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COMMUNITY AND LABOR CENTER

HRTP

KERN STRATEGIC WORKFORCE DEVELOPMENT REPORT

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Kern County faces unprecedented economic and environmental challenges due to its reliance on fossil fuel production as an economic driver and its heightened vulnerability to the accelerating climate crisis. While the state's response to the climate crisis may displace fossil fuel workers, the crisis itself will likely displace workers in Kern's other dominant economic sector—agriculture. Increasing droughts and changing temperatures may reduce farmable land throughout the Central Valley. To respond to the urgency of climate change and state-mandated carbon emission reductions, Kern County must diversify its economy, increase climate resiliency, and prepare the local workforce for a transition to a "high-road" regional economy. The reduction of oil and agriculture production in Kern without a high road strategic plan risks displacing and harming blue-collar oil and gas workers—many of whom earn higher wages than if they worked outside of the oil and gas industry—and already vulnerable farmworkers. However, in a region with few high road employers, the shift to a high road economy must begin with raising industry-wide working standards.

This report summarizes community and labor perspectives on the environment, jobs, and public investments gathered from seven data collection efforts, including representative surveys, community needs assessments, community and worker forums, and interviews with displaced workers. The community and worker input dispels popular beliefs about Kern County residents' attitudes towards jobs and state environmental policymaking and provides reliable and consistent evidence that most Kern residents are concerned about the environment and support public investment in creating better jobs and improving the environment. The findings also provide insight on the perspectives of Kern workers about what constitutes a better job. The findings identify healthcare as the sector workers and residents would most like to see grow in Kern County.

The Economic and Workforce Landscape Analysis finds that Kern County has the state's third greatest population growth; the most volatile economy in the state; and the greatest worker earnings decline in the state across forty years. This analysis also identifies key occupations in Kern County industries, their earnings, and their age distribution. These figures paint a disheartening picture of a region with few high

wage occupations and an economy where large numbers of low wage jobs support a small handful of higher wage jobs within the same industry sectors – creating a tiered and pyramidal employment structure. As a result, improving access to specific career pathways in certain industries will likely not advance a high road economy in Kern County without systematic efforts to raise labor standards across entire industries. A promising approach to advancing Kern economic and climate resilience involves tying labor standards to state-funded public subsidies in industries critical for advancing climate and economic resilience.

The Sector Analysis examines four key industries in Kern that are critical to advancing the State's high road strategies for economic and climate resilience: oil and gas, agriculture, warehousing, and healthcare. The oil production sector faces the steepest declines in employment, provides some of the County's highest wages, and is the largest contributor of greenhouse gas emissions. Agriculture is one of the largest sectors in Kern, provides its lowest wages, and is a significant contributor to greenhouse gas emissions. Warehousing is the fastest growing sector in Kern County, has the most significant declines in wages, and is a significant contributor to greenhouse gas emissions. Healthcare offers some of the highest quality jobs in Kern, has grown by the greatest number of jobs, and can help address climate-related illness in the region. The Sector Analysis examines the most common occupations within these industries and their pay, existing and prospective programs and investments relevant to each industry, and potential high road strategies.

The Report provides a series of recommendations for Kern County consistent with the Workforce Development Board's "Putting California on the High Road: A Jobs and Climate Action Plan for 2030" with a focus on demand-side and just transition strategies. The report focuses on these strategies, rather than supply-side strategies, because the region has so few existing high-road industries and occupations that can provide pathways out of poverty. Recommendations include requiring responsible employer standards, project labor agreements and community benefit agreements for projects receiving public investments or subsidies, social benefit programs for displaced and unemployed workers, and local labor and environmental standards for emerging land-uses and replacement sectors. The report also outlines ideas for worker-friendly solutions, such as job matching, job training, social supports for workers, subsidized absorption of transitioning workers, and wage replacement and early retirement.

INTRODUCTION

As one of the nation's largest oil-producing counties, Kern County is on the frontlines of global economic and environmental challenges—both from its reliance on fossil fuel production as an economic driver and from the vulnerability of its residents and workers to a changing climate. But Kern County is also positioned to lead historic initiatives advancing economic and environmental justice. With advanced planning, government support, and targeted workforce training programs, Kern County can model successful economic and workforce transition strategies that diversify the economy, benefit the climate, and protect the local workforce.

In the past two years, the State of California has experienced record heat, drought, catastrophic wildfires, and atmospheric rains and floods. While such climate disasters have been part of the history of the state, their risk has accelerated greatly due to global climate change. In 2022, the Federal Emergency Management Agency (FEMA) classified the risk of the impact of natural disasters on California communities as at least "relatively moderate" in fifty-two of the state's fifty-eight counties. No other state in the nation experiences such widespread and elevated risk across its counties. Kern County scored in the 99th percentile for climate risk relative to the rest of the U.S. (FEMA 2022).

Approximately 3.6 billion people around the world live in locations characterized by increasing heat waves, wildfires, droughts, floods, storms and biodiversity loss. While such climate challenges are linked to a rise in global carbon emissions, North America has been responsible for the world's largest share and the U.S. is the world's second greatest emitter of greenhouse gas emissions after China. In fact, the State of California is one of the leading oil producers in the nation (Pollin and Callaci 2019) and Kern County accounts for most of the state's oil production.

Workers and communities face significant climate challenges worldwide. A report from the Intergovernmental Panel on Climate Change determined that global carbon-dioxide emission levels must drop by 40% by 2035 and 80% by 2050 to stabilize global temperatures. The panel identified fossil fuel energy production as an important area of reform because fossil fuel production processes are responsible for 75% of the world's greenhouse gas emissions (Pollin and Callaci 2019). As one of the

highest greenhouse gas emitters, America must reduce domestic fossil fuel production by 40% and coal production by 60% to meet global goals for mitigating the climate crisis (Pollin and Callaci 2019).

Notwithstanding its role in the production of global emissions, the State of California has been a national leader in confronting the climate crisis. The state has set ambitious climate goals to reduce greenhouse gas emissions by 2035, and to become carbon-neutral by 2045. Centering workers is key to achieving such goals. The state's strategy for advancing its ambitious climate goals—the high road approach to economic development—identified low-road economic development as the greatest challenge for reducing greenhouse gas emissions. In turn, the California Workforce Development Board's High Road Training Partnership (HRTP), the most significant initiative under this strategy, invests in industry-led and worker-centered collaborations that seek to create jobs, raise industry standards, and improve the environment.

Transitioning away from oil and gas production risks displacing and harming blue-collar oil and gas workers. Due to Kern County's leading role in California's oil and gas production, efforts to shift from oil and gas production will have a significant impact on Kern's oil and gas workers—many of whom earn much higher wages than if they were to work outside of the oil and gas industry. Moreover, California has designated nearly half the census tracts in Kern County as "disadvantaged," meaning any economic disruption will increase social-economic burdens already facing Kern residents (OEHHA 2021). In Kern County, a region with few high-wage sectors or occupations, the shift to a high road economy must begin with raising industry-wide working standards.

The Kern High Road Coalition is an HRTP aimed at developing a high road regional workforce plan centering workers and a union voice, including recommendations for a "just transition" for blue-collar oil and gas workers through state investment, training opportunities, and the creation of good, new, union jobs. The Coalition engaged key stakeholders, including those often excluded or under-valued in workforce and economic development planning processes, to develop this Kern County High Road Workforce Development Report. The Kern High Road Coalition developed this report to help lead Kern County towards a more just economic and environmental future—one that promotes good jobs and a resilient economy with positive health, social, and environmental outcomes.

DEFINING A HIGH ROAD ECONOMY

California defines “high road” to mean a set of economic and workforce development strategies to achieve economic growth, economic equity, shared prosperity, and a clean environment. The strategies include interventions that improve job quality and job access, including for women and people from underserved and underrepresented populations; meet the skill and profitability needs of employers; and meet the economic, social, and environmental needs of the community (Unemployment Insurance Code § 14005(r)).

Job quality standards and employment practices associated with high road employment include payment of workers at or above local or regional living wage standards; the provision of benefits; investment in employee training, growth, and development; opportunities for career advancement and wage growth; safe and healthy working conditions; compliance with workplace laws and regulations; and the inclusion of worker voice and agency in the workplace (Unemployment Insurance Code § 14005(s)).

The high road framework advances equitable access to and advancement in quality jobs for women and people of color. If workers do not have equitable access to opportunities generated from the growth of a carbon-neutral economy, the economic transition will simply maintain the status quo, with workers of color concentrated in the bottom of the labor market.

The high road framework creates opportunities for workers to participate in decisions that affect their livelihoods. This can take shape through many structures, including, but not limited to labor unions, worker centers, labor management partnerships, or other entities with a demonstrated history of providing consistent and independent worker voice that informs employer decision-making.

Finally, the high road framework supports efforts to move California toward a carbon-neutral economy. Supporting these efforts requires special attention to industry sectors on the frontlines of the transition to a carbon neutral economy such as energy, agriculture, construction, and transportation.

CALIFORNIA'S HIGH ROAD APPROACH

In 2020, 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. The report conceptualizes how climate and public policies can shape labor supply and demand to increase job access, growth, and quality (Zabin et al. 2020).

Under the Obama administration, ambitious efforts to advance a green economy failed when workers were trained for jobs that did not exist. The innovation in Zabin et al.'s (2020) report is the development of a conceptual framework that identifies demand-side levers that government can pull to increase the number of sustainable jobs. Most notably, this includes public investments in high road employers interested in the use of market incentives, technology and environmental standards, caps on pollution, and other policy tools, to increase the number of well-paying jobs supporting environmentally sustainable development.

The report also provides supply-side strategies focus on the supply of labor and the strategies and training programs needed to prepare local workforces for changes in the labor market due to climate policy including "pre-apprenticeship and pipeline training, industry training partnerships, and curricula upgrades in post-secondary institutions." (Zabin et al. 2020).

When state and/or local governments invest in the high road approach, regions will experience economic diversification, fulfillment of skills needs, quality workmanship, improved working standards, and the maintenance of livelihoods. Lack of high road principles, on the other hand, results in an economy which emboldens employers attempting to lower labor and environmental standards, a workforce without adequate training, and displaced workers without income.

Common components of high road policies or agreements include sustainable living wages, benefit packages, stable and predictable work schedules, workers' right to mutual aid and protection, grievance management systems, skill attainment, and workplace health and safety.

Sustainable Living Wages

A "living wage" refers to the amount needed to avoid "consistent and severe housing and food insecurity" (Nadeau 2018, 2). While this figure is often reported for a hypothetical household with two working parents and two children, such hypothetical estimates ignore the reality of many low-income households. For example, on average, Kern households have more children than most other California counties—and two-parent households with two working adults are increasingly less common.

Living wage policies require that wages are predictable, stable, and able to support workers and their dependents. Living wages should enable workers to meet basic needs like food, childcare, housing, transportation and other family necessities. The California Workforce Development Board stresses the importance of paying family supporting wages that guarantee workers' ability to afford basic necessities for themselves and their families in any location. 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.

Benefits

Similar to higher wages, comprehensive benefits are an important component of job quality. These include paid leave protections (sick, family, medical and vacation), pension/retirement savings, and health benefits. Public funding may be conditioned on evidence that an employer in a relevant industry has demonstrated improvements in the provision of benefits.

Stable and Predictable Work Schedules

Worker schedules or working hours should be reliable, stable and predictable with assurance that workers will not lose their jobs and incomes unexpectedly. As a condition for public funding, employers might provide workers with access to information regarding their schedules. For example, shifts might be clearly defined, with consistent hours of work established well in advance, such as with a 28-day standard advance notice of changes in scheduling. Also, work schedules should include sufficient hours to meet a worker's need to earn a stable and sustainable income.

Workers' Right to Mutual Aid and Protection

A worker's right and ability to join a union and engage in concerted effort for mutual support and protection is a common fair labor standard across industries. According to the International Labor Organization (ILO) Convention, freedoms of association and of expression constitute indispensable labor standards to improve labor conditions and establish workplace peace (ILO Convention C087, 1984). Such rights might include union contracts, or "labor peace" agreements (i.e. employer neutrality towards union organizing activity and "card check" voting to establish unions) in cases where a union contract is not in place. In 2022, the State of California passed the Agricultural Labor Relations Voting Choice Act (AB 2183) to provide agricultural workers the right to vote outside the workplace by the use of cards. Workplaces might also implement worker-management committees to improve working conditions.

Grievance Management Systems and Industry-Led Problem-Solving Mechanisms

Workplace grievance resolution systems are important labor standards. Workers should have opportunities to file complaints or work-related grievances, and to have those issues resolved by the employer, the local government, or state or 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 their immigration status. In cases where worker grievances are not resolved by the employer, workers have the legal right to seek remedies through state and federal agency channels without fear of retaliation.

Skill Attainment

Workers should have the ability to access 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 to engage workers in projects that support skill building to meet industry needs and competitiveness.

Workplace Health and Safety

International, federal, and state labor standards capture and incorporate safe working conditions to varying degrees, but they all identify the necessity of worker safety and freedom from any form of discrimination and harassment. California's high road framework views a healthy work environment as one that provides 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 incorporate racial equity practices to support employers in making environmentally-sound decisions.

JUST TRANSITION AS A HIGH ROAD STRATEGY

The High Road framework includes strategies for a "just transition" to ensure that fossil fuel dependent communities and workers are able to thrive in a low-carbon economy. Just transition strategies include protection, support, and compensation for displaced workers and communities when a society makes significant policy decisions that result in job loss in affected businesses or areas (Zabin et al. 2020).

Labor leaders coined and popularized the term "just transition" in the 1970s (Smith 2017). In the 1990s, Tony Mazzocchi, a long-time leader of the Oil, Chemical, and Atomic Workers Union, argued that workers should not have to sacrifice their own jobs and living standards to improve environmental conditions—but rather, the government should invest in and support workers employed in jobs linked to environmental degradation. According to this perspective, environmental policies are only fair and just if they assist workers in impacted sectors to transition to new, well-paying jobs. The International Trade Union Confederation later popularized the concept of just transition in a bid to provide standards within the International Labor Organization (ILO) system to guide the implementation of just transitions around the World (Blattner, 2019). While representatives from U.S. trade unions and coalitions have openly expressed concern with workers being left behind in response to climate policy, the AFL-CIO endorsed the Paris Climate Agreement's recognition of "the imperatives of a just transition of the workforce and the creation of decent work and quality jobs" (Paris Climate Agreement 2015).

Just transition programs are complex. They require support and funding for both immediate short-term assistance to workers and communities directly affected by the decreasing use of fossil fuels, and long-term assistance to move fossil fuel dependent communities and workers towards a low-carbon economy. Short-term assistance may include worker retraining and skill upgrades, Unemployment Insurance, assistance for job placement in comparable jobs for younger workers, and bridges to retirement with fully funded pensions and health care for older workers. Long-term assistance should help diversify the local economy, including providing support for economic development planning, and helping regions identify promising new industries based on regional assets such as geography, educational and research institutions, and existing workforce skills. This process will include attracting new businesses and

industries and ensuring quality job creation occurs in the same geographic region as job losses to minimize displacement and relocation.

Research on just transitions around the world indicate that successful transitions are long processes requiring continuous broad-based support. In the face of a rapidly shrinking coal sector, Germany implemented numerous programs over 50 years to support the coal region of Ruhr. The government provided wage subsidies, compensation payments and early retirement or, if early retirement was not appropriate, job transfer schemes to coal workers facing short-term job loss. It also attracted investments from high-tech and knowledge-based firms, expanded the service sector, and promoted local entrepreneurship for a long-term sustainable transition to a low carbon economy. The national government invested in educational infrastructure to create new technical institutions and universities in the region (Zabin et al. 2020).

In Black Mesa, Arizona where the closure of a coal-fired power plant threatened the local economy and workforce, the Hopi Tribe and Navajo Nation used surplus sulfur dioxide allowances to generate a revenue stream to fund renewable energy projects. The Navajo Nation also passed legislation to establish the Green Economy Fund and Commission to support green initiatives using a mixture of state, federal, and foundation funding. Advocates developed other projects including a green business incubator, the Black Mesa Solar Project, the Navajo Wool Market Improvement Project, and the Food Sovereignty Project. The new projects helped diversify the local economy by transitioning away from dependence on a single economic driver (Zabin et al. 2020). These examples demonstrate that just transition efforts require time, planning, investment, and extensive government support.

