgent need for targeted interventions and policy changes to address the social determinants of health and improve the overall health and resilience of Kern County's diverse communities.

C. Economic and Climate Effects on Public Health

According to UC Merced Community and Labor Center (2024) analysis:

> Agricultural work and domestic work have the lowest standards of any jobs in the US labor market. As a result, agricultural work presents greater health risks than any other occupation. Agricultural workers experience extreme heat, lack of rest breaks, lack of sanitation, wage the, and pesticide exposure. The UC Merced Farmworker Health study was the largest ever study on the health and well-being of farmworkers and found that California farmworkers experienced high rates of non-compliance at work.
>
> The California Division of Occupational Health and Safety (Cal/OSHA) has established a Heat Standard and Wildfire Standard to protect workers from heat and wildfire smoke. The study found that 15% of farmworkers did not receive any heat illness training and over two in five (43%) reported that their employer “never” provided a heat illness prevention plan as mandated under law (UC Merced Community and

Labor Center 2022b). When asked on a scale of 1-5 how often a respirator was "lacking but needed," nearly one in three (32%) farmworkers reported that respirators were lacking but "always" needed. Farmworkers also reported non-compliance with labor laws including wage and hour violations. The survey asked farmworkers how often employers refused to pay complete wages, on a scale of 1-never to 5-very often. Nearly one in five (19%) farmworkers experienced, at one point or another, not being paid wages they earned by an employer, while nearly one in six (15%) farmworkers did not receive the minimum number of 10-minute rest breaks as mandated under state law.

In terms of workplace health and safety, Kern's three industries noted earlier (warehousing, agriculture, and energy) ranked among the least safe for workers. According to the US Bureau of Labor Statistics (2024), in 2022, warehousing and storage had one of California's highest rates of non-fatal occupational injury and illness US Bureau of Labor Statistics (2024). In 2022, over 6 (6.2) in 100 California warehousing workers experienced injury and illness causing them to be unable to perform regular work. This rate was even higher than in animal slaughtering and processing ("meatpacking") (5.3), for example US Bureau of Labor Statistics (2024). Two industries related to warehousing and storage also had injury and illness rates higher than the California rate (2.5); these were truck transportation (3.0) and building services (2.8) US Bureau of Labor Statistics (2024). Agriculture (3.1) also had a rate higher than the state rate, while oil and gas extraction (0.8) and support activities for mining (0.9) were lower than the state rate (2.5) US Bureau of Labor Statistics (2024).

UC Merced Community and Labor Center analysis of California Department of Public Health 2019 death data found that, before the pandemic, the median age of death for San Joaquin Valley residents was 74. This was much earlier than the California median of 77, and the earliest among the state's ten regions. In particular, Kern County's median age of death was 72—the county with the fifth earliest age of death in the state.

The following analysis examines the relationship between age of death, and the industry that the worker had worked in for most of their life (as reported on the death certificate) (see Appendix B for methodology).

Persons who had worked in several of Kern County's notable three industries mentioned earlier (agriculture, warehousing, and oil and gas) had even earlier median ages of death than Kern County. Warehousing had the earliest median age of death (59) among the county's thirty industries (only those with >10 cases were tabulated) (see Figure 45). Industries related to warehousing also had early median ages of death, including building services (65), construction (67), and transportation (70) (see Figure 45). Oil and gas extraction (70) workers had an earlier median age of death than the county, as well (see Figure 45). Of the county's three prominent industries, only agriculture workers had a median age of death that was not worse than the county median --- though this figure may not be accurate; most agricultural workers are Latino immigrants and researchers have long suspected a salmon-bias effect within this population.

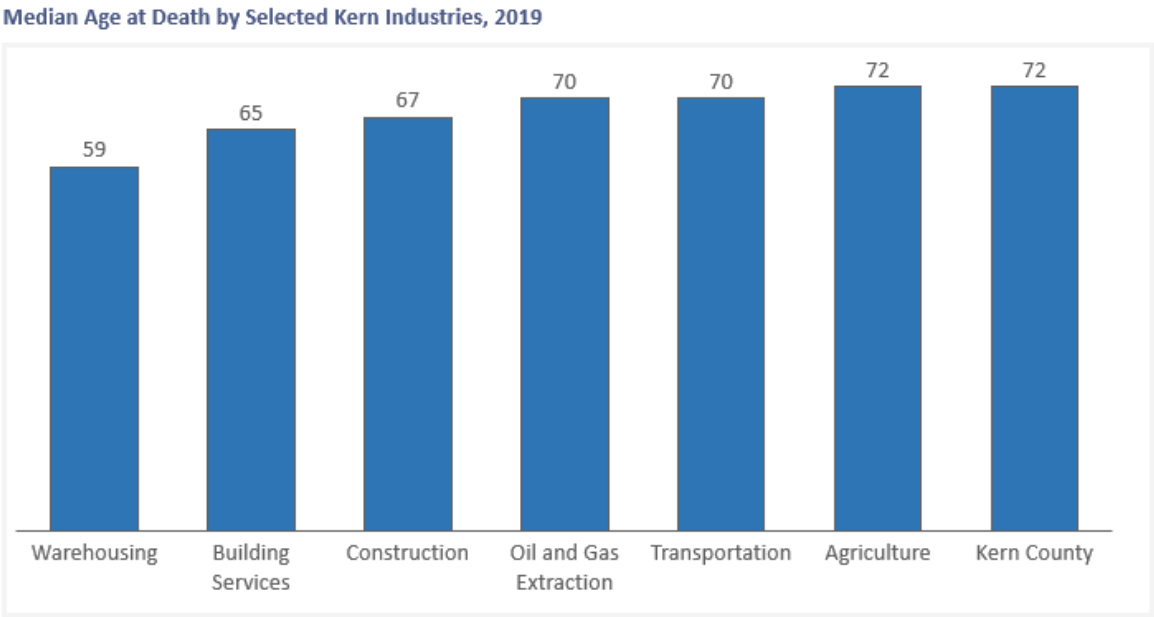


Figure 45: Median Age at Death by Selected Kern Industries, 2019 (UC Merced Community and Labor Center analysis of California Department of Public Health, California Comprehensive Death File, 2019)

The annual mortality rate for California workers aged 56-65 was highest in Kern's three notable industries. Workers aged 56-65, whose main industry of work had been in warehousing or related industries, all died at an annual rate above the state average. Death rates, by primary industry of work for those aged 56-65, were higher than the state average (1.23%) for warehousing (1.54%), transportation (1.47%), and building services (1.87%) (see Figure 45). Those who had worked in construction died

at a rate of 2.60% annually—far higher than the state's rate of 1.23% for all workers aged 56-65, and third worst among the state's 33 industries.

Agricultural workers are particularly vulnerable to a warming climate. Farmworkers experience heat-related illness and sudden death on the job at higher rates than other industries. Farmworkers work outside where they are exposed to direct sunlight and are impacted by heat illness thirty-five times more than other workers (Gubernot et al. 2015). From 1992-2006, US agricultural workers were twenty times more likely to die from heat stroke compared to workers in other industries (Centers for Disease Control and Prevention 2008). In 2019, agricultural workers experienced an estimated 19.4 deaths per 100,000 workers due to work-related injuries in 2019 (Centers for Disease Control and Prevention 2021). And in 2019, farmworkers accounted for 48 of 451 of officially recorded worker deaths in California, while only comprising about 1% of the state's workforce (US Bureau of Labor Statistics 2020b). Such statistics, though, undercount the prevalence of heat-related deaths. In California, from 2018-2022, 83 agricultural workers died suddenly on the job, mostly from causes linked with heat-related illnesses, such as heart attacks, strokes, cardiovascular diseases, or other "natural" causes, on days in which the temperature exceeded 80 degrees (Gross and Aldous 2023).

D. Public Health Analysis by Demographics

According to UC Merced Community and Labor Center (2024) analysis:

Overall Health Disparities: Out of all 58 California counties, Kern County ranks 56th for Health Factors and 53rd for Health Outcomes (Kern County Health Rankings 2021). An estimated 27% of Kern County residents have poor or fair health, compared to 18% of Californians overall. They have a lower life expectancy and face higher rates of infant mortality. In addition, several issues related to mental health impact that county at relatively higher levels compared to the state average. These health conditions occur in the context of high environmental pollution outlined above with nearly half of the census tracts in the county registering as highly polluted by state measures and over half by the US EPA measures. Environmental hazards, especially air and water contamination, exacerbate risks to well-being, chronic diseases, and life expectancy. In addition, access to treatment faces challenges with a less extensive health care and medical infrastructure in the region. These

challenges also include relatively lower rates of access to mental health care and child protected services.

Medical Health Disparities: There are 2,040 primary care physicians for every resident in Kern County, compared to 1,250 primary care physicians per Californian resident on average (County Health Rankings & Roadmaps 2024). One consequence of Kern County residents lacking access to primary care physicians is an increased rate of preventable hospitalizations (County Health Rankings & Roadmaps 2024). Preventable hospitalizations represent hospitalizations for conditions typically treatable in outpatient settings and may also overuse the emergency room as a primary source of care. The number of preventable hospitalizations per 100,000 Medicare enrollees in California was 3,598, compared to Kern County's overall rate of 4,914 (County Health Rankings & Roadmaps 2024).

As Figure 46 indicates, infant mortality is relatively higher in the region. Kern County ranks 35th out of 58 California counties for infant mortality and access to Adequate Prenatal Care. Life expectancy is also nearly four years lower than the state average (Figure 47). Hence, Kern residents face disproportionate health inequities throughout the life cycle. Figure 48 enumerates the leading causes of death in the county.

	Kern County	California
Total Population	5.3	3.9
African American	7.7	7.8
Hispanic/Latino	5.2	4.1
White	4.9	3.0

Figure 46: Infant Mortality (Deaths per 1,000 Live Births) – Statewide and County Data (2021) (County Health Rankings & Road Maps, 2021)

	Kern County	California
Overall Life Expectancy	77.5	81.7
Black	72.3	
Hispanic/Latino	81.1	
White	75.6	

Figure 47: Life Expectancy (County Health Rankings & Road Maps, 2021)

	Age-Adjusted Rate per 100,000
Malignant neoplasms	85.3

Diseases of heart	77.4
Accidents	54.5
Chronic lower respiratory diseases	19.5
Diabetes mellitus	18.6

Figure 48: Leading Cause of Death of People Under the Age of 75 (County Health Rankings & Road Maps, 2021)

A greater medical infrastructure with affordable access as found in more affluent counties in the state would improve these key health indicators, as well employment opportunities with extensive health care coverage.

Mental and Behavioral Health: There is one mental health provider for every 490 residents in Kern County, compared to one mental health provider per 270 Californian residents on average. Kern County residents report having 4.7 poor mental health days per year, compared to 3.7 poor mental health days for Californian residents on average. These are self-reported mental health accounts and likely underestimate undiagnosed and non-perceived mental problems as well. Figure 49 demonstrates one measure of mental health with relatively higher suicide rates in the county. Many stakeholders have expressed a continued need for improved access to mental health resources and services (Kern Coalition Stakeholder Meetings).

	Kern County	California
Total Population	14	11
African American	9	
Hispanic/Latino	8	
White	21	

Figure 49: Death by Suicide per 100,000 Population (Age-Adjusted) (County Health Rankings & Road Maps, 2021)

Drug-Induced Deaths: Another indicator related to mental health is Drug-Induced Deaths. Kern County ranks 53rd out of 58 California counties for drug-induced deaths. Per 100,000 residents, Kern County experienced 28.6 drug-induced deaths. This is twice the state rate of 14.3 per 100,000. Such high rates of drug-based mortality would give priority to programs addressing abuse and assisting prevention. This data does not include other problems associated with drug misuse and mental health outcomes, including homelessness.

Homelessness: has multiple causes, including housing costs, mental health, and drug addiction, and is a growing concern to the Kern County community members (Kern

Coalition Stakeholder Meetings). According to the Housing and Urban Development's 2020 Annual Homelessness Assessment Report (AHAR 2020), among all 59 "Largely Urban CoCs" in the country, Kern County has the fourth-highest percentage of unsheltered people experiencing homelessness; the fifth-largest number of people experiencing homelessness; and the fourth-largest number of veterans experiencing homelessness.

Current population trends are alarming. The 2021 Point in Time (PIT) annual count of homeless individuals estimated at least 1,581 unsheltered individuals in Kern County (Figure 50), including 343 children, in January 2021. Between 2018-2021, the total number of people experiencing homelessness grew by 143%. Much of this growth was driven by increases in children (327%) and families (221%), which highlights the economic dimension to the problem and the increased mental and physical health risks facing the newer populations of homeless.

As the share of unsheltered individuals grew by 32%, suggesting a need for increased housing, the growth rate of housing has not kept up. Kern County owns only one 24-hour shelter, M Street Navigation Center, which opened in May 2020 and has only 150 beds. To put this in perspective, from 2020 to 2021, the number of unsheltered individuals increased by 577 people – nearly four times the number of beds in M Street Navigation Center (Figure 51). But there are multiple other congregate shelters (City of Bakersfield "Brundage Lane Navigation Center", The Mission at Kern County, and Bakersfield Homeless Center, to name a few).

	2018	2019	2020	2021
Adults	715	1,115	1,359	1,633
Adults with Children	63	74	79	174
Children	107	141	142	343
Unsheltered	370	805	1,004	1,581
Total	885	1,330	1,580	2,150

Figure 50: Point in Time (PIT) Annual Count of Homeless Individuals (Grand Jury White paper on Homelessness)

	2018	2019	2020
Total Beds for Households without Children	363	384	405
Total Units for Households with Children	57	66	74
Total Beds for Households with Children	224	266	292
Dedicated Veteran Beds	56	59	59

Total Year-Round Beds	587	650	697

Figure 51: Available Housing Counts (Grand Jury White paper on Homelessness)

Child Welfare and Youth: There are more child maltreatment allegations per 1,000 children in Kern County than for the state (Figure 52). There are more substantiated reports of child maltreatment per 1,000 children in Kern County than the state rate, but less are investigated (Figure 53). These rates result in greater mental and physical health issues for youth. Kern County ranks 54th out of 58 California counties for adolescent births. The county had 25.9 births per 1,000Females, 15-19 Years old, compared with the state rate of 17.0 (County Health Rankings & Roadmaps 2024). More infrastructure for youth health care and child protective services would help to alleviate these high rates.

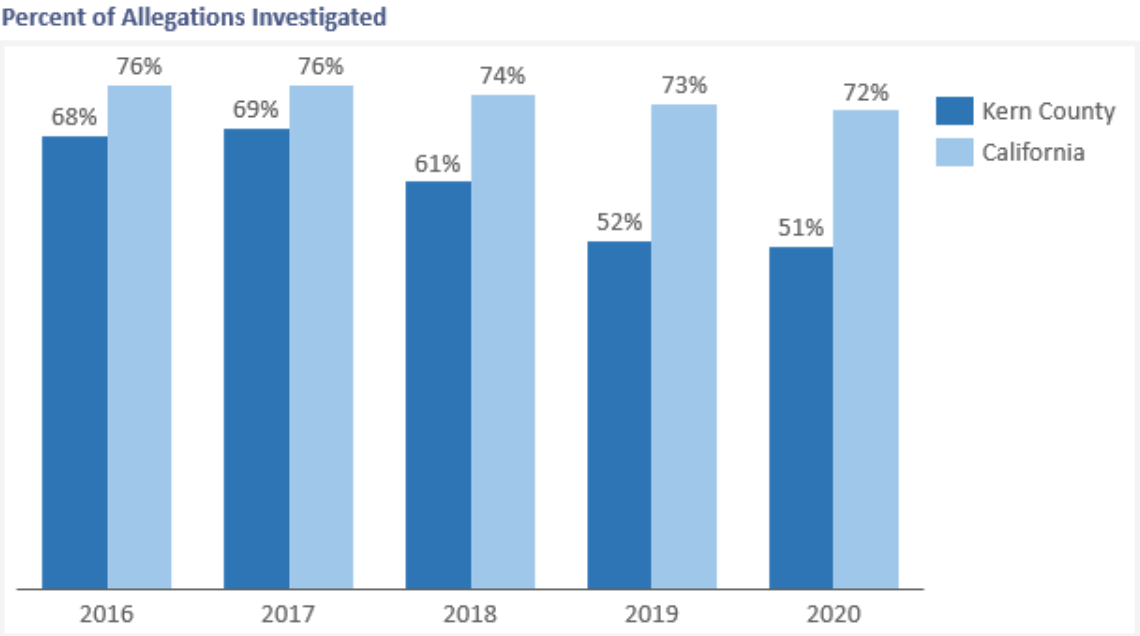


*Figure 52: Percent of Allegations Investigated (*California Child Welfare Indicators Project)

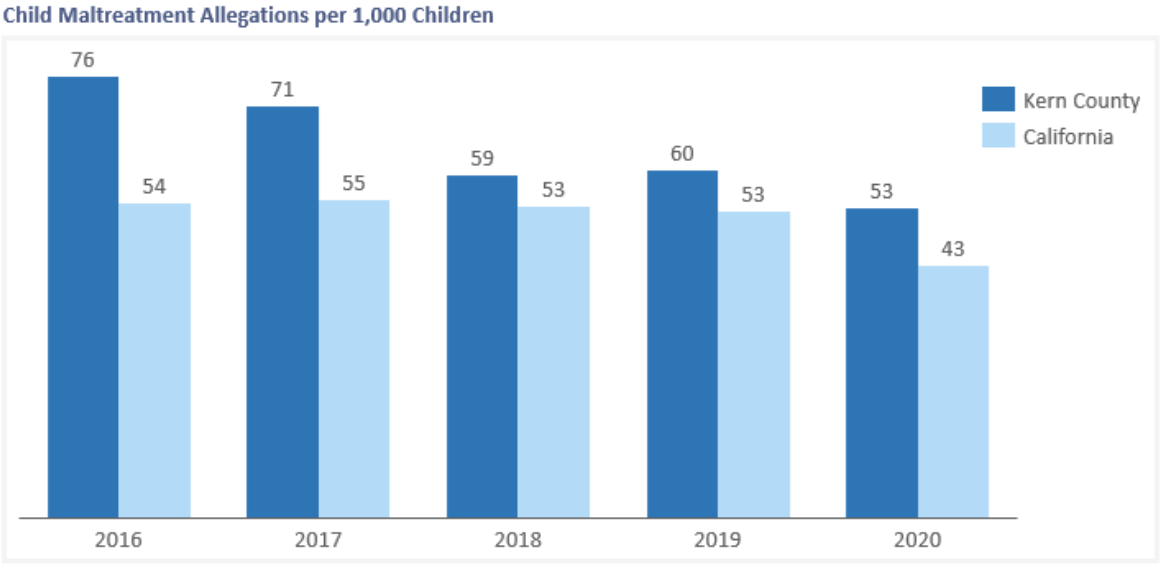


Figure 53: Child Maltreatment Allegations per 1,000 Children (Kern County Health Rankings & Road Maps, 2021)

Data Limitations

This analysis partially incorporated the UC Merced Community and Labor Center (2024) analysis along with the 2022 ACS 1-Year Estimates Data and ACS 5-Year Estimates Subject Tables. The Community and Place-Based GIS Planning platform was also used for more recent data, last updated for 2023. The UC Merced Community and Labor Center (2024) analysis reviewed both primary and secondary sources, which encompassed analysis conducted by the UC Merced Community and Labor Center on data from the US Census Bureau American Community Survey (ACS) Public Use Microdata Series (PUMS) spanning from 2017 to 2021 (refer to Appendix C).

One key limitation of this data analysis is the potential for incongruities or lack of clear correlations among the data points, even though the individual data sources are reliable. This occurs when combining data from multiple sources, which were collected at different time points or using varying methodologies. While each of these data sources is reputable and high-quality on its own, there are misalignments in the timeframes, geographic coverage, sampling approaches, or other factors. These differences make it challenging to establish clear, consistent relationships between the data points.

The US Census Bureau provides annual estimates of the resident population, with the latest data available up to July 1, 2019. These 2019 population figures serve as the baseline for projections going forward. The 2019 baseline projections incorporate the most recent

historical data on births, deaths, and migration, examining trends from 1990 through 2022. Using this 2019 baseline data, the Census Bureau then generates detailed county-level population projections by age, sex, and race/ethnicity out to the year 2060. These county-level projections are then aggregated to provide state-level population estimates. It's important to note that the projections are limited to the 2019 baseline, as more current census data beyond that year were not yet available. Consequently, the projections may not fully capture any important demographic changes or trends that have occurred since 2019.

Furthermore, Census data, like any human-generated data, may contain biases or errors from factors like self-reporting, sampling, or measurement issues.

Finally, the State of California EDD data was used to analyze sectoral employment and projected growth, yet our use of the State of California EDD datasets did not rely on the most disaggregated data in certain sectors (e.g., the analysis used EDD's broader categories like "education and health services"), which can limit the granularity of insights.

Annex

Language Spoken	Share of Homes
English only	54.0%
Spanish	39.9%
Other Indo-European languages	2.0%
Asian and Pacific Islander languages	3.0%
Other languages	1.1%

Figure 54: Language Spoken at Home, Kern County

Regions & Subregions	Poverty Rate	Median Household Income
California	11.7%	$84,907
Kern County (Overall)	18.6%	$48,021
Central Kern	16.1%	$46,552
North Kern	(SNAP Rate 25%)	$47.845
East Kern	15.2%	$65,810
South Kern	28.77%	$39,554
West Kern	27.4%	$46,628

Figure 55: Poverty Rate and Median Income by Sub-Region

AREA 3.

LABOR MARKET ANALYSIS

The modern labor market in Kern County has been significantly influenced by a history of colonization, plantation agriculture, significant demographic shifts, and disparities in citizenship. However, over the twentieth century, workers have mobilized, leading to the implementation of federal and state policies aimed at improving labor conditions. The promotion of the High Road framework, as outlined in the legislative intent of CERF (SB 162), entails public investment in collaborations among employers, labor unions, and communities to enhance industry and environmental standards. This section explores the State's High Road framework and its potential to elevate labor standards in pertinent industries in Kern County, as well as the obstacles to securing high-quality jobs and the training initiatives that could promote the development of a high-road economy in the county.

B. Key Findings

Kern County's labor history, rooted in colonialism and the plantation model, has led to enduring disparities in worker protections, particularly for agricultural and domestic workers. Exclusionary practices persist even with federal labor reforms, with farmworkers historically excluded from key protections until grassroots organizing efforts led to notable victories. While organized labor has advocated for state-level reforms benefiting workers in Kern County, local initiatives to raise labor standards have been limited, highlighting the ongoing need for comprehensive policy changes.

The California Workforce Development Board's report outlines how climate policies and public procurement influence labor demand and job quality, advocating for a high road approach. This approach emphasizes skilled workforce standards, wage standards, and just transition planning to ensure quality workmanship and support for displaced workers, contrasting with a low road approach characterized by lack of standards and training, resulting in poor job quality and income loss for workers.

Improving job quality and economic resilience in Kern County requires addressing critical factors such as living wages, benefits, job accessibility, education, training opportunities, and workplace health and safety. Community input highlights the need for comprehensive measures to enhance labor standards and create pathways for upward mobility, particularly in climate-relevant industries.

C. Evolving Labor Standards

According to UC Merced Community and Labor Center (2024) analysis:

> Kern County was originally inhabited by tens of thousands of Indigenous persons, and its colonial history profoundly shapes labor relations today. Kern County's economy, like that of the broader San Joaquin Valley, is rooted in the plantation model (Arax and Wartzman 2005). The region's economy has long been tied to large-scale agricultural production, as well as deeply paternalistic employment relations. Under Spanish rule, colonizers were rewarded with the labor of enslaved native people. Under Mexican rule, large landowners kept largely Indigenous peasants in debt peonage. And while most Mexicans were small ranchers following the Mexican-American war, industrialization (and industrial agriculture) pushed westward, and Mexican small farmers could not compete. By 1900, most Mexicans had been forced off their land and into the industrial economy—mostly industrial agriculture.
>
> Modern day worker standards started effectively with US President Franklin Delano Roosevelt's passage of the New Deal. In 1935, following waves of strikes and violent confrontations between workers struggling to form unions and protect their rights on the one hand and anti-union employers on the other hand, US Congress passed the National Labor Relations Act (NLRA) of 1935 (National Archives). The NLRA guaranteed the rights of workers to freely organize and engage in collective bargaining and other activities promoting the interests of workers without repression or fear of retaliation. The National Labor Relations Board (NLRB) was created to manage labor disputes and enforce fair labor practices based on NLRA

stipulations (National Labor Relations Board). Also, as part of the New Deal, the Social Security Act of 1935 created a national unemployment benefit system and social security for workers. Three years later, in 1938, further government commitments to regulate relations between employers and employees led to the passing of the Fair Labor Standard Act (FLSA), setting minimum wage, overtime pay, child labor guidelines, employment record keeping, nursing mothers' rights, and protection from any form of discrimination and other workers' rights laws at the federal, state, and local government levels (US Department of Labor).

Agricultural workers and domestic workers were excluded from modern-day US worker protections. In the 1930s, racist southern legislators sought to maintain a caste system; since Black workers concentrated in agricultural and domestic work, those industries were excluded from the NLRA, FSLA and Social Security Act (National Employment Law Project 2021, Quadagno 1996). The absence of these protections excluded agricultural and domestic workers from the rights to freedoms of association, collective bargaining, and overall protection of their interests. In Kern County, Cesar Chavez and Dolores Huerta innovated broad-based labor organizing, applying community organizing to the issue of farmwork, and leading the 1960s and 1970s farmworker movement to major victories. In 1966, the farmworker movement won the first-ever labor union contract for US farmworkers on the mainland (Ganz 2009). In 1970, the farmworker movement won over one hundred union contracts and had over 50,000 dues-paying members (Ganz 2009). In 1977, the United Farm Workers of America successfully advocated for the passage of the California Agricultural Labor Relations Act, establishing the state's Agricultural Labor Relations Board and farmworker organizing rights (Zerger 1977).

This legacy of exclusion persists in the agricultural industry, as federal minimum wage provisions and overtime pay do not cover agricultural or domestic workers (United State Department of Labor, Wage and Hour Division 2020, National Employment Law Project (NELP) 2021, National Farm Workers Ministry). Unions representing farmworkers have successfully advocated for state-level agricultural labor reforms in California, New York, Washington, and other states. Following the deaths of three farmworkers in Kern County, and one farmworker in Fresno County, the United Farm Workers of America successfully lobbied for the passage of the California Heat Illness Prevention Standard (§3395, 2005), the first state-level protection of its kind in the nation. The California Heat Standard benefits workers in various outdoor

occupations, such as Kern's oil and gas industry, and mining. Other state-level standards that organized labor has successfully advocated for, to protect California workers in agriculture and other industries—beyond federal standards—now include the state minimum wage law (SB 3, 2016), paid sick leave days (SB 616, 2014), field sanitation (§ 3457, 1991), Cal/OSHA Wildfire Smoke Emergency Standard (§ 5141.1, 2019).

Organized labor's contributions to labor policy development and the passage of state bills have been essential for raising labor standards in agriculture and other industries in Kern County. In recent years, some California municipalities have passed local ordinances raising minimum wages, expanding paid sick days, or enhancing workplace safety. Yet, there are no such examples of Kern County or its cities passing local laws to raise labor standards. Historically, widespread improvements in working conditions in Kern County industries have only emerged because of federal and state policy changes, or union-represented collective bargaining agreements in the workplace.

In the following, we review California's High Road framework, and relevant labor policy provisions, to present examples of how the public sector can foster high road collaborations advancing CA Jobs First/SB 162.

D. California's High Road Approach

According to UC Merced Community and Labor Center (2024) analysis:

> In 2019, the California Workforce Development Board published a 600-page report ("Putting California on the High Road") articulating the high road framework as the state's blueprint for advancing its ambitious climate goals, to reduce greenhouse gas emissions by 2035 and to become carbon-neutral by 2045. The report was path-breaking in going beyond traditional approaches that plan "green" workforce training (for the economic and climate resilient jobs of tomorrow) by also asserting that the state's public procurement power could be leveraged to shape the demand for those jobs.
>
> The report conceptualized how climate and public policies shape labor demand and the number of jobs, job quality and job access that may either be high road or low road, as outlined below (Zabin et al. 2019, 10):

- Climate policies: Examples include “renewables portfolio standard, IOU EE incentive programs, EV infrastructure and rebates, the CAP-and-Trade program.”
- Policy mechanisms that affect labor demand: Examples include “public investment, mandates, public enterprises, incentives, pricing policies and procurement.”
- Impact of policies on number of jobs, job quality and job access: Examples include “construction, manufacturing, transportation and utility jobs.”

The report’s conceptual framework articulates that the “high road approach” consists of several distinct processes, such as demand-side levers for climate agencies, supply-side strategies for education and training institutions, and just transition planning (Zabin et al. 2019).

- Demand-side levers for climate agencies: These consist of “skilled workforce standards, wage standards, community workforce agreements, procurement for the public good, [and] targeted/local hire mechanisms.”
- Supply-side strategies for education and training institutions: These consist of “pre-apprenticeship and pipeline training, industry training partnerships, and curricula upgrades in post-secondary institutions.”
- Just transitions: These consist of “planned industrial phase-out, displaced worker supports, community economic development, and displaced worker assistance.”

When the high road approach is followed, report authors argue that it leads to outcomes such as economic diversification, fulfillment of skills needs, quality workmanship, improved working standards, and displaced workers keeping their livelihoods intact. In contrast, when the high road approach is not followed, a “low road” approach ensues, characterized by a lack of labor standards, training, and advanced planning for displaced workers. Low road outcomes include lack of market adoption, poor quality workmanship, low wages, and displaced workers losing jobs and income.

E. Labor Standards in Kern County

According to UC Merced Community and Labor Center (2024) analysis:

California Jobs First, intended to advance the state's definition of a high road economic development framework, should incorporate provisions for higher labor standards into its planning and implementation. As mentioned in previous sections, most Kern industries and occupations have median wages below a living wage. Consequently, improving access to specific career pathways in certain industries will likely not yield widespread change advancing economic and climate resilience in Kern.

In the Kern Coalition Stakeholder Meetings, community members indicated that their expectations of a "good job" aligned with the state's definition of a "quality job" (also analyzed in the Kern Coalition CERF Regional Summary (2023) and focused on 1) living wages and higher pay, 2) employee benefits, and 3) job accessibility. These themes were consistent across all subregions. Residents expressed that a quality job should support the cost of living, offer stability and competitive salaries, and provide benefits such as health insurance, paid sick leave, paid holidays, retirement, childcare, strong union contracts, opportunities for upwards mobility, flexible work schedules, and a good and safe work environment. Some regions identified the importance of local hiring and incentivizing businesses to hire from the local workforce as well as incentivizing more small businesses to locate near population centers to take advantage of the local workforce. In some regions, community members raised concerns about the availability of quality jobs in their towns, and the accessibility of such jobs.