COMMUNITY AND LABOR OUTREACH, ENGAGEMENT AND FEEDBACK

This section summarizes feedback received from Kern residents and workers on issues related to jobs, workforce development, community infrastructure, and climate investment. This information synthesizes data collected from several community and economic development initiatives in Kern County over the past two years, including numerous community stakeholder meetings, community needs assessments in Delano, Shafter, Arvin and Lamont, a random sample phone survey of residents and workers in Kern County, a randomized door-to-door community needs survey of residents in Wasco, Arvin, Lamont, and East Bakersfield, and interviews with displaced oil and gas workers. The information gathered through these efforts informed and guided the creation of this high road workforce development plan.

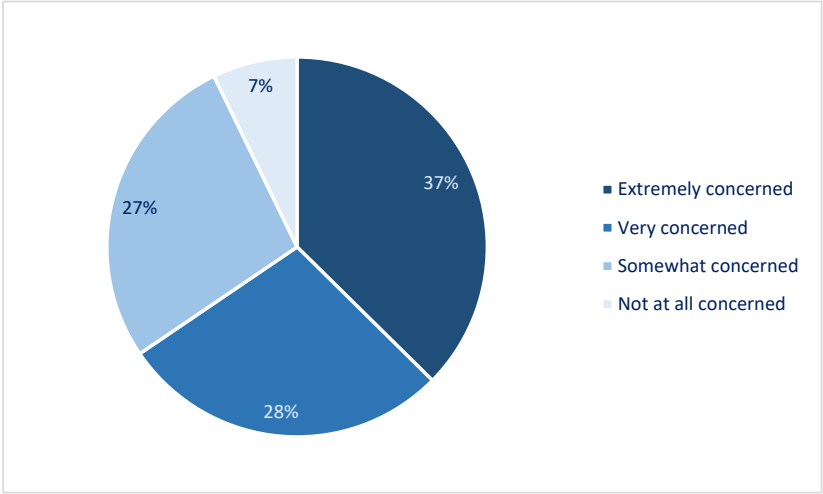
Kern Coalition Stakeholder Meetings

Between July 7, 2022, and July 21, 2022, the Kern Coalition (a coalition formed through the California Jobs First program) hosted a series of community engagement meetings in Bakersfield, Taft, Delano, Ridgecrest, Lake Isabella, and Arvin. Residents discussed job quality, preferred job sectors and businesses, barriers to employment, and strategies to advance job creation.

Residents defined a quality job as one that supports the cost of living, offers stability and competitive salaries, and provides benefits such as health insurance, paid sick leave, paid holidays, retirement, childcare, strong union contracts, opportunities for upwards mobility, flexible work schedules and a safe work environment.

Residents identified two types of barriers preventing Kern residents from obtaining a quality job; barriers due to the types of available jobs in Kern, and barriers due to worker circumstances. Barriers due to the types of jobs included a low number of high paying jobs in Kern County, a mismatch between quality jobs and local training programs in the county, and the availability of a non-local workforce for jobs in Kern. Barriers due to worker circumstances include language barriers, criminal records, undocumented status, lack of a driver's license, transportation, childcare barriers, long commute times, and high gas prices.

Figure 1.1 Level of Concern with the Environment, Kern County



Source: UC Merced Community and Labor Center analysis of Kern HRTP Community Needs Assessment Survey 2022

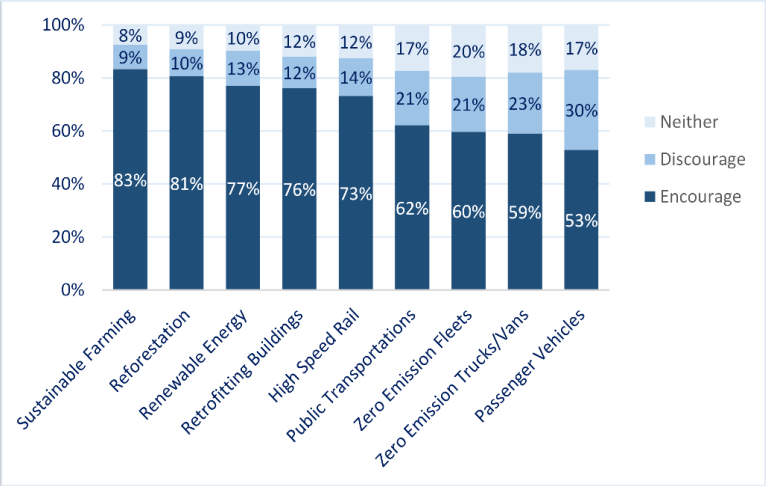
To obtain quality jobs, residents identified the importance of higher educational attainment in the region and having access to education and training opportunities. They identified specific education and training programs that would increase local resident access to quality jobs. These programs included adult education, resume-building, English as a Second Language, business and finance, early college education, and computer and technology classes. They also stressed the importance of experiential training programs such as paid internships and fellowships, apprenticeships, and on-the-job training. Residents identified language, transportation and childcare barriers as factors that prevented residents from accessing available training programs.

Residents overwhelmingly expressed an interest in growing four employment sectors in the region: education, health care, technology, and renewable energy. Residents believed that the health care sector could provide a large number of jobs while addressing local needs for health care services such as access to hospitals, mental health services and behavioral health services. Residents discussed the potential of the technology sector to provide a range of jobs, including information technology, cybersecurity, aerospace, agriculture, jobs related to automation, and STEM more broadly. Residents expressed an interest in green and sustainable jobs such as those in wind and solar energy, and recommended them because they are climate-friendly and not water intensive. Recommendations outside these four sectors included retail grocery stores, agricultural co-ops, restaurants, nonprofits, recreation and tourism, construction, logistics and distribution, and opportunities for entrepreneurship.

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, 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%).

Figure 1.2 Support for Government Investments to Create Quality Jobs



Source: UC Merced Community and Labor Center analysis of Kern HRTP Community Needs Assessment Survey 2022.

The Kern survey found that Kern residents are deeply concerned about the environment, and strongly support the state playing an important role in creating better jobs and improving the environment. 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, ninety-two percent of residents expressed some level of concern for Kern's environment (see Figure 1.1).

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. **The survey asked respondents asked about their support of government investment of tax dollars to create quality jobs, on a series of issues that the State of California Workforce Development Board has funded under its High Road Training Partnership (HRTP) initiative.** Kern residents expressed encouragement for greater public investment for quality jobs in *every* case: 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 low, ranging between 9% (sustainable farming) and 30% (high speed rail) (see Figure 1.2).

Residents were remarkably supportive of government and/or business efforts to immediately address a wide range of environmental issues in Kern. A majority of 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.

Kern workers expressed interest in better jobs and more work. When asked if they were interested in having a better job, nearly half (46%) responded they were "very interested," and another 20% responded they were "somewhat interested." Only one-third (34%) responded they were "not interested at all" in a better job. Among the twenty-five percent of Kern workers who worked part-time (less than 35 hours per week), more than half (58%) expressed wanting a full-time job. And among those wanting 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.

Workers expressed interest in having 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%), followed by 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.

Workers were also interested in better access to healthcare jobs. Among those who expressed interest in having a better job, 16% provided healthcare occupations as an example of a better job. Among women interested in a better job, over 25% provided a healthcare occupation as an example of a better job.

Lastly, the importance of an economic safety net emerged through the needs assessment. Over half (51%) of Kern workers had experienced unemployment at some point in the past, with 2020 being the median year of their most recent unemployment (the year of the onset of the pandemic). When asked how many months workers would be able to sustain themselves without a job, the median response was three months.

Dolores Huerta Foundation Community Needs Assessment Survey

The Dolores Huerta Foundation, with support from the UCM Community and Labor Center, conducted a representative community needs survey in Wasco, Arvin, Lamont, and East Bakersfield. 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.

The survey 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 program 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.

A series of survey interview questions asked residents about their concerns with environmental degradation, climate change, green technologies, and climate investments. The first question asked residents about their level of concern for the environment in general. Overall, a majority of residents are very concerned or extremely concerned about the environment, with three of the four cities sharing this high level of concern, with nearly half of the respondents in Wasco (47%) also reporting serious concern. Respondents supported state action to address the quality of drinking water, air pollution, excessive heat, and pesticides by wide margins. Respondents preferred that the state invest Greenhouse Gas Reduction Funds (GGRF) in pollution mitigation and job creation.

Kern residents would like to see more employment opportunities in energy (78%), land and oil field clean-up (57%), and warehousing (55%), followed closely by wind energy (47%) and high-speed rail (46%). Agricultural technology and agricultural automation were the least desired sectors for job growth.

Kern residents largely expressed being uninformed about the benefits and risks of proposed renewable energy and carbon management technologies. The DHF survey asked Kern residents about their familiarity with several types of renewable energy and climate technologies proposed for expansion in the San Joaquin Valley. A majority of respondents reported knowing about the potential risks and benefits of solar energy, and slightly over one third expressed familiarity with wind power. Yet, roughly only one in five residents reported awareness about other renewable energy and carbon management technologies.

Table 1.1 Level of Importance for Governmental Action to Create Quality Jobs by Region

Sector/Area of Job Creation	Level of Importance	Arvin	East Bakersfield	Wasco	Lamont/ Weedpatch
High-Speed Internet Infrastructure	Not Important	8.4%	5.7%	4.3%	6.8%
	Somewhat Important	6.4%	3.3%	4.3%	5.9%
	Important	16.3%	23.6%	27.5%	16.1%
	Very Important	20.7%	21.2%	19.4%	29.8%
	Extremely Important	48.3%	46.2%	44.5%	41.5%
		N=203	N=212	N=211	N=205
Public Transportation	Not Important	4.4%	1.4%	1.9%	1.5%
	Somewhat Important	4.4%	2.8%	2.8%	3.4%
	Important	14.3%	16.5%	26.5%	10.2%
	Very Important	24.6%	28.8%	20.9%	24.9%
	Extremely Important	52.2%	50.5%	47.9%	60.0%
		N=203	N=212	N=211	N=205
Sidewalks	Not Important	1.0%	1.4%	1.9%	0.0%
	Somewhat Important	4.5%	2.4%	3.3%	0.5%
	Important	10.4%	11.3%	21.9%	10.7%
	Very Important	22.8%	23.6%	17.6%	19.0%
	Extremely Important	61.4%	61.3%	55.2%	69.8%
		N=202	N=212	N=210	N=205
Streetlights	Not Important	1.0%	1.9%	1.9%	0.0%
	Somewhat Important	3.5%	2.4%	1.4%	1.5%
	Important	8.0%	10.4%	20.5%	7.8%
	Very Important	21.4%	21.7%	15.7%	19.5%
	Extremely Important	66.2%	63.7%	60.5%	71.2%
		N=201	N=212	N=210	N=205
Parks and Recreation Areas	Not Important	1.5%	0.9%	2.4%	0.0%
	Somewhat Important	3.5%	2.8%	2.4%	1.0%
	Important	11.4%	13.7%	18.0%	11.2%
	Very Important	16.9%	22.7%	21.3%	21.0%
	Extremely Important	66.7%	59.7%	55.9%	66.8%
		N=201	N=211	N=211	N=205
Road Repair	Not Important	4.0%	1.4%	1.9%	0.0%
	Somewhat Important	4.0%	2.4%	0.9%	0.5%
	Important	14.0%	9.0%	19.4%	7.3%
	Very Important	25.0%	21.7%	19.4%	23.4%
	Extremely Important	52.0%	65.6%	58.3%	68.8%
		N=203	N=212	N=211	N=205
Nearby Grocery Stores	Not Important	0.5%	2.8%	3.3%	0.5%
	Somewhat Important	3.5%	4.2%	3.3%	1.5%
	Important	10.0%	14.6%	21.8%	9.8%
	Very Important	18.0%	26.4%	20.9%	23.5%
	Extremely Important	68.0%	51.9%	50.7%	64.7%
		N=200	N=212	N=211	N=204
Sewer Systems	Not Important	1.5%	4.7%	4.3%	0.5%
	Somewhat Important	2.5%	1.9%	2.4%	2.0%
	Important	12.1%	11.4%	18.0%	12.2%
	Very Important	16.1%	28.4%	23.7%	22.0%
	Extremely Important	67.8%	53.6%	51.7%	63.4%
		N=199	N=211	N=211	N=205
Electric Charging Stations	Not Important	6.4%	9.4%	5.2%	6.9%
	Somewhat Important	7.8%	8.0%	2.8%	3.0%
	Important	13.0%	11.8%	18.5%	14.3%
	Very Important	10.9%	25.0%	23.7%	22.2%
	Extremely Important	61.7%	45.8%	49.8%	53.7%
		N=193	N=212	N=211	N=203

Source: UC Merced Community and Labor Center analysis of Dolores Huerta Foundation Community Needs Assessment 2023.

CRPE Community Workshops

The Center on Race, Poverty & the Environment hosted a series of community workshops with residents of Delano, Shafter, Arvin and Lamont. The workshops focused on gathering information on community priorities in four areas: local infrastructure, transportation, the environment, and jobs & the economy.

Infrastructure

Residents' suggestions for improved local infrastructure fell within several themes, including parks and recreation; public infrastructure; housing; and local amenities.

Residents expressed an interest in having more access to green space in their communities including more community gardens, trees on public streets, hiking trails, and greenways. Residents desired better parks and recreational facilities, with adequate lighting, bathrooms and water, and free or affordable sports programs for youth.

Residents reported poor public infrastructure in their communities and called for widespread improvements to their streets, sewer and drainage systems, and sidewalks, including better street signage, streetlights, and traffic controls. More specific requests included a pedestrian bridge over the railroad track in Shafter, bike lanes and handicap curbs in Delano, and solar-powered streetlight installation in Arvin.

Housing needs included increased affordable housing options, especially for seniors; housing and support services available to the unhoused, including access to showers; rent control ordinances, and measures to ensure landlords provide safe and habitable housing.

Important local amenities identified by residents included more cooling and heating centers; more local businesses, specifically restaurants, shopping centers, and wineries; additional health care clinics, hospitals and cancer treatment facilities; and more local history museums. Residents also viewed these amenities as opportunities to increase the number of available jobs and local revenue.

Transportation

Residents' suggestions for improved transportation fell under themes of increasing transit options and transportation infrastructure. Residents expressed interest in public transit options that were free or affordable, accessible, and expanded. For example, residents desired additional routes throughout the county with transit options available 24 hours a day. Residents focused specifically on providing accessible transit options for youth, seniors, medical patients, people with disabilities, and other marginalized populations. Specific recommendations centered on increasing taxi services, providing public transit options for students at Bakersfield College and other local schools or training centers, free transportation for students after school events, transportation to medical appointments, and public transit to Bakersfield. Transportation infrastructure needs included increased charging stations and electric vehicle infrastructure and new routes for heavy-duty trucks that avoid residential neighborhoods and schools.

The Environment

Residents identified various polluting industries they wanted to prevent or remove from their communities, strategies for reducing air and water contamination, and activities and strategies that improved the local environment. Residents opposed biomass facilities, pesticide use, dairies, diesel trucks, carbon capture, and new oil and gas wells near their neighborhoods.

Residents wanted local agencies to increase enforcement activities around air quality violations, illegal dumping, and agricultural burning and to adopt measures that increase oil recycling and prevent paint and other pollutants from entering the drainage system.

To improve the local environment, residents emphasized the importance of city cleanup programs, brownfield remediation efforts, investments in clean, renewable energy—including for clean transportation in the logistics industry, planting native plants and organic crops, and creating community gardens and urban forestry initiatives. Residents also suggested providing water filters for every residence that does not have clean municipal drinking water.

Jobs and the Economy

Residents primarily focused on industrial sectors that could provide both job opportunities and community benefits, predominantly in the care services and education sectors. They also provided strategies to increase job quality and access.

In the care services sectors, residents expressed an interest in expanding support for seniors in retirement, in-home support services, medical clinics with specialized care, such as for cancer treatment and mental health services, expanded hours for medical care, and medical training programs in partnership with local universities.

In the education sector, residents identified the need for more after school programs, more schools in rural areas, and improvements in existing school infrastructure. Residents also identified the need for targeted training programs for farmworkers, including English as a Second Language courses, inmate release programs to train formerly incarcerated individuals in trade sectors, and more vocational training and apprenticeship programs. Some residents advocated for more funding for local community-based nonprofits to provide education and training to local residents.

Residents also identified strategies to increase job quality and accessibility, including adopting local hire provisions, especially for city employees, investing in union jobs, preventing public tax dollars from going to contracts or corporations that do not use union labor or provide high quality jobs, preventing investments in sectors that generate pollution or exploit workers, and investing in outreach centers for marginalized communities, including immigrants, undocumented workers, unhoused individuals, and the formerly incarcerated.

CRPE Needs Assessment Surveys

CRPE disseminated two non-representative (i.e. based on a convenience sample) community needs assessment surveys. One was collected via text banking in which a text was sent to all registered voters in Kern County with the survey provided to those who expressed an interest. This survey garnered 292 responses. A second survey collection effort involved local outreach by community-based organizations located in Delano, Arvin, Lamont and Shafter and garnered 3,835 responses.

Text Banking

Respondents who filled out the survey provided via text banking skewed more white, older, with higher educational attainment and wages than the county as a whole.

Sixteen percent of respondents worked in the educational industry, 11% worked in public administration, 10% worked in healthcare, 5% worked in mining, quarrying and oil and gas, and 4% worked in agriculture. Twenty percent of respondents reported that they were covered by a union or employee association contract, 17% of respondents had participated in an apprenticeship program, and 36% of respondents were interested in acquiring job skills.

Respondents expressed overall dissatisfaction with the quality of life in Kern County, with 59% of respondents describing life overall as poor or fair. A majority of respondents indicated that retirement in Kern was poor or fair, raising children in Kern as poor or fair, and work in Kern as poor or fair. Residents scored community (22%), location (14.8%), and affordability (13.4%) as the aspects they most appreciated about living in Kern. Only 1.7 percent of respondents reported employment as a favorable attribute of living in Kern.

When asked about what industries they wanted to see grow in Kern, 40.8% of respondents said they wanted to see professional, scientific, & technical services grow, followed by healthcare (14.7%), utilities (9.8%), and higher education (6.5%). When asked about investments in Kern County, over 70% of respondents encouraged investments in sustainable farming and reforestation. More than 60% said they encouraged investments in renewable energy and retrofitting buildings and 58% encouraged investments in public transportation.

When asked about concern for the environment, 80% of respondents said they were either extremely concerned (29%), very concerned (24%), or somewhat concerned (27%), while only 20% of respondents said they were not at all concerned.

Community Outreach Survey

Most respondents to the community outreach survey resided in Lamont, Delano, Shafter or Arvin. Respondents to this survey skewed slightly older, slightly more white, with higher educational attainment and wages than the county as a whole.

The highest percentage of respondents worked in the educational industry (19%), followed by healthcare (11%), retail (7%), mining, quarrying and oil and gas (6%) and agriculture (5%). A quarter of respondents reported being covered by a union or employee association contract. Fifteen percent of respondents had participated in an apprenticeship program and 37% of respondents were interested in acquiring job skills.

When asked about the quality of life in Kern County, 72% of respondents said retirement was poor or fair, 66% of residents described raising children here as poor or fair, and 65% of residents described work here as poor or fair. Seventy percent of respondents described life overall as poor or fair.

Respondents said the most loved aspects of living in Kern were community (19.2%), location (15.1%), and affordability (14.6%). The lowest ranked aspects were traffic (2.7%), school (2.2%), and its convenience and accessibility (0.4%).

When asked about what industries they wanted to see grow, 26.8% of respondents said they wanted to see the healthcare industry grow, followed by professional, scientific and technical services (16.1%), utilities (14.9%), and higher education (13.9%). When asked about investments in Kern County, 79% of respondents encouraged investments in sustainable farming and 80% in reforestation. More than 70% said they encouraged investments in renewable energy and retrofitting buildings and 64% encouraged investments in public transportation.

When asked about concern for the environment, 94% of respondents said they were either extremely concerned (33%), very concerned (35%), or somewhat concerned (26%), while only 7% of respondents said they were not at all concerned.

SEIU 521 Focus Groups

The Service Employees International Union (SEIU) Local 521 conducted a study on public sector work in Kern County that included focus groups with employees living in Kern County. These employees included nurses, social workers, lab assistants, physical therapists, eligibility workers, and pharmacy technicians. The focus groups identified priority industries, worker interest in training, and the role of the public sector in economic development. Workers provided insight on the ways training, staffing, education, job environment and job quality could improve the services they provide to address the unmet needs of county residents.

Good Jobs

Local 521 members defined a “good job” as providing (1) good pay and benefits, (2) a respectful relationship with management, (3) work-life balance, and (4) adequate staffing. Local 521 members reported being satisfied with their health and retirement benefits, suggesting that growth in the public sector could provide pathways for Kern County residents to receive better benefits. Local 521 members

indicated that they wanted more training and education opportunities to support career advancement for social workers and workers in the healthcare industry.

Members expressed that what they most appreciated about being in the union is that membership allows them to be part of the "vision" of their organization, provides education about workplace safety and advocacy, and ensures that employees have a voice in the development and implementation of training and education opportunities.

Environment & Role of the Public Sector

Local 521 members expressed concern about environmental issues, specifically air quality which has increased rates of asthma in the Central Valley. Members reported that "if you live in the Central Valley, you will get asthma" and expressed interest in creating and/or expanding guidelines and oversight of air quality and pollution in the Central Valley.

Members reported a desire for local agencies to "take more ownership" of the environmental issues affecting the community. Members are interested in the development, implementation, and enforcement of air quality standards for employers in the Central Valley, including, but not limited to, dairy farmers. Additionally, members are interested in communications jobs related to air quality.

Critical Industry – Healthcare

Local 521's focus groups indicated that healthcare is a critical industry for a just transition in Kern County because (1) Kern County residents experience significant barriers to healthcare access, (2) Kern County workers are interested in reducing barriers to joining the healthcare workforce, and (3) many of the environmental issues in Kern County have negative impacts on Kern County residents' health.

Local 521 members reported significant issues related to healthcare access and high levels of interest in improving access to healthcare jobs. One reason for Kern County's poor performance is the lack of physicians in the county. Members reported that public sector healthcare and public safety jobs had the highest level of turnover.

Members reported that Kern County did not have good access to cardiac care and cancer specialists. Additionally, members reported that Kern County does not have a hospital specializing in healthcare for children or high-risk pregnancies. As a result, Kern residents requiring specialty care must travel to Fresno or LA County. For example, one member reported that she had to travel to LA County for chemotherapy and radiation treatments.

Workers expressed interest in reducing barriers to healthcare pathways in various specialties, including transitioning from a Licensed Vocational Nurse (LVN) to a Registered Nurse (RN) and a Lab Assistant to a Lab Scientist. They also were interested in additional education programs, training programs for pharmacy techs and physical therapists, and certification programs for Billing/Coding and Rehabilitation Aids. Healthcare employees reported that many people begin their careers in local medical centers and then seek work in other counties because of higher pay, better working conditions, and access to a wider range of facilities.

Public Sector Jobs in Kern County

Members appreciated working in the public sector because they liked the benefits provided, such as healthcare and retirement. Members reported job satisfaction because public sector work helps their community.

Members stated that turnover and vacancies were the "biggest problem" for Kern County workers. Staffing issues have significantly impacted caseloads and work-life balance. For example, social workers reported that their caseloads have doubled. Vacancies and turnover negatively impact members' work-life balance because they are required to work mandatory overtime and have difficulty taking vacation time.

Career Advancement

Members stated that the union protects training and education programs and ensures that employees have a voice in the development and implementation of such opportunities. Local 521 members cited various positive examples of existing healthcare training and education programs; their interest in these programs is demonstrated by the fact that existing programs do not have enough educators to meet demand. For example, members discussed a program with a local public community college that creates a pathway for licensed vocational nurses (LVNs) to become registered nurses (RNs) while still working as LVNs. The program is very popular but was almost canceled due to a lack of nurse educators. Local 521 helped save the program by finding nurse educators, but demand for the program continues to exceed the number of spots available.

Workers in Social Services that would like to connect people to services to help them live healthier and more fulfilling lives are unable to get the credentials necessary to do so. No educational program in the county offers a master's degree in social work or any degree pathway to become a licensed social worker. To do so, Kern County residents must travel to Fresno or Los Angeles to obtain this advanced degree.

Members expressed a strong desire for more apprenticeship programs–specifically apprenticeship programs built with the employer and the union. They viewed such programs as "more fair" because the union partnership would prevent employers from engaging in favoritism when hiring for apprenticeship programs. For example, members reported satisfaction with two apprenticeships at the Kern County Hospital Authority. The union is involved with the program, so members "know the process is fair. . . and the workers enjoy it and participate a lot more" because they know the union is "going to advocate for the resources that they need."

In other regions, city apprenticeship programs can provide a unique combination of structured learning with on-the-job training that leads to a job with local cities. Apprentices get paid while getting national industry certification. In Kern County, several city workers in Bakersfield and McFarland would have benefitted from an apprenticeship prior to joining their respective cities. However, no such apprenticeship exists in Kern County.

Displaced Oil Worker Study

The UCM Community and Labor Center conducted a displaced oil worker study to collect information about workers' experiences in Kern's oil and gas industry. Using a snowball sampling method, UCM

researchers conducted 12 semi-structured interviews lasting between twenty-seven minutes to an hour. This small, interview-based study with displaced oil and gas workers examines how workers experience joblessness, and what those experiences may tell us about the proper planning necessary to adequately support oil and gas workers no longer employed in the industry. The study found that workers struggle with difficult and dangerous work in entry-level, blue-collar, oil and gas jobs, but that they persist with the hope of ascending to management level positions that pay much more. Nonetheless, they face struggles working long hours in a volatile industry that prevents them from being more present with their families. As workers age, they want better scheduling that allows them to be more present in the lives of their family members. Displaced oil and gas workers would benefit from access to training and employment opportunities to move into well-paying occupations with better scheduling.

Common Experiences with Health and Safety in the Workplace

Oil and gas work is dependent on using heavy machinery; it is arduous and dangerous. The most common health and safety concerns were intense working conditions, long hours, and severe weather. Less common experiences were difficulty managing chronic health conditions, like arthritis and diabetes, due to work intensity. Despite negative experiences with health and safety, many workers continued to work in the oil and gas sector because it provides financial security.

Respondents reported working long hours, in varying weather conditions, and working with dangerous equipment that could suddenly falter. Equipment related injuries included loss of teeth, broken legs, and in one extreme case, the death of a coworker. Workers typically worked grueling schedules where workers were on call for days at a time. One worker reported that “You’re on call 24 hours a day. You work six days on, three days off. The conditions, environment, oil fields, it is grunt work. It’s tough. You have to really be alert because you’re up sometimes 24 hours a day or 48 hours a day.” Another explained “I've seen people so tired that they don’t even relocate. They get in their truck, pickup truck, whatever. They drive away a little bit and they just park at the top of the hill and they go to sleep.”

At some companies, productivity is prioritized over safety and leads to the inconsistent implementation of health and safety regulations. One participant shared, “They would just throw a piece of paper there. They wouldn’t even fill it out, and they’re like, ‘Just sign it, just sign it.’ You know what you’ve got to do? Sign it. I didn't even know what they wrote in there . . . They didn't care, until they get caught.”

Chronic health conditions were attributed to the demands of oil and gas work; long, irregular hours, and travel to remote locations. “You’re just not sleeping and you’re just on the go eating and trying to stay awake. I think part of [working for a gas and oil company] probably helped cause me to become diabetic...” Another stated, “it’s extremely hard on anybody’s back, it was extremely difficult. Human beings are not meant to do that kind of heavy labor.”

Despite varied experiences with health and safety and unemployment, interview participants continued work in the oil and gas industry because they were familiar with the work and to support their families. Some appreciated the hard work ethic and camaraderie with their co-workers. “It’s exciting, you are working in situations where things can blow up, or things can become extremely critical very fast. I loved it because everything is heightened, all your senses, everything. Men are coming out there to work with one thought on their mind, ‘Let's get this thing done, we are losing money every second that this is down, and we are bringing our A-game.’ You are a team, and that’s beautiful, it’s wonderful.”

Well Paying Jobs Come at a Cost to Workers and their Families

Well-paying entry-level positions for young workers without formal education are key drivers to seek employment in the oil and gas industry but come at a personal cost to worker families. Workers viewed the industry as a pathway out of poverty for those who did not have high levels of educational attainment. Oil and gas work is highly-skilled and certifications provide pathways for promotion for some workers. On average, displaced workers entered the industry in their early 20s. More than half of participants reported not earning a GED. Close to half obtained a GED and two workers earned a bachelor's degree in either chemical or civil engineering.

With 30 years of experience, Samuel reported an entry-level annual salary of $60,000. Within several years it increased from $80,000 to $100,000, depending on the amount of work available and overtime compensation. On the job training, certifications, and company programs facilitated career pathways for workers but varied by employers. Upward mobility depended on obtaining certifications such as a Class A license to drive trucks, drilling work, or certifications to work on different types of large equipment. The highest-ranking positions reported were foremen, supervisors, and salespeople.

Although entry-level positions in oil and gas are well paid, workers often spoke about unstable work schedules, having to be on-call, being sent to work out of state, and other issues that conflicted with family responsibilities. George, a worker who started in the industry at a young age described how his demanding schedule impacted workers and families. He shared, "this is not for everyone because unless you don't have a family or you're single, I don't think being away for a lot of the time is worth it, to be honest... I know a lot of people that have divorce because their wives would be mad. . . that they're never home." Another worker shared "[my family] would never see me. They go to sleep, I was at work. They woke up to go to school, I was already at work. I wasn't there, I wouldn't see them. There was times I wouldn't see them for weeks and months, because I was out there trying to provide and work, and everything, and like I said, the pay was good."

Layoffs in the oil and gas industry are an additional financial and emotional burden for workers and their families. Although temporary layoffs are common in the oil and gas industry, workers reported them in greater frequency and duration. The average unemployment time for workers interviewed was about six months. Workers' experiences with finding employment outside the oil and gas industry was mixed but more favorable to workers in higher ranking positions.

At the time of their interview, a concrete engineer had been unemployed for a year. A different worker with an engineering degree under his belt was surprised to be turned down for a laboratory technician position and a courthouse clerk position for being overqualified and eventually worked as a production engineer and later as a concrete engineer. Others reported being told that they did not have the required education for jobs that paid similar wages.

Some displaced workers found employment in other fields doing similar work such as agriculture irrigation system installation, sales, construction, and equipment operation. Others struggled to find ways to pay their bills. One worker recalled, "I was looking for other work, but no other work was hiring. . . I actually wanted to do something else, do something to better my education. I didn't have the time or the money, resources to do it because I already had kids, and then I had a house payment, bills piling up, you know what I mean? . . . So I started cutting hair, started calling my brother's friends. I'd even do it for like $5 to $10, just cutting their hair and making extra money just to feed the family. It was hard. It was hard."

Workers who were promoted to the highest position in oil and gas companies as salespeople and management entered comparable occupations in other industries. Although worker's salaries in industries outside of oil and gas were not comparable, they often met displaced oil workers' other priorities. One reported, "at first, it was like, 'Oh my gosh.' It was scary taking a pay cut. You juggle life around, you figure it out like, 'Hey, this isn't so bad. It's a pretty good pay, and I'm home every night.'"

Prioritizing a Family Friendly Workplace

After displacement, workers reported that a family friendly work environment guided their job search. For example, John described contributing more to household responsibilities after being laid off. He said, "[It] took a burden off my wife, too, because when I was working 24 hours a day, she had to do everything. I don't regret that I got laid off. I think my eyes saw a whole new world." When looking for work John prioritized a flexible work schedule, "When I came into this as a salesman, I took a pay cut, but. . . then you're home every night. . . I had a lot more freedom. I could run and drop lunch off because the kid forgot his lunch."

Displaced Worker Training and Support

Most of the displaced workers received Unemployment Insurance benefits and Covid-19 relief funds. Some used government assistance programs such as Keep Your Home California that assisted unemployed workers with mortgage assistance. Others mentioned training programs or free classes that were available through the American Job Center, but few took advantage of these training programs. One worker expressed regret that he had not taken advantage of education and training opportunities that were offered, sharing, "I should have enrolled in some kind of training program or schooling, short-term school, I didn't. I think that was one of my regrets. . . Because if you do that, that way you open up your field of work, you get more options. That chance went away." Some workers suggested that training programs in welding, renewable energy, or electrical work would be helpful for displaced oil and gas workers as well as programs that provide job matching or prioritized employment opportunities for displaced oil and gas workers in clean energy sectors. They also recommended mortgage assistance programs be brought back.