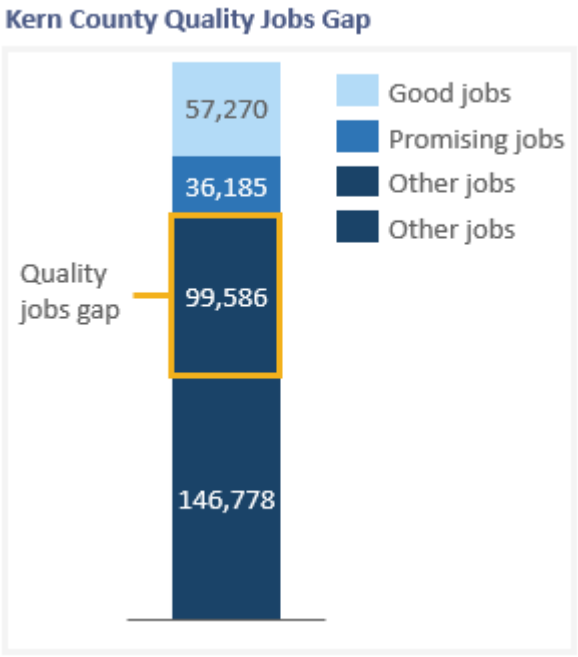


Figure 56: Kern County Quality Jobs Gap (Kern Coalition CERF Regional Summary, 2023)

Data in Figure 57 also shows that distribution of good and promising jobs is highly skewed by race and educational attainment from the Kern County Comprehensive Economic Development Strategy (CEDS) 2021 report. Notably, even among those with the same educational attainment, workers of color were much less likely to hold good or promising jobs.

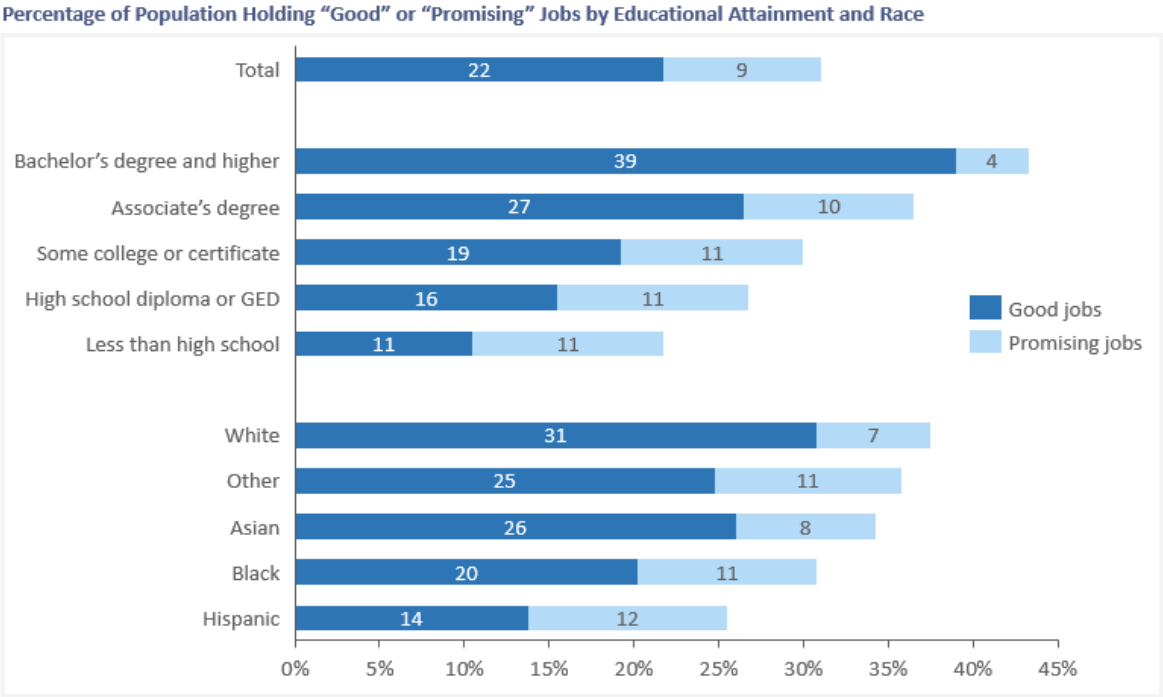


Figure 57: Percentage of Population Holding "Good" or "Promising" Jobs by Educational Attainment and Race (Kern County Comprehensive Economic Development Strategy (CEDS), 2021)

A second theme that emerged in the Stakeholder Meetings was the importance of having access to education and training opportunities. According to the UC Merced Community and Labor Center (2024) analysis:

> Members expressed that quality jobs require a skilled workforce, which requires an expansion of and access to public education and training programs. Residents discussed education in relation to skill development, which would provide opportunities for upward mobility as well as wage increases.
>
> When discussing barriers to find a job, stakeholders pointed to the lack of quality jobs, accessibility of available jobs, and lack of adequate education and training required for jobs. Participants also mentioned the propensity of employers to hire non-local employees. These themes were consistent across all subregions. Residents described the lack of quality jobs as stemming from low wages or lack of high pay, non-comparative salaries within their region, and an overall lack of availability of any jobs. Another barrier expressed by community members was the lack of accessibility to current jobs. The main concerns around accessibility were language barriers, criminal records, undocumented status, lack of a driver's license, location and

> transportation barriers, lack of childcare options or the inability to afford childcare, and long commutes. Members expressed that training and certifications to prepare workers were largely inaccessible to non-English speakers, especially for indigenous populations. They suggested that interpretation services could be useful in addressing those barriers. Members also discussed that location or proximity to work was often a barrier, especially given the high prices of gas, barriers to obtaining a driver's license, and lack of public transportation infrastructure.

When questioned on what their community could provide to benefit job creation, stakeholders mirrored many of the previous themes and called for specific educational programs such as adult education programs, English classes, business and finance programs, early college education, and computer and technology educational programs. According to the UC Merced Community and Labor Center (2024) analysis:

> Kern workers surveyed in the Kern County Regional Strategies High Road Training Partnership Survey expressed being interested in better jobs and more work. When asked if they were interested in having a better job, nearly half (46%) said they were "very interested," and another 20% said they were "somewhat interested." Only one-third (34%) said they were "not interested at all" in a better job. Among the 25% of Kern workers who worked part-time (less than 35 hours per week), more than half (58%) expressed wanting to work a full-time job. And within those wanting to work a full- time job, over a third (34%) cited school or training as the main reason for not working full-time, though an additional 9% said they could only find part-time work, and another 3% said that slack business conditions prevented them from working full-time.

In the following, the UC Merced Community and Labor Center (2024) analysis identified labor provisions frequently utilized in collective bargaining agreements or governmental policymaking endeavors aimed at enhancing working conditions. These standards encompass various aspects such as fair wages, mechanisms for dialogue and addressing grievances, management practices in the workplace, compensation structures, leave policies, empowerment and dignity of workers, promotion of healthy work environments, and the rights to assembly and expression. We assess the extent to which these provisions are presently mirrored in California's regulations and their implementation within Kern County.

According to the UC Merced Community and Labor Center (2024) analysis:

Sustainable Living Wages

Living wage considerations require that wages are predictable, stable, and able to support workers and their dependents. Living wages should also be able to meet basic needs like food, childcare, housing, transportation, and other family necessities. The California Workforce Development Board stresses the payment of family supporting wages that include healthcare, pensions, and paid sick leave and holidays, and the guarantee of workers ability to afford basic necessities for themselves and their families in any location. Living wages are calculated depending on a number of factors such as the number of family members within a household. For example, in 2023, families with two adults and two kids in Kern County, a sole breadwinner would have to earn an hourly wage of $38.14 to avoid chronic and severe housing and food insecurity; in similar families with two working adults, each would have to earn $25.02 per hour (MIT Living Wage Calculator 2023). Some counties have established minimum wages higher than the state or federal minimum wage rates to help workers cope with rising costs of living; such measures have included public sector workers, workers in certain industries (e.g., fast food), or hazard pay for essential workers during major public emergencies. Kern County has never established higher local wages, or higher wages for workers in emergent climate-related industries.

Benefits

Similar to the need for higher wages, more comprehensive benefits are an important component of job quality. These may include paid leave protections (sick, family, medical and vacation), meaningful pension/retirement savings, or meaningful health benefits. As a condition for public funding for economic and climate resilience, employers in relevant industries might demonstrate evidence of improvements in any or all of the aforementioned benefits.

The United States Department of Agriculture (USDA) Farm Labor Stabilization and Protection (FLSP) Pilot Program is modeled on the high road framework. It will soon provide $65 million in public subsidies are being allocated to farm employers—with the greatest amounts to those demonstrating the most improved working conditions, including increased benefits. While California is facing a budget crisis, state leaders still have the opportunity to align existing subsidies—such as those from state agencies like the California Department of Food and Agriculture—with CA Jobs First and high road employers.

In the Kern Coalition Stakeholder Meetings, residents interviewed about what constitutes a good job regularly cited access to benefits as a critical element. Specifically, residents prefer jobs that offer health benefits and support for family and childcare, competitive benefits, and access to educational training programs, alongside workshops and training sessions tailored for small business development (UC Merced Community and Labor Center 2024). As the UC Merced Community and Labor Center (2024) analysis continues:

> Kern County workers surveyed in the Kern County Regional Strategies High Road Training Partnership Survey expressed interest in good access to healthcare and healthcare jobs. When asked how important they believed "health/dental/vision insurance" benefits were to workers (on a scale of 1-4, with 4 being "extremely important"), 78% responded "extremely important." This was tied for the highest rate of any other benefit, including retirement benefits (78%), paid sick leave (74%), paid family leave (69%), vacation days (66%), childcare (62%), and employee discount programs (46%). When asked what it would mean to have a better job, the second-most common response after "better pay" (40%) was "benefits" (13%). More than one in three workers (36%) said that their employer did not offer healthcare coverage.

> ***Stable and Predictable Work Schedules***
> Worker schedules and working hours should be reliable, stable, and predictable, with the assurance that workers will not lose their jobs and incomes unexpectedly. As a condition for public funding, employers in such industries might provide workers with access to information regarding their schedules. For example, shifts should be clearly defined, with consistent hours of work well in advance, such as with a 28-day standard advance notice of changes in scheduling. Also, work schedules should include hours that take into consideration the need for families to earn sustainable incomes.

Kern County residents' feedback in the Kern Coalition Stakeholder Meetings also cite work-life balance as a key component of a quality job, highlighting the need for reasonable and reliable work schedules. As the UC Merced Community and Labor Center (2024) analysis continues:

> ***Workers' Right to Mutual Aid and Protection***
> Workers' rights and ability to join unions and or engage in concerted effort for mutual support and protection is a mandatory and a common fair labor standard across

industries. According to International Labor Organization (ILO) convention Co87, freedoms of association and of expression constitute indispensable labor standards important in improving labor conditions and establishing workplace peace (ILO, convention C087). Such rights might include an employer being a signatory to a union contract; in cases where a union contract is not in place, "labor peace" agreements (i.e., "card check" for voting for unions, and employer neutrality towards union organizing activity). In 2022, the State of California passed the Agricultural Labor Relations Voting Choice Act (AB 2183), allowing agricultural workers the right to vote by use of cards. Workplaces might also implement worker-management committees to improve working conditions.

Grievance Management Systems and Industry-Led Problem-Solving Mechanisms

Workplace grievances resolution systems are important features of labor standards. Workers should be granted opportunities to file complaints or work-related grievances, and to have those issues resolved either at the level of the employer, local government, or state and federal agencies. The California Department of Industrial Relations manages labor grievances, such as wage theft, through the Labor Commissioner's Office, where workers have the right to file grievances against their employers online, by mail, email or in person, regardless of immigration status and other factors (California Workforce Development Board Labor and Workforce Development Agency). In cases where worker grievances are not resolved at the level of the employer, workers have the legal right to access channels for state and federal agencies without fear of retaliation. Public funding for economic and climate resilience initiatives might incentivize those employers who are already signatories to a union contract; or have an active independent worker-management committee that convenes around work-related issues; or have a publicly posted grievance procedure that goes beyond federal and state regulations, and no record of major state or federal violations.

Skill Attainment

Workers should have the ability to access the opportunities to develop themselves professionally through promotions, new skill learning or retraining. The California Workforce Development Board High Road Training Partnership subsidizes collaboratives of labor unions, employers, and community organizations for engaging of workers in projects that support skill building to meet industry needs and competition in climate resilience. State subsidies should be aligned to reward

employers already investing in worker training and advancement towards the state's climate goals. Such training and advancement might include meeting apprenticeship standards; in non-apprenticeship occupations, developing industry-recognized portable skills; or being a member of a High Road Training Partnership.

During Subregional Meetings, Kern County residents emphasized the need for expanded English and technical training courses to provide job training, education, and guidance on navigating the education system and college careers. According to talent analysis from the Kern County CEDS 2021 report, the potential expansion of business services necessitates the cultivation of a more robust digital skills and tech talent base as an essential component of any deliberate overall endeavor. Residents highlighted factors such as lack of interpretation services as a barrier to accessing educational opportunities, along with the importance of affordable healthcare and workshop/internship opportunities for youth. Residents also called for investments in leadership and management training for employers, support for small businesses through navigational training, and incentives for businesses to hire and train local community members (UC Merced Community and Labor Center 2024).

In the Kern Council of Governments (COG) 2024 Community Survey, residents ranked "improving the quality of public education" as the most important issue for improving quality of life in Kern County over the next 20 years. According to the UC Merced Community and Labor Center (2024) analysis:

Workplace Health and Safety

Working conditions are captured in international, federal, and state labor standards in varying dimensions, but they all identify the necessity of worker safety, and freedom from any form of discrimination and harassment. The state's high road framework claims that a healthy work environment involves adequate training and provision of workplace safety equipment to reduce on-the-job injuries, prevent fatalities, and lessen the impacts of long-term health conditions. Socially conscious training should be designed to incorporate racial equity practices in community contexts to support employers to make pro-environmental and public health decisions for sustainability. State subsidies for climate and economic resilience initiatives should prioritize employers who are signatories to a union contract; or have an active independent worker-led safety committee; or have a publicly posted workplace health and safety plan that exceeds state and federal health and safety regulations, and no record of major state or federal violations.

In sum, various government and employer policies already provide worker protections and improve upon existing labor standards. For CERF/SB 162 to advance a high road approach towards climate and economic resilience, and for the state to advance towards its ambitious climate goals, existing public subsidies should incentivize Kern employers in climate-relevant industries—such as agriculture, warehousing, energy, and healthcare—that are aligned with the high road framework. In the above, we have outlined various ways that high road employment might be defined and incentivized. In the implementation phase, it will be critical for Kern CERF stakeholders to clarify the industries deemed as vital to advancing local economic and climate resilience plans; and to work to create a defined rubric for funding high road employment in those relevant industries. Critically, state and local government authorities will have to ensure that public funds reward Kern employers establishing and implementing improved labor standards in industries vital to economic and climate resilience—or such public subsidies will instead advance a low road economic development approach in direct conflict with the aims of CA Jobs First/SB 162.

AREA 4.

INDUSTRY CLUSTER ANALYSIS

This section provides foundational synthesis on Kern County's employment profile to inform better investment strategies that facilitate a transition towards emerging industries, fostering a more equitable and sustainable economic recovery.

In six main subsections, we first examine growth and decline projections of employment rates by industry and the residual effects of the COVID-19 pandemic. We include a discussion on comparative advantages, infrastructure assets, innovation ecosystem, supply chain considerations, federal and state investments, and policy trends. Following this, a subregional breakdown delineates the nuances of five distinct areas within the county: East Kern, West Kern, North Kern, South Kern, and Central Kern. We further explore five specific industries that stand out for their unique challenges, important employment impacts, and strong demand for job growth identified by stakeholders (agriculture, warehousing, healthcare, low-carbon energy development and carbon management, and education). Next, we analyze the benefits and limitations of the carbon management industry in Kern County. Due to identified trends and analyses, we then address the critical aspect of worker displacement risk. Finally, we acknowledge data limitations inherent in our study.

B. Key Findings

Kern County boasts a diverse employment profile, with remarkable contributions from sectors such as government (21.2%), trade, transport, and utilities (17.3%), farming (15.4%), education and health services (14.1%), and leisure and hospitality (8.5%)

Over the past five years, the county has experienced notable growth in the number of jobs, particularly in education and health services (22.4%), trade, transportation, and utilities (16.1%), government (8.3%), and leisure and hospitality (8.1%). By 2030, considerable job growth is also anticipated across various sectors, including trade, transportation, and utilities (+14,100 jobs), education and health services (+8,100), leisure and hospitality (+7,500), and government (+6,300).

Nonetheless, certain industries in Kern have also faced challenges over the past five years, with declines in mining and logging (-20.0%), information (-15.0%), manufacturing (-3.9%), farming (-2.9%), financial activities (-1.3%), and construction (-0.6%). Mining and logging is the sole sector projected to see a decrease in employment (with an expected decrease of 500 jobs).

The onset of the COVID-19 pandemic resulted in large declines in GDP for sectors such as arts and entertainment (-41%), accommodation and food services (-21%), oil & gas extraction (-17%), and educational services (-16%), while other sectors, notably agriculture (20%) and utilities (15%), displayed resilience with GDP growth.

Much of the employment in the county comes from government (68,000 jobs), trade, transportation, and utilities (60,000), natural resources and mining (49,091), education and health services (44,707), leisure and hospitality (30,089), and professional and business services (25,874). On the other hand, in terms of establishments, recent estimates indicate that education and health services lead (11,355), followed by trade, transportation, and utilities (3,847) and professional and business services (2,143).

Kern County's competitive advantage in various industries, such as natural resources, government, trade, transportation, and construction, is evident through high Location Quotients (LQs). The Kern County Comprehensive Economic Development Strategy (CEDS) 2021 report identifies additional subsectors with competitive advantages (including certain manufacturing subsectors and Business and Professional Services).

In terms of infrastructure assets, the county's strategic location, efficient land-use policies, and broadband connectivity are pivotal for its competitiveness. Challenges include placemaking issues in East Kern and declining job proximity due to suburban growth. Broadband access, while generally high, remains unequal, particularly in high-poverty areas. The Infrastructure Investment and Jobs Act aims to address these gaps, highlighting infrastructure's role in driving productivity and economic growth.

Kern County's innovative landscape shines with distinct strengths. With lower research and development (R&D) expenditures compared to neighboring universities, CSU Bakersfield continues to prioritize research by supplementing external funding with its own income. Military and aerospace institutions in the region contribute to research, especially in key engineering fields. Kern County also excels in research publications, particularly in focused engineering disciplines.

Supply chain disruptions pose a substantive challenge for Kern County's agricultural sector, leading to product shortages and increased costs for both farmers and consumers. Transportation bottlenecks and workforce shortages are key hurdles that require targeted solutions.

Kern County benefits from significant federal and state investments aimed at improving its infrastructure (like the Wheeler Ridge CAPM project), water security (like the Kern Fan Groundwater Storage Project), and overall quality of life (through ARPA funds for public safety, homelessness, and infrastructure initiatives). These strategically aligned investments position the county for future growth and development.

The county's success also hinges on navigating state policy trends. Collaboration is key to secure benefits for both the region and the state. While Kern should advocate for its traditional industries, it must also embrace the shift towards renewable energy like solar and wind farms. The county's land-use policy offers a competitive advantage with its streamlined permitting processes. Areas for further collaboration include infrastructure expansion, industry incentives, and a coordinated strategy for the aerospace and commercial space sector.

The sub-regional profiles of East, West, North, South, and Central Kern offer further insights into their unique economic landscapes, difficulties, and alignment with a transition to a high-road economy.

- **East Kern:** Driven by military installations, East Kern also focuses on economic diversification into sectors like aerospace products, services, research, & testing; natural resources & clean energy; outdoor recreation & tourism; logistics & distribution; and health care.
- **West Kern:** Anchored by the oil industry, West Kern is transitioning to carbon management and storage technologies while exploring opportunities in oil well remediation, gravity storage, and geothermal energy storage. Agriculture continues to be an essential sector, though its growth patterns vary.
- **North Kern:** Primarily agricultural, North Kern faces climate challenges like drought and extreme heat. It's embracing biomass with attached carbon capture and sequestration proposals, while also venturing into logistics and distribution.
- **South Kern:** Dominated by low-wage agriculture jobs, South Kern is investing in low-carbon energy and community improvements, such as electric buses, microgrid infrastructure, and educational centers.
- **Central Kern:** A diverse economy including agriculture, oil, manufacturing, and distribution, Central Kern is exploring low-carbon energy development and carbon management solutions like microgrids while facing challenges with dairy digesters (DD) and warehouse expansion.

Considering the employment data, community input, and other relevant considerations, Kern County showcases several particularly interesting sectors. Five industries stand out for having some combination of presenting unique challenges, making a substantial contribution to employment in the county, and demonstrating large demands for job growth. These include agriculture, warehousing, healthcare, low-carbon energy, and education, each with its own opportunities and challenges:

- **Agriculture**, although Kern's third-largest employment sector, faces challenges such as low labor standards and wages, environmental impacts, and occupational hazards, with most workers concentrated in low-paying roles.
- **Warehousing**, experiencing growth in Kern, is associated with high greenhouse gas emissions, wage declines, and occupational risks, predominantly impacting laborers in low-paying positions.
- **Healthcare**, one of Kern's major industries with a diverse range of occupations within the sector, provides essential services but suffers from a high percentage of workers earning below a living wage.

- **Low-carbon energy**, a growing sector in Kern, offers opportunities for economic growth and job creation, but faces opposition and concerns over environmental impacts and subsidy reliance, particularly in relation to local communities and resource management.
- **Education**, a fundamental pillar of Kern County's workforce landscape, has shown remarkable growth and garnered community interest, yet it faces persistent challenges such as teacher shortages and the need for higher educational attainment to foster more employment opportunities and higher wage jobs.
- Other important industries in Kern County include technology, advanced manufacturing, business services, entrepreneurship, defense, aerospace, transportation, logistics, and energy more broadly. These sectors offer diverse job opportunities and contribute to the region's economic landscape.

Some of Kern County residents see carbon capture as a promising economic opportunity to address climate change. Although this technology has the potential to bring several benefits, it also faces controversy over its true effectiveness and potential environmental risks. Stakeholders are debating the costs, advantages, and necessary safeguards before projects move forward.

Displacement risks also threaten Kern's agricultural and oil and gas sectors, calling for targeted strategies to ensure worker resilience amid climate and industry changes:

- Agricultural workers face threats from climate-related factors, such as extreme heat and droughts, additional displacement threats from automation, while aging immigrant workers encounter challenges transitioning to new occupations underscoring the need for comprehensive support programs.
- In the oil and gas industry, volatility and climate reforms pose risks to worker livelihoods, highlighting the urgency of equitable pathways for transition, including job training and retirement packages tailored to workers' needs.

C. County Analysis

i. Employment by Industry

Figure 58 captures Kern County's employment distribution by sector according to the State of California Employment Development Department (EDD), with an estimated 345,400 jobs as of February 2024, accompanied by a 10.2% unemployment rate.

The largest employer is the government sector, constituting 21.2% of total employment, followed closely by trade, transport, and utilities (17.3%), farming (15.4%) and private education and health services (14.1%), which are all fundamental pillars on the county's economy. Additionally, sectors like leisure and hospitality (8.5%) and professional and business services (7.9%), also contribute to overall employment. Conversely, industries such as mining and logging, construction, manufacturing, information, and financial activities hold smaller shares, each representing less than 5% of total employment. More specifically, the mineral, oil and gas extraction industry employ 3,945 people, or 0.34% of the population while the transportation and warehousing industry (inclusive of oil and gas pipelines) employs 8,970 people (3.14% of the county's population) (GIS Planning, 2023). Hence, this data underscores the diverse employment landscape within Kern County.

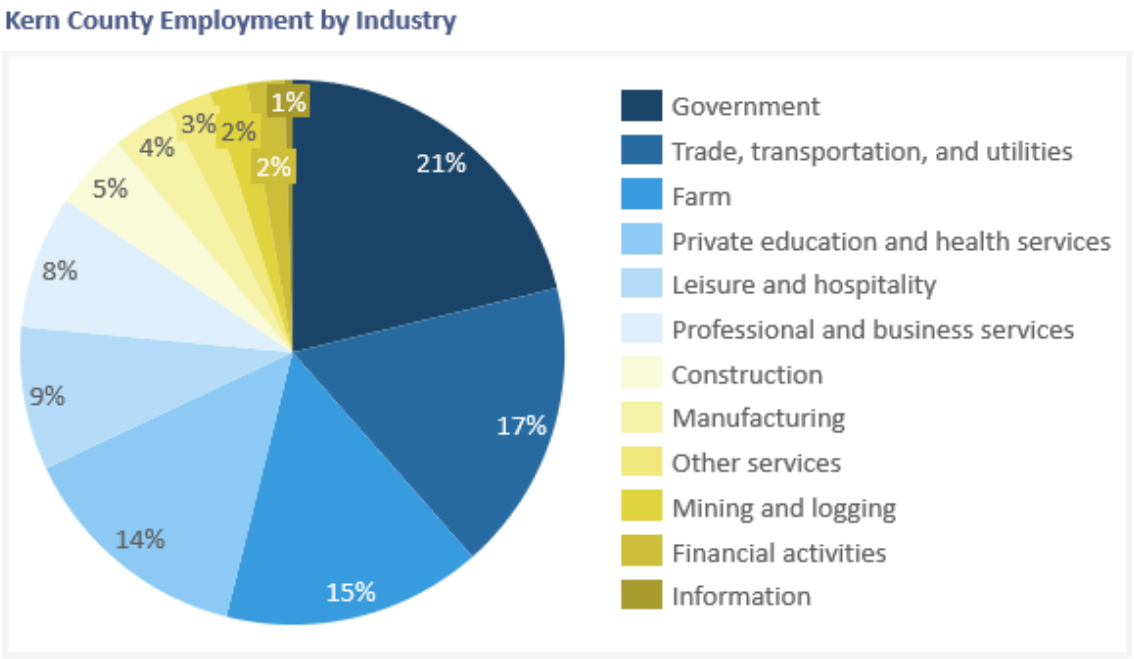


Figure 58: Kern County Employment by Industry (The State of California Employment Development Department (EDD), 2023)

ii. Job Growth Analysis and Key Trends

Data from the State of California EDD indicates that, over the past five years (February 2019 to February 2024), job growth in Kern County has been driven by several sectors, as seen in

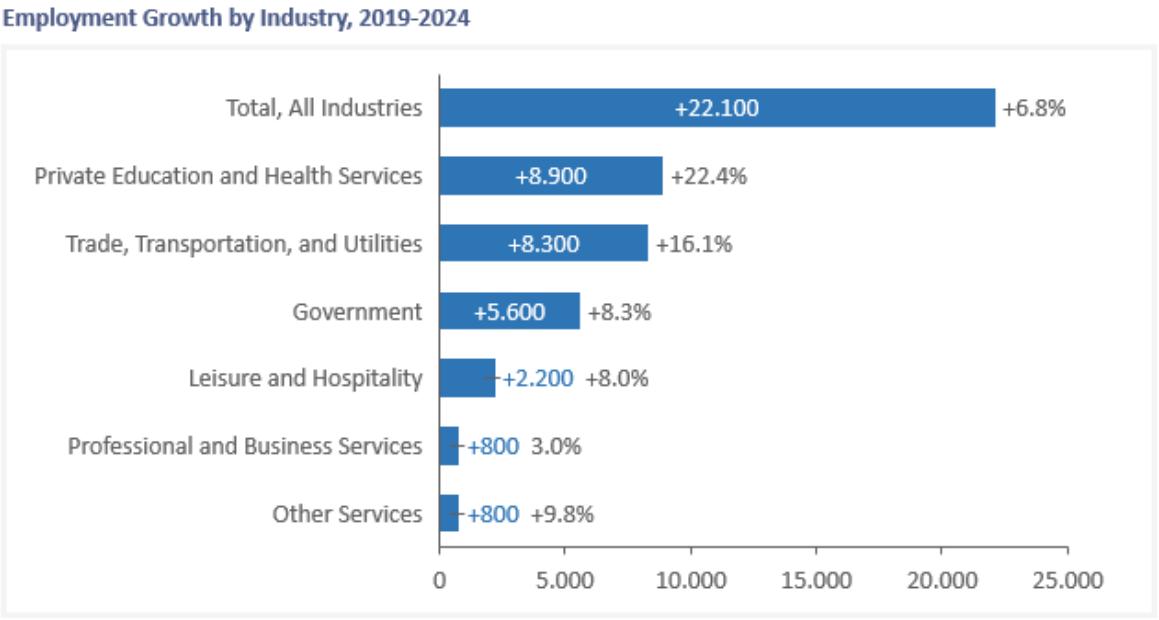


Figure 60. Complementary data from the UC Merced Community and Labor Center's analysis of the American Community Survey (ACS) presents employment by industry and showcases growth from 2007-2011 to 2017-2021, as demonstrated in Figure 61. Overall, the total labor force across all industries experienced an increase of 6.8%, with the total number of jobs rising from 323,300 to 345,400 by February 2024.

Occupational Group	% of total employment	Mean hourly wage
Management	4.5%	$58.41
Business and financial operations	4.1%	$40.29
Computer and mathematical	1.5%	$48.62
Architecture and engineering	2.2%	$51.42
Life, physical, and social science	1.0%	$39.35
Community and social service	2.0%	$28.56
Legal	0.4%	$53.23
Educational instruction and library	6.9%	$33.22
Arts, design, entertainment, sports, and media	0.8%	$28.51
Healthcare practitioners and technical	4.7%	$51.66
Healthcare support	5.5%	$16.87
Protective service	3.3%	$33.84
Food preparation and serving related	8.1%	$16.32

Building and grounds cleaning and maintenance	2.5%	$18.69
Personal care and service	1.3%	$18.52
Sales and related	7.0%	$21.73
Office and administrative support	9.0%	$22.45
Farming, fishing, and forestry	12.8%	$16.19
Construction and extraction	4.6%	$30.70
Installation, maintenance, and repair	3.8%	$29.27
Production	3.3%	$23.22
Transportation and material moving	10.8%	$20.84

Figure 59: Occupational employment and wages by major occupational group, May 2022.