One worker who appreciated the grittiness and camaraderie of oil and gas work expressed regret at needing to find another area of work. He explained, "how do you take the passion out of the person for what they do? How do you fit them into another place, when they knew where they fit already. Again, that might be somehow philosophical but we all have to find a job. I believe that the state is doing whatever they think they need to do to retrain, find new jobs and all this. How do you put the happy back into doing work that you did with so much love?"

Future Careers

Following their separation from the oil and gas industry, interviewees reported working as managers in a propane company, cement engineer, project manager for an irrigation company, and in construction. Although our study is not based on a representative sample of California's oil and gas workers, the Census Bureau's Job-to-Job Flows Explorer (J2J) data list similar destination industries. The 2022 top three destination industries in California, for former mining, quarrying, and oil and gas extraction workers were construction; manufacturing; and administrative and support waste management and remediation services.

KERN APPRENTICESHIP AND TRAINING PROGRAMS

The vast majority of the jobs that can help lower greenhouse gas emissions across the economy are in traditional professional, technical, and blue-collar occupations related to energy and construction (Zabin et al. 2020) In fact, the California Public Utilities Commission (CPUC) found that approximately two-thirds of the jobs generated directly by energy efficiency investments in California are in the building and construction trades—e.g., electricians, sheet metal workers, plumbers, laborers, carpenters, stationary engineers, and others (Zabin et al. 2020). This section highlights existing apprenticeship and training programs in Kern County with a focus on climate-relevant programs such as those in the construction, energy and electricity fields.

The Bakersfield Sheet Metal Workers Apprenticeship offers a variety of training pathways in commercial HVAC, architectural sheet metal, sheet metal roofing, CAD detailing, industrial welding, HVAC Fire-Life safety, and refrigeration technology. Throughout this 5-year apprenticeship program, students receive over 880 classroom hours and 7,500 on-the-job hours of specialized training to earn industry-recognized certifications in the sheet metal trade. The program is registered with the Kern Community College District and graduate apprentices earn 30 units of college credits from Bakersfield Community College to apply towards an Associates in Arts Degree.

The Kern County Electrical Joint Apprenticeship and Training Committee (JATC), offers an electrical apprenticeship governed by the National Electrical Contractors Association (NECA) and the International Brotherhood of Electrical Workers (IBEW) Local Union 428. The Inside Wireman Electrical Apprenticeship Program is a 5-year program providing a minimum of 8,000 hours of on-the-job training and over 1,000 hours of classroom instruction. Upon completion of the program, apprentices will earn the California State Electrician Certification. The Apprenticeship Program provides a starting wage of $22.34 per hour with $2.27 per hour wage increases every six months. Apprenticeships provide medical, dental and retirement benefits. The program is sponsored by Bakersfield College and provides college credits that apply towards an Associate’s Degree.

The UA Local 460 Plumbers & Steam Fitters Joint Apprenticeship and Training Committee (JATC) offers a plumber, pipefitter, refrigeration and air conditioning fitter apprenticeship training program. The program is 40 hours per week for five years. Approximately 273 Journeymen and 110 Apprentices are employed in the area. The JACT estimates a need for about ten (10) new apprentices each year. Starting wages for an apprentice is 45% of the Journeyman rate of $39.80 per hour with increases every year. The apprenticeship includes training on layout assemblies, pipe installation, fitting and fixtures for air, gas, water, steam and waste disposal systems, pipe systems testing for leaks or improper operation, and working from blueprints and isometric drawings.

The Laborers' International Union of North America, Local 220 Apprenticeship Program provides on-the-job training, recognized by both the Department of Labor and the State of California for federal Davis-Bacon and California prevailing wage projects. Within the required 3000 hours of on-the-job training, apprentices learn the general skills of the laborer as well as specific skill areas in environmental remediation, building construction, and heavy/highway construction. In addition, the Indentured Apprentice attends 216 hours of supplemental/related instruction in classroom and hands-on type format during the minimum 18-month program.

The Operating Engineers Local 12 Apprenticeship Program provides Operating Engineer training consisting of an intensive work-study Apprenticeship Program combining on-the-job experience and classroom instruction for several work classifications including Equipment Operator, Heavy Duty Repair Person, Plant Equipment Operator, Building Construction Inspector, Rock Products Industry Equipment Operator, and Dredge Operator. The Bakersfield training facility offers courses on general earth moving equipment, forklifts / skid-steer, commercial driver training, excavating equipment, health and safety classes, grade-checking / plan reading, union education, and welding. Beginning apprentices earn sixty percent (60%) of the current negotiated Journeyperson wage rate but wages vary depending on work classification. Apprentices are covered by medical and dental insurance, holiday and vacation pay, a pension plan, and other benefits upon qualification in accordance with established trade agreements.

The International Union of Painters and Allied Trades, Council 36 provides a Paint and Drywall apprenticeship program in Bakersfield. The apprenticeship combines a minimum of 144 hours of classroom instruction and on-the-job learning. A typical apprenticeship lasts three years. The curriculum includes an introduction to the union and the finishing trades; health and safety; and leadership and professional development. Apprenticeships provide health and retirement benefits.

Community Colleges and Other Training Programs

Bakersfield College serves around 31,000 students and offers 234 degrees and certificates in ten program areas. Underrepresented ethnic groups, including African American, American Indian, Filipino, Hispanic/Latino, Pacific Islander students comprised 77.8% of the student population. Top degrees for transfer to a four-year University were in Registered Nursing, Liberal Arts/Science, Psychology, Business Administration, and Accounting. Top Associate Degrees earned include Registered Nursing, Criminal Justice, Radiological Technology, Fire Technology, and Business Administration. Top vocational degrees or certificates awarded were for Registered Nursing, Welding, Automotive Technology, Vocational Nursing, and Fire Technology.

Bakersfield College has a number of active apprenticeship programs, including for electricians, sheet metal workers, data analysts, help desk technicians, digital marketer, software developer, office technician, personnel specialist, staff services analyst, maintenance technician, and perioperative nurse. Bakersfield

also has a number of apprenticeships in development with finding secured. These include apprenticeships for information technology project manager, management analyst-public health, perinatal nurse, neonatal nurse, and licensed vocational nurse to registered nurse bridge.

Cerro Coso Community College serves a little over 6,000 students and offers 62 degrees and certificates in twelve program areas. Underrepresented ethnic groups comprise 53% of the student population. Top degrees for transfer to a four-year University were in Liberal Arts/Social and Behavioral, General Science, Anthropology, Business Administration. Top Associate Degrees conferred were Undeclared, Liberal Arts/Social and Behavior, Business, Vocational Nursing, and Paralegal Studies. Top vocational degrees or certificates awarded were for Clinical Medical Assisting, Emergency Medical Tech 1, Welding Technology, Vocational Nursing, and Child Development Associate Teacher.

Taft College serves more than 3,000 students within six Academic Divisions. It offers more than 75 degrees and certificates and 15 Associate Degrees for transfer to a four-year University. More than 500 students graduate with a degree every year. Fields of study include Arts, Humanities, and Communication, Business and Finance, Early Childhood and Elementary Education, Health Science and Kinesiology, Occupational Safety and Health, Science, Technology, Engineering, and Mathematics (STEM), Social Science, Law Enforcement, and Public Service.

Kern Community College District's 21st Century Energy Center providing training in Construction Skills, Safety, Solar installation, Solar Sales, Industrial Maintenance Mechanic / Wind Energy Technician job skills training. The 21st Century Energy Center convenes the Energy Innovation Workforce Coalition of innovators, industry leaders, community-based organizations, and local governments. The coalition seeks to support economic and workforce development through integrated energy pathways - grid modernization and clean transportation growth. The 21st Century Energy Center is training individuals and first responders to work with alternative fuel vehicles. The coalition members' input led the 21st Century Energy Center to develop the Introduction to Zero Emission Vehicles and Careers class and established a partnership with the Kern County Electrical Apprenticeship program to provide Electric Vehicle Charging Installation pre- apprenticeship training. The Center is also developing an Electric Vehicle Charging Station Operations and Maintenance Technician training course, a hydrogen fueling infrastructure training course, a Solar Business Development course, a Solar Entrepreneurship course, and a Microgrid Basics course.

In 2022, the Foundation for California Community Colleges awarded an $18.1 million workforce grant to facilitate cradle-to-career pathways initiatives. The Kern Regional K-16 Education collaborative is led by the Kern County Superintendent of Schools and features participation from the Kern High School District, Kern CCD, Cal State Bakersfield, UCLA, UC Merced, the Central Valley Higher Education Consortium, and numerous economic development and industry partners. The coalition is dedicated to building and sustaining inclusive institutions that meet all students where they are, streamlining pathways to degrees, and simplifying supports for student success through collaborative repositories for educational data that can be shared between institutions.

The Kern Community College District is the fiscal agent and co-convenor for the Central Valley Mother Lode Regional Consortium, a coalition of career and technical education experts from 15 community colleges, 230 public school districts, and 150 across the San Joaquin Valley. Through this consortium, community colleges collaborate on career education programs, workforce development strategies, and other tools for upward mobility for the more than 100,000 students they represent.

Other notable training programs in Kern include the Employers' Training Resource in partnership with America's Job Center. Employers' Training Resource (ETR) is a department within the County of Kern which serves as the administrative arm of the Kern/Inyo/Mono Counties Workforce Development Board. Its goals include training the workforce for the needs of the local economy and providing assistance to businesses in the hiring process. ETR offers many no-fee training courses through America's Job Center as well as focused training for farmworkers and youth.

The Farmworker Institute of Education and Leadership Development (FIELD) is focused on uplifting the economic prospects of underserved populations in poor, minority communities by helping farmworkers and the rural workforce to gain self-sufficiency through employee-owned social enterprises. FIELD provides a continuum of educational and workforce development programs that assist underserved communities in achieving empowerment, self-sufficiency, and a better quality of life including in the fields of clean energy, fire management, recycling, and agriculture.

Proteus, Inc. provides training, education, and community services throughout the Central San Joaquin Valley. While most of its programs are offered in Tulare and Fresno Counties, it has a service center in Delano. Proteus administers approximately 50 different programs ranging from adult, youth, and dislocated worker programs, to programs related to energy conservation, emergency supportive services, foster family services, youth services, migrant child care, community youth centers, child development programs, prevention services, pesticide safety training, career and technical education classes.

The Kern High School District Regional Occupational Center and Career Technical Education Center (ROC CTEC) are accredited public education career/technical training institutions. ROC CTEC offers over thirty 3-hour per day programs to those interested in developing or improving job skills. All courses are designed to prepare students for entry-level employment. Classes at ROC CTEC are open to high school juniors, seniors, and adults.

KERN COUNTY LANDSCAPE ANALYSIS

The Kern County Landscape Analysis identifies county demographics and demographic trends with a focus on population characteristics that help inform high road workforce development strategies, including statistics on population growth, age, race, immigration status and educational attainment. It also covers economic trends over time and examines both industry sectors and occupations within Kern County by wage, growth, and overall number of employees.

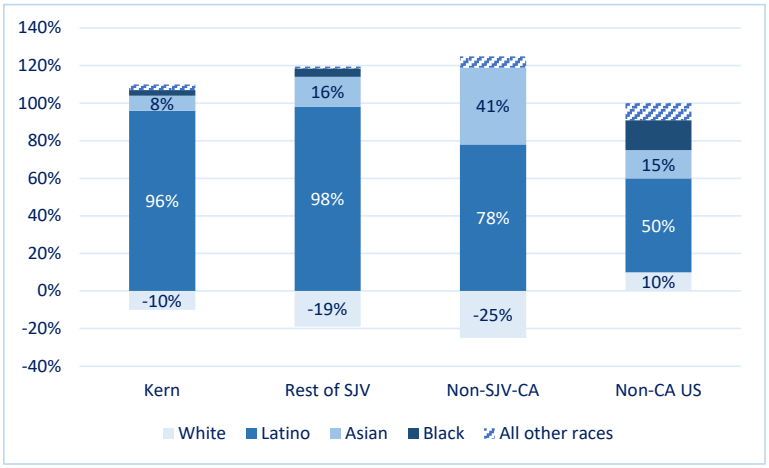
Demographics

Kern County is California's eleventh most populous county, with 916,108 residents (US Census Bureau 2023). Kern County and the broader San Joaquin Valley region have experienced significant demographic growth and change in recent decades. Kern County's population grew by 41 percent between 2000 and 2019, the third highest rate in the state. This contrasts with California, which has had a declining population in recent years.

Most of Kern County's population growth is due to a growing native-born Latino population. Latino residents make up more than half (52%) of the county's population (477,787). One in three residents (33%) are non-Hispanic white, while a much smaller minority of residents are Asian (5%), Black (5%) or persons who self-identify as another race (3%). For every 100 new residents in the county, 96 were Latino residents, 8 were Asian, 6 were of other races, and 10 white residents had moved out (see Figure 1.4).

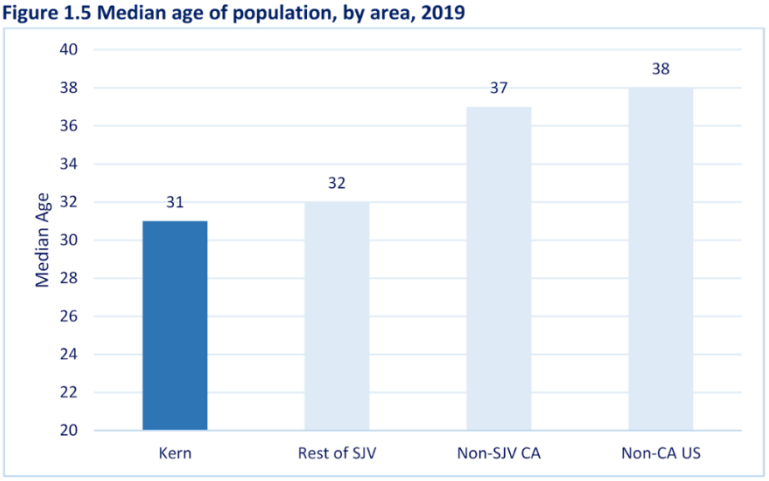
This dramatic population growth fueled significant economic and labor market growth. Between 2000 and 2019, the number of Kern County workers grew 51%, from 149,820 to 325,108; this growth was also third highest in the state. During the most recent ten-year period, from 2007-2011 to 2017-2021, the size of Kern County's labor force grew by 12% (33,358).

Figure 1.4 Race as share of new residents, by area, 2009-2019



Source: UC Merced Community and Labor Center analysis of IPUMS-USA American Community Survey, 2009 and 2019, 1-year Public Use Microdata Series

Figure 1.5 Median age of population, by area, 2019

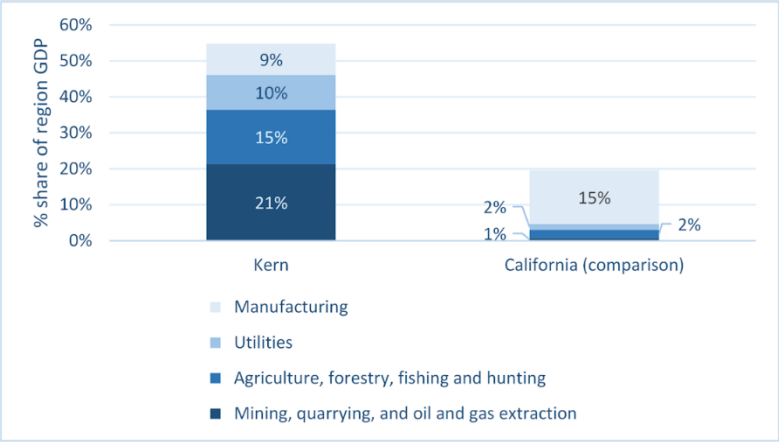


Source: UC Merced Community and Labor Center analysis of IPUMS-USA American Community Survey, 2019, 1-year Public Use Microdata Series

Kern's population growth and demographic changes will substantially reshape the labor market, with declining numbers of white and immigrant workers and increasing numbers of native-born Latino workers. In 2019, while a minority (40%) of workers aged 55-64 were Latino, a majority (65%) of those between the ages of 5-24 were Latino. Among those nearing retirement (aged 55-64), *thirty-one* percent of workers were immigrants; but among those entering the workforce (aged 15-24), only *eight* percent of workers were immigrants. Despite this demographic shift, the naturalization rate among Kern County immigrants is among the lowest in the state at 38.7%.

In 2019, Kern County was the third-youngest county in California with a median age of 31 years (see Figure 1.5). One in thirteen (7.8%) Kern residents were under the age of five, fourth highest in the state—only behind its neighboring counties of Kings (8.6%) and Tulare (8.0%), and Imperial (8.6%). In addition, nearly three in ten (29.6%) Kern residents were under the age of 18. This was fifth highest in the state, only behind other rural counties (Tulare 30.8%; Imperial 30.2%; Kings 29.8%; and Merced 29.7%).

Figure 1.6 Industry share of region GDP (top-5 largest Kern industries), 2019



Source: UC Merced Community and Labor Center analysis of US Bureau of Economic Analysis 2019 data

Nearly one in four Kern residents over 25 years old have not graduated high school and only 18% have a bachelor's degree or higher. Only nine percent of Latinos over the age of 25 had a bachelor's degree or higher and 38% had less than a high school education. This compares to 25% of non-Hispanic white residents with a college degree and 9% with less than a high school education (U.S. Census Bureau, 2017-2021 American Community Survey 5-Year Estimates.)

These statistics demonstrate that Kern's growing population is shifting towards a younger, native-born, Latino population which continues to struggle with low levels of educational attainment.

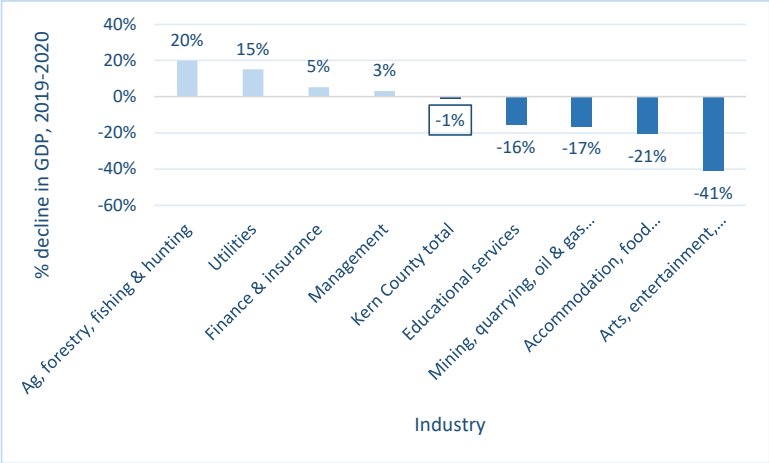
Economic Value and Growth

Kern's per capita Gross Domestic Product (GDP) growth is highly volatile; it grew more than any other California county between 2000 and 2009, at 34.9%. Yet, since 2009, Kern's per capita GDP shrank by 4.4%—the third worst in the state. In 2022, Kern County's economy generated $43.8 billion in Gross Domestic Product (GDP) (US Bureau of Economic Analysis 2023). This ranked fourteenth in California, although its GDP change (-3.3%) from the prior year was eighth worst among the state's 58 counties. This is an indication of high economic volatility in the region, driven in part by its reliance on economic sectors that are susceptible to external conditions, such as weather (agriculture) and global prices (oil and gas).

Kern County's GDP has been dominated by four industry clusters: mining, quarrying, and oil and gas extraction (21%); agriculture, forestry, fishing and hunting (15%); utilities (10%); and manufacturing (9%). These four industry clusters comprised more than half (55%) of Kern's GDP in 2019 (see Figure 1.6). From 2019 to 2020, oil and gas experienced the third largest drop (-17%) in GDP in Kern (see Figure 1.7).

Property tax revenue in the State of California is a funding source for local governments and is based on ad valorem property taxation, calculated by applying a 1% tax rate to the assessed value of real property owned. Kern's land valuation is low compared to the rest of the state. Since 2014, the County's total assessed valuation has increased 24.3%, or 2.7% per year. This is significantly below the 29% increase in the consumer price index over this same period and gives Kern County the distinction of having the lowest growth in assessed valuation of all 58 counties in California.

Figure 1.7 Most and least resilient Kern County industries, 2019-2020



Source: UC Merced Community and Labor Center analysis of US Bureau of Economic Analysis 2019-2020 data

One of Kern County's longstanding challenges has been its dependence on oil and gas property tax revenues, due to their volatility and decreasing value. However, according to Kern's Recommended Budget for FY 2023-24, "[t]he most notable change in the County's assessed value over the past eight fiscal years is increasing economic diversification. In FY 2014-15, oil and gas property assessments made up 32% of the assessment roll. In FY 2023-24, the estimated oil and gas property assessments account for just 13% of the roll despite a 272 million year-over-year increase in oil and gas property assessments in FY 2023-24." Wind recently surpassed oil as the number one source of county taxes (O'Rourke 2023).

Sector Trends and Job Growth

Seven industries employ a majority (53%) of Kern workers. These include education (33,006), agriculture (30,992), health (26,681), public administration (22,800), restaurants/ food services (20,458), retail trade (18,730), and construction (18,323). Thirteen industries employed over 10,000 workers in 2021.

Kern County's top-ten most common occupations regardless of industry sector includes graders and sorters/agricultural workers (32,251); bus drivers (10,013); first line supervisors of non-retail sales workers (9,790); preschool and kindergarten teachers (7,239); home health aides (6,184); parts salespersons (6,100); first-line supervisors of food preparation and serving (5,593); cleaners of vehicles and equipment (5,217); first-line supervisors of landscaping, lawn service, and groundskeeping workers (4,829); and mail clerks and mail machine operators, except postal service (4,775).

Since 2009, 22 of the 30 largest industries in Kern experienced job growth. The industries experiencing the most growth include warehousing (552%); animal production (220%); non-oil and gas mining (215%); forestry, fishing and hunting (193%); building services (90%), and utilities (72%). Five of Kern's largest industries accounted for nearly half (49.6%) of the county's growth. Health jobs experienced the greatest increase among Kern's large industries, growing by 25% (5,277). Education jobs increased by 21% (5,830), while restaurant and food services grew by 12% (2,177). Agriculture grew by 9% (2,584) and construction grew by 8% (1,319). Yet two of Kern's largest industries experienced job losses during the same period. Retail trade jobs decreased by -7% (-1,397) and public administration jobs decreased by -4% (-1,021). During the same period, the oil and gas industry experienced the greatest absolute job losses of any industry in Kern, declining by 2,994 jobs (-18%) (see table 1.2).

Table 1.2 Kern industries, by greatest number of workers, 2007-2011 and 2017-2021

	Jobs			
Industry	2017-2021	2007-2011	% change	# change
Educational	33,006	27,176	21%	5,830
Agriculture	30,992	28,408	9%	2,584
Health	26,681	21,404	25%	5,277
Public Administration	22,800	23,821	-4%	-1,021
Restaurants and other Food Services	20,458	18,281	12%	2,177
Retail Trade	18,730	20,127	-7%	-1,397
Construction	18,323	17,004	8%	1,319
Grocery	13,508	9,875	37%	3,633
Oil and Gas Extraction and related mining	13,427	16,421	-18%	-2,994
Manufacturing	12,263	11,123	10%	1,140
Transportation	12,095	9,688	25%	2,407
Professional, Scientific, and Management	11,177	9,846	14%	1,331
Other Services (Except Public Administration)	10,675	10,509	2%	166
Finance, Insurance, Real Estate, and Rental and Leasing	9,985	10,940	-9%	-955
Forestry, Fishing and Hunting, Support Activities	9,438	6,635	42%	2,803
Social Services	7,920	6,481	22%	1,439
Wholesale Trade	7,597	7,292	4%	305
Warehousing	4,733	1,095	332%	3,638
Building Services, including Security	4,364	3,226	35%	1,138
Animal production	4,293	2,023	112%	2,270
Arts, Entertainment, Recreation	4,277	3,811	12%	466
Food processing	4,261	4,110	4%	151
Administrative and Support Services	3,960	3,178	25%	782
Information and Communications	3,407	3,613	-6%	-206
Utilities	2,637	3,371	-22%	-734
Traveler Accommodation	2,121	1,793	18%	328
Waste Management	2,008	1,154	74%	854
Nursing Care	1,975	1,646	20%	329
Active Duty	1,965	1,932	2%	33
Residential Care	1,931	1,488	30%	443
Landscaping	1,328	1,683	-21%	-355
Non-Oil and Gas Mining and Quarrying	655	452	45%	203
Bars	247	273	-10%	-26
Total	323,237	289,879		33,358

Source: UC Merced Community and Labor Center analysis of American Community Survey (ACS) Public Use Microdata Series (PUMS) 5-year data, 2007-2011 and 2017-2021

Wages

Kern workers are among the state's most disadvantaged, even after adjusting for local cost of living. Four out of ten (40%) Kern workers lived below a living wage in 2019, the third worst rate in the state. Nearly one in two (48%) workers in Southeast Bakersfield lived below a living wage. Kern workers' earnings decline has been singularly worst among all California counties. In 1979, Kern workers earned a median wage of $34,451 (in 2019 dollars), identical to U.S. workers outside of California. Since 1979, Kern workers' median wages have declined 13 percent.

Few of Kern County's largest occupations regularly pay above a "living wage," the amount needed to avoid "consistent and severe housing and food insecurity" (Nadeau 2018, 2). According to the Massachusetts Institute of Technology (2023) Living Wage Calculator, in 2022, a Kern County worker living in a household with two working adults and two children would have to earn $25.07 per hour ($52,146 per year) in order to avoid chronic and severe housing and food insecurity. We term this threshold, based on a two working adult and two children household, a "standard" living wage in Kern.

Our analysis found that among the thirty-five largest occupations of employment in Kern County—those with over 2,000 workers in the county—only seven occupations had median earnings above the standard living wage threshold. Occupations in large sectors with median earnings above Kern's standard living wage include registered nurses ($99,558), managers ($95,417), correctional officers and jailers ($86,363), first-line supervisors of construction trades and extraction workers ($81,565), secondary school teachers ($79,624), elementary and middle school teachers ($68,156), and welding, soldering, and brazing workers ($53,863). These occupations experienced a 7% growth in employment between 2011 and 2021, from 24,697 to 26,450 workers.

We also examined industry rates of workers earning less than an "actual" living wage. Whereas some analyses (such as the above-mentioned analysis) focus on rates of workers earning above a standard living wage for a family of two working adults and two children, this section analyzes ACS 2022 data and applies living wage thresholds for each household based on their actual structure (i.e. number of working adults and number of children). This analysis provides a better-informed understanding of the wages needed for Kern workers to avoid chronic housing and food insecurity because Kern has a more youthful population than the rest of the state.

Our analysis of ACS data found that in 2022 four of ten (41%) Kern workers lived in households with earnings below an actual living wage (i.e. adjusting for household structure). In ten industries, the percent of workers living below an actual living wage was better-than-average for Kern. These industries included utilities (13% lived below a living wage); professional, scientific and management (20%); public administration (21%); oil and gas and support activities for mining (21%); administrative and support services (30%); information and communications (30%); finance, insurance, and real estate (32%); education (33%); transportation (34%); and health (34%).

In thirteen industries, the percent of workers living below a living wage was worse-than-average for Kern. These industries included agriculture (67%); building services, including security (64%); forestry, fishing and hunting, support activities (52%); other services (51%); social services (49%); retail trade (49%); food processing (49%); restaurants and other food services (47%); arts, entertainment, recreation (45%); wholesale trade (44%); grocery (42%); and construction (42%).

Table 1.3 Kern industries, by median annual salary/wages, 2007-2011 and 2017-2021

	Wages		
Industry	2017-2021	2007-2011	% change
Utilities	$82,479	$87,929	-6%
Public Administration	$81,565	$75,365	8%
Oil and Gas Extraction and related mining	$69,007	$68,753	0%
Non-Oil and Gas Mining and Quarrying	$69,007	$68,753	0%
Professional, Scientific, and Management	$57,505	$55,462	4%
Manufacturing	$51,116	$49,802	3%
Active Duty	$49,455	$65,774	-25%
Construction	$47,980	$49,802	-4%
Transportation	$47,980	$53,768	-11%
Finance, Insurance, Real Estate, and Rental and Leasing	$46,181	$50,051	-8%
Educational	$46,004	$46,806	-2%
Information and Communications	$44,964	$43,850	3%
Health	$44,496	$41,965	6%
Waste Management	$40,254	$47,549	-15%
Wholesale Trade	$37,984	$35,752	6%
Food processing	$36,349	$39,342	-8%
Nursing Care	$34,503	$26,126	32%
Animal production	$32,786	$32,785	0%
Landscaping	$32,558	$24,620	32%
Building Services, including Security	$29,988	$24,190	24%
Residential Care	$29,534	$30,014	-2%
Traveler Accommodation	$28,753	$19,210	50%
Warehousing	$27,602	$34,377	-20%
Retail Trade	$27,263	$27,502	-1%
Other Services (Except Public Administration)	$27,263	$31,474	-13%
Grocery	$26,046	$25,613	2%
Social Services	$26,046	$26,228	-1%
Administrative and Support Services	$25,761	$24,752	4%
Agriculture	$22,790	$18,938	20%
Forestry, Fishing and Hunting, Support Activities	$20,702	$16,500	25%
Bars	$17,273	$27,406	-37%
Restaurants and other Food Services	$17,251	$15,737	10%
Arts, Entertainment, Recreation	$17,038	$19,671	-13%
Total			

Source: UC Merced Community and Labor Center analysis of American Community Survey (ACS) Public Use Microdata Series (PUMS) 5-year data, 2007-2011 and 2017-2021

Kern's median household income ($53,800) was sixth lowest out of 41 California counties. Worker earnings ($25,000) were tied for second lowest, and Kern County's household poverty rate (16.5%) ranked ninth worst in California in 2019. At the same time, Kern's average household size (2.9), and children per household (0.9) were much higher than average—ranking thirteenth and sixth—indicating that many households have not only lower wages but greater social and economic demands.

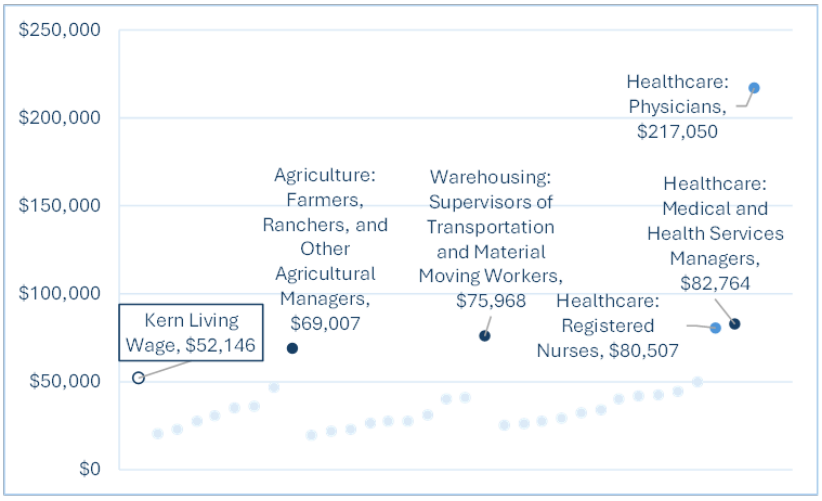
PRIORITY SECTOR ANALYSIS

Four industries are critical to advancing the State's high road approach for economic and climate resilience in Kern County: oil and gas, agriculture, warehousing, and healthcare. The first two sectors are at significant risk of worker displacement. Oil production faces the steepest declines in employment, provides some of the highest wages, and is the highest contributor of greenhouse gas emissions. Agriculture is one of the largest sectors in Kern, provides its lowest wages, and is a significant contributor to greenhouse gas emissions. The second two sectors are job growth areas for Kern but have divergent implications for the climate. Warehousing is the fastest growing sector in Kern County, has the most significant declines in wages, and is a significant contributor to greenhouse gas emissions. Healthcare offers some of the highest quality jobs in Kern, has grown by the greatest number of jobs, and can help address climate-related illness in the region.