According to the State of California EDD, private education and health services stand out for their large contribution to this growth, as they added 8,900 jobs, reflecting a remarkable growth rate of 22.4%. Of this, private educational services added 400 jobs, health and social assistance services added 8,500 jobs. This seems to generally align with the estimates from UC Merced, where the educational sector saw an addition of 5,830 jobs (21% increase), while the health sector added 5,277 jobs (25% increase) (UC Merced Community and Labor Center 2024).

Similarly, trade, transportation, and utilities saw robust growth, adding 8,300 jobs (16.1% increase) as seen in

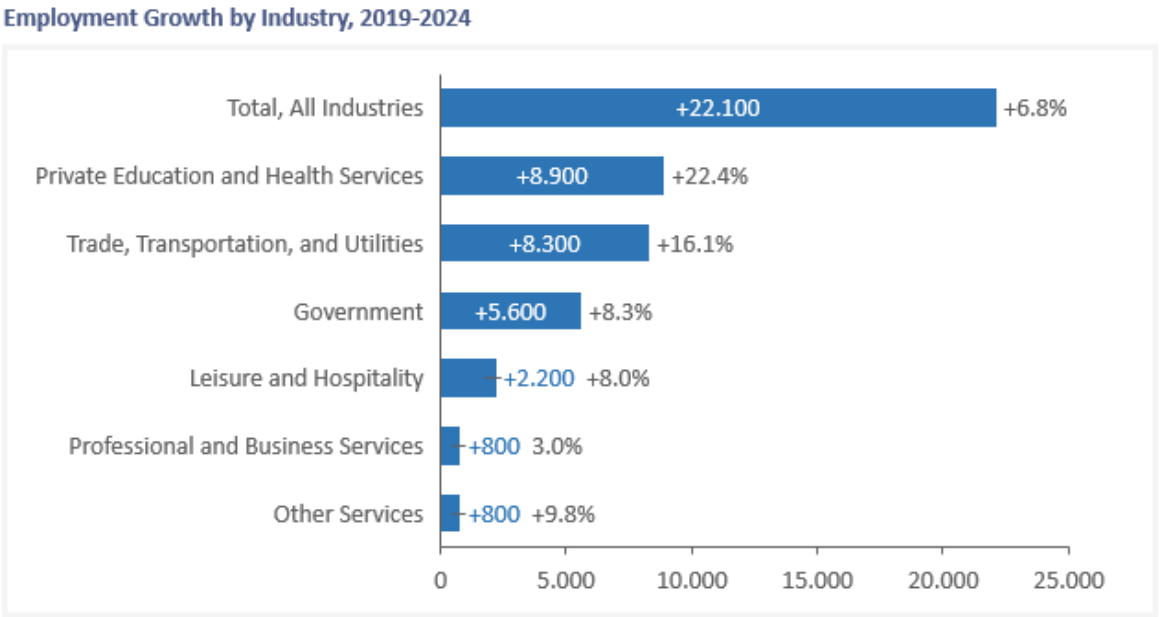


Figure 60. Particularly noteworthy, warehousing exhibits exponential growth, leading to the creation of 3,638 jobs and expanding by a staggering 332%, evidenced in Figure 61. These figures indicate that while the overall growth in trade, transportation, and utilities is not that large, the numbers for warehousing reveal a greater increase.

In addition, government employment and leisure and hospitality have also increased, albeit at a slower pace, with each sector adding 5,600 and 2,200 jobs respectively, resulting in growth rates of 8.3% and 8.1%. Professional and business services, as well as other services, also experienced modest growth rates, with each adding approximately 800 jobs (See

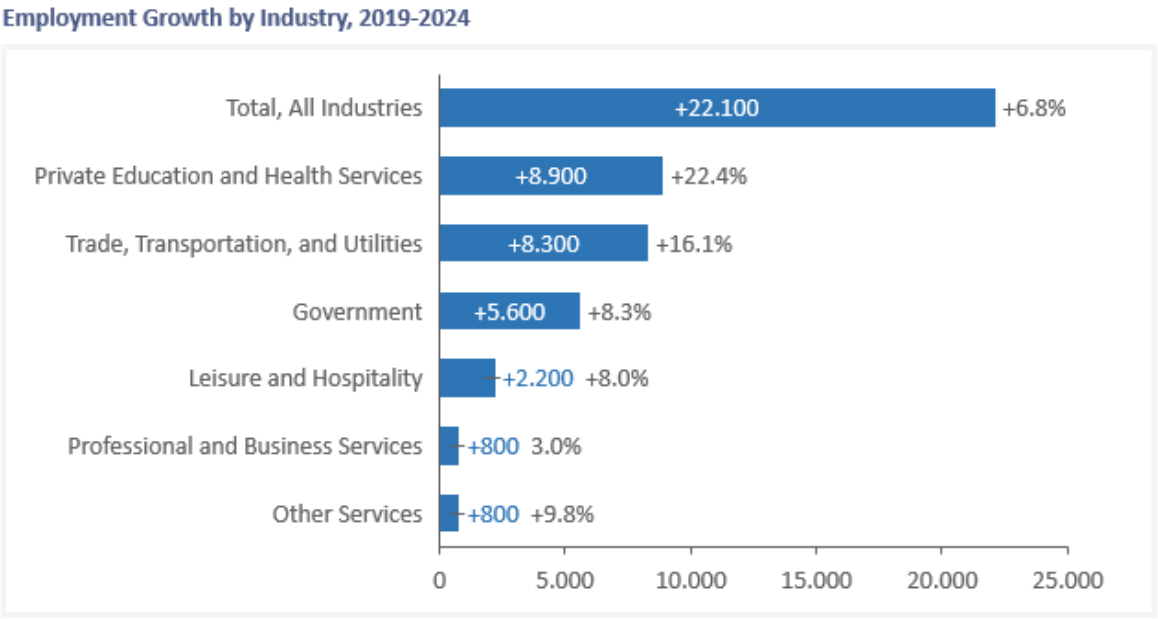


Figure 60). Likewise, the grocery industry has also grown, contributing 3,633 new jobs (37% increase), while forestry, fishing, and hunting added 2,803 jobs (42% increase) (See Figure 61).

In this regard, it is evident that the growth stems from a variety of sectors, underscoring the diversified nature of Kern County's economy. Several of the industries previously mentioned as having the highest participation in the labor market coincide with the industries with the highest growth rates, specifically government; trade, transport, and utilities; private education and health services; and leisure and hospitality. Interestingly, the order of highest participation in the labor market does not necessarily coincide with the order of the highest growth rates.

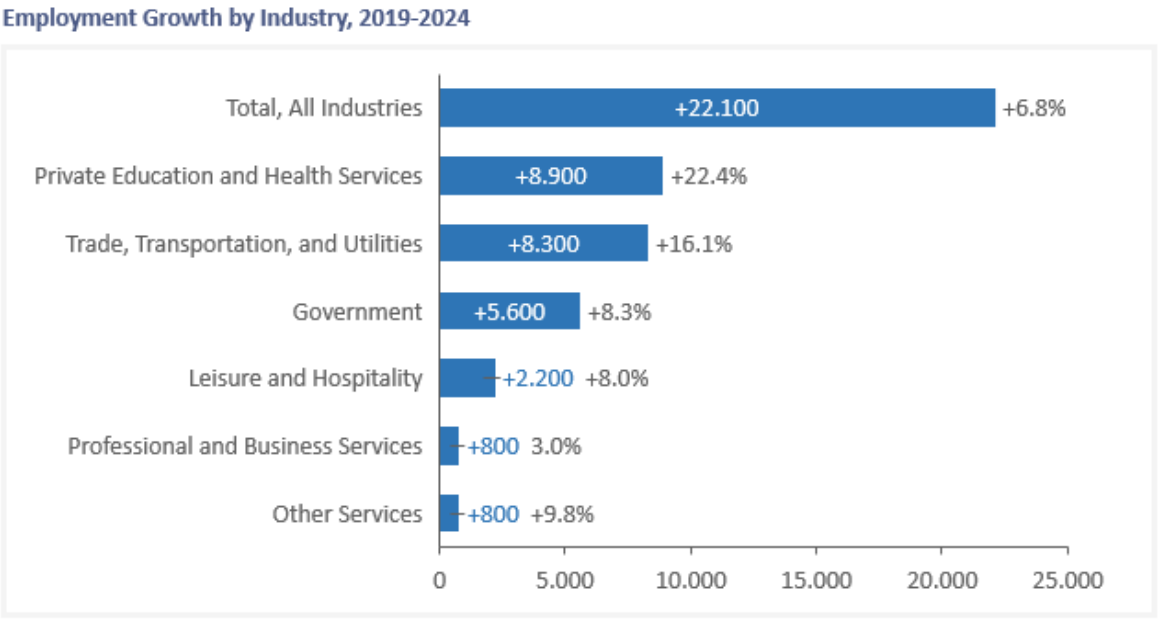


Figure 60: Employment Growth by Industry, 2019 – 2024 (The State of The State of California Employment Development Department (EDD), 2023)

Industry	Jobs 2017-2021	Jobs 2007-2011	% Change	# Change
Educational	33006	27176	21%	5830
Agriculture	30992	28408	9%	2584
Health	26681	21404	25%	5277
Public Administration	22800	23821	-4%	-1021
Restaurants and other Food Services	20458	18281	12%	2177
Retail Trade	18730	20127	-7%	-1397
Construction	18323	17004	8%	1319
Grocery	13508	9875	37%	3633
Oil and Gas Extraction and related mining	13427	16421	-18%	-2994
Manufacturing	12263	11123	10%	1140
Transportation	12095	9688	25%	2407
Professional, Scientific, and Management	11177	9846	14%	1331
Other Services (Except Public Administration)	10675	10509	2%	166
Finance, Insurance, Real Estate, and Rental and Leasing	9985	10940	-9%	-955

Forestry, Fishing and Hunting, Support Activities	9438	6635	42%	2803
Social Services	7920	6481	22%	1439
Wholesale Trade	7597	7292	4%	305
Warehousing	4733	1095	332%	3638
Building Services, including Security	4364	3226	35%	1138
Animal production	4293	2023	112%	2270
Arts, Entertainment, Recreation	4277	3811	12%	466
Food processing	4261	4110	4%	151
Administrative and Support Services	3960	3178	25%	782
Information and Communications	3407	3613	-6%	-206
Utilities	2637	3371	-22%	-734
Traveler Accommodation	2121	1793	18%	328
Waste Management	2008	1154	74%	854
Nursing Care	1975	1646	20%	329
Active Duty	1965	1932	2%	33
Residential Care	1931	1488	30%	443
Landscaping	1328	1683	-21%	-355
Non-Oil and Gas Mining and Quarrying	655	452	45%	203
Bars	247	273	-10%	-26
Total	323237	289879		33358

Figure 61: Kern Industries by Greatest Number of Workers, 2007-2011 and 2017-2021 (The State of The State of California Employment Development Department (EDD), 2023)

Looking forward to the next decade, several industries are projected to experience job growth (Figure 62). Among these, trade, transportation, and utilities show the highest projected job growth, with an estimated increase of 14,100 jobs by 2030, representing a 26.8% growth from the base year employment estimate in 2020. Educational and health services are expected to see an addition of 8,100 jobs, indicating a 19.9% increase. Following closely, the leisure and hospitality industry is anticipated to add 7,500 jobs, signaling a substantial 32.3% increase. Meanwhile, the government sector is projected to contribute 6,300 jobs, demonstrating a 9.6% growth. Lastly, it is worth noting that professional and business services and farming are expected to see an increase of 4,300 jobs each, representing 16.0% and 7.4% growth, respectively.

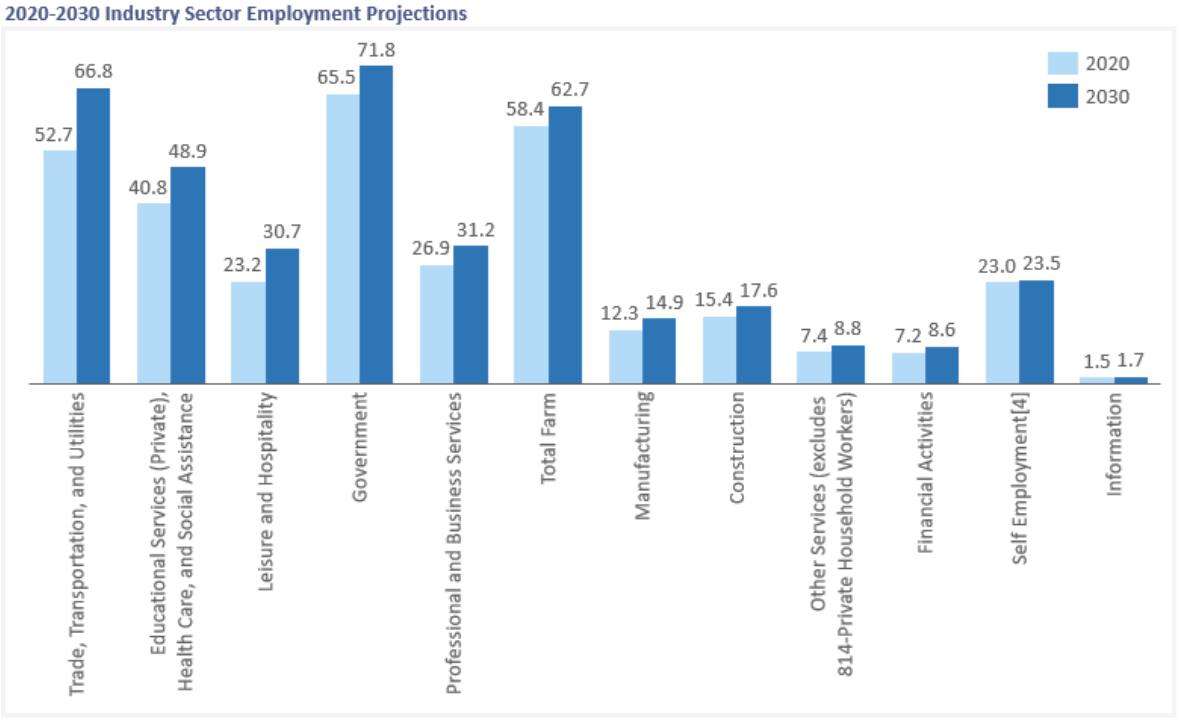


Figure 62: 2020-2030 Industry Sector Employment Projections (The State of California Employment Development Department (EDD), 2023)

iii. Job Decline Analysis and Key Trends

On the other hand, data from the State of California EDD indicate that between February 2019 and February 2024, some industries have also faced serious challenges (Figure 63). Among these, mining and logging stand out, with a decline of 1,900 jobs, representing a substantial 20% decrease. Similarly, total farm employment declined by 1,600 jobs (-2.9%), manufacturing lost 500 jobs (-3.9%), and information lost 300 (-15%). Lastly, construction and financial activities saw marginal decreases of 100 jobs each (-0.6% and -1.3%, respectively).

While several sectors have experienced growth, it's essential to acknowledge the challenges faced by others, evidencing the dynamic nature of Kern County's economy. It's interesting to note that several of the industries previously mentioned as having lower participation in the labor market coincide with the industries with the highest growth rates, specifically construction, manufacturing, mining and logging, financial activities, and information. The order of participation in the labor market does not necessarily coincide with the biggest decline rates.

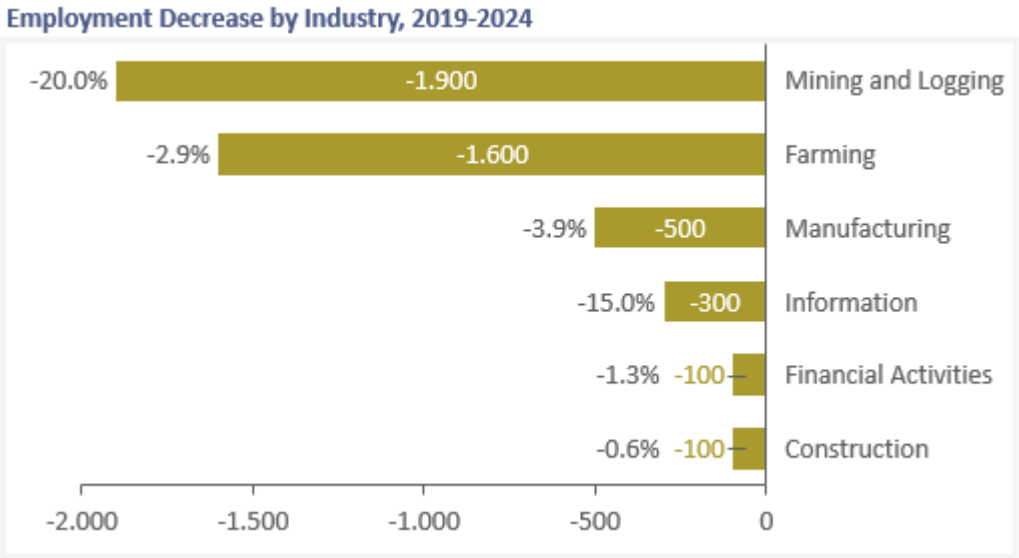


Figure 63: Employment Decrease by Industry, 2019-2024 (The State of California Employment Development Department (EDD), 2023)

iv. Resilience and the Effects of the COVID-19 Pandemic

As an additional key trend to analyze based on the UC Merced Community and Labor Center (2024) analysis:

> The onset of the COVID-19 pandemic temporarily shifted economic activity away from in-person and non-essential functions, along with the need for oil and gas extraction (that fuels transportation and in-person activity). As a result, between 2019 and 2020, four Kern industry clusters declined in GDP: arts, entertainment, and recreation (-41%); accommodation and food services (-21%); mining, quarrying, oil & gas extraction (-17%); and educational services (-16%) (see Figure 64). Four industry clusters appeared especially resilient to the pandemic. GDP grew for agriculture, forestry, fishing, and hunting (20%); utilities (15%); finance & insurance (5%); and management (3%)" (see Figure 64).

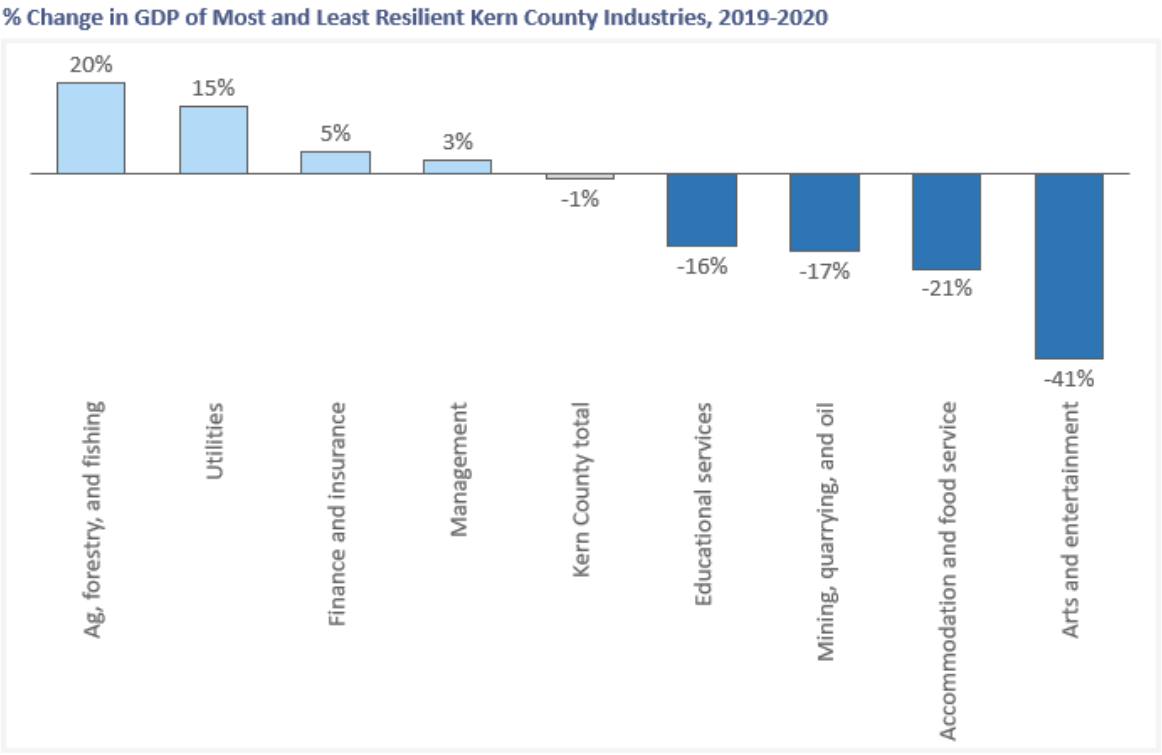


Figure 64: Percent Change in GDP of Most and Least Resilient Kern County Industries, 2019-2020 (UC Merced Community and Labor Center analysis of US Bureau of Economic Analysis 2019-2020 data)

v. Employment Distribution

In Kern County, a diverse economic landscape drives growth and employment across various industries, as it can be seen from the 2023 Q1 data. With a rich blend of sectors ranging from natural resources and mining to education and healthcare services, Kern County's economy reflects unique strengths and opportunities (US Bureau of Labor Statistics, 2024).

In terms of workforce and employment, as previously mentioned, the government sector emerges as a prominent employer in Kern County, providing jobs across federal, state, and local levels, with approximately 68,000 jobs in March 2023. The trade, transportation, and utilities sector play a crucial role in job creation, offering employment opportunities for over 60,000 jobs. The natural resources and mining sector, and the education and health services sector also contributed greatly to employment, with 49,091 and 44,707 jobs, respectively. The leisure and hospitality sector and the professional and business services sector are also relevant, providing 30,089 and 25,874 jobs, respectively.

Among the industries boasting the highest number of establishments in the county, the education and health services sector stands out as the largest, boasting a major presence

comprising 11,355 establishments. Next in line is the trade, transportation, and utilities sector with 3,847 establishments, while the professional and business services sector has 2,143. Various other industries, such as construction, manufacturing, and financial activities, have between 1,000 and 2,000 establishments each.

vi. Additional Relevant Data

Comparative Advantage:

Industry clusters can also be analyzed to understand the level of competitive advantage a region has in an industry compared to the entire US. One way of quantifying this is through a Location Quotient (LQ) for employment, as observed in Figure 65, which measures the concentration of jobs in a region compared to the national average. The natural resources and mining sector emerges as the most important, with an LQ of 13.49, followed by the government sector with a high LQ of 4 indicating Kern County's specialization in extractive and political industries. Information, financial activities, and professional and business services have the weakest LQs, suggesting low importance to the county's economy.

Industry	Establishment Count	Employment Location Quotient Relative to the US
Natural resources and mining	979	13.49
Government	1.0	4
Construction	1.4	0.98
Trade, transportation, and utilities	3.9	1.00
Total, all industries	25.5	1.00
Leisure and hospitality	1.7	0.88
Education and health services	11.4	0.87
Other services	1.2	0.82
Manufacturing	463	0.45
Professional and business services	2.1	0.54
Financial activities	1.3	0.40
Information	118	0.25
Unclassified	20	0.05

Figure 65: Wage Location Quotient for Kern County Industries Relative to the US (US Bureau of Labor Statistics, 2024)

The Kern County CEDS 2021 report conducted an evaluation that initially prioritized whether the region met a minimum competitive position compared to others. Subsequently, upon identifying an advantage, the data compared the relative strength and opportunity of each subsector within the region itself, aiding in the prioritization of options. A subset of

subsectors that met the minimum competitive position compared to other regions is represented in Figure 66, with colors denoting overall strength (high, moderate, low).

Subsector examples	Jobs (2019)	Nat'l Growth (2009-19)	Reg'l Growth (2009-19)	Multiplier Effect	Job Quality/ Opportunity	Institutional Innovation	Talent Adjacency
Processed Chemical Products	475						
Plastic Products, Materials, and Resins	500						
Inorganic Chemicals	130						
Fabricated Metal Products & Fasteners	250						
Metal Processing – Advanced	90						
Metal Processing – Basic	60						
Aerospace Vehicles and Defense	1,000						
Process Equipment and Components	260						
Industrial Machinery	150						
Surgical and Dental Instruments	275						
Food Processing and Manufacturing	6,200						
Business Support	3,400						
Computer Services	1,400						
Consulting (general)	1,200						
R&D Consulting	250						
Marketing/Design	260						
Insurance Carriers	1,000						
Warehousing and Storage	3,800						
Rail Transportation							

High Low

Figure 66: Comparative Advantage Indicators by Subsector (Kern County Comprehensive Economic Development Strategy (CEDS), 2021)

As noted in the report, certain manufacturing subsectors, which provide accessible and high-quality jobs, demonstrate large concentration or growth trends compared to broader industry patterns. These trends could be accelerated through targeted support aimed at addressing industry-specific needs that are more prevalent in other regions. While business and professional services as traded subsectors may not naturally experience growth, their long-term strengthening is crucial for diversification and economic opportunity within a regional economy of this scale. Key sectors like Logistics and Agriculture, important for creating jobs and growing the economy, are vital foundational assets. Due to limited economic development resources, prioritizing other Opportunity Industries could potentially yield greater progress towards regional performance goals. The region's logistics capabilities and strengths can also serve as facilitators or platforms for the growth of other high-value traded sectors, such as manufacturing. This acknowledges that the region's advantages lie in factors like geography, population, and available land for development, as opposed to merely being a source of exportable innovation.

Infrastructure assets:

Based on the B3K Market Assessment Data Book and Findings report (2021), it is possible to state that Kern County's infrastructure plays a crucial role in its competitiveness. The region's efficiency, broadband connectivity, vast geography, and distinctive sub-regions present both opportunities and challenges. Land-use policy, led by the Office of Planning and Natural Resources, has been consistently cited as a contributor to the region's competitiveness, with an efficient permitting process and a flexible approach to administration. Placemaking issues in East Kern, particularly the lack of new housing and amenities, have emerged as a concern for attracting and retaining skilled talent.

Kern County's strategic location adjacent to the Los Angeles market and access to major thoroughfares and railways have provided an advantage for the region's growing logistics industry. These advantages also support opportunities in manufacturing and business services, leveraging connections to other California markets.

While job proximity is above average in Kern County, it has declined due to suburban job growth, which tends to distribute jobs to areas with lower population density. This dynamic is influenced by the distribution of housing and the sectors generating job growth, such as logistics and agriculture.

In terms of internet access, as highlighted by the Kern County CEDS 2021 report and the B3K Market Assessment Data Book and Findings report (2021), broadband availability in Kern is high. The main challenge is access and subscription rates, particularly in high-poverty and less populous census tracts. Kern has comparatively strong broadband availability, with only 4% of residents lacking broadband coverage meeting the FCC standard at 25 Mbps (36,200

people). The following figures (Figure 67 and Figure 68) only reflect download speeds and do not fully address many expectations or the needs of precision agriculture.

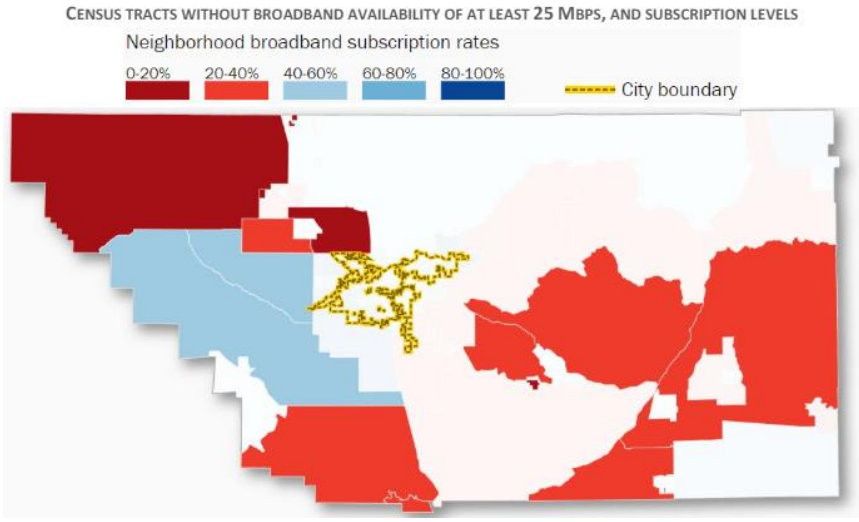


Figure 67: Census Tracts Without Broadband Availability of at Least 25 MBPS and Overall Subscription Rates (Kern County Comprehensive Economic Development Strategy (CEDS), 2021)

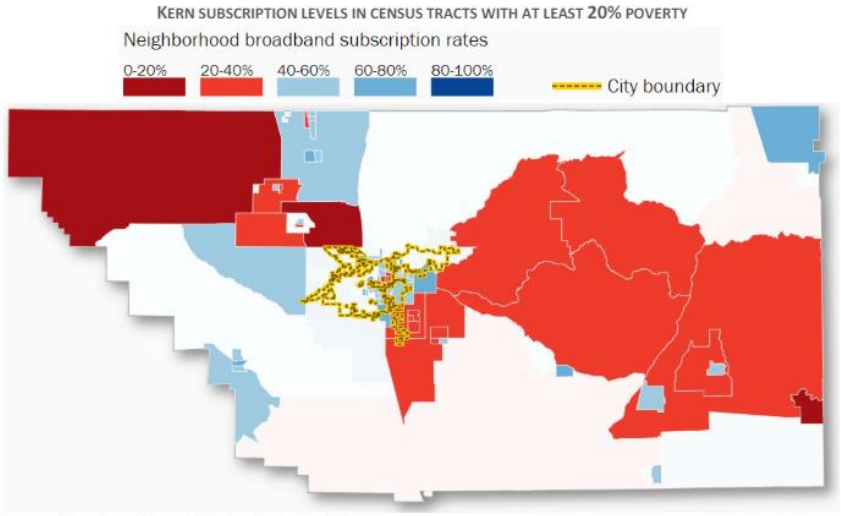


Figure 68: Broadband Subscription Levels in Census Tracts With at Least 20% Poverty (Kern County Comprehensive Economic Development Strategy (CEDS), 2021)

The city of Bakersfield specifically has basically universal broadband coverage, with availability of at least 25 Mbps in all neighborhoods. Nonetheless, actual household access varies, primarily due to differing poverty levels. Subscription rates are notably lower in census tracts with at least 20% poverty, which also tend to have a higher-than-average

proportion of children. Limited access tends to be more prevalent along eastern and southern neighborhood boundaries.