A key theme in the priority sector analysis is the need to raise working conditions across entire industries. In the thirty-two largest occupations within three Kern priority industries (agriculture, warehousing and healthcare), only managerial occupations, physicians and nurses earned median wages above a living wage (see Figure 1.8). Thus, investment of public dollars for supply-side efforts to increase the number of workers in already-high-paying occupations in Kern's priority industries will not lift the overall economic profile of the region, but rather reproduce fundamental inequities in the labor market.

This section will explore these themes in detail, examine the most common occupations within these industries and their pay, identify existing and prospective programs and investments relevant to each industry, and provide potential high road strategies–namely, utilizing public dollars to incentivize employers that help raise industry-wide standards (as opposed to focusing investment on training for particular high-paying occupations).

Figure 1.8 Living Wage vs Earnings in 32 Largest Agriculture, Warehousing, and Healthcare Occupations, Kern 2017-2021



Source: UC Merced Community and Labor Center analysis of IPUMS-American Community Survey 2017-2021 Public Use Microdata Series (PUMS) data

Oil and Gas Production

The oil and gas industry produces the greatest annual GDP of any Kern industry and provides one of the highest average wages for Kern workers. Yet it is also the most volatile industry for employment in Kern, and oil and gas extraction jobs are associated with an earlier average age of death (67) than most other Kern industries (see figure 1.10 later). The oil and gas industry also risks downturn during economic shocks, such as a major public disaster, oil price changes, or as the state moves towards more renewable forms of energy development. Between 2007-2011 and 2017-2021, the Kern oil and gas industry lost 2,994 jobs—more than any other industry.

While not a leading sector of employment in the county, the oil and gas industry offers blue collar jobs at higher-than-average wages. These workers are at risk of displacement because their jobs are vulnerable to volatility in the fossil fuel sector. The already low-wage burdened county will experience even lower wages as the oil and gas sector's well-paying jobs disappear (US Department of Energy 2022). The transition away from fossil fuels will also significantly reduce property taxes in Kern County, potentially leading to cuts in public service and public sector jobs.

Workers in Kern's oil and gas, and related industries, have among the highest earnings of any industry. In 2017-2021, Kern oil and gas workers had annual median earnings of $69,007 per year (see Table 1.3). Oil and gas workers had the third-highest earnings among thirty-four different industry groups in Kern. Only Kern's utilities workers ($82,479) and public administration workers ($81,565) earned more. Yet, Kern's high-paying oil and gas industry is not a leading sector in employment numbers. Kern County's oil and gas extraction industry (and related industries) employ 13,427 workers, 4.2 percent of the county's total workforce. Eight other industries employ a greater share of the county's workers: education (10.2%), agriculture (9.6%), health (8.3%), public administration (7.1%), restaurants and food services (6.3%), retail trade (5.8%), construction (5.7%), and grocery (4.2%). While employing only about four percent of Kern's workforce, understanding the industry's most common occupations, workforce demographics, and possible pathways to well-paying jobs outside of the oil and gas industry will help the region plan for and protect the livelihoods of fossil fuel workers.

Table 1.4 Kern Oil and Gas Industry Employment and Wages, 2017-2021

		Median Earnings		Number of Workers	
	Occupation	Oil & Gas	Non-OG	Oil & Gas	Non-OG
Oil and Gas Concentrated	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, oil, gas, and mining	$54,263	---	689	---
	Riggers	$47,980	---	273	---
	Conveyor, dredge, and hoist and winch operators	$34,078	---	195	---
Top-3 Non-Concentrated	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

Source: UC Merced Community and Labor Center analysis of American Community Survey (ACS) Public Use Microdata Series (PUMS) 5-year data, 2017-2021

An analysis of American Community Survey 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, and a second type in which the majority of workers in the occupation are not concentrated in oil and gas industry jobs (see table 1.4).

Top Oil and Gas Occupations Concentrated in the Industry

Kern's oil and gas industry employed the majority of 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 Oil and Gas Occupations Not Concentrated in the Industry

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. Another 6,420 (48%) of Kern's oil and gas industry workforce were employed in 93 different occupations with the majority employed in non-oil and gas concentrated industries. Seventeen different occupations accounted for the majority (3,285) of those jobs with occupations ranging from welding to administrative assistants to managers.

The median annual salary/wages for Kern's oil and gas-concentrated occupations was $69,007 (see Table 1.3). For those working in the same occupations outside of the industry, median salary/wages were $74,756. Those working in the top-3 oil and gas non-concentrated occupations earned median salary/wages of $29,903. Their counterparts working in the same three occupations, but outside of the oil and gas industry, earned similar median salary/wages of $29,988 (see Table 1.4).

However, the earnings of the most common occupations in Kern's oil and gas industry were substantially higher than similar occupations outside of the oil and gas industry. The average annual salary of secretaries and administrative assistants was $82,556 in Kern's oil and gas industry, but $33,985 (59% lower) outside of oil and gas. Similarly, the average salary of managers was $164,766 in Kern's oil and gas industry, but $90,854 (45% lower) outside of it. Yet the average earnings of cashiers (such as gas station attendants) of $17,654 in Kern's oil and gas industry were comparable to non-oil and gas cashiers.

The average pay of non-managerial blue-collar jobs in Kern's oil and gas industry ranged between $51,949 and $79,408. This included other extraction workers ($79,408); welding, soldering, and brazing workers ($68,357); underground mining machine operators ($67,741); crane and tower operators ($60,425); derrick, rotary drill, and service unit operators, and roustabouts, oil, gas, and mining workers ($57,078); riggers ($53,156); and drivers and truck drivers ($51,949). The average pay for the above-mentioned, non-managerial blue-collar jobs most common in the oil and gas industry was 15% to 23% higher in the oil and gas industry than outside of the industry.

Among workers in occupations that were concentrated in Kern's oil and gas industry, pay was much higher for white-collar workers. The occupations with the highest average annual earnings in Kern's oil and gas industry were environmental scientists and specialists, including health ($190,757); petroleum, mining and geological engineers, including mining safety engineers ($175,570); chemical engineers ($169,827); and geoscientists and hydrologists ($152,748). Environmental science and geoscience technicians, and nuclear technicians ($76,037) earned considerably less. These occupations paid 18% to 62% higher in the oil and gas industry than outside of the industry.

Workers in blue-collar occupations concentrated in Kern's oil and gas industry earned substantially less than white-collar workers. This included other extraction workers ($79,408) and underground mining machine operators ($67,741). Nonetheless, these occupations still paid 16% and 23% higher average wages than blue-collar workers in similar occupations outside the oil and gas industry. Crane and tower operators were an exception, earning less in oil and gas ($60,425) than outside of the industry ($73,172).

Only four blue-collar occupations exist in the oil and gas industry but not outside the industry. This includes surface mining machine operators and earth drillers ($60,444); derrick, rotary drill, and service unit operators, and roustabouts, oil, gas, and mining $57,078; riggers ($53,156); and conveyor, dredge, and hoist and winch operators ($39,676). Policymakers should focus on supporting workers in these four occupations since efforts to job match outside the industry may be difficult.

Climate and Community Impacts

In the California Air Resources Board's (CARB) economic sector categorization of emissions, oil and gas extraction was responsible for 17% of the industrial sector's greenhouse gas emissions in 2021 (CARB 2023). The fossil fuel industry in Kern County is responsible for 40% of the 27 million metric tons of GHG generated in Kern County (San Joaquin Valley Unified Air Pollution Control District (2012). Averting climate catastrophe requires profound transformations in this industrial sector. Oil and gas extraction are large emissions sources, and the use (i.e., fuel combustion) of finished petroleum products is an even greater source of the state's GHG emissions.

Some of Kern's oil and gas production facilities and wells are sited near 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 use diesel-powered equipment that emit toxic air contaminants and exacerbate local emissions. These emissions, combined with leaks, generate odors that have considerable health impacts. An industry-driven 2024 ballot initiative temporarily halted recent legislation requiring new or expanded oil and gas production facilities to locate at least 3,200 feet from sensitive receptors such as homes or schools.

Oil and gas extraction workers have among the earliest average ages of death in Kern County. The Community and Labor Center's analysis of California Department of Public Health 2019 data indicated that oil and gas extraction workers (and support activities) died, on average, at as 67—ninth-worst among Kern's thirty-three industries.

High Road Pathways and Investments for Oil and Gas

The Employment Development Department (EDD) awarded Kern/Inyo/Mono Consortium Workforce Development Area - Kern County Employers' Training Resource a total of $11,244,000 to assist workers who are impacted by California's transition away from oil and gas to find gainful employment outside of the natural gas/oil industry (EDD 2024). The program's stated purpose is to assist both the county's employers and jobseekers, provide wraparound services to address displaced workers' needs including job search assistance; training or employment services; supportive services; and partnership collaborations. The organization will offer an array of services and job training in fields such as construction/trades and utilities, transportation, logistics/warehousing and healthcare as well as employment opportunities with the County of Kern.

A High Road Training Partnership in Kern County is currently focusing on oil well capping. Currently approximately sixty-eight percent of the 41,568 marginal, idle, or orphaned wells in the state are located in Kern County (Sierra Club 2023). 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. This HRTP will augment and train existing oil and gas workers on the specific requirements related to oil and gas well decommissioning activities and create career opportunities with a strong worker voice to develop profitable, industry-leading approaches to improve the community environment while promoting alignment of labor and innovative business practices to power local economic development and quality of life. The HRTP will offer professional career development to include career pathways in estimating, engineering, project management, safety and health, and business. Plugging all of the state's idle and likely orphaned wells could create an estimated 6,842 jobs in California (King 2023). Pollin (2021) found that a total of 2.4 jobs are created for every million dollars spent on plugging orphaned oil and gas wells.

Table 1.5 Kern Oil and Gas Industry-Concentrated Employment by Age, 2017-2021

	Age						
Type of Occupation	16-25	26-35	36-45	46-55	56-65	66+	Total
Oil and gas concentrated occupation	61	1,394	963	879	382	150	3,829
Non-concentrated occupation	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

Source: American Community Survey (ACS) Public Use Microdata Series (PUMS) 5-year data, 2017-2021

The 2022/2023 State Budget appropriated an additional $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).

Senate Bill 1295 (Limón, Chapter 844, Statutes of 2022) classifies California Geologic Energy Management Division (CalGEM) administered work to plug and abandon wells, decommission production facilities, or otherwise remediate well sites as public works. 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.

Priority Populations and Transition Strategy

The California Air Resources Board's Scoping Plan shows demand for fossil fuels will decrease by more than 45 percent by 2030. This drop in demand and production, while necessary to combat climate change, increases the likelihood of reductions in employment in the fossil fuel sector. This shift presents a significant risk for workers employed in petroleum extraction and affirms the need for advanced planning for a just transition (Zabin et al. 2020).

Just transition strategies should be tailored to workers in different occupations and with varying levels of experience in the oil and gas industry. For the 7,626 workers (aged 16-55) in non-concentrated oil and gas occupations in Kern, potential strategies include job matching (see table 1.5). For the 1,455 less experienced workers (aged 16-35) in oil and gas concentrated occupations, potential strategies include publicly funded job training or apprenticeships, and any necessary social support for young workers to enter new careers. For the 1,842 workers with more experience (aged 36-55) in oil and gas concentrated occupations, potential strategies include subsidies for employers to accept workers in matched jobs outside of the oil and gas industry; the development of clear career pathways from oil and gas concentrated occupations to similar jobs outside the industry (e.g. water infrastructure); and funding for labor unions to build capacity and train workers for well-paying union jobs. For the 2,504 workers (in oil and gas concentrated and non-concentrated occupations) at or near retirement age (aged 56 and over), potential strategies include early retirement packages.

One transition strategy could involve job matching to advance pollution abatement strategies. Leak detection and well maintenance, as well as oil well plugging and abandonment activities, are pollution abatement strategies that would require a similar skillset to oil and gas extraction. While the US Bureau of Labor Statistics (2024) found that the average annual earnings of US abatement workers (Hazardous

Table 1.6 Kern Agricultural Employment, by Occupation, Workers and Annual Earning, 2017-2021

Occupation	Workers	% of industry	Median $
Other agricultural workers	21,811	70%	$20,447
Graders and sorters, agricultural products	1,927	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 tracker 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%	---
	30,992	100%	

Source: UC Merced Community and Labor Center analysis of IPUMS-American Community Survey 2017-2021 Public Use Microdata Series (PUMS) data

Material Removal Workers in the industry of Remediation and Other Waste Management Services) was $51,040, and that there are limits to creating careers in oil well plugging (e.g. it may only take a number of years to plug all idle oil wells), labor standards can nonetheless be raised. One California Workforce Development program (High Road Construction Careers) already subsidizes the cost of training and hiring in the build trades. Applying workforce standards more generally, to any publicly-funded investments in pollution abatement—such as well plugging—could generate high-quality and high-paying jobs for workers in occupational fields facing challenges to high road employment.

Appendix A provides a crosswalk between oil and gas occupations noted above and related occupations experiencing growth. Efforts to advance a just transition might facilitate job matching between transitioning oil and gas workers and employers hiring workers in related occupations.

Agriculture

Agriculture is the second-largest industry of employment in Kern. Yet it employs the highest rate of workers living below a living wage of any Kern industry, industrial practices that 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.

About 1,691 farms operate on 2.4 million acres of land in Kern County. In 2017-2021, the Kern agricultural sector employed 30,992 agricultural industry workers in seventy-four occupations. Eight occupations employed 26,903 workers, a large majority (87%) of Kern's agricultural workforce. Overall, more than two-thirds (70%) of Kern agricultural workers are "other agricultural workers," who have a profile of being largely immigrant, noncitizen, non-English speakers, with low levels of education. Median wages for Kern's "other agricultural workers," in 2022 dollars, were $20,447 (see Table 1.6).

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—with the exception of 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.

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 theft, 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. However, the study found that fifteen percent 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 to 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. Nearly one in five (19%) farmworkers experienced, at one point or another, not being paid wages they earned by an employer. Additionally, nearly one in six (15%) farmworkers did not receive the minimum number of 10-minute rest breaks as mandated under state law.

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 from work-related injuries (Centers for Disease Control and Prevention 2021). The same year, farmworkers accounted for 48 of 451 of officially recorded worker deaths in California, despite only comprising about 1 percent of the state's workforce (US Bureau of Labor Statistics 2020). Yet even such statistics undercount the prevalence of heat-related deaths. In California, from 2018-2022, 83 agricultural workers died suddenly on the job, mostly from causes commonly 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).

Farmworkers risk displacement for a variety of climate-related reasons. First, climate change is leading to increasing episodes of extreme heat in California, particularly in the inland regions of the state, like Kern County, where agricultural activity concentrates. As temperatures continue to increase, fewer farmworkers will be able to withstand working in such conditions and will leave the industry.

Climate change is leading to increasing severity of droughts (Fernandez-Bou et al. 2021). Researchers project that drought and water shortages may reduce annual water supply by twenty percent by 2040; as such, farmers may fallow up to 30% of agricultural land in the Southern San Joaquin Valley by the early 2040, resulting in significant socio-economic impacts in the region (Escriva-Bou et al. 2022; Escriva-Bou et al. 2023; Hanak et al. 2019). This will challenge Kern's agricultural industry with varying consequences on its crops. While increasing heat will not greatly affect almond production, for example, reduced availability

of irrigation can reduce their yield. Extreme climate conditions will severely affect other crops like pistachios, grapes, carrots and oranges (Cox 2020). Heatwaves and cold snaps in recent years have reduced pollination and lowered the quality of crops like cherries (Cox 2023). Higher temperatures reduce the chill time trees like pistachios require to produce, while other crops such as carrots do not do well in extreme heat weather conditions.

Such decline in crop production will hurt the economy of the county, as the county makes approximately $7.25 billion gross output per year from agriculture (Cox 2020). Any reduction in productive agricultural land will result in lost wages and employment. The anticipated decline of the agricultural sector due to climate change, and its expected fallowing of farmland is projected to lead to a 2.3 percent decline of the economy of Kern County by 2040 (Escriva-Bou et al. 2023).

Climate induced extreme heat, drought, and flood events may displace aging farmworkers. An analysis by the UC Merced Community and Labor Center (2022b) found that immigrant farmworkers are aging in historically unprecedented numbers. 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 or having access to WIOA-funded workforce development training. 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. 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.

Climate and Community Impacts

In addition to being impacted by climate change, the agricultural sector is a significant contributor to greenhouse gas emissions in Kern, as well as other environmental hazards. The sector generates 8% of the total greenhouse gas emissions in the statewide greenhouse gas inventory. About three-fifths of agricultural emissions are from methane in dairy and livestock, with the rest from energy and fertilizer use. Dairies are a subset of agricultural land uses that pose a threat to the region's air and water quality. They emit ammonia, hydrogen sulfide, particulate matter, volatile organic compounds and hazardous air pollutants, as well as unpleasant odors. 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).

High Road Pathways and Investments for Agriculture

The state commissioned report, "Putting California on the High Road: A Jobs and Climate Action Plan for 2030," identifies several strategies and investment opportunities for reducing carbon emissions from the agricultural sector. Many of the strategies and investments available for the agriculture sector in the report accrue to the farmer for methane capture, reduced energy consumption, equipment replacement, and water conservation. However, the report recognized that these strategies did not result in significant job growth (Zabin et al. 2020).

Table 1.7 Kern Warehouse Employment, by Occupation, Workers and Annual Earning, 2017-2021

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, tester, 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
Janitorial and building cleaners	107	2%	$40,254
24 other occupations	855	18%	---
	4,733	100%	

Source: UC Merced Community and Labor Center analysis of IPUMS-American Community Survey 2017-2021 Public Use Microdata Series (PUMS) data

Both the state and federal government have released several other programs and investments related to the agricultural sector to address farmworker training and workforce needs. The Farmworkers Advancement Program Grant, administered by the Economic Development Department, will fund research, design, and implement projects that focus on farmworker needs at a regional level by offering essential skills and upskilling training to either advance in the agricultural industry and/or prepare for advancement outside of the agricultural sector. The program is designed to position farmworkers to obtain access to good-quality jobs including jobs that pay family sustaining wages, offer benefits, have predictable hours, opportunities for career advancement, and worker voice.

The State of California's Employment Training Panel's $10 million Agriculture Initiative will help train farmworkers to gain new skills and career opportunities. The Agriculture Initiative launched as part of a strategy to expand the number of workers with the educational capacity necessary to enter higher training programs, increase access to existing and emerging high-paying jobs in the agricultural industry, and improve job quality and wages (Labor & Workforce Development Agency 2024.)

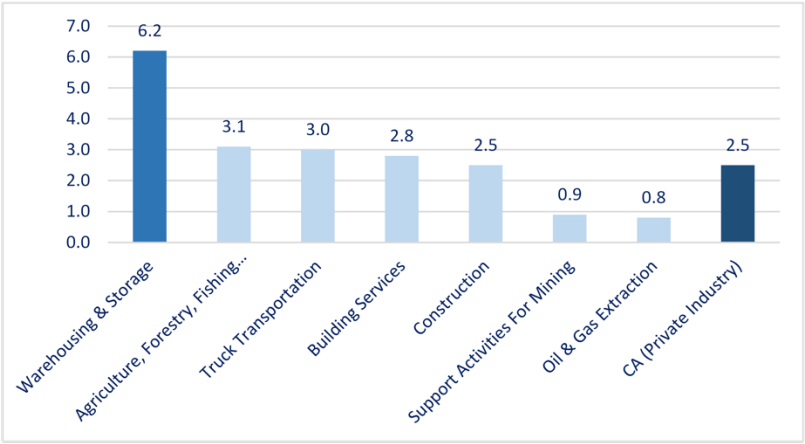
The U.S. Department of Agriculture (USDA) provides funding for the Rural Innovation Stronger Economy (RISE) program to provide financial assistance in support of innovation centers and job accelerator programs that improve the ability of distressed rural communities to create high wage jobs, accelerate the formation of new businesses, and help rural communities identify and maximize local assets (US Department of Agriculture 2024).

The USDA Farm Labor Stabilization and Protection Pilot Program (FLSP) will provide support for agricultural employers in implementing robust labor standards to promote a safe, healthy work environment for both U.S. workers and workers hired under the seasonal H-2A visa program (US Department of Agriculture 2023).

Priority Populations and Transition Strategies

Undocumented farmworkers are most vulnerable to displacement due to climate change and automation in the agricultural sector. An estimated 22,971 farmworkers in Kern County are undocumented and

Figure 1.9 Occupational injury and illness rates, by select California Industries, 2022



Source: U.S. Bureau of Labor Statistics, U.S. Department of Labor 2021

therefore experience increased vulnerability to displacement as well as significant barriers to re-employment (UC Merced Community and Labor Center 2023). Therefore, transition strategies for displaced agricultural workers should include a focus on undocumented farmworkers.

Just transition strategies include short-term assistance, including providing Unemployment Insurance for displaced workers (Zabin 2020). However, large segments of the agriculture workforce in Kern County are ineligible for Unemployment Insurance because of their undocumented status despite employers contributing to the unemployment system in California on their behalf. Kern County should consider developing and administering a local Excluded Worker Wage Replacement Program. Unemployment insurance benefits sustain workers, families, and local economies in response to economic downturns and disasters. Without the support of essential safety net programs like unemployment benefits, many unemployed immigrant workers and their families exhaust their life savings, accumulate debt, strain local social services–and may even leave and take their labor to another region or state.

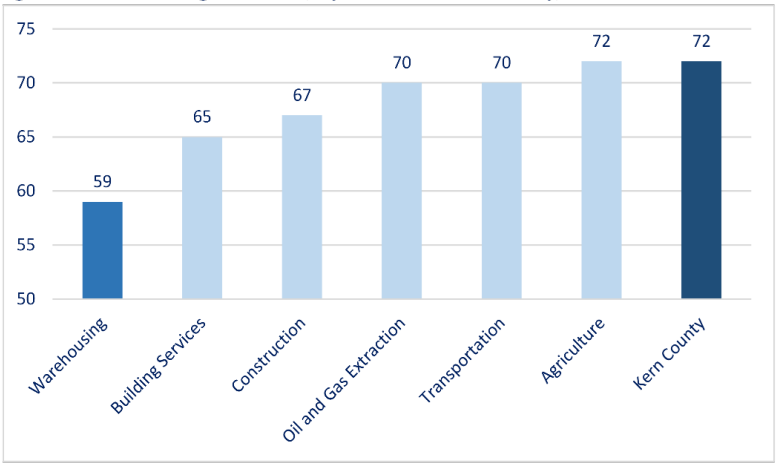
In addition to relieving pressures on local social service programs, unemployment benefits bolster local economies during economic downturns. Studies document that the multiplier effect of every $1 in UI benefits paid out generates between $1.60 and $2 in local spending (Helwig 2021). In areas like Kern, where the undocumented population is concentrated in sectors most likely to be impacted by climate change and economic downturns, an excluded worker wage replacement fund would provide heightened benefits and uplift workers and their families, and continue growing the local economy.

Warehousing

Warehousing employment in recent years has increased more than in any other Kern industry. Yet it is associated with elevated and concentrated production of GHGs and air pollution, the steepest wage decline of any Kern industry, ongoing occupational health and safety risks, and the risk of excess mortality during a public health disaster.

Warehouse workers experienced the greatest decline in wages of any industry in Kern. In 2011, Kern warehouse workers earned median annual salary/wages of $34,377, but in 2021 earned just $27,602. This represents a decline of 20 percent of median annual salary/wages.

Figure 1.10 Median Age at Death, by selected Kern industry, 2019



Source: UC Merced Community and Labor Center analysis of California Department of Public Health, California Comprehensive Death File, 2019

In 2017-2021, Kern County employed 4,733 warehousing industry workers in thirty-four different occupations. Median wages for laborers in Kern's warehousing industry, in 2022 dollars, were $27,602. Ten occupations employed 3,878 workers, a large majority (82%) of Kern's warehousing workforce (See Table 1.7). More than one in four (28%) of Kern warehousing workers are "laborers."

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 (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).

According to the U.S. Bureau of Labor Statistics (2024) in 2022, warehousing and storage had one of California's highest rates of nonfatal occupational injury and illness. In 2022, over 6 in 100 California warehousing workers experienced injury and illness preventing them from performing regular work (see Figure 1.9). This rate was even higher than in animal slaughtering and processing ("meatpacking") (US Bureau of Labor Statistics 2024). Two industries related to warehousing and storage—truck transportation and building services—also had injury and illness rates higher than the California rate (US Bureau of Labor Statistics 2024).

Warehousing workers had the second-earliest average age of death (60) among the County's thirty-three largest industries. Industries related to warehousing also had early average ages of death, including building services (63) and construction (67); workers in transportation (70) had an average age of death similar to the county (70) (see Figure 1.10). Workers in Kern's key industries also had earlier average ages of death, including oil and gas extraction (67) and agriculture (69); while Kern workers in health (70) had an average age of death similar to the county (70) (see Table 1.10).

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 to 65, were higher than the state average (1.23%) for warehousing (1.54%), transportation (1.47%), and building services (1.87%). 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.

Wages and working conditions for truck drivers, including those who transport goods to and from distribution centers, have steadily declined since the trucking industry was deregulated beginning in the late 1970s. For-hire port truck drivers and for-hire long-haul truckload drivers are susceptible to minimum wage law violations, serious health problems from exposure to diesel exhaust, and employee misclassification. Truck drivers, many of whom are immigrants, are extremely vulnerable and currently bear a disproportionate share of the cost of transitioning to low-emission vehicle use. Compared to truck drivers who are treated as employees, independent contractor drivers earn lower incomes after deducting the cost of their trucks; they also lack benefits, work long hours, and are excluded from labor protections, such as minimum wage and overtime laws, Unemployment Insurance, and workers' compensation (Zabin et al. 2020).

Climate and Community Impacts

Warehouse operations are a significant contributor to greenhouse gas emissions due to the transport of goods to and from warehousing and distribution centers. The transportation sector produces 17% of greenhouse gas emissions in the county. The County's transport emissions are generated, in part, from goods movement from freight vehicles. While medium- and heavy-duty vehicles make up a small number of the total vehicles in the state—just under 1 million out of 30 million, or around 3 percent—they account for 22 percent of the state's on-road greenhouse gas emissions because of their size, extensive usage (mileage and hours of operation), and almost complete reliance on petroleum-based fuels, primarily diesel fuel (Zabin et al. 2020). These trucks generate not only greenhouse gas emissions, but other air pollutants that harm the health of nearby residents and residents. The county generates about .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 in the transport sector emit monoxide (CO), lead, nitrogen dioxide (NO2), particulate matter, ozone, and sulfur dioxide (SO2) into the atmosphere (Sulbaran and Sarder 2013). These gasses harm human health and the environment. Nitrogen oxide, for example, increases risk of cancer, heart conditions and respiratory problems, particularly in children and the elderly.

Emissions from the transportation sector have increased due in part to the rapid increase in warehouse and distribution operations in the county. Kern County hosts over fifty mega warehousing and distribution facilities involving heavy duty truck around-the-clock movement of goods to and from Kern and other parts of California and the nation (Kern Economic Development Corporation 2022). These transportation related emissions are likely to increase as the County approves additional large warehousing projects that involve the movement of trucks.

High Road Pathways and Investments for Warehousing

Multiple state and federal programs are focused on reducing carbon emissions from the transportation sector, including vehicles in the goods movement sector. Because truck freight accounts for most of the demand for cargo movement, developing and deploying zero-and low-emission technologies in the

trucking industry is a priority in reducing greenhouse gas emissions from transportation. Many of these programs include incentives and other financial assistance to support the development and deployment of emerging clean vehicle technologies, particularly in the medium and heavy-duty classes (Zabin et al. 2020). However, misclassification of drivers is a major, widespread problem in the trucking industry as firms have shifted from employing workers (largely unionized) to independent contracting, making it difficult for independent drivers to purchase low-emission vehicles, even with incentives and financial assistance. Other areas of the state have engaged in efforts to attach labor standards to publicly-funded clean truck incentives.

Several High Road Training Partnerships exist for the warehouse and logistics sectors in other areas of the state. These projects generally focus on training pathways in manufacturing, maintenance, installation, and operating electric logistics yard equipment and zero-emissions delivery and distribution vehicles. They have also identified a related need and potential career pathway to build a network of electric vehicle (EV) charging stations capable of keeping electric delivery vehicles on the road between delivery destinations.

Priority Populations and Transition Strategies

Warehousing is a growing sector in Kern County and its workers are not facing displacement. This sector generally employs blue collar workers. It can close an employment gap for young workers in Kern and those displaced from other low-wage sectors. However, the sector suffers from low wages, unsafe working conditions, few benefits, and poor environmental conditions. Without interventions, this sector will likely not provide Kern residents with a pathway to high road employment.

Other areas that have faced warehousing booms are struggling to reduce the environmental, climate, and community impacts associated with the land use. Local air districts and municipalities are developing and adopting ordinances that limit warehouse development and require conditions to reduce local impacts. The South Coast Air Quality Management District and cities such as Stockton, San Diego, Fontana, Redlands, and have adopted or proposed warehouse ordinances to reduce environmental impacts from the warehouse sector (U.S. Environmental Protection Agency 2023). Common provisions include location requirements or restrictions, design elements to protect nearby sensitive land-uses such as residences or schools, criteria for trucks routes—including re-routing to avoid residential areas, requirements for low-emission or zero-emission trucks, increasing renewable energy use, and adopting construction standards to reduce the environmental and climate footprint of warehouse facilities. Local ordinances can include labor provisions. As other areas in the state adopt warehouse standards, developers may target areas like Kern County that have fewer restrictions, creating a “race to the bottom” effect.

Requiring community benefit agreements and project labor agreements is another strategy to address community and labor concerns with warehouses while providing avenues for community and labor voice to help define the conditions under which developers can build new warehouses. CBAs and PRAs requirements can be included in local warehouse ordinances.

Kern County is facing an influx of new warehousing proposals without the benefit of standards to limit local impacts. Developing local warehouse ordinances similar to those adopted in other parts of the state will provide a level playing field for new warehouse operations seeking to locate in the county, avoid local impacts that have plagued other areas, and provide opportunities to increase job quality in this sector.

Table 1.8 Kern Health Employment, by Occupation, Workers and Annual Earning, 2017-2021

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 administrative support workers	911	6%	$49,981
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%	---
	15,663	100%	

Source: UC Merced Community and Labor Center analysis of IPUMS-American Community Survey 2017-2021 Public Use Microdata Series (PUMS) data

Healthcare

Healthcare is the third-largest industry of employment in Kern and the U.S. Dept. of Labor Outlook projects a 16% job growth for public health and related medical occupations. Healthcare provides a valuable public good for maintaining the health and wellbeing of Kern residents as the climate crisis is causing record heat, catastrophic wildfires and smoke, droughts, floods, and outbreaks of contagious disease. More Kern residents view healthcare as providing good jobs, and are interested in jobs in healthcare, than any other industry. Moreover, workers see health benefits as the most important benefit that employers can offer in a job.

In 2017-2021, Kern employed 15,663 healthcare industry workers in ninety-nine different occupations. Fourteen occupations employed 10,330 workers, a majority (66%) of Kern's healthcare workforce. No occupation in healthcare employed more than nine percent 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(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%) (see table 1.8). Another eighty-five occupations employed 5,333 workers, a minority (34%) of Kern's healthcare workforce.

Despite the high pay of some occupations in the healthcare sector, 34% of Kern healthcare industry workers live below a living wage. 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 physicians ($217,050), medical and health services managers ($82,764), and registered nurses ($80,507).

Community Impacts

Kern County faces significant social and economic obstacles due to its inadequate access to healthcare. The San Joaquin Valley has the lowest ratios of licensed physicians (MDs and DOs), nurse practitioners (NPs), registered nurses (RNs), therapists, counselors, and social workers per 100,000 population in California and the second lowest ratios of physician assistants (PAs), certified nurses (CNs) and psychologists per capita (Coffman et al. 2017; Bogucki et al. 2022). Kern has approximately one primary care doctor for every 2,020 people in Kern County, as opposed to the California Average on one for every 1,230 people (County Health Rankings & Roadmaps 2020). Kern has one mental health provider per 240 California residents on average (County Health Rankings & Roadmaps 2020).