Additionally, Building Healthy Communities (BHC) show that there is a prominent digital divide in Kern County (Figure 69), including racial disparities and notable differences among immigrant households compared to US-born households (Building Healthy Communities (BHC) Kern County & Bakersfield Indicators, National Equity Atlas, and California Immigrant Data Portal (CIDP). For instance, Latino and Black populations exhibit higher percentages lacking home high-speed internet, a computer, or both, compared to Asian American and White households. Similarly, across all racial/ethnic groups, immigrant populations have higher rates of lacking access to these resources.

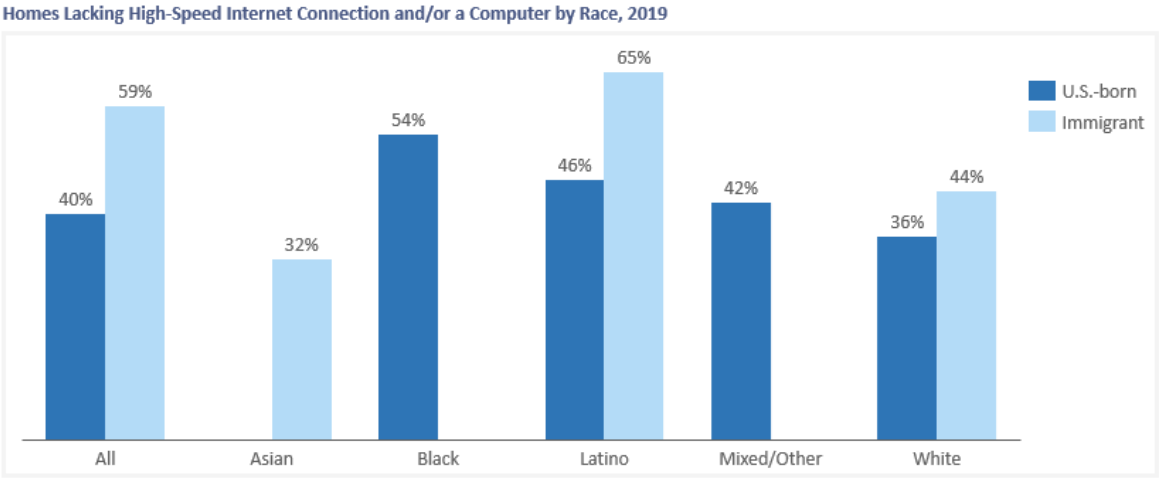


Figure 69: Homes Lacking High-Speed Internet Connection and/or a Computer by Race, 2019 (Building Healthy Communities (BHC) Kern County & Bakersfield Indicators, National Equity Atlas, California Immigrant Data Portal (CIDP))

Lastly, infrastructure investments can contribute to productivity, economic performance, and job creation (Kern County Comprehensive Economic Development Strategy (CEDS), 2021). The Infrastructure Investment and Jobs Act, passed in November 2021, addresses deferred maintenance of bridges and roads, ensures access to broadband, and makes substantial progress in public transit and electric vehicles. These investments are expected to help shore up any access gaps and improve broadband speeds.

Innovation ecosystem:

Drawing on the insights from the B3K Market Assessment, Kern County appears to have a unique innovation landscape that is characterized by a diverse range of research and development activities. The region's innovative capacity is shaped by several key factors,

including academic expenditures on research and development, commercialization, entrepreneurial dynamism, and advanced industrial production (B3K, 2021).

In terms of academic expenditures on research and development, Kern County's largest university, CSU Bakersfield, spent just $26 million on R&D from 2009 to 2018. This is a relatively small amount compared to other universities in the region, such as CSU Fresno, which spent $77 million, and CSU San Bernardino, which spent over $100 million. It's worth noting that although CSU Bakersfield receives about half of its R&D funding from the federal government, it also reallocates other sources of income toward R&D, making itself its second-largest source of R&D funding. CSU Bakersfield has increasingly invested its own income from other sources into R&D to complement external funding for research.

The region's innovative capacity is further strengthened by the presence of military bases, military contractors, and portions of the US aerospace industry. These institutions contain unique R&D capacities in a diverse set of institutions not found in other regions, contributing to the region's overall innovation landscape.

In addition to academic expenditures on research and development, Kern County's innovative capacity is also shaped by commercialization and entrepreneurial dynamism. The region has a relatively low volume of scholarship, with only 2,300 articles published over roughly two decades. Yet, this scholarship is highly concentrated in select fields of science, including engineering disciplines such as environmental engineering, chemical engineering, and mechanical engineering, as well as life and earth sciences. Kern County's research institutions and organizations publish outsized amounts of research in select engineering disciplines, including environmental engineering, chemical engineering, and mechanical engineering, each of which accounts for more than twice as much of the region's scholarship than the national average.

Supply chain:

Supply chain logistics in Kern County play an important role in its economic development, as can also be inferred by the B3K Market Assessment Data Book and Findings report (2021). The report notes that, in recent years, there have been growing challenges related to the county’s supply chains, especially as they relate to agriculture. Ongoing supply chain disruptions have led to product shortages on shelves and critical ramifications for local growers in Kern. Farmers in the region have faced issues ranging from increased expenses due to rising prices of fertilizers and pesticides to difficulties in exporting goods. Transportation bottlenecks, particularly evident in the inability to secure containers and

vessels internationally, have hindered the timely shipment of agricultural products. These challenges have affected local businesses and have led to increased prices for consumers. As calls for action and discussions surrounding potential solutions persist, such as streamlining distribution processes and addressing workforce shortages, the agricultural sector continues to grapple with the enduring effects of supply chain disruptions.

Aligned state and federal investments:

Kern County benefits from a range of strategically aligned state and federal investments aimed at enhancing its infrastructure, economic vitality, and overall quality of life. Some examples worth highlighting include:

- Wheeler Ridge CAPM: The project secured $20.51 million for rehabilitating pavement, replacing signage, and installing Transportation Management System (TMS) elements along Interstate 5 near Grapevine, from Grapevine Road to the Route 5/99 Separation. It is supported by the California Transportation Commission (CTC), with contributions from the federal Infrastructure Investment and Jobs Act of 2021 (IIJA), Senate Bill 1 (SB 1), and the Road Repair and Accountability Act of 2017 (Caltrans,2024).
- Groundwater Banking Joint Powers Authority's Phase 1 of the Kern Fan Groundwater Storage Project: Phase one involves acquiring 350 acres in Kern County for constructing recharge basins, recovery wells, and water conveyance infrastructure, with a storage capacity of approximately 28,000 acre-feet and an expected annual water production of 2,482 acre-feet. The project is receiving funding from the Bipartisan Infrastructure Law (US Bureau of Reclamation).
- Kern County ARPA (American Rescue Plan) Funds: Allocated $174.85 million through the State and Local Fiscal Recovery Funds (SLFRF) as part of the 2021 American Rescue Plan (ARPA). These funds cater to various sectors, including public safety, homelessness, and infrastructure improvements, distributed across categories like Countywide Public Services, Economy, Trade & Tourism, Homelessness & Housing, Park & Open Space Improvements, Public Safety Initiatives, and Pedestrian Safety and Infrastructure Improvements, totaling 55 projects and fully obligating the received funds (Kern County Website).
- Regional Direct Air Capture (DAC) Hubs: The US Department of Energy (DOE) has chosen to a $495,845 subaward funds to the California Direct Air Capture (DAC) Hub as part of its Regional DAC Hubs Initiative. Among other DOE grants, this initiative pertains to the establishment of California's inaugural full-scale DAC

plus storage (DAC+S) network of regional hubs, which entails the removal and permanent storage of atmospheric carbon dioxide (CO_2) utilizing low carbon emission energy sources, aiming to offer economic advantages to nearby communities. Since the summer of 2022, Kern CCD has been a prominent collaborator within the CalHub consortium, aligning with the CRC Carbon Management Institute's recognition as a Center of Excellence for the California Renewable Energy Laboratory (CREL).

- DOE LEAP Grant for Clean Energy & Carbon Management Business Park: Kern County was awarded a Communities LEAP technical assistance grant by the US Department of Energy (DOE). This grant, secured in collaboration with stakeholder partners, will support the development of a Clean Energy and Carbon Management Business Park. The hypothetical park considered spans 4,000 acres and measures 30 million square feet, with an additional 30,000 acres of solar panels planned for power generation. This initiative aims to establish Kern County as a national Center of Excellence in emerging clean energy and carbon management sectors, attracting significant investment.

Policy trends:

State policy is highly influential on Kern County's economy, as emphasized by the B3K Market Assessment Data Book and Findings report (2021). To thrive, Kern must engage the State in strategy development to identify mutual benefits. According to the report, while Kern should continue to advocate for the health of its oil, gas, and agricultural sectors, the region must also pursue proactive partnerships with the state. Meanwhile, Kern's assets and leadership in various sectors are needed by the State to meet its own policy goals. Engaging the State in strategy creation must be vigorously pursued to establish an ongoing problem-solving relationship, proactively navigate issues, and secure commitments for delivering on Regions Rise Together principles.

Kern County is specifically susceptible to and bolstered by key policy trends at the State and Federal level, including shifts towards state and federal energy transition policy, federal interest rate policy, and local land-use policy. Heightened focus, investment, and policy initiatives from government entities (federal, state, and local), industries, and environmental stakeholders have enhanced the foundation for financial and other forms of support in these sectors. Recent independent studies conducted by Livermore National Laboratory and Stanford University / Energy Futures Initiative confirm the potential, particularly within Kern County (Kern County Comprehensive Economic Development Strategy (CEDS), 2021).

A shift towards low-carbon development initiatives to address climate change impacts are specifically noteworthy for Kern. The county is experiencing a rise in low-carbon energy development and carbon management projects, including solar and wind farms, aimed at reducing reliance on fossil fuels and promoting sustainability. This is guided by State efforts, including the Green Jobs Initiative, and Federal legislation such as the 2021 Infrastructure Investment and Jobs Act of and the 2022 Inflation Reduction Act. Kern County leaders and community stakeholders have identified these as critical opportunities to bring more sustainable and higher-wage jobs into the county, as well as to reduce the effects of the ongoing national shift away from oil and gas. Within this context, conclusions from the B3K Market Assessment Data Book and Findings report (2021) analysis suggest that "while Kern should continue to advocate for the health of its oil and gas and agricultural sectors, the region must also pursue proactive partnerships with the state." The report points to additional evidence, surfaced by independent research by Livermore National Laboratory and Stanford University / Energy Futures Initiative, which shows that increasing attention, investment, and policy action by government, industry, and environmental interests have created unique opportunities for Kern to continue extending its energy cluster into renewable fuels and carbon management.

Kern County residents have expressed concerns about affordability and rising prices across the board. These are tied to federal fiscal policy and, especially, Federal Reserve decision-making and inflation targeting. That said, housing affordability is particularly concerning, and the B3K Market Assessment, also highlights this as a priority when considering job growth in the region, as a "lack of commercial and residential development to provide quality of life for workforce is a challenge in particular sub-regions and neighborhoods across the county, most acutely in East Kern." That said, California has prioritized housing supply and housing affordability, including a set of 56 bills signed in Oct. 2023 to streamline housing across the state and to preserve affordable housing. Of these, almost $3 million has already been awarded within Kern County to preserve affordable housing (B3K, 2021).

Nevertheless, the B3K Market Assessment also pinpointed specific policy advantages within Kern County that could help provide it with key competitive advantages. Specifically, land use policy at the county level – led by the Office of Planning and Natural Resources – was consistently cited by stakeholders in B3K outreach as a key contributor to the region's competitiveness and a distinctive asset as related to other California regions. This includes an efficient and robust permitting processes, a generally flexible and business-friendly

approach to administration, and a comparatively streamlined approach to CEQA Environmental Impact Report applications (B3K, 2021).

D. Subregional Analysis

UC Merced Community and Labor Center (2024) report conducted a sub-regional analysis on Kern County, which found:

> The sub-regional profiles highlight each of the five subregions in Kern: East Kern, West Kern, Noth Kern, South Kern, and Central Kern. The profiles identify the main economic drivers and employers in each subregion, comparative advantages, economic challenges specific to the subregion, a sample of recent economic development or climate initiatives in the subregion, and their alignment with a transition to a high road economy.
>
> ### Sub-Regional Profile: East Kern
>
> The East Kern subregion spans a diverse geography, including parts of the Mojave Desert, the Tehachapi Mountains, and the Kern River Valley. The region's economy is driven primarily by two military installations—Naval Air Weapons Station-China Lake and Edwards Air Force Base—and a handful of other major employers including the Rio Tinto borax mine in Boron, the Mojave Air & Spaceport, and the California Correctional Institution in Tehachapi.
>
> The military sector is a dominant force in East Kern's economy, controlling vast amounts of real estate assets and employing thousands of full-time personnel (Kern County 2017). These installations provide approximately 11,000 full-time positions, from specialized technical roles to administrative positions (Natelson Dale Group, 2023). Federal government civilian jobs constitute more than 21% of total employment in the region, much higher than the national average of about 2% (Kern County 2017). The military installations also support an additional economic ecosystem formed by suppliers and service providers, such as retail, food service, and healthcare, that serve military personnel, civilian contractors, and their families. High-wage opportunities in East Kern are often tied to defense-related positions while lower wage jobs are clustered in the service sectors that support military operations and personnel.

Recognizing that its reliance on a single economic sector makes the region vulnerable to unforeseen changes in military operations in the area, the East Kern Economic Alliance developed an economic diversification plan that identified five sectors to promote in East Kern. These include Aerospace Products, Services, Research, & Testing; Natural Resources & Clean Energy; Outdoor Recreation & Tourism; Logistics & Distribution; and Health Care. Of these sectors, clean energy, outdoor recreation and tourism, and health care are most aligned with a high road economy.

Low-carbon energy development and carbon management, including renewable energy, is a major factor in East Kern's economic landscape. The Tehachapi Mountain's abundant wind resources have led to the installation of more wind turbines than any other county in the nation, positioning Kern as a frontrunner in wind energy generation. East Kern hosts dozens of commercial scale solar projects, including a new solar energy project at Edwards Air Force Base with close to 2 million photovoltaic arrays. The Coso Geothermal Project at the China Lake Navel Weapons Center sits just outside the Kern County border but provides both energy and job opportunities to East Kern County.

New types of low-carbon energy development and storage projects are also proposed for the region. The Willow Rock Energy Storage Center is a compressed air energy storage project currently proposed near Rosamond. This project would store excess generation from California solar and wind projects during periods of low customer demand by compressing air and storing it on the project site. The proposed facility could provide up to 500 megawatts (MW) of new electrical capacity, allowing solar and wind resources to be directly converted into reliable, on-demand peaking capacity. Project proponents estimate 25-40 full-time equivalent jobs during operation, and an estimated peak workforce of 700 jobs during construction (Willow Rock Energy Storage System 2023).

Renewable energy companies have also expressed interest in developing green hydrogen projects at the Tehachapi wind farms (SJ Green Hydrogen 2021, Cox 2021). The US Department of Energy recently awarded $1.2 billion dollars from the Bipartisan Infrastructure Act to California's Alliance for Renewable Clean Hydrogen Energy Systems (ARCHES) to support hydrogen production and market development in the state, including supporting 39 specific projects throughout the state (Bergert 2023). As green hydrogen rolls out across the country, stakeholders disagree about

key aspects of its development, especially regarding what qualifies as green or renewable hydrogen, for what purposes it should be it be used, and the safety of hydrogen production, transport, and storage (Begert and Wolman 2023). These conversations are relevant to any green hydrogen project proposal in East Kern or other subregion and may impact community perspectives on the development.

Since the solar property tax exemption through 2027, (California Revenue and Taxation Code § 73) renewable energy projects can still generate much of local property taxes. These projects also can generate large amounts of construction jobs, though increasing efficiency in project development has led to lower construction workforce needs than in the past (Osborne 2023). The long-term operation of low-carbon energy facilities will provide a smaller number of permanent full-time jobs in operations and maintenance. Solar, wind, energy storage, and geothermal energy projects will shift the economy toward zero emission energy sources and benefit residents by decreasing air pollutants and their associated health risks.

Other industrial sector highlights in the region include the relocation of aerospace companies outside California, which has put pressure on the local aerospace industry. Even so, the Mojave Air and Space Port (MASP) infrastructure continues to serve as a test and evaluation site for aerospace and other scientific and technical industries in the region. It is working on plans for a microgrid that would save on utility bills and increase energy reliability for the facility (Gatlin 2022). While the aerospace industry provides high-wage employment opportunities, the local workforce may encounter enormous barriers to accessing jobs that require advanced degrees due to the low percentage of individuals with a college education (US Census Bureau 2021a). To evaluate MASP's occupational growth needs, the B3k study identified a higher demand for workers possessing mid-level skills over those with high-level skills, based on employer interactions (B3K).

The logistics sector is also growing in the subregion. The Mojave Inland Port, set to be operational by 2024, will be built on 400 acres next to the Mojave Air & Space Port (Powell 2022). The facility will receive containers by rail from the Ports of Los Angeles and Long Beach for distribution across California and the nation. Project proponents estimate that the establishment of the Mojave Inland Port may generate around 3,000 new jobs in Kern and contribute $80 million in local taxes (Murillo 2022). Warehouse and logistics jobs may be more accessible to the local workforce;

however, the warehouse and distribution sector generally offers relatively low wages and difficult working conditions.

While there are multiple emerging industries and industry drivers in the subregion, certain sectors are most aligned with a transition to a high road economy. Clean low-carbon energy and energy storage aligns with a transition to a carbon-neutral economy and can protect communities and the environment by displacing the need for fossil fuels. Increasing health care options and access, increasing local tourism, investing in community infrastructure, developing a more robust network of community-based organizations, and providing more opportunities for higher education and four-year degrees locally all potentially align with a transition to a high road economy.

Sub-Regional Profile: West Kern

The West Kern subregion encompasses a cluster of cities and census-designated places (CDPs) such as Derby Acres, Lost Hills, Maricopa, McKitrick, Metler and Tati, built around the oil industry, the farm working community of Butonwillow and the Tejon Mountain communities of Frazier Park, Lebec and Pine Mountain Club. Oil production continues to be the primary economic driver in the region. The Midway-Sunset Oil Field is the largest known oilfield in California and the third largest in the United States. The oil field runs from east of Maricopa to south of McKitrick. The towns of Taft, Maricopa, and Fellows are built directly on the oil field. Other oil fields in the subregion include the Cymric Oil Field, McKitrick Oil Field, Elk Hills Oil Field, and the South Belridge Oil Field. Other economic sectors in the subregion include low-carbon energy development and carbon management, agriculture, and retail. Clean Harbors Butonwillow Landfill between Butonwillow and McKitrick is one of only two operating hazardous waste landfills in the state.

While the fossil fuel industry has long been a cornerstone of the local economy, it has also sparked environmental concerns due to its large carbon footprint and adverse effects on the environment and public health. Legislative efforts aimed at achieving carbon neutrality, coupled with the natural decline of oil production in Kern, are impacting the stability of this industry, thereby affecting jobs and economic activity in the region.

The region has turned its attention to the burgeoning carbon management industry, including carbon capture and sequestration (CCS) and direct air capture (DAC) carbon

management strategies. CCS involves capturing carbon from industrial point sources, transporting it, and storing it deep underground. DAC involves removing carbon directly from the atmosphere and storing it deep underground. The Department of Energy recently awarded nearly $20 million to support the development of carbon capture projects in West Kern County as local officials aim to turn the southern San Joaquin Valley into a hub for the industry (Office of Fossil Fuel and Carbon Management 2023).

Proponents of this industry view West Kern as an ideal location for carbon storage projects because depleted oil reservoirs can serve as a natural receptable for stored carbon. However, environmental groups, climate advocates, community-based organizations, and local residents are concerned that subsidies for stored carbon create perverse incentives to increase carbon production, that capturing carbon promotes continued fossil fuel oil production, that pipelines near communities pose a health and safety risk, and that underground storage may not permanently remove carbon from the atmosphere due to long term leaks or seepage (Central Valley Air Quality Coalition et al. 2023).

The transition to carbon management and storage technologies is uncertain and, if it moves forward, will require substantial investments in risk mitigation, infrastructure, research, and workforce development. Most jobs associated with carbon management are in the construction phase rather than in the long-term operation of projects. For example, the proposed carbon storage projects in Kern that have disclosed job estimates, estimate hiring a few hundred workers during the construction phase, but only between 25-80 workers for permanent positions (Cox 2023, 2021). While there is little information on job quality, wages, and skillset required for employees during the construction or operation phases of a carbon capture project, local officials in Kern believe that fossil fuel workers would be well suited to employment in this field. (O'Rourke 2023). In general, heavy industry and electric power generation jobs tend to offer higher wages than other sectors in the region.

Oil well remediation, gravity storage, and geothermal energy storage may offer pathways to a high road economy that are unique to the West Kern subregion. These opportunities have the potential to create well-paying jobs, protect communities and

the environment, support the transition to carbon neutrality, and beneficially reuse fossil fuel infrastructure.

Currently about 68% of the 41,568 marginal, idle, or orphaned wells in the state are located in Kern County, and many of them in West Kern (Sierra Club 2023). These wells will become a liability to the operator/owner who must plug and decommission the wells and restore the well site to its prior condition. If a well is not properly sealed and closed, it may provide a pathway for hydrocarbons or other contaminants to migrate into drinking water or the atmosphere. Plugging all of the state's idle and likely orphaned wells could create an estimated 6,842 jobs in California (King 2023). A 2021 report found that a total of 2.4 jobs are created for every million dollars spent on plugging orphaned oil and gas well (Pollin 2021). While responsibility for plugging and remediating wells falls to the owner/operator of the wells, the state has provided funds to plug the state's 378 highest-priority wells and decommission 51 facilities at an estimated cost of $80 million (California Geologic Energy Management Division 2023). One hundred and twenty-nine (129) of the wells are located in Kern County.

Senate Bill 1295 (Limón, Chapter 844, Statutes of 2022) requires that California Geologic Energy Management Division (CalGEM) administered work to plug and abandon wells, decommission production facilities, or otherwise remediate well sites to be considered public work. As such, all contractors are required to pay prevailing wages and comply with apprenticeship utilization requirements pertaining to public works projects. In addition, SB 1295 requires CalGEM, after January 1, 2028, to ensure that contractors selected to carry out state abandonment work enter into a project labor agreement to use a skilled and trained workforce. The 2022/2023 State Budget appropriated $20 million to the California Workforce Development Board to create a workforce training pilot to train displaced oil and gas workers in Kern and Los Angeles Counties in remediating legacy oil infrastructure. The Oil and Gas Well Capping Pilot initiative aims to assist state-registered apprenticeship programs in creating curricula for training apprentices and to upskill journeypersons on well capping projects (California Geologic Energy Management Division 2023).

Energy storage is another potential sector that can utilize West Kern's fossil fuel infrastructure. Bakersfield startup Renewell Energy is working on its first commercial gravity storage system in West Kern which will use renewably powered winches to

lift weights from near the bottom of oil wells. After the sun goes down and wind stops, lowering the weights will run a generator that feeds the grid (Cox 2023a). Another Bakersfield company, Premier Resource Management LLC, hopes to turn depleted oil reservoirs in West Kern into synthetic geothermal storage by gathering energy from the sunlight using an array of parabolic mirrors. This will heat the groundwater when sunlight is available and store the energy in an underground reservoir to be used when power is needed (Cariaga 2023). If these projects turn out to be feasible and safe, they could become models for beneficially using depleted fossil fuel infrastructure in East Kern. Section

Sub-Regional Profile: North Kern

The North Kern subregion comprises cities and census designated places such as Cherokee Strip, Delano, Lost Hills, McFarland, Mexican Colony, Shafter, Smith Corner, and Wasco. The region's prominent industry is agriculture, with approximately 60,000 acres of orchards and vineyards – primarily almonds, pistachios, and grapes. The region hosts three state prisons – Wasco State Prison-Reception Center, Kern Valley State Prison, and North Kern State Prison. The region is also growing its logistics and distribution sector. Other prominent industry sectors include food manufacturing, business services, healthcare, and retail.

North Kern faces pressing climate and environmental challenges. Drought, extreme heat, energy price hikes, and reduced grid stability in the North Kern subregion threaten communities and its key industries. The drought's impact on North Kern's agricultural sector has been substantial. Water scarcity limits the ability to irrigate crops and sustain livestock, leading to reduced yields and crop failures. This causes financial stress and job losses within the sector. More importantly, prolonged droughts and heat waves have a devasting effect on the people of Kern and particularly the farm working community. Death from heat stroke among outdoor workers has risen over the past two decades along with temperatures (Gross and Aldhous 2023). Agricultural workers face more than 35 times the risk of heat-related deaths than other occupations (Gubernot and Hunting 2015). Eighty-three of the 168 farmworkers who died suddenly at work in California from 2018 to 2022 perished when temperatures exceeded 80 degrees Fahrenheit (Gross and Aldhous 2023).

From an economic standpoint, decreased agricultural output can disrupt supply chains, affecting related industries such as food processing and distribution. The

overall economic slowdown reverberates through the community, impacting local businesses and communities that rely on the agriculture-driven economy. To navigate challenges posed by climate-related impacts, the agriculture sector should invest in water-efficient technologies and irrigation systems and consider shifting crops to those that are less water-intensive. Diversifying the local economy beyond agriculture and fostering industries less susceptible to water-related shocks can also help build resilience against future economic challenges.

The local agriculture sector is a driving force for two pending biomasses with attached carbon capture and sequestration (BECCS) proposals in North Kern – Covanta in Delano, and Pelican Renewables in McFarland (Cox 2023b). Biomass facilities convert organic material, such as agriculture waste, to biofuel. The previously operational Covanta biomass facility in Delano shuttered in 2015; like most of state's biomass facilities, it was unable to compete with the growing efficiency of other renewable energy sources. However, the industry is gaining new life with the emergence of carbon capture and sequestration technology and related carbon capture subsidies. Both projects face local opposition from residents who are concerned about the air quality impacts of the process as well as the safety of transporting and storing carbon underground.

North Kern has embraced Kern County's growing distribution sector and hosts one of the largest warehouse centers in the county - the Wonderful Industrial Park, a 1,625 acre Master-Planned Industrial Park outside of Shafter on the Burlington Northern Santa Fe Railway line (City of Shafter). Current tenants include Amazon, Target, Ross, and Walmart, among others. More warehouses are proposed for development in the region. While the logistics and distribution sector will increase the number of job opportunities in the region, nearby communities have expressed concern with the impact of increased trucking on local air quality and traffic. There are also concerns about low wages and the job quality associated with this sector.

Other prevalent industries in North Kern, including retail, agriculture, manufacturing, and construction, also tend to be characterized by lower-wage jobs that require minimal formal education. This concentration of lower-wage industries can contribute to economic disparities, limiting upward mobility and opportunities for residents who may lack access to advanced education or training. This creates a cycle where economic growth becomes constrained by the lack of high-paying

employment options. The higher-wage opportunities in North Kern include public administration, information, and construction. These sectors often involve specialized skills and government involvement, offering relatively higher earning potential.

While there are multiple emerging industries and industry drivers in the subregion, they are not all supported by the local community or aligned with a transition to a high road economy. Building electric transportation infrastructure, increasing energy efficiency for homes, improving local water systems and infrastructure, increasing education and training programs, and increasing health care options and access all potentially align with a transition to a high road economy.

Sub-Regional Profile: South Kern

The South Kern subregion includes the communities of Arvin, Lamont, Edmundson Acres, Fuller Acres, Greenfield, and Weedpatch. The subregion is characterized by several industry sectors, including agriculture, food manufacturing, business services, healthcare, retail, and logistics. Similar to North Kern, the most common occupations in South Kern are low-wage jobs in the agriculture sector. One of the largest employers in the region is Grimmway Farms. South Kern faces similar climate-related risks such as drought and extreme heat as North Kern, as well as their negative impacts to the agriculture sector and farmworkers.

The subregion hosts Blossom Valley Organics, the largest green waste composting facility in the United States between Lamont and Arvin. It is permitted to receive 3,692 tons of waste per day. Much of the waste originates in Los Angeles and is transported by truck to the site. The facility has a problematic history. While under the management of the previous owner, two underage workers were overcome by hydrogen sulfide when cleaning a drainage pipe. Tragically, they both passed away from the exposure. After being shuttered by the county and years of litigation, the owners sold the facility (Herbets 2014). After initially facing intense opposition from nearby community groups, the new owner (Recology) and residents in Lamont and Arvin were able to negotiate a Good Neighbor Agreement, including additional protections for the community, a community benefit fund, and a commitment to reduce emissions from the plant by over 80% (Recinos 2017). The Good Neighbor Agreement is a model that can be replicated to improve project conditions and collaboration between willing communities and businesses.

Another major facility in the region is Kern Energy, formerly known as Kern Oil and Refining, near Fuller Acres. The company recently announced plans to begin refining 100% renewable diesel, but residents continue to be concerned about its operation due to its proximity to the nearby residential neighborhood. Community groups in North and South Kern have led the statewide charge to increase the distance between oil and gas infrastructure and sensitive receptors such as homes and schools.

The City of Arvin is advancing a number of climate initiatives. It recently was awarded $2.9 million by the Federal Transit Agency to purchase two additional electric buses and construct microgrid infrastructure. The microgrid is estimated to save the city at least $1 million in energy costs over the next 10 years. Arvin also committed to building more sidewalks and bike paths, and planting trees throughout the community. Tasteful Selections' specialty potato plant, a 1,100-employee agricultural facility in Arvin, constructed a 5-megawat solar, natural gas and battery microgrid, expected to cut the plant's power bill by 40% (Cox 2021a). This project established the first microgrid in Kern County.

Bakersfield College also committed to open the Arvin Educational Center, a satellite campus to serve the residents in Arvin. This will help overcome barriers to higher education in Arvin and has been a long-term priority for Arvin residents. This new center will provide an opportunity to prepare local residents for a high road economy with training programs and classes specially tailored to local opportunities.

South Kern offers important lessons for a transition to a high road economy. Residents in this region are especially engaged in public processes and advocating for their health and well-being. They have demonstrated how to navigate building relationships and agreements with neighboring businesses, and how to build community-centered improvements to their communities. The region will benefit from increased educational opportunities. Increasing and improving health care and community infrastructure in the region are other areas of potential focus.

Sub-Regional Profile: Central Kern

Central Kern includes Oildale and Bakersfield, including the neighborhoods of North Bakersfield, East Bakersfield, Northeast Bakerfield, Southeast Bakersfield, South Bakersfield, Southwest Bakersfield, and Northwest Bakersfield. The Kern River Oil Field extends across the northeast of Bakersfield and sits just beyond Oildale. This

area is the densest operational oil development in the state of California. Similar to other subregions, Central Kern's primary industries are agriculture and oil. Bakersfield serves as the home for both corporate and regional headquarters of companies engaged in these industries. However, in comparison to other areas, Bakersfield has a smaller proportion of workers in agriculture and oil production due to a more diverse local economy. Bakersfield also has a growing manufacturing and distribution sector, largely centered on the region's agricultural food products.

Energy prices and reliability have affected residents and the economic stability of industry sectors in Central Kern. Given the primacy of intermittent solar and wind renewable energy in the county, Kern County has recently engaged in efforts to increase energy storage and resilience. The City of Bakersfield, in partnership with the Kern Community College District, received a grant to increase local understanding of energy resilience technology with a focus on microgrids and energy storage. Microgrids are self-sufficient energy systems, usually powered by solar or other distributed energy sources, that can operate independently from the utility grid. It is also a form of local energy that creates energy for nearby customers. Researchers with the US Department of Energy will provide technical assistance on siting, designing and operating systems that generate, store and direct power for use on independent networks of different sizes (Cox 2022). In a second project, residents of southeast Bakersfield will receive training on how to design, set-up and maintain microgrid technology funded by a grant backed by the California Office of the Small Business Advocate. Kern County will likely need additional local energy storage and production to guard against power shut offs and to cover daily gaps between supply and demand for renewable electricity.

A more controversial low-carbon energy development and carbon management source in Central Kern is dairy digestion. Dairy digesters capture methane from manure lagoons, convert it to biomethane, and inject it into utility pipelines as renewable compressed natural gas to power trucks, buses, and cars. Most digesters are now part of clusters, with biogas from multiple dairies sent to a centralized cleaning hub. In Kern County, 16 dairies, mostly around Bakerfield, are part of the Kern County Dairy Biogas cluster. The dairies collectively produce approximately 6 million diesel gallon equivalents per year from around 60,000 milk cows.

The controversy surrounding this low-carbon energy source stems from the subsidies the industry receives and the perverse incentives they can create. Critics argue that generous financial incentives provide a profit motive for dairies to increase methane production (Briscoe 2023). Community advocates contend that methane digesters increase negative health impacts in surrounding communities by driving dairies to increase herd sizes, thereby increasing local ammonia and particulate pollution.

Developments more widely supported by residents and community organizations are the installation of 30 electric vehicle charging ports throughout the city, the installation of LED streetlights, the expansion of Mercy Hospital Southwest, and the recently announced large state investment to "transform" Southeast Bakersfield with nine integrated projects, including affordable housing, low-income energy efficiency program, garden collaborative and re-imaging a park, a mixed-use senior center, safe routes to school and corridor improvements, urban greening, and senior apartments.

Finally, the subregion continues to increase warehouse capacity, especially in North Bakersfield. The most recent proposals are proposed for the area around Meadows Field Airport. These developments seek to build on the momentum from the giant Amazon distribution center that opened in 2020 north of Merle Haggard Drive. Other industrial buildings have been built nearby. A casino is also proposed for the area (Cox 2023c).

While there are multiple emerging industries and industry drivers in the subregion, they are not all supported by the local community or aligned with a transition to a high road economy. Focusing on energy projects supported by the community such as building microgrids and expanding storage, projects that improve community infrastructure, or address deficiencies in needed services such as health care all potentially align with a transition to a high road economy.

E. Industry Deep Dives

The following section provides a deeper examination of some of the industries shaping Kern County's economic landscape. While several themes emerged from the Kern Coalition Stakeholder Meetings, including a focus on specific sectors across different areas (e.g. education, healthcare, technology, and low-carbon energy), five industries emerge as they have some combination of (1) presenting unique challenges, (2) making a substantial contribution to employment in the county, and (3) demonstrating a growing demand for job

growth according to stakeholders consulted (Kern Coalition Stakeholder Meetings): agriculture, warehousing, healthcare, low-carbon energy, and education.

Each of these five sectors plays an important role and possesses its own opportunities and obstacles, according to the UC Merced Community and Labor Center 2024 analysis:

- Agriculture, one of the county's largest employers, faces challenges such as low wages and environmental concerns.
- Healthcare, a cornerstone of public well-being, confronts the challenges of providing essential services amidst climate-related adversities.
- Low-carbon energy, emerging as a transformative force, offers prospects for sustainable development but grapples with issues of subsidy reliance and environmental impact.
- Education, experiencing large growth and garnering community interest, faces persistent challenges like teacher shortages and the need for higher attainment to boost job opportunities.

i. Agriculture

During Kern Coalition Stakeholder Meetings, participants discussed the potential of the technology sector to provide a range of jobs, including within agriculture (UC Merced Community and Labor Center 2024). As highlighted in the Kern Community College District (KCCD) Workforce Development Plan 2023-2028, Kern is one of the most productive agricultural regions in the country, and this industry is very important to the local economy and employment (Kern Community College District (KCCD), 2024).

Similarly, according to the Kern Coalition CERF Regional Summary (2023), agriculture remains a cornerstone industry in Kern County, offering stability and substantial economic contributions. Kern stood as the nation's top agriculture-producing county in 2022, boasting a diverse array of crops ranging from potatoes, lettuce, and garlic to grapes, citrus fruits, and almonds. With an estimated revenue of $6.3 billion, agriculture ranks highly in employment, supporting over 40,000 individuals. Disparities in earnings persist within the sector, with some occupations commanding higher wages than others. The reliance on undocumented workers further complicates the understanding of job quality and earnings distribution. However, leveraging advancements in agricultural technology and techniques could enhance productivity and foster economic diversification, creating more high-wage job opportunities in the sector.

The Kern County CEDS 2021 report identifies food manufacturing as the area with the greatest potential for expansion and the creation of better-paying jobs. Concurrently, agriculture is undergoing a shift towards increased technological integration, presenting an opportunity for any established agricultural region to capitalize on this trend.

While agriculture is the third-largest industry of employment in Kern, it has the highest rate of workers living below a living wage of any Kern industry. According to the UC Merced Community and Labor Center 2024 analysis:

> These industrial practices contribute to GHGs and industrial pollution, ongoing and escalating occupational health and safety risks (particularly heat-related illnesses and deaths), and the risk of high excess mortality during a major public disaster.
>
> In 2017-2021, Kern County had 30,992 agricultural industry workers in seventy-four different occupations. Eight occupations employed 26,903 workers, a large majority (87%) of Kern's agricultural workforce (see Figure 70). Overall, more than two-thirds (70%) of Kern agricultural workers are "other agricultural workers," who have a profile of being largely immigrant, noncitizen (many undocumented), non-English speakers, with low levels of education. Median wages for Kern's "other agricultural workers," in 2022 dollars, were $20,447.

Occupation	Workers	% of Industry	Median Income
Other agricultural workers	21,811	70%	$20,447
Graders and sorters, agricultural products	1,9270	6%	$23,002
Farmers, ranchers, and other agricultural managers	832	3%	$69,007
Packers and packagers, hand	724	2%	$27,602
First-line supervisors of farming, fishing, and forestry workers	607	2%	$46,837
Industrial truck and tractor operators	433	1%	$35,985
Other grounds maintenance workers	301	1%	$30,670
Driver/sales workers and truck drivers	268	1%	$35,128
66 other occupations	4,089	13%	-
Total	30,992	100%	-

Figure 70: Kern Agricultural Employment by Occupation, Workers, and Annual Earnings (UC Merced Community and Labor Center analysis of US Bureau of IPUMS- American Community Survey 2017 -2019 Public Use Microdata Series (PUMS) data)

Within the leading occupations in Kern agricultural work, small percentages of agricultural workers worked in occupations that were not classified as "other agricultural workers." These included graders and sorters for agricultural products (1,927 or 6%); farmers, ranchers, and other agricultural managers (832, or 3%); packers and packagers (724, 2%); first-line supervisors of farming, fishing, and forestry workers (607, 2%); industrial truck and tractor operators (433, 1%); other grounds maintenance workers (301, 1%); and driver/sales workers and truck drivers (268, 1%). Median annual earnings for each of these occupations were between $23,002 and $46,837—far below the 2022 Kern living wage threshold ($25.07 per hour/ $52,146 per year) for a worker in a two-adult-worker household with two children—except for one occupation: farmers, ranchers, and other agricultural managers ($69,007). Another seventy-four occupations employed 4,089 workers, a small minority (13%) of Kern's agricultural workforce.

Community members expressed that the agriculture industry would benefit from providing more support and resources for agricultural and farm workers, particularly those of undocumented status. Even more, they believe that additional job opportunities need to be identified to stimulate the local economy, as the agriculture sector has not always been a sustainable occupation for them. Specifically, some have expressed interest in entrepreneurship opportunities for undocumented farmworkers (Kern Coalition Stakeholder Meetings).

As the KCCD Workforce Development Plan underscores, agriculture faces pressing challenges, such as those related to climate change. KCCD offers training programs to equip future agricultural workers with the skills needed to manage advanced systems for regenerative and precision agriculture techniques. This includes knowledge of data analysis, internet of things (IOT) technologies, and even drone operation. KCCD also recognizes the need for a more diverse workforce in agriculture. The college is working to attract and support women and minorities by offering relevant programs and internships.

ii. Warehousing

The KCCD Workforce Development Plan highlights that the transportation, logistics, and warehousing industries are growing in Kern. Warehousing employment has increased more than any other Kern industry where the county is becoming one of California's warehousing hotspots, driven by the affordable warehouse space and land, which has attracted major logistics companies such as Amazon and Dollar General.

Figure 71, from the UC Merced Community and Labor Center analysis of 2023 Dolores Huerta Foundation Community Needs Assessment, sheds light on Kern residents' aspirations for job growth within various sectors. Although warehousing emerges as the third most desired sector, it is associated with various challenges. These include elevated and concentrated production of GHGs, the steepest drops in wages among all sectors in Kern County, persistent occupational health and safety hazards, and the potential for significantly higher mortality rates during a major public health crisis (UC Merced Community and Labor Center 2024).

Sector	% of Respondents Preferring Job Growth
Solar Power/Energy	78%
Land and Oilfield Cleanup	57%
Warehousing	55%
Wind Energy	47%
Highspeed Rail	46%
Technology Sectors	43%
Carbon Management	39%
Electrification/Electric Car Charging	35%
Hydrogen Power	33%
Biofuels	32%
Agricultural Technologies (AgTech)	31%

Figure 71: Preferences for the Growth of Jobs by Sector in 4 Disinvested Kern Communities (UC Merced Community and Labor Center analysis of Dolores Huerta Foundation Community Needs Assessment 2023)

From 2017 to 2021, Kern County had a total of 4,733 individuals working in the warehousing industry, spread across thirty-four distinct occupations. Among these, ten occupations accounted for 3,878 employees, comprising a significant majority (82%) of Kern's warehousing workforce (see Figure 72). Over a quarter (28%) of Kern's warehousing employees are classified as "laborers" based on the Census occupational categorization, specifically as "laborers and freight, stock, and material movers, hand". The median wages for laborers within Kern's warehousing sector, adjusted for inflation to 2022 dollars, amounted to $27,602 (UC Merced Community and Labor Center 2024).

Occupation	Workers	% of Industry	Median $

Laborers and freight, stock, and material movers, hand	1,308	28%	$27,602
Industrial truck and tractor operators	616	13%	$23,002
Packers and packagers, hand	503	11%	$19,535
Shipping, receiving, and inventory clerks	305	6%	$31,053
Stockers and order fillers	300	6%	$27,602
Supervisors of transportation and material moving workers	258	5%	$75,968
Inspectors, testers, sorters, samplers, and weighers	207	4%	$26,453
Transportation, storage, and distribution managers	148	3%	$40,983
Other material moving workers	126	3%	$21,852
Janitors and building cleaners	107	2%	$40,254
24 other occupations	855	18%	-
Total	4,733	100%	-

Figure 72: Kern Warehouse Employment by Occupation, Workers, and Annual Earnings (UC Merced Community and Labor Center analysis of US Bureau of IPUMS- American Community Survey 2017 -2019 Public Use Microdata Series (PUMS) data)

According to the UC Merced Community and Labor Center (2024) analysis:

> Within the leading occupations in Kern warehouse work, smaller percentages of warehousing workers worked in occupations apart from "laborers." These included industrial truck and tractor operators (e.g. forklift drivers) (616 or 13%); packers and packagers, hand (503, 11%); shipping, receiving, and inventory clerks (305, 6%); stockers and order fillers (300, 6%); supervisors of transportation and material moving workers (258, 5%); inspectors, testers, sorters, samplers, and weighers (207, 4%); transportation, storage, and distribution managers (148, 3%); other material moving workers (126, 3%); and janitors and building cleaners (107, 2%). Median annual earnings for each of these occupations were between $19,535 and $40,983--far below the Kern living wage threshold for a worker in a two-adult-worker household with two children--with the exception of one occupation: supervisors of transportation and material moving workers ($75,968). Another twenty-four occupations employed 855 workers, a small minority (18%) of Kern's warehousing workforce.

iii. Healthcare

Healthcare stands out as one of the largest employment sectors in Kern, offering a crucial public service in safeguarding the health and wellness of its residents, especially amidst the challenges posed by the climate crisis, including extreme heat, devastating wildfires and smoke, droughts, floods, and disease outbreaks like COVID-19 (UC Merced Community and Labor Center 2024).

During Kern Coalition Stakeholder Meetings, several members voiced their belief in the healthcare sector's potential to offer ample opportunities and address the community's demand for essential healthcare services such as hospital access, mental health support, and behavioral health services. Participants also viewed the healthcare industry as a significant source of employment opportunities to meet local needs (UC Merced Community and Labor Center 2024).

An increasing number of Kern residents perceive healthcare as a sector offering promising job prospects and express interest in pursuing careers in this field. Among those who expressed interest in having a better job, when asked for examples of better jobs the most common response (16%) was healthcare occupations. In fact, among women interested in a better job, 27% mentioned a healthcare occupation as an example of a better job (Kern County Regional Strategies High Road Training Partnership Survey). Even more, workers see health benefits as the most important benefits in a job while 34% of Kern healthcare industry workers live below a living wage (UC Merced Community and Labor Center 2024 analysis of the Kern County Regional Strategies High Road Training Partnership Survey).

As highlighted in the KCCD Workforce Development Plan, the healthcare sector is one of the priority sectors for Kern CCD due to the workforce shortage and the high demand for healthcare professionals. The lack of healthcare professionals in Kern County has resulted in long wait times for medical services and increased disease severity at diagnosis.

Hence, the Kern Community College District has implemented various programs to address the healthcare workforce shortage. These programs include establishing a pre-medical professional education pipeline to support students interested in medical professions. Bakersfield College offers nursing assistant, vocational nursing, radiology technician, respiratory technician, and registered nursing programs. Cerro Coso Community College offers emergency medical technician (EMT), human services, certified nursing aide, medical assisting, medical billing and coding, home health aide, and licensed vocational nursing. In

addition, Porterville College offers emergency medical technician (EMT), psychiatric technicians, and registered nursing.

According to the UC Merced Community and Labor Center (2024) analysis:

> During 2017-2021, Kern had 15,663 healthcare industry workers in ninety-nine different occupations. Fourteen occupations employed 10,330 workers, a majority (66%) of Kern's healthcare workforce (see Figure 73). No occupation in Kern healthcare employed more than 9% of the local industry's workforce.
>
> The leading occupations in Kern's healthcare industry were: medical assistants (1,443 or 9%); personal care aides (1,417, 9%); dental assistants (1,088, 7%); registered nurses (1,010, 6%); receptionists and information clerks (966, 6%); first-line supervisors of office and administrative support workers (911, 6%); nursing assistants 652, 4%); licensed practical and licensed vocational nurses (619, 4%); physicians (595, 4%); office clerks, general (422, 3%); medical and health services managers (322, 2%); billing and posting clerks (319, 2%); emergency medical technicians (290, 2%); and other office and administrative support workers (276, 2%). Median annual earnings for each of these occupations were between $25,303 and $49,981--far below the Kern living wage threshold for a worker in a two-adult-worker household with two children--with the exception of three occupations: physicians ($217,050), medical and health services managers ($82,764), and registered nurses ($80,507).
>
> Another eighty-five occupations employed 5,333 workers, a minority (34%) of Kern's healthcare workforce.

Occupation	Workers	% of Industry	Median $
Medical assistants	1,443	9%	$27,602
Personal care aides	1,417	9%	$26,126
Dental assistants	1,088	7%	$29,274
Registered nurses	1,010	6%	$80,507
Receptionists and information clerks	966	6%	$25,303
First-line supervisors of office and	911	6%	$49,981

administrative support workers			
Nursing assistants	652	4%	$34,078
Licensed practical and licensed vocational nurses	619	4%	$40,254
Physicians	595	4%	$217,050
Office clerks, general	422	3%	$32,435
Medical and health services managers	322	2%	$82,764
Billing and posting clerks	319	2%	$44,496
Emergency Medical Technicians	290	2%	$42,554
Other office and administrative support workers	276	2%	$41,982
85 other occupations	5,333	34%	-
Total	15,663	100%	-

Figure 73: Kern Healthcare Employment by Occupation, Workers, and Annual Earnings, 2017-2021 (UC Merced Community and Labor Center analysis of US Bureau of IPUMS- American Community Survey 2017 -2019 Public Use Microdata Series (PUMS) data)

iv. Low-carbon energy

According to UC Merced Community and Labor Center 2024 analysis, Kern County leads California in low-carbon energy development and carbon management production. It boasts the largest wind farm and the third-largest solar farm in the United States. The economic contribution from electricity generation has steadily risen, with its share of Kern's GDP increasing from 4% in 2001 to 10% in 2021. By 2021, over half of Kern County's electricity came from renewable sources (O'Rourke 2023). Kern's landscape has gradually evolved to include vast expanses of wind turbines and solar panels. However, Kern County faces challenges due to California's solar tax exemption, which waives property taxes for solar farms, resulting in an annual loss of nearly $20 million in tax revenue (O'Rourke 2023). Conversely, wind energy, lacking such exemptions, has become the county's primary source of tax revenue, surpassing even oil (UC Merced Community and Labor Center 2024).

According to the Kern Coalition CERF Regional Summary (2023), low-carbon energy holds promise as a key driver of economic development and sustainability in Kern County. With

abundant sunlight and wind resources, Kern has the potential to become a hub for low-carbon energy generation, attracting investments, fostering innovation, and creating high-quality jobs. In addition, the Kern County CEDS 2021 report also underscores that leveraging its unique industry base, skilled workforce, geological advantages, and emerging "net zero" market and policy prospects, the region can expand its energy cluster into renewable fuels and carbon management.

Similarly, the KCCD Workforce Development Plan also underlines that the county is shifting from traditional oil and gas towards clean low-carbon energy. This is driven by state climate goals and growing investment in solar, wind, and other renewable energy sources. To support this transition, Kern Community College District is heavily involved in training the workforce of the future. The college offers various programs focused on clean energy jobs like solar installation, wind turbine technician, and electric vehicle maintenance. These programs are constantly evolving to keep pace with new technologies like hydrogen fueling infrastructure. Partnerships with industry leaders ensure graduates possess the necessary skills for immediate employment. There's a particular focus on ensuring a skilled and diverse workforce. Training programs are open to everyone, and there are initiatives to encourage women and minorities to enter these fields.

It is worth highlighting that during Kern Coalition Stakeholder Meetings, members of the Kern County community expressed a strong interest in environmentally conscious "green" and "sustainable" jobs, such as those in alternative energy, climate-friendly industries, and water-efficient sectors. Many highlighted a desire for jobs related to wind and solar power generation, particularly in the East Region (Kern County Comprehensive Economic Development Strategy (CEDS), 2021). However, some community members also voiced concerns that green jobs are not always indicative of long-term economic sustainability or high-quality employment opportunities. Regardless, many believe that the county should prioritize employment opportunities to benefit the environment and move away from continued reliance on oil drilling.

Figure 74 provides information on the sectors in the region where Kern residents would like to see more employment opportunities, with solar power being the top preference and wind energy ranking fourth.

Sector	% of Respondents Preferring Job Growth
Solar Power/Energy	78%
Land and Oilfield Cleanup	57%
Warehousing	55%
Wind Energy	47%
Highspeed Rail	46%
Technology Sectors	43%
Carbon Management	39%
Electrification/Electric Car Charging	35%
Hydrogen Power	33%
Biofuels	32%
Agricultural Technologies (AgTech)	31%

Figure 74: Preferences for the Growth of Jobs by Sector in 4 Disinvested Kern Communities (UC Merced Community and Labor Center analysis of Dolores Huerta Foundation Community Needs Assessment 2023)

The UC Merced Community and Labor Center (2024) analysis of the 2023 Dolores Huerta Foundation Community Needs Assessment:

> The DHF survey asked Kern residents about their familiarity with several of the new renewable energy systems and climate technologies expanding rapidly in the San Joaquin Valley in the 2020s (see Figure 75). Many respondents reported knowing about the potential risks and benefits of solar energy, and slightly over one third knew about wind power. For all other new technologies roughly only one in five residents reported awareness.

Green Industry	Percent Informed
Solar Power	56%
Wind Power	36%
Carbon Capture and Sequestration	22%
Direct Air Capture	22%
Hydrogen Energy	21%
Biofuels	21%
Dairy Digesters	20%

Figure 75: Percent of Respondents Informed on Renewable Energy Industries (UC Merced Community and Labor Center analysis of Dolores Huerta Foundation Community Needs Assessment 2023)

> Kern's natural resources provide numerous opportunities for energy production and storage. The plethora of wind and solar energy in the region creates opportunities for energy storage systems that can save energy for use at a later point in time. Solar

and wind energy can also be used to produce hydrogen, which is another type of energy storage that can be used to fuel sectors that are hard to electrify such as aviation and shipping. The abundant agricultural waste in Kern can be converted to generate biogas. Methane produced at the region's dairies can be captured and turned into fuel as well. Proponents argue that these projects will generate jobs and revenue for the county, that they can help displaced fossil fuel workers find new employment, that they capture carbon emissions that would otherwise escape into the atmosphere, and that these energy sources displace the need for fossil fuel. They also point to opportunities to use Kern County's unique natural resources and features to bring federal and state investment dollars into the county.

Many low-carbon energy projects in Kern are facing opposition from residents and environmental justice organizations, particularly around the use of public subsidies and local impacts associated with the facilities or processes used to generate the energy. Critics argue that by providing subsidies for energy produced by polluting facilities, the government is, in essence, paying companies for pollution, and may be inadvertently creating perverse incentives to increase pollution. They point to an increase in herd sizes at dairies after installing dairy digesters and allege that dairy farmers are getting paid almost as much to generate methane as they are for milk (Smith, 2021). They also argue that subsidies for energy sources that use solar and wind in their production, such as hydrogen, increase energy inefficiencies by using clean energy that could otherwise generate electricity directly. They point to local risks to air, water and land associated with energy production facilities. The San Joaquin Valley Air Pollution Control District explained that reducing GHG emissions does not change the amount of pollution created by power plants burning ag waste is comparable to that of coal-fired plants (Cox, 2023).

v. Education

Kern County's educational services sector is a major contributor to employment and economic growth, as evidenced by data from the State of California Employment Development Department (EDD) and the UC Merced Community and Labor Center. Over the past five years, the sector has shown remarkable expansion, with private education and health services adding a substantial number of jobs, and positive projections indicating further increases in employment over the next decade.

During Kern Coalition Stakeholder Meetings, participants voiced a desire to expand the education sector, seeing it as a key avenue for creating opportunities and filling gaps in existing educational offerings. They emphasized the importance of increasing educational attainment in the region to open more job prospects and higher-paying positions. Additionally, residents expressed a need for access to various educational services, including special education programs, childcare facilities, youth development organizations, and training programs (UC Merced Community and Labor Center 2024).

The Kern Coalition CERF Regional Summary (2023) notes that Kern County hosts four higher education institutions: California State University, Bakersfield, and three community colleges, Bakersfield College, Taft College, and Cerro Coso College. Census data indicates 27,593 individuals aged 18 to 24 are currently enrolled in college or graduate school, though the college enrollment rate for residents stands at 16.1%, lower than that of Fresno County, a peer county, which boasts a rate of 20.7%. These institutions offer educational opportunities while also serving as sources of employment. The field of educational services encompasses a diverse array of occupations, including Management, Business, Science, and Arts roles (59.2% of careers) and Service occupations (about 29% of opportunities). With varying levels of pay and skill requirements, these colleges offer job prospects that could fuel economic growth across different sectors while ensuring livable wages. Increased investment in education and a focus on its importance within the community could further enhance the region's economic prospects.

As highlighted in KCCD Workforce Development Plan, the education sector is an important employer in the Kern Community College District's service area, with an average annual wage of $86,588, making it a priority sector for the district.

Also discussed by KCCD, the education sector in Kern County faces a teacher shortage, particularly in early childhood education and special education. California community colleges play a major role in training future teachers through their Teacher Preparation Programs (TPPs). These programs aim to address the lack of teacher diversity and create a pipeline of qualified educators. They collaborate with universities and offer work-based learning opportunities to prepare students for the classroom. A gap remains between the number of teachers needed and those graduating from TPPs. Federal and state grants are available to support TPPs and address these challenges.

vi. Other Industries

In addition to agriculture, warehousing, healthcare, and low-carbon energy, and education, there may be other industries worth considering for analysis going forward, given that they also have an essential role in the county. We introduce these here, but we will delve deeper evaluate these additional industries more extensively, potentially substituting the current ones, in Phase 2 of the Regional Plan.

For instance, during Kern Coalition Stakeholder Meetings, participants also discussed potential of the technology industry to offer diverse employment opportunities, spanning fields such as information technology, advanced manufacturing, cybersecurity, aerospace, roles linked to automation, and the broader spectrum of STEM disciplines (UC Merced Community and Labor Center 2024).

Other relevant industries include:

Advanced Manufacturing:

The advanced manufacturing sector is a priority for the Kern County Coalition (KCC), as defined in the KCCD Workforce Development Plan. The region has a diverse manufacturing industry, with a mix of agriculture and food-related manufacturing, as well as other types of manufacturing. The district's colleges offer certificate and degree programs in industrial technology, manufacturing and machine technology, occupational safety and risk management, and welding and metal fabrication, providing the skills needed for high-wage manufacturing jobs. The top skills in demand across the region's manufacturing industries include warehousing, auditing/accounting, forklift operation, and machinery marketing/selling, as well as industry-specific skills like food safety and flight testing.

Business Services & Entrepreneurship:

The business services and entrepreneurship sector are also a priority for the KCC, with a regional presence of industries such as finance, management, and administrative support. The district's colleges offer programs that provide the skills needed for careers in these fields, including accounting, finance, and business administration. The district is also focused on supporting the growth of back-office services, which presents a potential opportunity for the region (Kern Community College District (KCCD), 2024).

Defense & Aerospace:

The defense and aerospace industry are an additional priority sector within the Kern County Coalition,) as this industry employs both military personnel and civilians, contractors, and

family members. The median wages for pilots, engineers, technicians, and analysts in this sector are higher than the regional average. The district's colleges offer programs that support the workforce needs of this industry, such as industrial technology, manufacturing, and machine technology (Kern Community College District (KCCD), 2024).

The Kern County Comprehensive Economic Development Strategy (CEDS) 2021 report also highlights that the aerospace sector is a well-established and globally competitive industry that offers high-quality employment opportunities across various skill levels. However, it also faces potential challenges from other regions, necessitating a more focused and collaborative effort within the cluster to sustain and enhance its market position.

Transportation & Logistics:
In addition to warehousing, the broader sector of Transportation & Logistics is also a priority identified by the KCCD Workforce Development Plan and important employer, with a projected 25% job growth by 2027. The district's colleges offer programs in areas such as industrial technology, manufacturing, and machine technology, which provide the skills needed for careers in this sector. The top skills in demand include warehousing, auditing/accounting, forklift operation, and machinery marketing/selling.

Energy:
Besides low-carbon energy, the energy industry is a priority sector for the Kern County Coalition, as it is one of the largest in the district's service area, encompassing traditional oil and gas, as well as emerging clean low-carbon energy, electrification, and carbon management industries. The industry is undergoing a critical transformation, with projected job losses in the oil and gas sector and growth in the clean energy sector Kern Community College District (KCCD) Workforce Development Plan, 2024).

According to the Kern Coalition CERF Regional Summary, Kern County has historically been the leading producer of oil and gas in California, producing 95% of the state's oil and gas. The industry contributed nearly $200 million to the local economy in 2020 and, until recently, accounted for over 15% of property taxes. However, shifting priorities towards sustainability pose challenges to the industry's long-term viability.

F. Carbon Management

With the emergence of carbon capture as a potentially lucrative economic sector in Kern County, officials are navigating a complex landscape of opportunities and challenges. Carbon capture industries are receiving large amounts of federal and state investment, but there

are concerns about the lack of necessary environmental and working standards, particularly within the high road framework. For instance, industry and political leaders have articulated a shift towards carbon management as a solution to uneven regional economic (Kern County Comprehensive Economic Development Strategy (CEDS), 2021). Although carbon management could offer prospects for economic expansion, there are still uncertainties regarding who stands to benefit from it and in what ways. The subsequent paragraphs explore prominent debates surrounding carbon management as a potential avenue for economic development (UC Merced Community and Labor Center 2024).

Carbon capture context:

According to the UC Merced Community and Labor Center (2024) analysis:

> Carbon capture and sequestration (CCS) involves capturing carbon from a point source – commonly power plants, cement plants or other industrial facilities – then storing it deep underground. Direct air capture involves capturing carbon from the atmosphere and storing it deep underground. Specific types of CCS include CCS attached to a bioenergy facility (BECCS) or other types of low-carbon energy plant. Kern County's unique geography makes it an attractive location for carbon capture projects due to its deep geologic formations formed by depleted oil and gas fields.
>
> CCS costs range from $15 to $120 per metric ton of captured carbon depending on the emissions source, and DAC projects are even more expensive, costing between $600 and $1,000 per metric ton because of the immense amount of energy needed to capture carbon from the atmosphere (Douglas 2023). It is only through public subsidies or other commodification of carbon that most CCS or DAC projects become financially feasible. Without subsidies the only carbon capture projects that are financially feasible must use the carbon to increase revenue in a different way, such as using carbon for enhanced oil recovery. The Inflation Reduction Act, passed in 2022, offers a $85 tax credit per metric ton of carbon captured for CCS and $180 per metric ton captured through DAC. Both types of carbon capture require a large increase in energy to operate the necessary equipment. The US Department of Energy is currently providing billions of dollars in investment funding to support the development of carbon capture projects throughout the US, including $20 million invested in Kern County projects.

Advantages of Carbon Capture:

Based on the B3K Market Assessment Data Book and Findings report (2021), it is highlighted that although not entirely new, carbon capture and storage (CCS) represents a growing area of focus for California and international environmental policymakers. Experts suggest that the removal and storage of carbon will be necessary to achieve climate change objectives.

The 2022 Scoping Plan for Achieving Carbon Neutrality roadmap, developed by the California Air Resources Board (CARB), sets out a goal to reduce greenhouse gas emissions by 85% and attain carbon neutrality by 2045. The R2R report delves into the regionally specific opportunities for carbon capture and storage (CCS). In Kern County and the Central Valley, the predominant CCS methods identified are Direct Air Capture Adsorbents (DACS) and Biomass Agriculture Residues. This selection is influenced by the abundant underground CO_2 storage facilities and the surplus wind and solar resources available to fuel Direct Air Capture technology. DACS has the potential to remove 8 million tons of carbon annually from Kern County, while biomass storage offers a capacity of 47 million tons of carbon per year (Roads to Removal 2024).

In addition, B3K also notes that the potential for Kern to capitalize on CCS opportunities is supported by an analysis of industry and talent adjacencies. Studies by the RAND Corporation and others have identified industrial and occupational functions required by the sector for capturing and storing carbon in geological formations. These evaluations determined that activities supporting the CCS industrial base largely overlap with those of the oil and gas sector. Beyond overlapping industrial categories, there are 37 occupations corresponding to CCS that align with the region's capabilities, including Mining and Geologic Engineers, Mining Safety Engineers, Petroleum Engineers, Geologic and Petroleum Technicians, Service Unit Operators, Oil, Gas, and Mining, Petroleum Pump System Operators, Refinery Operators, and Gaugers (B3K, 2021).

According to the Kern Coalition CERF Regional Summary, Carbon Management emerges as a promising avenue for economic growth and diversification in Kern County. The establishment of carbon management sites presents unique opportunities to channel economic benefits, including substantial property tax and sales tax revenues. Projections suggest the potential for more job creation, with estimates ranging from 13,500 to 22,000 permanent jobs, accompanied by substantial annual payrolls. While the exact composition and wages for jobs in the Carbon Management industry are yet to be quantified, trends in Fossil Energy and Carbon Management occupations suggest a diverse range of opportunities across various skill levels.

Although there is limited literature on quantifying the value of CCS, recent studies have examined its benefits. For example, Ganzer & Dowell's research shows that CCS boosts economic productivity in the UK's industry and power sectors compared to moving production offshore without CCS. Additionally, Sabraveti et al. found that using CCS in constructing a bridge reduces emissions in the production chain by 51% while only slightly raising the bridge's cost by 1% (Global CCS Institute, 2023).

Likewise, advanced modeling tools like the Global CCS Institute's GENZO model offer crucial insights into the broader implications of CCS adoption. By simulating various scenarios and considering factors like pledged net-zero targets, GENZO highlights there are substantial cost savings achievable through optimal CO_2 storage. As observed in countries like the United States, Canada, Norway, the UK, and the Netherlands, government support for CCS initiatives underscores its cost-effectiveness in promoting CO_2 storage at scale (Global CCS Institute, 2023).

Limitations of Carbon Capture:

According to the UC Merced Community and Labor Center 2024 analysis, while commendable in theory, some climate scientists and policy experts perceive carbon sequestration as a strategy for the fossil fuel sector to leverage public funds to support its existing operations. They also highlight the risk that subsidies might incentivize the establishment of new carbon-emitting sources to be captured (Sekera and Goodwin 2021). Additionally, this approach could potentially escalate local air pollution and redirect solar energy that would otherwise be replacing current fossil fuel consumption (Cantu 2023). This, combined with apprehensions about the safety of transporting and storing carbon dioxide in proximity to residential zones and other vulnerable areas, has led to skepticism and queries from residents, environmental advocates, community groups, and other stakeholders (UC Merced Community and Labor Center 2024).

Based on the B3K Market Assessment Data Book and Findings report (2021), it can also be highlighted that the debate over CCS potential for carbon management and achieving carbon neutrality is unsettled. While technological advancements are less of an issue, market feasibility and cost structures are uncertain, heavily dependent on federal and state government regulation, policy, and tax credits or subsidies. Environmental justice advocates have also raised some opposition to CCS regarding impacts related to groundwater and water use, potential leaks, life-cycle emissions, and conditions for neighbors and workers. In addition, the extent of durable long-term job creation after installations is not definitive,

although expert consultation indicates substantial extended mid-term opportunities through scale-up and ongoing requirements.

Similarly, the Kern Coalition CERF Regional Summary notes that concerns regarding environmental impact and community well-being necessitate careful consideration and mitigation strategies.

Carbon Capture in Kern County:
According to the UC Merced Community and Labor Center (2024) analysis:

> Kern County officials have identified carbon capture and sequestration as a lucrative economic sector as it has the potential to produce high revenue and jobs for the county as well as support climate change mitigation efforts (Cantu 2023). Multiple large-scale carbon capture and sequestration projects are currently proposed for Kern County. The largest project is the Carbon Management Business Park that is estimated to generate about $68 million in tax revenues to Kern County per year and 23,000 new jobs (O'Rourke 2023, Cantu 2023).
>
> A carbon sequestration project at this scale would require the construction of giant solar farms across 47 square miles to power the massive machines that would capture and transport carbon dioxide from the air and store them in underground geologic formations (Cantu 2023). The captured carbon dioxide would then be transformed into liquid using pressure processes and injected into porous rock formations in geologic basins. The transformed carbon dioxide could also be transported to industrial complexes for use (O'Rourke 2023).

It is also worth highlighting the analysis of potential fiscal and economic benefits of the Kern County carbon management industry, prepared for the Kern County Planning and Natural Resources Department and Kern County Administrative Office (Natelson Dale Group, 2023). Specifically, this report evaluates the fiscal and economic benefits of establishing a carbon management industry in Kern County, focusing on the direct and indirect impacts of the proposed Carbon Management Business Park (CMBP).

- The fiscal analysis reveals potential property tax income ranging from $24.2 million to $56.2 million annually for the county of Kern, along with estimated sales tax income ranging from $4.2 million to $7.9 million per year. For incorporated cities, the report projects property tax income ranging from $4.5

million to $8.4 million annually and sales tax income ranging from $8.4 million to $15.6 million per year.

- Concerning broader economic benefits, the report outlines that the CMBP is expected to create a substantial number of jobs and stimulate overall business activity in Kern County. The total number of jobs supported by the CMBP, and related industries is estimated at 13,500 to 22,000 (Kern Valley Public Radio (KVPR), 2024), with an associated annual payroll of $1.1 billion to $1.8 billion. The total business activity (economic output) generated by the carbon management industry could reach $4.5 billion to $6.9 billion per year.

The 2023 Environmental Impact Report (EIR) for the Carbon TerraVault I (CTV I) presents a detailed outline of the Carbon TerraVault I (Kern County) Project. Proposed by California Resources Corporation (CRC), this initiative aims to establish a carbon capture and storage (CCS) facility across approximately 9,130 acres in Kern County and involves building wells and pipelines to capture and store carbon dioxide underground. The CTV I project aims to capture carbon dioxide from an existing gas field at Elk Hills and store it underground in designated reservoirs. The captured CO_2 would be processed at existing facilities and transported via newly constructed pipelines to injection wells. The project would be built in phases, with the first phase injecting CO_2 into four wells and the second phase injecting into two additional wells. In addition, ten existing wells would be converted for monitoring purposes, and six more would be used for seismic monitoring. At full operation, the project aims to capture and inject up to 2.21 million tons of CO_2 per year from the Elk Hills gas field (California Resources Corporation, 2023).

Carbon Sequestration Tensions:

According to the UC Merced Community and Labor Center (2024) analysis:

> Research has emphasized that climate change induces conflicts and tensions within and between communities and countries. In Kern County, environmental concerns arising from earmarked carbon sequestration projects are igniting tensions between Kern County officials and groups of stakeholders challenging the viability of the projects. Groups against the establishment of carbon sequestration plants in Kern County argue that the process does not reverse the harmful impacts of climate change because it does nothing to reduce the sources of pollution that drive climate change in the first place; and they do not envisage how such projects will reduce devastating climate change impacts like wildfires and droughts in Kern County. That

> the county needs to intentionally generate carbon dioxide to help oil companies and other businesses collect subsidies for sequestering the carbon dioxide calls into question the validity of these projects and their ability to protect the environment (Cantu 2023).

For instance, the 2023 Environmental Impact Report (EIR) for the Carbon TerraVault I (CTV I) project also examines potential environmental effects. Although the project may have minimal long-term impacts on most resources after mitigation, there are unavoidable consequences to consider in the broader context. A growing concern is the cumulative impact. The project, combined with other existing or planned projects, could considerably worsen existing environmental issues in the region in the short term. Air quality, already a problem, would suffer further due to the project's emissions. The project's emissions would compound existing air quality concerns and intensify the strain on already stressed groundwater resources, further contributing to the loss of valuable agricultural land. These combined impacts are anticipated to be critical and unavoidable. (California Resources Corporation, 2023).

According to the UC Merced Community and Labor Center (2024) analysis:

> Some critiques, citing a pipeline break (that lead to forty-five people seeking hospital treatment and an evacuation of 200 people) in a small Delta town in Mississippi (Strong 2023), challenged the raison d'etre of the projects, and maintain that the technology must first be tried (and its environmental protection and human safety capacity tested)—particularly for those close to such pipelines—before it may be implemented in Kern County. Environmental justice advocates argue that carbon sequestration development would be financially irresponsible; it would advance oil and gas industry interests and continue pollution (O'Rourke 2023). Some stakeholders have argued that this standpoint is "supported by" the oil and gas industry's lobbying for the acceptance of carbon sequestration to begin carbon capture in Kern County (Cantu 2023).
>
> Lastly, some advances suggest that the projects will continue polluting the environment for the already over-burdened communities that are likely going to be at the frontline of the carbon sequestration experiment (O'Rourke 2023). This difference in perspective from Kern County officials and industry stakeholders on the one hand, and community-based and environmental justice organizations on the other will likely create continuing conflict in the region and raises questions on the

role of carbon capture and sequestration in the county and under what conditions it should proceed.

Opportunities and stakeholder perspectives:

According to the UC Merced Community and Labor Center (2024) analysis:

> There are currently multiple carbon capture projects proposed in Kern County, including: Carbon TerraVault I (Elk Hills), the Carbon Management Business Park (West Kern), Covanta (Delano), Kern River Eastridge Co-Generation Plant (Bakersfield), Carbon Frontier/Aera Energy LLC (North and South Belridge Oil Fields), and Sentinel Peak (McKitrick), among others. While it is unclear which, if any, of these will move forward, Kern County stakeholders should weigh the sector's costs, benefits, and any necessary mitigation well before any project is approved.
>
> Proponents of this technology, and its development in Kern County, argue that carbon storage can reduce greenhouse gas emissions and mitigate climate change, and is ultimately necessary to meet state and national carbon reduction goals. They point to increased job opportunities and property taxes for an area facing concerning job and tax revenue losses in the fossil fuel sector. And it would provide a new source of revenue for beleaguered fossil fuel companies as well as federal investment dollars in the disinvested region.
>
> Opponents of this technology and its development in Kern County argue that subsidies tied to carbon storage incentivize increasing carbon emissions and co-pollutants that will worsen the already degraded air quality. They point to the high cost and energy usage associated with CCS that could be better used in more effective and efficient ways to reduce carbon emissions. They are concerned about environmental risks associated with long term storage of carbon, including leaks or seepage at the sequestration site or along the transit route. And they are concerned about the experimental nature of carbon capture at scale since few projects have been successful to date.
>
> Environmental justice organizations in the Central Valley provided a set of proposed requirements to guard against the most concerning risks associated with carbon capture (Central Valley Air Quality Coalition et al 2023). Some of these requirements include:

- CCUS projects must not be approved if they threaten groundwater and drinking water supplies or threaten to increase water pollution, soil pollution, truck or barge traffic, light pollution, noise pollution, or other nuisances to the community.
- CCUS infrastructure (e.g., capture infrastructure, pipelines, storage) must not be sited within a minimum of 10 miles of an overburdened EJ community.
- CCUS projects must be powered by excess clean, low-carbon energy.
- Projects must meet certain requirements for robust public notification and engagement.
- CCUS must be confined to hard-to-decarbonize sectors. This does not include refineries, natural gas power plants, bioenergy with carbon capture and storage (BECCS), waste incinerators and chemical recycling facilities, and ethanol production facilities.
- CCUS financing must not result in increased rates for utility customers.
- Offsets must not be generated by planning, constructing, or operating CCUS projects.
- Storage project operators must assess and prove stable geology where projects are to be sited and ensure no risk of leakage, and they must prove that projects will not increase geological risks.
- For transportation pipelines, there must be a defined safe distance or plume dispersion model for developing a potential impact area.
- An odorant must be added to CO_2 for effective leak detection.
- Pipeline operators must assess and prove stable geology where projects are to be sited and ensure no risk of rupture due to seismicity.
- Other modes of transportation such as trucks, trains, and barges are not safe or cost effective and should not be utilized to transport CO_2.

If CCS projects are approved in Kern, stakeholders should also consider labor standards, project labor agreements, and community benefit agreements. Any project receiving public subsidies should be required to adopt labor standards and project labor agreements to ensure high quality jobs and shared prosperity for the region.

G. Workers and Sectors at Risk of Displacement Due to Identified Trends and Analyses

According to the UC Merced Community and Labor Center (2024) analysis:

Among the trends identified in this report, workers in two key Kern industries mentioned previously are at risk of displacement: agriculture, and oil and gas. Agricultural workers are at risk of displacement due to changing climate conditions and demographic factors. Oil and gas workers are at risk of displacement due to industry volatility and reforms needed to achieve the state's climate goals.

Agriculture:
Farmworkers risk displacement due to a variety of climate-related reasons. High road approaches will have to align public investments to incentivize agricultural practices advancing economic and climate resilience.

First, climate change is leading to increasing episodes of extreme heat in California, particularly in the inland regions of the state where agricultural activity concentrates. Recent examination of Cal/OSHA-recorded, worker-related deaths indicate that among over 168 California farmworkers died between 2018 and 2022, nearly half (83) occurred within one day of the temperature being over 80 degrees (Gross and Aldous 2023). As temperatures continue to increase, fewer farm workers will be able to withstand working in such conditions and will leave the industry.

Second, climate change is leading to increasing severity of droughts (Fernandez-Bou et al. 2021). As a result, during recent droughts, California farmers have relied excessively on pumping groundwater to feed thirsty crops. Scientists have found that pumping groundwater is lowering the water table and ground, ruining public water infrastructure, and escalating climate-related risks like floods. The State of California has recently acted against local water districts that have not sufficiently regulated groundwater pumping. As droughts become more common, and as the State increasingly enforces groundwater pumping restrictions, water will become scarcer for industrial farming and fewer farmworkers will be needed to harvest crops.

Third, as climate change worsens, atmospheric rains and epic floods will become more common. In 2023, floods in Pajaro and Planada displaced entire rural, unincorporated communities in which farmwork was the leading industry of employment. In the absence of large-scale infrastructure investments to protect vulnerable communities from floods, more people living in farmworker communities will risk becoming displaced. Such displacements may become permanent; while legal residents have access to Unemployment Insurance, undocumented immigrants (who comprise a large portion of farmworkers) have no access to unemployment

benefits and may be more likely to move following a major public disaster and/or immediately seek employment in a new industry.

Fourth, as climate change makes the above-mentioned conditions more common (extreme heat, drought, and floods), aging farmworkers may be displaced. An analysis by the UC Merced Community and Labor Center (2022c) found that immigrant farmworkers are aging in numbers historically unprecedented. An estimated nearly 55,000 California noncitizen farmworkers are 55 years of age or older; yet such undocumented immigrants do not have access to Social Security Income and may have no choice but to continue working in new industries. Challenges for properly transitioning younger and older undocumented farmworkers in climate-resilient occupations include low levels of education, and not being eligible for/ having access to WIOA-funded workforce development training.

There is a need for quality job opportunities, outside of agricultural farming particularly, that are accessible to this population, who often lack a valid Social Security number (Kern Coalition Stakeholder Meetings).

As the UC Merced Community and Labor Center (2024) analysis continues:

> While large amounts of public funds are being invested in economic development for agriculture technology (ag-tech), such development initiatives have thus far focused on automation with no clear path for farmworkers to transition into new jobs.

Oil and Gas:

Kern's oil and gas industry needs worker-centered initiatives, to advance economic and climate resilience. The oil and gas industry produced the greatest annual GDP of any Kern industry, and one of the highest average wages for Kern workers. Yet, it is also the most volatile industry for employment in Kern, risking downturn during economic shocks, such as major public disasters or oil price changes. The State of California has ambitious climate goals to reduce greenhouse gas emission by 2035 and to become carbon neutral by 2045; and it is expected that oil and gas extraction employment—already the most volatile sector of employment in Kern—will be affected by state efforts to advance on climate goals. Advancing on the state's goals may require a shift towards more renewable forms of energy development. Unless

reforms center workers, those in oil and gas may lose their livelihoods and potentially resist such reforms.

Type of Occupation	16-25	26-35	36-45	46-55	56-65	66+	Total
Oil and gas concentrated	61	1,394	963	879	382	150	3,829
Non-concentrated	820	2,490	2,333	1,983	1,644	328	9,598
Total	881	3,884	3,296	2,862	2,026	478	13,427

Figure 76: Kern Oil and Gas Industry Employment by Age ((UC Merced Community and Labor Center analysis of American Community Survey (ACS), Public Use Microdata Series (PUMS) 5-year data for the 2017-2021)

Kern oil and gas workers are among the county's highest earners. In 2017-2021, Kern oil and gas workers earned a median of $70,924 (see Figure 77), double the median ($34,503) of all other workers in Kern County (analysis not shown). While only 13,427 (4.3%) of Kern's 323,237 workers worked in the oil and gas industry (see Figure 78), to guarantee the livelihoods of these workers it is imperative to have a better understanding of the industry's most common occupations, their demographics, and possible pathways to well-paying jobs outside of the oil and gas industry.

According to the Kern County CEDS 2021 report, analysis of talent adjacency in the oil and gas sector reveals robust knowledge and skill strengths that facilitate the development of new specializations. Particularly, the capabilities of the oil and gas workforce exhibit a notable alignment with various manufacturing specializations (Kern County Comprehensive Economic Development Strategy (CEDS), 2021).

	Median Earnings		Number of Workers	
Occupation	Oil & Gas	Non-Oil & Gas	Oil & Gas	Non-Oil & Gas
Environmental scientists and specialists, including health	$207,019	$77,967	24	13
Chemical engineers	$170,389	$138,012	71	38
Petroleum, mining, and geological engineers, including mining safety engineers	$87,821	$128,804	345	31
Environmental science and geoscience technicians, and nuclear technicians	$84,058	$57,505	93	7
Underground mining machine operators	$80,507	$48,304	493	102

Crane and tower operators	$71,306	$80,507	253	165
Other extraction workers	$70,541	$69,007	1,254	72
Surface mining machine operators and earth drillers	$69,007	-	139	-
Derrick, rotary drill, and service unit operators, and roustabouts	$54,263	-	689	-
Riggers	$47,980	-	273	-
Conveyor dredge, and hoist and winch operators	$34,078	-	195	-
First-line supervisors of construction trades and extraction workers	$92,009	$70,541	848	1,468
Driver/sales workers and truck drivers	$53,656	$45,437	670	9,343
Cashiers	$18,353	$13,801	1,660	8,130

Figure 77: Kern Oil and Gas Industry Employment and Wages, 2017-2021 (UC Merced Community and Labor Center analysis of American Community Survey (ACS), Public Use Microdata Series (PUMS) 5-year data for the 2017-2021)

An analysis of US Census Bureau American Community Survey, Public Use Microdata Series (PUMS) data for the 2017-2021 period finds that Kern oil and gas workers are concentrated in two types of occupations; one type in which the majority of workers in the occupation are concentrated in oil and gas industry jobs ("oil and gas concentrated occupations"), and a second type in which the majority of workers in the occupation are not concentrated in oil and gas industry jobs ("oil and gas non-concentrated occupations). In the following, we share analysis of ACS data on all oil and gas concentrated occupations, as well as the three most common oil and gas non-concentrated occupations (see Figure 76).

- Oil and gas-concentrated occupations: Kern's oil and gas industry employed most workers in eleven different occupations. These occupations included (in parentheses with the estimated percentage and the number employed in the oil and gas industry):
    - Derrick, rotary drill & service unit operators; roustabouts, oil, gas & mining (100%, 689)
    - Surface mining machine operators and earth drillers (100%, 139)
    - Riggers (100%, 273)
    - Conveyor, dredge, and hoist and winch operators (100%, 195)

        - Other extraction workers (95%, 1,254)
        - Environmental science and geoscience technicians, and nuclear technicians (93%, 93)
        - Petroleum, mining and geological engineers, incl. mining safety engineers (92%, 345)
        - Underground mining machine operators (83%, 493)
        - Chemical engineers (65%, 71)
        - Environmental scientists and specialists, incl. health (65%, 24)
        - Crane and tower operators (61%, 253)
- Top-3 oil and gas non-concentrated occupations: Kern's oil and gas industry also employed over 500 workers in three other occupations in which the majority of workers (in each of those occupations) worked outside of oil and gas. These occupations included:
    - Cashiers (17%, 1,660)
    - First-line supervisors of construction trades and extraction workers 37%, 848)
    - Driver/sales workers and truck drivers (7%, 670)

The 7,007 oil and gas workers employed in the fourteen occupations listed above comprise the majority (52%) of Kern's oil and gas industry workforce (Figure 77). Another 6,420 (48%) of Kern's oil and gas industry workforce were employed in 93 different occupations, in which the majority of those occupations' workers were employed in non-oil and gas industries. Seventeen different occupations accounted for the majority (3,285) of those jobs, from fields such as welding to administrative assistants and other managers.

The median annual salary/wages for oil and gas-concentrated occupations, inside Kern's oil and gas industry, was $69,007 (analysis not shown). For those working in the same occupations outside of the industry, median salary/wages were higher at $74,756 (analysis not shown). Top-3 oil and gas nonconcentrated occupations earned median salary/wages of $29,903 (analysis not shown) in Kern's oil and gas industry, while their counterparts working in the same three occupations outside of the oil and gas industry earned similar median salary/wages of $29,988 (analysis not shown).

A comparison of the median earnings in the paragraph above seems to suggest that, among Kern workers in oil and gas-concentrated occupations, those working inside Kern's oil and gas industry earn median wages lower than those of their counterparts working outside of the industry.

This masks the true disparities within the oil and gas sectors. The data suggests that the median wages of oil and gas concentrated occupations, as well as the top-3 non-concentrated occupations, are higher for those in the oil and gas industry in all but two cases (petroleum engineers, and crane and tower operators).

The major difference in the earnings of occupations in the oil and gas industry, versus all others, is that occupations unique to the oil and gas industry are often entry-level and pay lower wages than all other oil and gas concentrated jobs. Surface mining machine operators and earth drillers ($69,007); derrick, rotary drill, and service unit operators, and roustabouts, oil, gas, and mining ($54,263); riggers ($47,980); and conveyor, dredge, and hoist and winch operators ($34,078) all have median wages less than the other seven oil and gas-concentrated occupations (see Figure 77). Despite lower entry-level wages, there is some evidence to suggest that the skills and knowledge cultivated in these roles can position workers to attain higher-paying positions in other adjacent industries (B3K 2021).

H. Data Limitations

Some limitations can be recognized from this section. The five main constraints include: (1) disaggregation of data, (2) heterogeneity in subregional analysis, (3) Absence of standardized prioritization criteria for industries cited in stakeholder feedback, (4) slightly outdated datasets, (5) lack of identification of drivers behind the data.

Disaggregation of data: First, the analysis using the State of California EDD datasets did not use the most disaggregated data in certain sectors (e.g., the analysis used EDD's broader categories like "education and health services"), which can limit the granularity of insights. Understanding the distinct dynamics and contributions of individual components within these sectors—such as separate analyses for education and healthcare services, or for trade, transportation, and utilities—would allow for deeper insights into their respective challenges and opportunities. Similarly, conducting additional analysis for sub-sectors would also be beneficial for a more nuanced understanding of the landscape.

Heterogeneity in subregional analysis: Secondly, a clear limitation arises from the variability and availability of region-specific data. This heterogeneity in the subregional analysis, characterized by variations in structure and data points across geographic areas, poses challenges for comparison and for the synthesis of findings. A standardized framework for conducting subregional analyses would facilitate robust cross-regional comparisons and the identification of common trends or disparities.

Absence of standardized prioritization criteria for industries cited in stakeholder feedback: Likewise, there is an absence of standardization in the industries highlighted through community engagement: agriculture, warehousing, health, and energy. Each industry has relevant characteristics and garners interest from stakeholders, but they differ in terms of their relevance, rationale for importance, and specificity (e.g., agriculture is more general than warehousing). This diversity complicates efforts to compare and prioritize them, posing challenges for future analyses.

Slightly outdated datasets: Additional data points and sources, such as those from the UC Merced Community and Labor Center analysis of the American Community Survey (ACS), appear slightly outdated (2021) and may be less reliable than other sources like those from California's Employment Development Department (EDD).

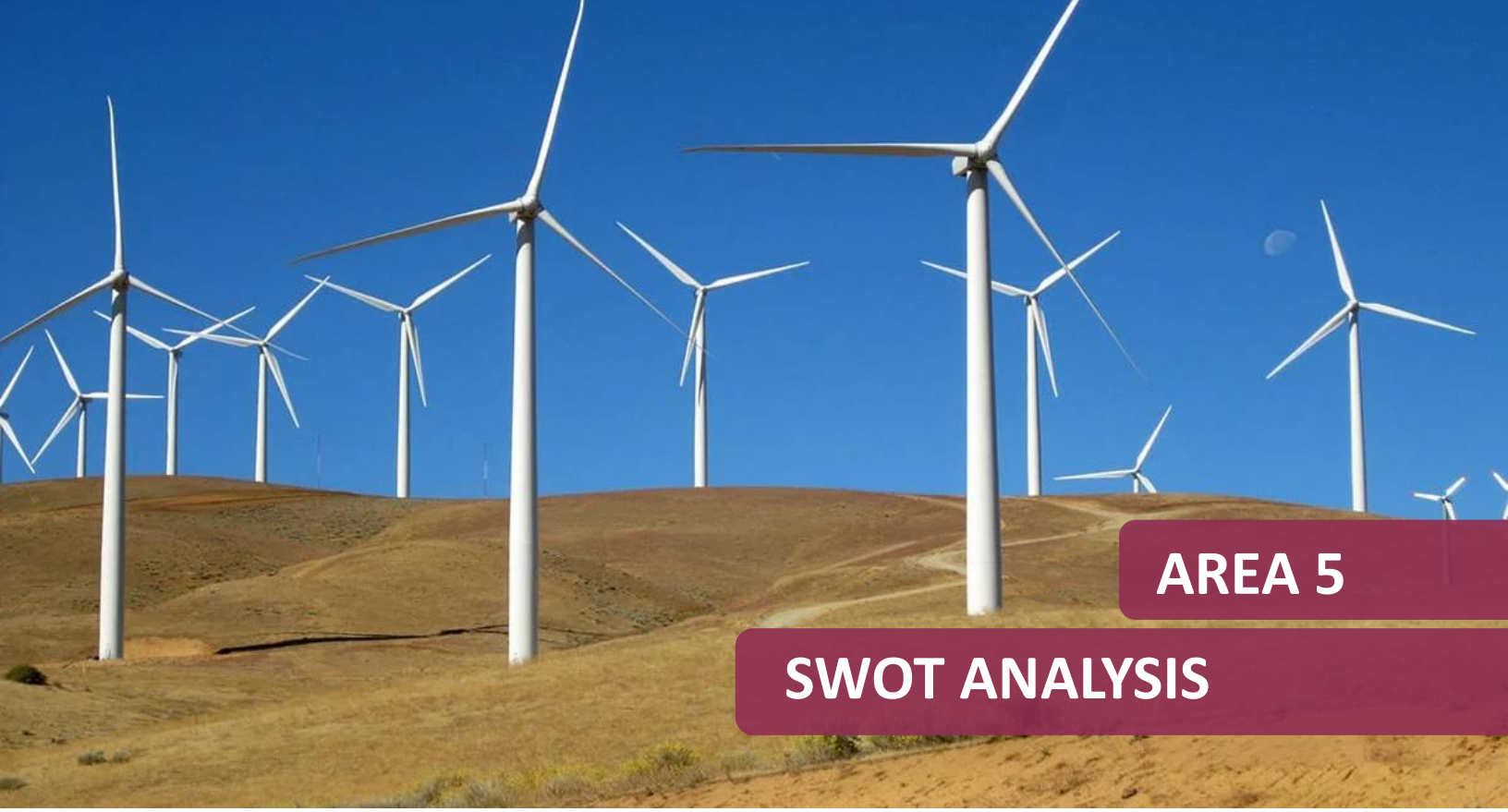
Lack of identification of drivers behind the data: Lastly, the absence of detailed information on the factors influencing the rise or decline of specific industries and subsectors represents a gap in the analysis. Identifying these drivers is important for developing comprehensive insights. Therefore, incorporating additional research going forward is crucial to provide context and complement the gathered data points and numerical analysis.

I. Annex

Industry	Jobs 2017-2021	Jobs 2007-2011	% Change	# Change
Educational	33006	27176	21%	5830
Agriculture	30992	28408	9%	2584
Health	26681	21404	25%	5277
Public Administration	22800	23821	-4%	-1021
Restaurants and other Food Services	20458	18281	12%	2177
Retail Trade	18730	20127	-7%	-1397
Construction	18323	17004	8%	1319
Grocery	13508	9875	37%	3633

Oil and Gas Extraction and related mining	13427	16421	-18%	-2994
Manufacturing	12263	11123	10%	1140
Transportation	12095	9688	25%	2407
Professional, Scientific, and Management	11177	9846	14%	1331
Other Services (Except Public Administration)	10675	10509	2%	166
Finance, Insurance, Real Estate, and Rental and Leasing	9985	10940	-9%	-955
Forestry, Fishing and Hunting, Support Activities	9438	6635	42%	2803
Social Services	7920	6481	22%	1439
Wholesale Trade	7597	7292	4%	305
Warehousing	4733	1095	332%	3638
Building Services, including Security	4364	3226	35%	1138
Animal production	4293	2023	112%	2270
Arts, Entertainment, Recreation	4277	3811	12%	466
Food processing	4261	4110	4%	151
Administrative and Support Services	3960	3178	25%	782
Information and Communications	3407	3613	-6%	-206
Utilities	2637	3371	-22%	-734
Traveler Accommodation	2121	1793	18%	328
Waste Management	2008	1154	74%	854
Nursing Care	1975	1646	20%	329
Active Duty	1965	1932	2%	33
Residential Care	1931	1488	30%	443
Landscaping	1328	1683	-21%	-355
Non-Oil and Gas Mining and Quarrying	655	452	45%	203
Bars	247	273	-10%	-26
Total	323237	289879		33358

Figure 78: Job Growth by Industry, 2017-2021 and 2007-2011



AREA 5

SWOT ANALYSIS

We provide an assessment of Kern County's regional strengths, weaknesses, opportunities, and threats (SWOT) using insights from the UC Merced Community and Labor Center (2024) analysis, subregional community and stakeholder meetings, and consultations with the Kern Coalition.

Strengths

Population, the Environment & Civil Society: (Kern Community College District (KCCD), 2024 and Kern Coalition Stakeholder Meetings)

- Kern County covers a large geographic area and its location in California, with access to major ports and transportation networks, positions it well for logistics and distribution.
- As highlighted by KCCD Workforce development plan, efforts to improve overall educational outcomes have been launched, with the region building strategies and offerings around career and technical education and work-based learning.
- Leadership from regional and local institutions provides opportunities for enhanced alignment and resources in economic and workforce development.

Additionally, the UC Merced Community and Labor Center (2024) analysis included the following:

- The region's young population (nearly 30% under age 18) provides opportunities to train and prepare young people entering the workforce for a high-road economy.
- A diverse and longstanding network of community-based organizations in the Central Valley region of Kern County can reach vulnerable and hard-to-reach populations. The Kern Coalition is activating this existing community base and increasing engagement in rural communities.
- Growing partnerships between local governments and community-based organizations provide pathways to better collaboration.
- There is widespread public support for sustainable and high-road initiatives.
- The region's language diversity, with a large percentage of the workforce being bilingual, enriches its social fabric.
- Kern County contains or is near several state and national parks, such as Red Rock Canyon State Park and Sequoia National Park.

Public Sector:

- Government grants for energy resilience and workforce training programs signal support for economic development and transition.
- Government investment in carbon capture projects, including subsidies and tax credits, incentivizes development.
- The county receives federal and state funding for infrastructure, water management, economic development, and public safety projects.

Additionally, the UC Merced Community and Labor Center (2024) analysis included the following:

- Local public universities and colleges (Kern Community College District, West Kern Community College District/Taft College, and California State University, Bakersfield) are increasing partnerships and collaboration to prepare local residents for the workforce.
- There has been an increase in funding for nursing programs in the region.
- There are opportunities for young people to participate in college and high school dual enrollment programs.
- The Kern Regional K-16 Education Collaborative is working to improve student progress from high schools to postsecondary education and ultimately the workforce.

Industry/Economy: (B3K, 2021; Kern Coalition CERF Regional Summary, 2023; Kern Community College District (KCCD), 2024; Kern Coalition Stakeholder Meetings, UC Merced Community and Labor Center 2024)

- Kern County has a strong foundation in natural resources and mining, with a Location Quotient (LQ) of 13.49 indicating specialization in extractive industries.
- Kern County's innovative ecosystem benefits from the convergence of academic institutions, military bases, research facilities, and relevant industries, including the aerospace industry.
- The diversity of economic sectors in Kern is evident across its sub-regions, reflecting a broad array of industries (e.g., military and defense in East Kern, oil and gas in West Kern, agriculture in North Kern, agriculture and low-carbon energy in South Kern, and manufacturing and distribution, among others, in Central Kern).
- Employment in Kern County displays notable diversity, with notable contributions from sectors such as government, trade, transportation, utilities, farming, and private education and health services, fostering resilience against economic downturns.
- Several industries in Kern have experienced considerable job growth in recent years, including private education and health services, trade, transportation, and utilities, government, and leisure and hospitality.
- Technological advancements, particularly in ag-tech, enhance productivity and efficiency in Kern's agricultural sector.
- Kern County's proximity to Los Angeles and access to major transportation routes enhance its market access.
- As highlighted in the B3K Market Assessment (2021), Kern County's strategic location, efficient infrastructure, and broadband connectivity position it favorably for industries like logistics, manufacturing, and business services.
- Certain sectors of Kern County's economy, including agriculture, forestry, fishing and hunting, utilities, finance & insurance, and management, demonstrated resilience during the initial phases of the COVID-19 pandemic.
- Kern County is widely perceived by private and public sector leaders as more "business-friendly" than other regions in California.
- Positive start-up activity and organizing efforts, including networking, co-working, education, and exposure, contribute to an expanding entrepreneurial foundation in Kern County.

- The unique topography of Kern County makes it an attractive location for carbon capture projects, due to its deep geologic formations formed by depleted oil and gas fields, offering potential for economic growth.
- Overlapping industrial functions with the oil and gas sector provide a knowledge and skills base for implementing carbon capture technologies.
- As highlighted in the KCCD Workforce Development Plan, the Kern County has clearly defined priority industry sectors based on thorough economic and workforce development assessments and is taking concrete actions to address the specific workforce needs and challenges.

Additionally, the UC Merced Community and Labor Center (2024) analysis included the following:

- Kern County has many oil reserves, which position the county to be a leader in energy production.
- Kern is a leading producer of low-carbon energy in the state and nation, especially for commercial solar and wind, considering its noteworthy wind resources, sunshine, and solar panel projects.
- Military installations in East Kern, such as the Naval Air Weapons Station, China Lake, and Edwards Air Force Base, are economic drivers of the desert region.

Weaknesses

Population, the Environment & Civil Society: (B3K, 2021; Kern County Comprehensive Economic Development Strategy (CEDS), 2021; Kern County CERF Regional Summary (2023); National Equity Atlas; California Immigrant Data Portal (CIDP); Kern Coalition Stakeholder Meetings)

- The Kern County CEDS 2021 report highlights how generational poverty and trauma pose roadblocks to prosperity.
- Water quality in Kern is among the worst in the state.
- As highlighted in the B3K Market Assessment, Infrastructure hurdles include uneven amenities between East Kern and Greater Bakersfield, distance-related connectivity issues among sub-regions, and fewer commercial air links compared to peers.
- There's a general shortage of tech or digital skills talent.

- There is a prominent digital divide, including racial disparities and differences between immigrant and US-born households regarding the rates of home high-speed internet access, access to a computer, or both.
- The farmworker community faces ongoing risks due to fast-changing climate conditions, causing financial struggles for their families.
- According to the Human Rights Commission at California State University, Bakersfield, historical practice of redlining has resulted in significant socioeconomic consequences, disproportionately impacting the Black community.
- Environmental pollution and ineffective policies contribute to negative health outcomes among vulnerable communities.

Additionally, the UC Merced Community and Labor Center (2024) analysis included the following:

- The low educational attainment levels in Kern present barriers to credentialed and skilled employment.
- There are insufficient professionals and academics to provide high level education training to the local population. The region faces a "brain drain" where young people who leave the region for educational opportunities often do not return to Kern County due to a lack of suitable employment or local amenities.
- Young people in Kern have not shown a considerable interest in entering skilled trades careers.
- The isolation of some small, incorporated communities in the region presents barriers to accessing services, training, and job opportunities.
- There are few community-based organizations in East Kern to advocate for and provide support to local residents.
- The immigrant population in Kern is marginalized due to language barriers, discrimination, and uncertain work status. This marginalization is even more pronounced for indigenous populations who do not speak English or Spanish.
- Kern County has a history of racism and discrimination, including discrimination against the LGBTQI+ population.
- There are geographic barriers separating communities and subregions.
- The region has very poor air quality, with Kern County ranking as one of the counties with the poorest air quality in the country.

- The isolation of small rural communities in Kern has led to food deserts, where communities are not served by an accessible grocery store.

Public Sector: (B3K, 2021; Kern County Comprehensive Economic Development Strategy (CEDS), 2021; National Equity Atlas; California Immigrant Data Portal (CIDP); Kern Coalition Stakeholder Meetings)

- The region's public transportation system is woefully inadequate to serve public needs, including coverage, schedules, and accessibility.
- The region needs more transportation options to the local colleges and universities and their satellite campuses.
- Progressing strategy and services across Kern County's expansive and diverse regions has proven challenging due to its size, varying sub-regional needs, and differences in scale and capacity.
- Economic development initiatives across the region lack a unified vision and measurable goals among involved stakeholders, inhibiting long-term, coordinated action and implementation.
- In some instances, there is a lack of coordination, such as in economic development endeavors in East Kern and Greater Bakersfield, leading to perceived disconnects.
- Minority stakeholders often feel marginalized in decision-making processes, impeding efforts to tailor strategies to their specific needs.

Additionally, the UC Merced Community and Labor Center (2024) analysis included the following:

- The region lacks sufficient education infrastructure, such as public transportation systems.
- Some schools are difficult to get due to lack of walkability (no sidewalks, crosswalks, traffic signals) and public transit doesn't provide coverage.
- While Bakersfield has universal broadband coverage, the main challenge is access and subscription rates
- The region lacks research capacity and research centers.
- Federal and state funding is misaligned with local needs and priorities.

- There is insufficient information about and recruitment for traded sectors and vocational training programs.
- Physical infrastructure is lacking or in disrepair, including streets, streetlights, sidewalks, sewer systems, water systems, and drainage systems.
- There are not enough public institutions in some communities, such as libraries, senior centers, community, and cultural centers.
- Many residents still lack access to health care, both because of a lack of coverage and a lack of health care facilities and medical practitioners.
- The county hospital needs additional investment.
- There is insufficient access to childcare because of the high cost, the limited availability of services and childcare providers, and the lack of childcare options that provide flexible scheduling.
- The lack of immigration reform and pathways to citizenship leave many Kern residents vulnerable to immigration enforcement, limited access to employment, and family separation.
- There are insufficient resources for individuals with disabilities.
- There are insufficient resources for the formerly incarcerated and their families.
- Many residents do not have access to clean drinking water.
- There are college course shortages that make it difficult to meet degree requirements.
- The many service providers in Kern County lack connectivity to help coordinate multiple service needs.
- There is a funding mismatch for nursing programs in the region.
- The exclusion of undocumented workers from public safety net programs creates economic hardship for many Kern County workers.

Industry/Economy: (B3K, 2021; Kern County Comprehensive Economic Development Strategy (CEDS), 2021; Kern Coalition Stakeholder Meetings)

- Access to capital and other essential resources is limited, hampering both the establishment and growth of startups.
- Inclusive entrepreneurship support is lacking and is not integrated with mainstream economic development efforts.
- Kern County continues to grapple with a high unemployment rate (10.2% as of February 2024).

- Certain sectors, including mining, logging, manufacturing, and information, have seen declines in employment, underscoring vulnerabilities in specific industries.
- Kern County's agricultural sector has encountered many challenges due to disruptions in the supply chain, impacting both local growers and consumers.
- Transportation bottlenecks and workforce shortages present hurdles to the timely shipment and availability of agricultural products, affecting sector stability.
- Insufficient new housing development, particularly in East Kern, poses challenges in attracting and retaining skilled workers.
- As noted in the Kern County Comprehensive Economic Development Strategy (CEDS) 2021 report, while broadband availability is widespread, subscription rates remain low in some areas, affecting internet access for residents and businesses.
- Some subregions heavily depend on a single industry, such as oil production in West Kern and agriculture in North and South Kern, leaving them susceptible to economic fluctuations.
- Many dominant industries in Kern, such as agriculture and logistics, predominantly offer low-wage jobs, exacerbating economic disparities and limiting upward mobility.
- Energy insecurity in areas like Central Kern, characterized by fluctuating prices and reliability issues, impacts both residents and the economic stability of industry sectors.
- The long-term viability, job creation potential, and profitability of CCS (Carbon Capture and Storage) remain uncertain.
- Job growth has been concentrated in local serving and public sectors rather than tradable sectors

Additionally, the UC Merced Community and Labor Center (2024) analysis included the following:

- Persistent economic disparities in the region damage the local economy as well as the well-being of Kern residents.
- Regulatory barriers can slow or impede pathways for growing industry sectors.
- There are few jobs available or accessible for older workers returning to the workforce.

- Affordable housing is becoming increasingly hard to find as rents are rising quickly, and some communities are facing housing shortages.
- Low union density in Kern means lower wages, fewer benefits, and poorer workplace conditions for workers.
- Many small communities lack access to grocery stores.

Opportunities

Population, the Environment & Civil Society: (Kern Community College District (KCCD), 2024; Kern Coalition Stakeholder Meetings)

- Organizations like the Kern Community Foundation can play a key role in effective governance, bridging boundaries for joint action on common agendas.
- There is an opening for a partnership and alignment with Kern Community College District's initiatives for the identified priority sectors.
- Carbon management is critical to achieving the county's emissions targets, with the CARB Scoping Plan pointing to Kern County as a major factor in achieving the state's climate objectives.

Additionally, the UC Merced Community and Labor Center (2024) analysis included the following:

- The demographic shift to more second and third generation immigrants provides pathways to opportunities and avoids barriers to success faced by undocumented residents.
- The younger population in Kern means a larger high school and college age population that can take advantage of college and training programs.
- There is an interest in growing arts and cultural resources in Kern County.
- The increasing number of collaborative spaces in Kern opens up opportunities for organizations in the nonprofit sector to share information and resources.

Public Sector: (B3K, 2021; Kern Community College District (KCCD), 2024; Kern Coalition Stakeholder Meetings)

- Proactive partnerships with the state and federal entities can benefit Kern County by aligning strategies and leveraging policy trends to support Kern County's development objectives.

- Pursuing the established, EDA-approved CEDS can greatly improve resource allocation and collaborative action across the county.
- Government investments, such as with the Infrastructure Investment and Jobs Act, can address infrastructure needs and boost economic development.
- Promoting inclusive economic development as well as engaging diverse communities in leadership and tailoring strategies to address their needs can ensure broader prosperity.

Additionally, the UC Merced Community and Labor Center (2024) analysis included the following:

- There is an interest in conducting needs assessment surveys to obtain feedback and perspectives from Kern County's youth.
- There is an opportunity to design nontraditional education pathways to reach additional populations.
- State and federal investments can help develop necessary infrastructure in the region and provide jobs.
- There is a big interest and need in growing the health care sector in Kern.
- There is an opportunity to develop a bachelor's degree nursing program at Bakersfield College.
- The Transformative Climate Communities funding can provide benefits and opportunities for Southeast Bakersfield.
- The High-Speed Rail project and station can provide jobs and community benefits in Bakersfield and beyond. If the project is completed, it will increase access to the region and the ability of residents to commute/travel to other areas.
- There are opportunities to attract educators to the community.
- Communities have requested college satellite campuses, especially in small rural communities.
- Kern can use the Head Start model to provide school readiness programming to pre-K children at a low cost.
- The Kern Coalition can provide technical assistance grants to support small rural organizations and communities.
- Funding for climate change and sustainability is creating more alignment between stakeholders.

Industry/Economy: (Kern Coalition CERF Regional Summary, 2023; Kern County Comprehensive Economic Development Strategy (CEDS), 2021; Kern Coalition Stakeholder Meetings)

- More specifically, programs that provide training and education for displaced workers can help them transition into new careers.
- There is a need for more language courses, particularly for teaching English to adults and promoting bilingual speakers.
- Kern County's shift towards low-carbon energy presents opportunities for job creation and economic diversification, as well as attraction of investment.
- Trade, transportation, utilities; education and health services; leisure and hospitality; and professional and business services, are projected to experience job growth in the coming decade.
- Having more training programs such as paid internships and fellowships, on-the-job training, accessible training with stipends, and resume workshops would be beneficial.
- Some regions recommended establishing and promoting a circular economy by supporting local businesses, creating local jobs, and retaining local workers.
- Further diversifying the economy will lead to improved economic stabilization by reducing reliance on volatile industries.
- Diversifying employment opportunities for seniors beyond farm labor, fostering inclusivity and economic growth can help expand job and income security.
- There is an opening to streamline the permit application process, enabling seniors to easily start their own businesses and contribute to local economies.
- The region can establish facilities and offer training programs to assist seniors in acquiring legal identification and credentials, ensuring their full participation in society.
- There is an opportunity to establish more art and cultural centers to foster creativity and engagement within the senior community.
- The tourism industry can help attract visitors and create opportunities for seniors to participate in and benefit from tourism-related activities.
- Implementing capacity-building initiatives with language translation services to support indigenous speakers in accessing resources and opportunities can help increase quality job applicants and reduce disparities.
- Investments in agricultural practices and technology can enhance climate resilience and create new job opportunities in sustainable farming methods.

This includes both the creation of new jobs and upgraded roles for the same workers once upskilled.

- Properly plugging and decommissioning idle or orphaned oil wells can create jobs and protect the environment.
- Energy storage solutions can help to address the intermittent services that low-carbon energy sources sometimes present.
- Creating incubators, accelerators, and increasing access to capital can support the development of new businesses and support entrepreneurship.
- As underscored in the Kern Coalition CERF Regional Summary, carbon capture projects in Kern County offer opportunities for economic development and job creation. According to the Kern County Planning Department, in operation and maintenance, there are estimated to be between 75 and 270 permanent jobs, with approximately 700 to 1,000 jobs during the construction phase, alongside the creation of thousands of indirect employment opportunities.

Additionally, the UC Merced Community and Labor Center (2024) analysis included the following:

- There is increasing alignment between training programs, workforce development, and industry needs, such as the for the low-carbon energy sector.
- Kern hosts the state wrestling championship. This and other events bringing in people from other parts of the state or county provide economic opportunities for Kern.
- Childcare centers are a potential area of growth. According to the National Workforce Registry Alliance, encouraging BIPOC women to start in-home childcare businesses can both help close the gap in supply for childcare and boost economic empowerment for a historically underrepresented and vulnerable group.

Threats

Population, the Environment & Civil Society: (B3K, 2021; Kern County Comprehensive Economic Development Strategy (CEDS), 2021; Kern Coalition Stakeholder Meetings)

- Immigrant communities may also become targets for misinformation regarding job opportunities, according to the Kern County CEDS 2021 report.
- Some low-carbon energy projects and warehouse developments face opposition from residents concerned about environmental or health impacts.

Additionally, the UC Merced Community and Labor Center (2024) analysis included the following:

- Many residents and local organizations distrust the local government and would be wary to work or collaborate with their representatives.
- Natural and climate disasters such as excessive heat, wildfires, flooding, and droughts impact the health and well-being of residents, especially disadvantaged populations, as well as the local economy.
- Groundwater shortages impact communities, the agriculture industry, and other economic sectors.

Public Sector:

- A lack of clear accountability mechanisms could hinder the successful implementation of economic development strategies.

Additionally, the UC Merced Community and Labor Center (2024) analysis included the following:

- High speed rail can also be viewed as a threat by diverting investment from other priorities and if it is not completed.
- Low educational attainment levels for BIPOC and undocumented populations will perpetuate local economic inequities.
- The lack of health care access for BIPOC and undocumented population will perpetuate local health inequities.
- The lack of economic safety net for the undocumented population will perpetuate local economic inequities.
- The high cost of higher education will prevent many residents from obtaining college degrees and credentials necessary for some higher paying economic sectors in Kern.
- Some representatives and officials in local government do not acknowledge climate change, its magnitude, or the steps necessary to address its devastating impacts.

Industry/Economy: (B3K, 2021; Kern County Comprehensive Economic Development Strategy (CEDS), 2021; Kern Coalition Stakeholder Meetings)

- Finding tech or digital skills talent is a common challenge, with reported difficulty in hiring tech talent compared to other markets (Kern County Comprehensive Economic Development Strategy (CEDS), 2021).
- Dependence on sectors facing job declines, notably mining, logging, manufacturing, construction, and information, though not dominant, could pose risks to Kern County's economic stability, with mining and logging expected to decline further, potentially reshaping employment trends.
- More specifically, over-reliance on oil and gas extraction leaves the county vulnerable to fluctuations in energy prices and the national shift towards low-carbon energy.
- Climate change could transform Kern County's agricultural sector and water resources.
- CCS projects require substantial upfront investment and ongoing energy use.
- Legislative efforts aimed at carbon neutrality and environmental regulations may impact traditional industries like oil production.
- Persistent supply chain disruptions, particularly in the agricultural sector, may impede economic growth.
- Federal Reserve decisions regarding interest rates can impact affordability and economic growth in the county.

Additionally, the UC Merced Community and Labor Center (2024) analysis included the following:

- Inflation and an economic downturn will hamper economic progress, stymie job growth, and negatively impact local income levels.
- Competition from nearby regions with similar economies may lure business opportunities or investment away from Kern County. Regional competition may also lead to a race to the bottom where companies locate where wages and regulations are lowest, putting downward pressure on worker benefits and environmental protections.
- Wages in Kern County, especially for Black and Indigenous populations, are not sufficient to meet basic household needs. Without a wage increase in Kern County, poverty and income inequities will continue and magnify.

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APPENDICES

APPENDIX A. STAKEHOLDER LIST[1]

Direct Aid and Service Providers

Direct Aid and Service Providers	Types of Service Provided	**Location or Area Served**	**Demographic Served**
Agricultural Family Fund	● Health Screenings	Arvin, Bakersfield, Delano, Lamont, McFarland, Shafter, Wasco	Farmworkers
Arvin Family Resource Center	● Support Services ● Referrals	Arvin	Individuals in need, benefit recipients, low-income individuals, individuals in crisis
Bakersfield AIDS Project	● Bus Passes ● Hygiene Supplies ● Drop-in Clinic	Kern County	Persons living with HIV and AIDS
Bakersfield American Indian Health Project	● Transportation ● Case Management ● Youth Prevention ● Nutrition ● Health	Kern County	American Indians and Alaska Natives residing in Kern County
Bakersfield Burrito Project	● Food Distribution	Bakersfield	Unhoused and hungry
Boys and Girls Clubs of Kern County	● Youth Services and Programs	Locations throughout Kern County	At-risk youth
Buttonwillow Community Resource Center	● Emergency Food/Clothing ● School Supplies ● School Readiness ● Health Care Services ● Local Resources Referrals	Buttonwillow	
California Rural Legal Assistance	● Legal Services ● Covid-19 ● Housing ● Employment ● Public Benefits	Delano and Lamont	Residents in rural California
California Veterans Assistance Foundation	● Health and Wellness ● Benefits Counseling ● Vocational Training ● Job Referral and Placement	Kern County	Homeless, at risk, or low-income veterans

[1] Stakeholders that are currently engaged in the Kern Coalition California Jobs First process are indicated in *italics.*

	• Housing Assistance		
Catholic Charities of Bakersfield	• Food and Nutrition • Basic Needs • Immigrant and Refugee Services • Disaster Preparedness and Response • Housing • Seniors	Bakersfield	Residents in the San Joaquin Valley
Center for Sexual and Gender Diversity	• Community Building Activities • Support Groups • Counseling, Advocacy and Referrals • Transgender Services	Kern County	LGBTQIA2S+ residents
Central California Legal Services	• Housing • Health • Covid-19 • Family Violence • Utilities Employment • Seniors • Guardianship • Immigration • Benefits	Central California with offices in Merced, Fresno and Visalia	Low-income residents and seniors
CityServe Bakersfield	• Workforce Development • Transitional Housing • Dry Goods • Emergency Response • Life Skills and Personal Development • Re-entry programs	Kern County	Low-income and other disadvantaged residents, working through a network of dozens of churches reaching all of Kern County
Charmed & Chosen	• General Life Skills • Mental Wellness Resources • Mentoring • Job Preparation	Kern County	Youth and young adults
Community Action Partnership of Kern	• Head Start/Child Development	Kern County, Mojave, Southeast Bakersfield, Ridgecrest, Shafter	

	• Health and Nutrition Services • Youth and Family Services • East Kern Resource Center • Oasis Family Resource Center		
Community Support Options	• Day Programs • Transportation • Pathways to Work • Social Skills • Residential • In-house Support	Wasco, Tehachapi, Shafter, Bakersfield	Adults with Developmental Disabilities
Covenant Community Services	• Life Development and Coaching • Employment and Training • Mentoring	Kern County	Former Foster Youth
Delano Community Connection Center	• Parenting classes • Food Distribution • HEAP Assistance Referrals • Car Seat Distribution • School Readiness	Delano	
East Kern Family Resource Center	• Case Management • Differential Response Program • Summer Bridge Program • Food Pantry • Utility Assistance • Clothing Closet	Mojave	
Education and Leadership Foundation	• Immigration Services • Education Services • Rent and Utilities Assistance • Economic Justice	Offices in Fresno	Underrepresented communities
Garden Pathways	• Mentoring • Violence Intervention • Tattoo Removal • Training Opportunities	Kern County	At-risk residents

	• Transformative Education		
Got Ur 6	• Commodities Distribution	Boron and surrounding areas	Indigent, homeless and veterans
Greater Bakersfield Legal Assistance	• Children and Families • Civil Rights • Health and Public Benefits • Housing and Homelessness Prevention • Older Adults	Kern County	Low-income residents and Seniors
Greenfield Family Resource Center	• Resource Referrals • Family Services • Nutrition and Physical Health • School Preparation • Tobacco Use Prevention	Greenfield	
Habitat for Humanity Golden Empire	• Housing Construction	Kern County	
Housing and Opportunity Foundation of Kern	• Assistance program • Senior Food Pantry • Academic Development • Microlending • Financial Empowerment • Teen Club	Kern County	Residents in low-income public housing
In the Field 661	• Food Distribution	Bakersfield	Unhoused
Kern River Valley Family Resource Center	• Early Child Home Visits • Nutrition Programs • Parenting Classes	Lake Isabella	
Lamont Weedpatch Family Resource Center	• Parenting Classes • Resources and Referrals	Lamont and Weedpatch	
Lost Hills Family Resource Center	• School Readiness • Parenting Classes • Car Seat Safety • Kits for New Parents • Nutrition and Wellness Information	Lost Hills	

	• Local Resources Referrals		
McFarland Family Resources Center	• Case Management • Parent Education Classes • Center-based Activities • Utility Assistance • Emergency Food Baskets	McFarland	
Mexican American Opportunity Foundation	• Early Education • Community Development • Senior Services • Community Partnerships	Locations in Arvin, Bakersfield and Delano	Latino community
Mountain Communities Family Resources Center	• Family Services • Senior and Adult Services • Health and Nutrition Services • Employment Assistance • Utility Assistance • Referrals	Frazier Mountain Communities	
Oasis Family Resources Center	• Emergency Food and Hygienic Necessities • School Readiness • Case Management Services • Local Resource Referrals	Ridgecrest	
Ocho Semillas	• Kern County Community Resilience Fund • Kern Youth Abolitionist/ Emergency Mesa Verde Commissary Fund • Emergency Response Food Distribution	Central Valley	Displaced Black, brown, indigenous, disables, migrant and LGBTQ+ and unincorporated communities
O.L.A. Raza, Inc.	• Immigration Legal Services	Offices in Bakersfield and Delano	Immigrants, disadvantaged students and poor communities

Open Door Network	● Homelessness ● Housing ● Domestic Violence and Sexual Assault ● Child Abuse ● Anti-Trafficking ● Employment	Bakersfield	
Pathpoint	● Employment Services ● Community Integration Services ● Transition Services	Offices in Bakersfield and Ridgecrest	Individuals with intellectual and developmental disabilities
Rapid Response Network of Kern	● Know Your Rights ● Legal Services ● Defense Referrals ● Immigration Services	Kern County	Immigrants targeted by immigration enforcement
Shafter Healthy Start Family Resource Center	● Food Distribution ● School Readiness ● Medi-Cal Representative ● Unemployment Representative	Shafter	
Shamrock Community Foundation	● Education Access ● Career and College Planning	Office in Delano	First generation students
Shar-On	● Food Distribution ● Court Cab ● Support Groups ● Classes/Education ● Showers and Shaves	Taft	
ShePower Leadership Academy	● Leadership Training ● Mentorship	Kern	Young women ages 10-18
South East Neighborhood Partnership Family Resource Center	● Case Management for Family ● Car Seat Education and Installation ● Parenting Classes ● Local Resource Referrals	Southeast Bakersfield	
Stewards Inc	● Representative Payee Service ● Direct Deposit and Debit Card Services ● Food Pantry ● Financial Classes		Vulnerable individuals

	• Resource Referrals		
Westside Outreach and Learning Center	• Family Success Coaching • Preschool Program • Parent Education Classes • Local Resources Referrals • Case Management for Family	Taft	
Youth 2 Leaders Education Foundation	• Scholarships • Pre-College Camps • Cash for College • College Preparation Academy	Southern Central Valley	Low-income and underrepresented students

Base-Building Organizations

Base-Building Organization	**Issue Area**	**Area Served**	**Demographic of Base**
99 Rootz	• Social Justice • Youth Organizing	Small towns along Hwy 99	Young people of color
All of Us or None	• Civil Rights • Criminal Justice	Nationwide with Bakersfield chapter	Formerly Incarcerated and their families
Center on Race, Poverty & the Environment	• Environmental Justice • Just Transition • Climate Justice • Toxics • Community Investment	Delano, Lamont, Shafter, Arvin; Kern Communities	Low-income communities of color
Central California Environmental Justice Network	• Environmental Justice • Economic Justice • Health Equity	Central Valley, with offices in Bakersfield, Fresno and Coalinga.	Low-income communities of color
Comunidades Aliades Tomando Acción	• Social Justice • Environmental Justice	Kern County	Vulnerable, minorities and farm-working communities
Dolores Huerta Foundation	• Social Justice • Community Organizing	Kern, Tulare, Fresno and Antelope Valley	Marginalized individuals and families
Faith in the Valley Kern	• Equity • Community Organizing • School to Prison Pipeline	Fresno, Kern, Merced, Stanislaus and San Joaquin Counties	

	• Restorative justice		
Greenaction for Health and Environmental Justice	• Environmental Justice	Buttonwillow	
Jakara Movement	• Community-building • Health • Education • Economic, Social, and Political Power	Local Central Valley chapters in Bakersfield and Fresno	Punjabi Sikhs and other marginalized communities
Leadership Counsel	• Healthy Sustainable Communities	Offices in Bakersfield, Fresno, Merced	Disinvested communities
Lideres Campesinas	• Economic Justice • Social and Political Change • Human Rights	Chapters in North and South Kern	Farmworker women
Loud for Tomorrow	• Building youth power	Delano and wider-Kern	Youth

Local Community Groups or Neighborhood Associations

Organization or Entity	**Priority Issues**	**Community or Neighborhood Served**
Comite Progreso de Lamont	• Environmental Justice • Green Space • Community Infrastructure • Air and Water Quality	Lamont
Committee for a Better Arvin	• Environmental Justice • Air and Water Quality • Toxics • Community Infrastructure	Arvin
Committee for a Better Shafter	• Environmental Justice • Community Infrastructure • Air and Water Quality • Toxics	Shafter
Committee to Preserve La Colonia	• Community Infrastructure	Shafter Colonias
Delano Guardians	• Environmental Justice • Toxics • Air and Water Quality • Utility Affordability • Community Infrastructure	Delano
Greenfield Walking Group	• Community Health and Safety • Green Space • Community Infrastructure	Greenfield

KRV Bridge Connection	• Community Development • Social Service • Economic Empowerment	Kern River Valley
Listen to Shafter	• Literacy • Public Participation • Community Transformation	Shafter
Lost Hills En Accion	• Environmental Justice • Public Health and Wellbeing	Lost Hills
MLK CommUNITY Initiative/Circle of Life Foundation	• Food Insecurity Mentorship • Small Business Growth • Community Engagement	Southeast Bakersfield
The Mojave Foundation	• Community Development • Security • Housing • Amenities • Beautification	Mojave
Oildale Community Action Team	• Community Clean-ups • Events • Community Input	Oildale
Orange Heart Foundation	• Community Building	Wasco
South Valley Neighborhood Partnership	• Effective and Efficient Community Services	Arvin, Lamont, Weedpatch

Advocacy and Philanthropic Organizations

Organization or Entity	**Issue Area**	**Location or Area Served**	**Demographic Served**
ACLU Southern California	• Criminal Justice • Economic Justice • Education Equity • Freedom of Speech • Gender Equity • Reproductive Justice • Immigrants' Rights	Bakersfield office	
African American Network of Kern County	• Education • Economic Parity • Job Opportunities	Kern County	African American residents
Blue Zones Project Bakersfield	• Health and Wellness	Bakersfield	
Building Healthy Communities Kern	• Health Equity • Schools • Climate Justice • Health Access	Kern County	

California Farmworker Foundation	• Education • Workforce Development • Health and Wellness • Immigration Services • Community engagement	Kern, Madera, Fresno, Tulare, Riverside Counties	Farmworkers
Californians for Pesticide Reform	• Pesticides • Health • Air Quality	California	
California Rural Legal Assistance Foundation	• Social Justice • Equity	Rural communities	Farmworkers, low-wage workers and mixed-status families
Central California Asthma Collaborative	• Air Quality • Health	Central California	
Central Valley Air Quality Coalition	• Air quality	Central Valley	
Central Valley Immigrant Integration Collaborative (CVIIC)	• Immigration	Central Valley	Immigrants
Central Valley Movement Building	• School to Prison Pipeline	Central Valley	Students and parents
Central Valley Pacific Islander Alliance	• Leadership • Visibility • Community Building	Central Valley	Pacific Islanders
Central Valley Partnership	• Social, Racial, Environmental and Economic Justice	Central Valley	
Cherokee Community of Central California	• Cherokee Culture • Heritage and Traditions • Fellowship		Cherokee community
Clean Water Action	• Water Quality • Environment • Public Health	National/state organization with Kern County-based staff	
The Climate Center	• Climate	California with Kern-based staff	
Coalition for Humane Immigrant Rights (CHIRLA)	• Legal Assistance • Immigration	Central Valley Office in Porterville	Immigrants
Community Interventions	• Health Equity • Education Equity • Law Enforcement Accountability	Central Valley with office in Bakersfield	Marginalized and vulnerable people

	• Juvenile Justice • Youth Leadership Development		
Community Water Center	• Water Quality and Access	Central Valley, Central Coast	
Comunidades Aliades Tomando Acción			
Council on American-Islamic Relations California (CAIR)	• Legal Services • Civic Engagement • Outreach and Education • Youth Empowerment	Central Valley/Sacramento Branch	Muslim Americans
Cultiva La Salud	• Health	Central Valley	Disadvantaged residents
Grid Alternatives	• Renewable Energy, • Environmental Justice, • Community Building	Central Valley office in Fresno	Underserved communities
Grimm Family Education Foundation	• Education • Health and Wellness	Arvin, Shafter and Greater Bakersfield	
The Hub of Bakersfield	• Community Revitalization	Downtown Bakersfield	
Kern Community Foundation	• Philanthropy	Kern County	
Kern County Network for Children	• Protection of Children	Kern County	Children
Kern Dance Alliance	• Creative Economy • Arts and culture • Education • Recipient of $4.2 million California Creative Corps grant from California Arts Council	Kern County, Central Valley and Eastern Sierra Region	Artists and cultural workers, Latinas, students, people with physical disabilities, people with Alzheimer's disease and dementia
Kern Welcoming and Extending Solidarity to Immigrants (KWESI)	• Immigrant Rights • Criminal Justice	Bakersfield and McFarland	Immigrants in ICE detention
Latina Leaders of Kern County	• Leadership Development	Kern County	Latinas
Livermore Lab Foundation	• Community Education • Science and Technology	Kern County	

Mariposa Con Propósito	• Unity • Prosperity • Quality of Life	Kern County	Spanish-speaking community
NAACP Bakersfield Branch	• Civil Rights • Economic • Education • Social and Racial Justice	Kern County	African American community
People's Budget Bakersfield	• Community Investment • Police Divestment	Bakersfield	Black and brown vulnerable populations
Seedcore Foundation	• Education • Entrepreneurship • Philanthropy	Kern County	
Self-Help Enterprises	• Healthy Homes and Communities	Central Valley	Low-income families
Services & Immigrant Rights & Education Network	• Immigration	Central Valley Office	Immigrants
Sierra Club - Kern Kaweah Chapter	• Green Space • Clean Air • Climate Change	Bakersfield, Ridgecrest, Frazier Park and Kings/ Tulare County local groups	
Unidad Popular Benito Juárez	• Health • Housing • Human rights	Central Valley with Office in Lamont	Indigenous immigrants
United Farmworker Foundation	• Immigration Reform • Worker Protection • Hazard Pay • Pesticide Protection		
United Way of Kern County	• Childhood Literacy, • Health • Economic Resilience	Kern, Inyo, Mono and northern San Bernardino Counties	
Vision y Compromiso	• Equity • Health	Kern and Kings Counties	Promotores and community health workers

Labor Organizations and Unions

Labor Organizations and Unions	**Sector**
Carpenters Local 743	Construction
Communications Workers of America Local 9416	Telecommunication
IBEW Local 428	Electrical

International Longshore & Warehouse Union Local 30	Mining
International Union Operating Engineers Local No. 12	Construction
Iron Workers Local 155	Construction
Kern, Inyo and Mono Counties Central Labor Council	Labor Council
LiUNA Local 220	Construction
Painters District Council 36	Construction
Plumbers and Pipefitters Local 460	Piping Industry
SEIU 521	Public Sector
SEIU 1000	State Workers
SMART Sheet Metal Workers Int'l local 105	Construction
Teamsters 87	Freight and Warehouse
Teamsters 2010	UC and CSU Workers
UDWA	Home and Family Care
UFCW 8-Golden State	Food and Retail
UFW	Agriculture
United Steelworkers 219	Oil and Gas

Education and Training Providers and Programs

Training and Education Providers	**Training Programs, Degrees, or Certifications Offered**	**Area or Demographic Served**	
America's Job Center of Kern	● No-Cost Training ● Job Placement Services ● Job-Hunting Resources	Kern County	
Bakersfield Adult School	● High School Diploma ● ESL ● GED ● Health Careers ● CTE & Job Training ● Jail Education ● Independent Study ● Business and Computer Education ● Recycling ● Culinary Arts		
Bakersfield ARC	● Community Integration ● Tailored Day Services ● Paid Internship Program	Kern County Adults with intellectual or	

	• Supported Employment	developmental disabilities	
Bakersfield College	• Agriculture, Nutrition, and Culinary Arts • Arts, Communication, and Humanities • Business • Education • Health Sciences • Industrial Technology & Transportation • Public Safety Training • Social & Behavioral Sciences • Science, Technology, Engineering, & Math • Personal & Career Exploration		
Bakersfield Sheet Metal Workers Apprenticeship & Training Center	• Air Conditioning Service • Industrial Welding • CAD (Computer-Aided Design) • Stainless Steel Kitchen Equipment Installation • Sheet Metal Roof Installation • HVAC Fire/Life-Safety		
California Renewable Energy Lab	• CRC Carbon Management Institute • Clean Energy & Grid Resilience • Clean Transportation		
California State University Bakersfield	• Arts and Humanities • Business and Public Administration • Natural Sciences, Mathematics and Engineering • Social Sciences and Education		
CSUB Center For Entrepreneurship & Innovation	• Petroleum and Renewable Energy • Aerospace • Remote Business Services	CSUB students and all residents of Kern County	

	• Advanced Manufacturing • Agricultural Technology		
Career Technical Education Center	• Agriculture & Natural History • Arts, Media and Entertainment • Building and Construction Trades • Business & Finance • Education, Child Development & Family Services • Energy, Environment & Utilities • Engineering & Architecture • Fashion & Interior Design • Health Science & Medical Technology • Hospitality, Tourism & Recreation • Information & Communication Technologies • Manufacturing & Product Design • Marketing, Sales and Service • Public Services • Transportation		
The Central California Emerging Technology Accelerator (CCETA)	• Petroleum and Renewable Energy • Aerospace • Remote Business Services • Advanced Manufacturing • Agricultural Technology		
Cerro Coso Community College	• Allied Health • Business and Paralegal Studies • Child Development • English and Foreign Languages • Industrial Arts		

	• Information Technology • Kinesiology and Health Science • Mathematics • Public Services • Science and Engineering • Social Sciences • Visual and Performing Arts		
Delano Adult School	• Academic Transition • Business Education • El Civics • ESL • High School Diploma • Nursing Assistant Program • Medical Assistant		
Employer's Training Resource	• Job Squad Meetings • Resume Workshops • Farmworker Training and Employment Programs • Medical Billing/Coding • Licensed Vocational Nursing • Truck Driving • Emergency Medical Technician • Auto Mechanics • Youth Programs		
Farmworker Institute of Education and Leadership Development (FIELD)	• High School Diploma • ESL • Literacy • Solar • Early Childhood Education • Fire • Business Management • Recycling • Natural Resources • Agriculture • Cesar Chavez Conservation Corp	Learning Centers in Shafter, Lamont, McFarland, and Bakersfield Underserved populations in poor minority communities	
Fresno Pacific University Bakersfield Campus	• Liberal Arts • Education		

International Brotherhood of Electrical Workers-IBEW 428	• Inside Wiremen • Outside Wiremen • Resident Wiremen • Telecommunications Installer Technicians		
Ironworkers, local 155	• Structural Steel • Architectural Steel • Rigging • Welding • Reinforcing Steel		
Kern Community College District	• 21st Century Energy Center • California Compliance School • Customized and Corporate Training		
Kern County Rop-Vocational Training	• Office Administration • Automotive and Mechanics • Culinary Arts • Bookkeeping and Accounting • Business • Education • Construction Trades • Cosmetology • Health • Fire and Law Enforcement • Livestock Management • Logistics • Metal Fabrication • Robotics Engineering • Veterinary Technology • Video Game Design • Welding		
Kern Electrical JATC	• Electrician Apprenticeship		
Kern Initiative for Talent and Entrepreneurship	• Entrepreneurship Classes	Kern County	CoStarters has launched cohorts in rural communities
Kern Literacy Council	• Adult and child basic education • English as a Second Language	Active at all Kern County library locations	

	• Citizenship Test preparation • GED preparation • Free community tutoring • Dolly Parton Imagination Library		
Kern Women's Business Center/Mission Community Services Corporation	• Helping Business Owners Start and Run Successful Businesses	Kern, San Luis Obispo and Monterey Counties	Women, low-income, minority and non-profit business owners
Laborers' International Union of North America-LIUNA, local 220	• Environmental remediation • Building Construction • Heavy/Highway Construction		
McFarland Learning Center	• Conversational Classes for English Learners • Office Automations • Logistics Class • Certified Nursing Assistant (CNA)		
North West College	• Medical Assistant • Dental Assistant • Pharmacy Technician • Nursing • Surgical Technology • Medical Billing and Coding		
Operating Engineers Local 12	• Apprenticeship		
Painters District Council 36	• Paint and Drywall		
Plumbers and Steam Fitters JATC	• Plumber • Pipefitter • Refrigeration • Air Conditioning Fitter		
Proteus Inc.	• General Office Occupations • Truck Driving • Energy Careers • Forklift Certification • ESL • Citizenship • High School Equivalency		

	• Adult Basic Education		
Recycling Lives	• Basic safety and equipment operation • Soft skills • Basic work readiness • Basic accounting • Warehousing • Sales and marketing		
San Joaquin Valley College	• Medical and Dental Programs • Business Programs • Electrical Technology • HVAC • Maintenance Technician		
Teamsters 87	• Construction		
Taft College	• Adult Education • Business, Arts, and Humanities • Career Technical Education • Dental Hygiene • Engineering • English and Language Arts • Liberal Arts • Math and Science • Social and Behavioral Science • Transition to Independent Living • Welding and Fabrication		
UEI College Bakersfield	• Automotive Technician • Business Office Administration • Criminal Justice • Dental Assistant • Electrician Technician • HVAC • Medical Assistant • Medical Billing and Insurance Coding • Pharmacy Technician		
University of La Verne Bakersfield Campus	• Accounting • Childhood Development • Education		

	• Psychology • Business Administration • Criminal Justice • Organizational Management • Teaching		
Valley Build	• Careers in Construction		
Wasco Adult Education Program	• High School Diploma • ESL • Citizenship Classes • Computer Classes	Wasco	
West Kern Adult Education Network	• Welders Helper • Industrial Safety • Forklift • Paraprofessional • Construction • Security Guard • Home Care Aid • Career Connection • ESL • GED		
Westside Energy Services and Education Center	• Law Enforcement, • Court Reporting • Safety	Shafter	
West Side Regional Occupational Program	• Applied Office Skills • Automotive Technology • Careers In Education • Commercial Photography • Commercial Printing • Construction Trades • Cosmetology • Fashion Merchandising • Food Preparation and Service • Retail Merchandising • Video Production • Virtual Enterprise		

Business and Economic Development Organizations

Economic Development and Business-Serving Organizations	**Type of Economic Development or Business Service**	**Area Served**	**Demographic Served**

3C Capital Fund Inc	• Capital • Entrepreneurship		Low to moderate income and underserved business
Arvin Chamber of Commerce	• Local Development • Supporting Local Business	Arvin	
B3K Prosperity	• Economic Development • Job growth	Kern County	
Bakersfield Black Dollar Initiative	• Patronization • Economic Growth	Bakersfield	Black small business owners
Bakersfield Economic and Community Development	• Economic and Community Development	Bakersfield	
Boron Chamber of Commerce	• Local Development • Supporting Local Businesses	Boron	
California Central Valley Economic Development Corporation	• Job Creation	Kern, Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus and Tulare Counties	
California City Chamber of Commerce	• Local Development • Supporting Local Businesses	California City	
California State University Bakersfield Small Business Development Center	• Supporting Small Businesses	Kern, Inyo and Mono Counties	Small businesses and aspiring entrepreneurs
China Lake Alliance	• Economic Growth • Expanded China Lake Defense Program • Improved Business, Education, Health Care and Other Infrastructure	Indian Wells Valley, Eastern Sierra region	
Community Vision Capital and Consulting	• Financing • Investment and Community Building	Northern and Central California	Nonprofits, small businesses, and social enterprises in disinvested communities of color
Delano Chamber of Commerce	• Creating Robust Local Economy	Delano	

	• Community Development		
Downtown Bakersfield Development Corp	• Community Development	Downtown Bakersfield	
Greater Bakersfield Chamber of Commerce	• Resources and Support for Local Businesses	Bakersfield	
Greater Tehachapi Chamber of Commerce	• Advance Local Prosperity	Tehachapi	
Greater Tehachapi Economic Development Council	• Attracting, Retaining and Supporting Local Businesses	Tehachapi	
Indian Wells Valley Economic Development Corporation	• Economic Development	Indian Wells Valley	
Kern County Black Chamber of Commerce	• Advocate for African American Businesses	Kern County	Black-owned businesses
Kern County Hispanic Chamber of Commerce	• Business Development	Kern County	Hispanic-owned businesses
Kern County Taxpayers Education Fund/KernTax	• Public Education on Economic Growth and Development	Kern County	Taxpayers
Kern Economic Development Corporation	• Promote Opportunities for Business	Kern County	
Kern Economic Development Foundation	• Economic and Workforce Development	Kern County	
Kern, Inyo, Mono County Workforce Development Board	• Workforce Development	Kern, Inyo, and Mono County	
Kern Venture Group	• Venture capital firm, with a focus on supporting Kern-based or Kern-focused businesses		
Kernville Chamber of Commerce	• Promotion of Tourism and Events • Business Retention and Attraction • Cooperative Marketing	Kernville	

Kern Women's Business Center/Mission Community Services Corporation	• Helping Business Owners Start and Run Successful Businesses	Kern, San Luis Obispo and Monterey Counties	Women, low-income, minority and non-profit business owners
Limitless Micro-Enterprise Development Inc.	• Supporting Micro Enterprise Businesses		Business owners with intellectual and developmental disabilities
McFarland Chamber of Commerce	• Represent Business Interests • Advocate for Policies that Promote Economy	McFarland	
Mid State Development Corporation	• Small Business Financing		
Monarch Economic Development Corp	• Transportation Related Economic Development	Kern County	Underrepresented groups and communities
Mojave Air and Space Port	• General and commercial aviation and space port	East Kern	
Mojave Chamber of Commerce	• Promote and Develop Local Businesses • Economic Prosperity	Mojave	
National Association of Women Business Owners Bakersfield Chapter	• Strengthen Wealth-Creating Capacity • Promote Economic Development		Women business owners
North of the River Chamber of Commerce	• Help Businesses Network and Prosper	Rosedale, Oildale	
Ridgecrest Chamber of Commerce	• Building Community • Strengthening the Economy	Ridgecrest	
Shafter Chamber of Commerce	• Local development • Supporting Local Businesses	Shafter	
Taft Chamber of Commerce	• Local Development • Supporting Local Businesses	Taft	

Industry and Trade Associations

Industry and Trade Associations	Type of Industry
Associated Builders and Contractors Central California	Construction
Bakersfield Association of Professional Landmen	Oil and Gas
Bakersfield Association of Realtors	Real Estate
California Farm Bureau	Agriculture
California Independent Petroleum Association	Oil and Gas
California Trucking Association Kern Unit	Trucking
Central California Business Federation(BizFed Central Valley)	Business
Executives' Association of Kern County	Business Owners and Executives
High Desert Chapter of the American Society of Military Comptrollers	Department of Defense Financial Management
Home Builders Association of Kern County	Construction
Kern Alliance of Business	Business
Kern Citizens for Energy	Oil and Gas/Energy
Kern County Builders Exchange	Construction
Kern Energy Foundation	Oil and Gas
National Association of Royalty Owners - California	Oil and Gas
Pacific Section of the American Association of Petroleum Geologists	Oil and Gas
San Joaquin Valley Electric Vehicle Partnership	Electric Vehicles
Water Association of Kern County	Agriculture
Western States Petroleum Association	Oil and Gas

APPENDIX B. UCM CLC/DHF COMMUNITY NEEDS ASSESSMENT SURVEY DATA AND METHODS

Between August and December 2023, the UC Merced Community and Labor Center partnered with the Dolores Huerta Foundation (DHF) for a Community Needs Assessment Survey in disinvested regions in Kern County. The locations chosen for the study include Arvin, East Bakersfield, Wasco, and Lamont/Weedpatch. Canvassers were trained in person in survey interviewing and data entry in two separate orientation sessions on August 7 and August 16, respectively. The canvassers also completed an eight-hour online training in research ethics via UC Merced's Institutional Review Board (IRB) and CITI Training, resulting in a certification. Both the survey trainings and the IRB certifications provided capacity building to the region with a dozen local residents prepared to undertake survey canvassing in an underserved county.

Two hundred or more surveys were completed in each of the four disinvested communities with adult respondents. The team employed a random and representative sampling design of residential addresses in each town with a margin of error of +/- 7 points. Canvassers conducted the survey interviews in-person going door-to-door. Each survey interview with a respondent lasted between 15 and 20 minutes. Surveys interviews were conducted in both English and Spanish formats and all canvassers were bilingual (over half of the surveys were carried out in Spanish). Response rates ranged from 38.5% to 60%.[2] Figure A.1 illustrates the sampling sites.

Figure A.1 Community Engagement Survey Sampling Sites

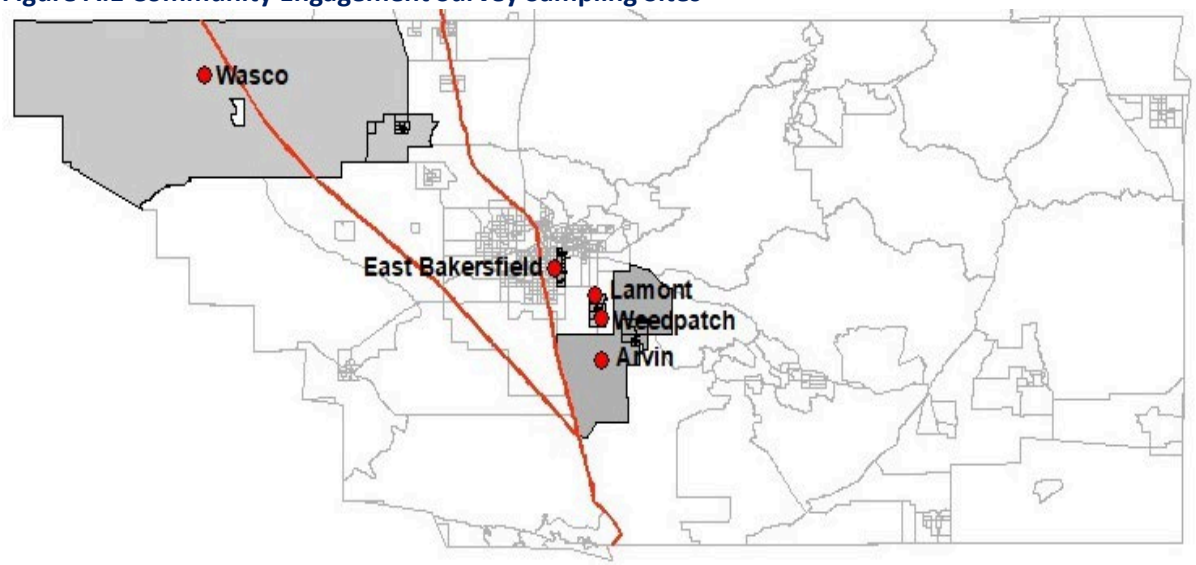

Table A.1 Median Household Income of Sampled Cities and Immigration Status of Respondents

City	Census Median Household Income (ACS 2021)	Amount Below California Median Household Income	Immigration Status Based on DHF Survey

2 Response rate calculated by if an adult was home when approached by a canvasser. The individual city response rates were: 38.5% for Arvin, 41.5% for East Bakersfield, 46.7% for Wasco, and 60% for Lamont/Weedpatch

		$84,097 (2021)	
Arvin	42,961	$41,136	US Citizen: 60.9% Legal Resident:23.2% Work Permit: 1.5% Undocumented: 14.5% N=207
East Bakersfield	39,375	$44,722	US Citizen: 59.1% Legal Resident: 18.1% Work Permit: 2.9% Undocumented: 20.0% N=210
Wasco	$40,532	$43,565	US Citizen: 54.5% Legal Resident: 20.4% Work Permit: 1.4% Undocumented: 23.7%
Lamont/Weedpatch	$40,341	$43,757	US Citizen: 35.1% Legal Resident: 29.3% Work Permit: 2.9% Undocumented: 32.7%

The low household incomes reported in Table A.1 demonstrate the urgent need to raise wages and living standards in disinvested communities. The respondents were queried with 113 questions about household demographics, community level issues and concerns, the local education system, the workplace and economic investments, the environment and climate change, and civic engagement. Hence, Kern residents in disinvested localities engaged extensively in person with our community needs study in a region where representative community perspectives are rarely collected and reported. By going door-to-door using random sampling techniques, we have a better representation of the inhabitants, including immigrant communities not captured with other sampling strategies that rely on phone numbers of registered voters (see Table A.1). The UCM Community and Labor Center/DHF survey better captures the views and preferences of the actual inhabitants of Kern County as well as hard to count populations. This fine-grained local level survey engagement with communities on the ground also complements the representative county level data in the HRTP survey.

APPENDIX C. METHODOLOGICAL APPENDIX

The figures and tables in this study are drawn from several public data sources, as well as some surveys conducted by the UC Merced Community and Labor Center. Federal public data sources include the US Department of Commerce, Bureau of Economic Analysis; the US Department of Labor, Bureau of Labor Statistics; the US Census Bureau, Decennial Census; and the US Census Bureau, American Community Survey. For analysis of Decennial Census and ACS data, we utilized Steven Ruggles et al. (2023) IPUMS-USA, which cleans PUMS data and provides it publicly. One state-level public data source was also drawn upon: the California Department of Public Health, California Comprehensive Death File. This report also utilized survey data from community engaged research led by the UC Merced Community and Labor Center.

Decennial Census data. This report utilizes US Census Bureau Public Use Microdata Sample (PUMS) data collected during the 1980, 1990 and 2000 Decennial Census, when a one in twenty American households were sent a longer questionnaire as part of the census. The major Decennial Census variables analyzed in this report include geography (county and state), employment status, and class of worker (employee or self-employed), to estimate the number of wage earners by California county across time. Data was weighted at the person level (PERWT) to provide estimates for the broader population (the universe from which the sample was chosen from, for example, Kern County).

American Community Survey data. This report also utilizes IPUMS USA for annually-released American Community Survey (ACS) PUMS data. This report utilized ACS PUMS data from single year data sets in 2009, 2019 and 2022; as well as five-year data sets from 2007-2011 and 2017-2021. In 2009, the Census Bureau contacted 2.9 million US addresses for participation in the ACS, and conducted interviews with 1.9 million households; by 2022, owing to population increases, the respective figures were 3.5 million and 2.0 million (US Census Bureau 2023). The ACS is the largest survey of its kind in the world, and affords a granular analysis of household-level and worker dynamics within the American population. The major ACS variables analyzed in this report include geography (county and state), employment status, class of worker (employee or self-employed), industry, occupation, earnings (annual wages/salary). Data was weighted at the person-level (PERWT) to provide estimates for the broader population (the universe from which the sample was chosen from, for example, Kern County). In some cases, the weighted estimates for Kern industry or occupation-level data on workers has small sample numbers (and thus wider margins of error); for this reason, we only selected the most common occupations in Kern's major industries for analysis.

Living wage analysis. In one of the more complex analyses utilized in this report, the Community and Labor Center used SPSS statistical software to apply specific living wage thresholds (MIT Living Wage Calculator 2023) to each Kern household in ACS 2022 PUMS data, based on the county of residence (e.g. Kern), number of working adults (1, or 2 or more), adults living in the household (1, or 2 or more), and children living in the household (0, 1, 2 or 3 or more). We termed this an "actual" living wage threshold (not to be confused with a "standard" living wage threshold that assumes a household of two working adults and two children in a given locality). Each household was then given a value based on whether they lived above a living wage or below a living wage. Frequencies were then computed for workers based on their industry. (A clustering effect may have been possible as some low-wage workers, such as farmworkers, may live together in large households. In this report, we deem the number of workers in an industry living below a living wage the relevant unit of analysis, not the percentage of households.)

US Bureau of Economic Analysis data. This report utilizes US Department of Commerce, Bureau of Economic Analysis data. County and industry-level GDP data for three years (2009, 2019 and 2020) were accessed from the bureau's website. The data was analyzed for and published in the Community and Labor Center's (2022) Kern High Road Training Partnership landscape analysis, "The Future of the State." This

report re-publishes findings from that analysis, as well as cites a recent report from the bureau's website estimating figures for 2022 GDP and 2021-2022 change in GDP.

Bureau of Labor Statistics data. The US Department of Labor, Bureau of Labor Statistics publishes, on an annual basis, data from the Survey of Occupational Injuries and Illnesses. This report utilizes data from the bureau's California data on Nonfatal occupational injuries and illnesses data by industry (SOII). The California SOII present industry-level data on "Highest rates for cases with days away from work, restricted work activity, or job transfer" (US Bureau of Labor Statistics 2023). We sorted the industry rates to examine those with the highest rates of non-fatal injuries that required someone to not do regularly performed work.

California Department of Public Health (CDPH), California Comprehensive Death File (CCDH). CDPH-CCDH data consist of all state-recorded deaths, from death certificates (which have data on primary industry and occupation of the decedent). The data are available by request from the public, and subject to Institutional Review Board approval from the state's IRB administrator (CPHS). In 2021, the UC Merced Community and Labor Center requested, received, and analyzed CDPH-CCDH data for years 2019 and 2020. The center tabulated county and industry-level rates of death before and after the pandemic, to examine pandemic-era increases in death, and published findings in fact sheets (in print and online). This report utilizes the pre-pandemic tabulations, together with ACS estimates of the number of workers in each California industry aged 56-65, to arrive at mortality estimates for California workers aged 56-65 by industry (in 2019).

Community-engaged research. Lastly, this report also draws from two major UC Merced Community and Labor Center surveys. One was conducted as part of the Kern High Road Training Partnership (HRTP) project in 2022, and another was conducted with the Dolores Huerta Foundation (DHF) in 2023 (described in Appendix B). The UC Merced Community and Labor Center, together with the Kern-Inyo-Mono Central Labor Council, designed and conducted the Kern Community Needs Assessment survey, asking about adult (age eighteen and over) Kern residents' views on jobs, the environment, and policymaking. The Community and Labor Center conducted an all-day survey method training to KIM-CLC staff. The survey then drew from a Political Data Intelligence (PDI) phone list of all Kern County residents, utilizing random digit dialing to collect a representative sample of 813 surveys. The survey was conducted in two languages, English (90%) and Spanish (10%), from July 12, 2022, through September 7, 2022.

Note: some of this data mentioned above was utilized in previous Community and Labor Center publications. In such cases, either the same data has been used (republished in this report), or it references existing publications.