Kern County has a severe shortage of medical professionals across all fields of care including Primary Care, Pediatrics, Allergy & Immunology, Cardiology, Dermatology, Endocrinology, Gastroenterology, Neurology, Rheumatology, Oncology Surgery, Ophthalmology, Orthopedics, ENT, Urology, Psychiatry, and Radiology. This lack of access to healthcare professionals results in long wait times for medical services and increased disease severity at diagnosis. Access to healthcare is also constrained in Kern County because healthcare facilities are clustered in densely populated areas, leaving residents of rural Kern County to face long travel times and increased costs when seeking healthcare. Those with resources seek care outside the SJV. Those with fewer resources are left to navigate limited services and delays in treatment. Individuals in need of coronary artery bypass surgery, most chemotherapy or radiation, or high risk maternal-fetal care must travel to Fresno or Los Angeles—a round trip of over 300 miles—to meet their healthcare needs. Approximately 44,088 residents leave Kern County for their healthcare on average per year. This represents a loss of 440,878 potential patients in Kern County between 2012 and 2021 (California Department of Health Care Access and Information 2021).

When people lack access to primary care physicians, hospitalization rates increase for conditions that are typically treatable in outpatient settings. The number of preventable hospitalizations per 100,000 Medicare enrollees in California was 2,256, compared to Kern County's overall rate of 3,009 (County Health Rankings & Roadmaps 2024). Addressing this gap will result in better health outcomes and reduced financial strain on the economy that results every time a family leaves the county to get healthcare.

Lack of access to primary care physicians, and more specifically to preventative care, results in higher death rates for common diseases, higher infant mortality rates, and higher rates of preventable hospitalizations and acquired disabilities. Kern County residents were more likely than the average Californian to die prematurely during what should be their productive years of life. Kern County loses approximately 8,700 years of potential life per year due to premature death, compared to an average of 5,700 statewide (County Health Rankings & Roadmaps 2024). Kern County residents are more likely to die of common diseases, including: chronic liver disease and cirrhosis, chronic respiratory disease, coronary heart disease, and diabetes. Life expectancy is nearly four years lower than the state average. Additionally, Kern County's infant mortality rate is higher than the statewide average for all race and ethnic groups (County Health Rankings & Roadmaps 2024).

Out of 58 California counties, Kern County ranks 56th for health factors and 53rd for health outcomes (Kern County Health Rankings 2021). Twenty-seven percent of Kern County residents have poor or fair health, compared to 18% of Californians overall. In 2021, Kern County's working aged residents were 29% more likely to be disabled than the statewide average. Kern County residents report having 4.7 poor mental health days per year, compared to 3.7 poor mental health days for California residents on average. The

consequences of insufficient access to healthcare are reduced life expectancy, lost productivity, and lost revenue in the local economy. A greater medical infrastructure with affordable access would improve these key health indicators, as well as provide better employment opportunities.

High Road Pathways and Investments for Healthcare

Many High Road Training Partnerships focus on health and healthcare, including Advancing Entry-Level Healthcare Student Graduation and Job Placement Rates, Building a Behavioral Health Employment Pathways Industry Partnership, a CNA and CNA to LVN Apprenticeship Program, and a Community Health Worker Career Accelerator and Advancement Pathways Initiative, to name a few. However, no healthcare related HRTP exists in Kern County.

The Health Care Workforce Innovation Program, administered by the U.S. Department of Labor Employment and Training Administration, is designed to help grow the healthcare workforce by funding new, leading edge health profession education and training models that will expand the supply of health care professionals in underserved and rural areas.

The Kern Community College District is engaged in several initiatives to provide pathways for healthcare in Kern County. The Medical Professional Education Pipeline is supporting pre-medical students and establishing a pre-medical professional education pipeline. Bakersfield College has supported the re-establishment of a pre-medical student organization and developed a series of workshops and academies to provide students interested in medical professions with the information they need to be successful, provide STEM course guidance and support, provide field trips to medical schools, and medical school application and financing information that often presents barriers for students in the region (KCCD 2023).

The California Wellness Foundation funded a UC Merced partnership with Bakersfield College / Kern CCD and other community colleges to map courses and student support needs to ensure diversity, equity, inclusion, and access for pre-medical students to attend UC Merced's new medical education program.

Bakersfield College and the Kern Community College District are implementing new and expanding existing medical assistant, nursing assistant, vocational nursing, and registered nursing programs. Starting in Spring 2023, BC started a Nursing Assistant Training Program. The BC part-time evening Licensed Vocational Nurse LVN to RN Program began in the summer of 2023. The California Community College Chancellor's Office California Apprenticeship Initiative (CAI) recently approved a new Perioperative Nursing Apprenticeship Program. Bakersfield College and the Kern CCD are partners in a statewide collaborative funded by a US Health and Human Services grant to develop curriculum to train public health informatics job skills and support the diversification of the public health workforce (KCCD 2023).

Priority Populations and Transition Strategy

Healthcare is a growing sector in Kern and is not facing worker displacement. Many Kern residents expressed an interest in joining or transitioning to the healthcare sector. The primary strategies for increasing high road jobs in the healthcare industry are to increase resident access to existing training programs, expand training and education opportunities, and add apprenticeships programs in partnership with local unions. The County should also develop strategies to fill gaps in medical services, including providing clinics and medical service in rural areas and increasing the number of specialists in areas with few service providers such as oncology, mental health services, and pediatrics.

RECOMMENDATIONS

Several strategies are necessary to align development in Kern County with the State of California's efforts to achieve ambitious climate goals. Such strategies are drawn from the California Workforce Development Board's commissioned report, "Putting California on the High Road: A Jobs and Climate Action Plan for 2030." The recommendations include (1) identifying and leveraging local, state and federal funding resources to increase community benefits and labor standards; (2) utilizing community benefits agreements, community workforce agreements, and project labor agreements; and (3) implementing just transition strategies to provide short-term and long-term support to displaced workers. Such an approach will support displaced workers, increase labor standards, and address community needs in Kern County.

Community Benefits and Labor Standards in Public Investments

California's Greenhouse Gas Reduction Fund has funded over seventy different projects worth over $9.3 billion. While these investments have purportedly produced approximately 26,100 full time jobs, 7,300 indirect, and nearly 13,800 induced jobs, no information is publicly available on job quality or responsible employer standards associated with this job growth. The state should tie climate investments, incentives, and subsidy programs financed with public or ratepayer funds to high road job requirements and responsible employer standards. These standards would prevent public funds from supporting low-wage jobs or unfair and illegal labor practices. Responsible employer standards can screen out low road employers by setting minimum requirements for program or subsidy eligibility or basic terms and conditions of program implementation including skill standards, a floor on wages and benefits, and labor law compliance.

These standards would be especially useful for incentive programs in industries or sectors characterized by low wages, health and safety violations, worker misclassification, and other low-road labor practices such as agriculture and the distribution sector. Such requirements can help ensure climate investment and incentive programs deliver decent job quality outcomes. Conversely, 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, developing

industry-recognized portable skills, or being a member of a High Road Training Partnership. State subsidies for climate and economic resilience initiatives should prioritize employers who are signatories to a union contract; 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.

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 high road employers. State subsidies for Kern employers in industries critical for economic and climate resilience might advance the high road by providing higher funding amounts for those employers implementing policies that protect and expand workers' rights to mutual aid and protection.

The federal, state and local government can also condition public incentives, subsidies and investments on the adoption of project labor agreements, community workforce agreements and community benefit agreements. Several state and federal programs already have placed conditions such as community benefit agreements and labor standards on publicly funded programs such as California High-Speed Rail Authority's Community Benefits Agreement; the Transformative Climate Communities program, which encourages Community Workforce Agreements; the Department of Toxic Substances Control's Cleanup in Vulnerable Communities Initiative, in which the agency is developing a policy for facilitating Community Benefits Agreements (CBAs) between Responsible Parties of cleanup sites and impacted communities to promote benefits beyond the traditional scope of site mitigation and restoration; and the United States Department of Agriculture (USDA) Farm Labor Stabilization and Protection (FLSP) Pilot Program, which provides support for agricultural employers in implementing robust labor standards to promote a safe, healthy work environment.

Various government and employer policies already provide worker protections and improve upon existing labor standards. 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.

Critically, state and local government authorities will have to ensure that public funds reward higher road employers in Kern—those 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 California's high road framework.

Displaced Worker Support

The California Air Resources Board's Scoping Plan shows demand for fossil fuels will decrease by more than 45 percent by 2030. This drop in demand and production, while necessary to combat climate change, increases the likelihood of reductions in employment in the fossil fuel sector. This shift presents a significant risk for workers employed in petroleum extraction and affirms the need for advanced planning for a just transition (Zabin et al. 2020).

Just transition strategies should be tailored to Kern's estimated 13,427 oil and gas workers in different occupations and with varying levels of experience. For the 7,626 oil and gas workers (aged 16-55) in occupations not concentrated in the oil and gas industry, a potential strategy is job matching. For the 1,455 less experienced oil and gas workers (aged 16-35) in occupations concentrated in the oil and gas

industry, potential strategies could include publicly-funded job training or apprenticeships, and any necessary social support for young workers to enter new careers. For the 1,842 oil and gas workers with more experience (aged 36-55) in occupations concentrated in the oil and gas industry, potential strategies include subsidies for employers to accept workers in matched jobs outside of the oil and gas industry; the development of clear career pathways from oil and gas occupations (e.g. pipeline construction) to jobs requiring similar skills and experience outside the industry (e.g. water infrastructure); and funding for labor unions to build capacity and train workers for well-paying union jobs. For the 2,504 oil and gas workers at or near retirement age (aged 56 and over), potential strategies include early retirement packages.

Yet another transition strategy could involve job matching in pollution abatement strategies. Leak detection and well maintenance, as well as oil well plugging and abandonment activities, are pollution abatement strategies that would require a similar skillset to oil and gas extraction. Applying workforce standards to investments in pollution abatement, such as well plugging, could ensure high quality jobs and high wages.

Excluded Worker Wage Replacement Fund

Most workers who have become unemployed or underemployed, through no fault of their own, are eligible to receive Unemployment Insurance benefits. Yet many of California's most vulnerable workers are entirely excluded from Unemployment Insurance. Since 1976, undocumented immigrants have been ineligible to access Unemployment Insurance. Despite paying billions of dollars in state and local taxes, and making up one-sixteenth of the California workforce, undocumented immigrants are categorically excluded from accessing federal Unemployment Insurance benefits.

Kern County alone has roughly 23,000 undocumented immigrant workers, and the creation of a state or local unemployment benefits program for Kern's excluded workers would enable those workers, their families, and the California economy to reap wide-ranging benefits. Studies have shown that unemployment benefits support recipients' financial stability and mental health, as well as curtail poverty by substantially reducing household hardship. Economists maintain that UI benefits produce between $1.60 to $2.00 of local economic stimulus for every $1 of benefits paid. And UI benefits help employers and the labor market by supporting workers to find the best matched positions.

To build a safer and more resilient economy, the region should consider establishing an Excluded Workers Wage Replacement Program. Such a program would provide weekly monetary assistance to unemployed workers who are ineligible for state or federal Unemployment Insurance benefits due to their immigration status. Such a program would not be new; states like New York and Colorado have created temporary or permanent wage replacement programs for undocumented immigrants, and the County of Merced recently established a similar wage replacement program following a flood disaster in Planada.

Extreme heat, catastrophic wildfires, epic floods and other public disasters are forecast to increase in frequency in the 21st century–and particularly in Kern County. An Excluded Worker Wage Replacement Program would provide support to undocumented immigrants and mitigate their risk of migrating elsewhere following disasters. Without such a program, any so-called "act of God" could easily displace excluded workers, causing local employers to lose workers and consumers and risk going out of business.

Land Use and Local Ordinances

Local jurisdictions should consider adopting ordinances for industrial land use that includes minimum environmental and labor standards. Provisions could include location requirements or restrictions, design elements to protect nearby sensitive land-uses such as residences or schools, criteria for trucks routes (including re-routing to avoid residential areas as necessary), renewable energy requirements, requirements for low-emission or zero-emission vehicle use, and construction standards to reduce the environmental and climate footprint of built facilities.

Local governments, such as Kern County, can avoid low road economic development by establishing local ordinances for land use. When local governments attach standards to public dollars, they avoid a "race to the bottom" in which municipalities compete for economic development projects by sacrificing environmental standards or working conditions. While a lack of standards may appear to advance economic growth in the short-term, concessions generally lead to long-term adverse consequences.

Developing local ordinances to match those adopted in other parts of the state will prevent developers from targeting Kern for low-road economic activity, help avoid adverse environmental impacts, and provide opportunities to increase industry standards for working conditions.

Kern County can also adopt ordinances to establish higher local wages, or higher wages for workers in emergent climate-related industries. Kern officials may advance climate and economic resilience by tying provisions for living wages to development projects in healthcare, agricultural technology, warehousing expansion, or energy development.

Project and Replace Lost Public Tax Revenues

Government should not only subsidize just transition type projects but replace projected losses in local tax revenues (Betony, 2021). The Contra Costa HRTP has estimated potential losses in local tax revenues stemming from a transition towards renewable energy production. The Kern HRTP could utilize the Contra Costa HRTP's methodologies, building upon a similar analysis to estimate potential losses in local tax revenues projected from a shift away from fossil fuel extraction. While such an analysis has been commissioned in the past by Kern County (Natelson Dale Group 2020), such research assumed a static value of land on oil and gas extraction sites and may have underestimated potential land value; a more accurate analysis would project the value of land following redevelopment.

Public Appropriation of Retired Land

Land from transitioned fossil fuel energy businesses can be repurposed for climate-friendly development and public good. Examples include sustainable agriculture, public parks, touristic sites, museums, and other public facilities that provide new jobs and generate income for the communities. The German government invested in such developments in the Ruhr region, which now attracts over 250,000 tourists a year (The Ruhr also established 22 universities with more than 250,000 students.) Also, a former coal mining complex in Essen was transformed into a UNESCO World Heritage site, and 7,500 new homes were established on another former mining site.

Preferential Community Loans

The government can provide communities or counties with preferential loans to take over former fossil fuel sites and properties and start new enterprises providing diverse income generating public services. In Upper Selassie, Poland, the government gave municipalities in former mining communities preferential loans to invest in new enterprises that created 1,900 new jobs.

Tax Incentives for High Road Businesses

The state can promote just transitions by passing laws that support low-carbon economy investments (Morgan et al., 2020; Crowe and Li, 2020). One example includes establishing market credits to attract capital flow (Look et al., 2021). Market tax credits provide individuals and corporate investors with tax credits against their income tax in exchange for investing in community development projects and investments in education and training. In the Latrobe Valley, Australia the government used tax incentives and grants to businesses to boost economic development in the communities involved. In Alberta, Canada the government supported innovative businesses and projects promoting tourism.

Appendix A. Occupational Crosswalk
Oil & Gas Occupations, and Related Occupations with a ”Bright Outlook”*

Legend
Bold = Oil and Gas Occupations
Regular = Related Occupations
Italics = Supplemental Related Occupations

*”Bright Outlook” indicates occupational field with job growth, as defined by O*Net
**Indicates an occupational field with job growth in itself outside of the oil and gas industry
***“All Other” titles represent occupations with a wide range of characteristics which do not fit into one of the detailed O*NET-SOC occupations. O*NET data is not available for this type of title.

Source: https://www.onetonline.org/find/all

47-5071.00 Roustabouts, oil and gas
47-2061.00 Construction Laborers
49-9043.00 Maintenance Workers, Machinery
49-3042.00 Mobile Heavy Equipment Mechanics, Except Engines

47-5022.00 Excavating and Loading Machine and Dragline Operators, Surface Mining
47-2061.00 Construction Laborers
49-9043.00 Maintenance Workers, Machinery
49-3042.00 Mobile Heavy Equipment Mechanics, Except Engines
49-9041.00 Industrial Machinery Mechanics
53-7062.00 Laborers and Freight, Stock, and Material Movers, Hand

49-9096.00 Riggers
49-9043.00 Maintenance Workers, Machinery
49-3042.00 Mobile Heavy Equipment Mechanics, Except Engines
49-9041.00 Industrial Machinery Mechanics

53-7011.00 Conveyor Operators and Tenders
49-9041.00 Industrial Machinery Mechanics
53-7062.00 Laborers and Freight, Stock, and Material Movers, Hand
53-7063.00 Machine Feeders and Off bearers
49-9043.00 Maintenance Workers, Machinery
45-2091.00 Agricultural Equipment Operators
51-9111.00 Packaging and Filling Machine Operators and Tenders

53-7031.00 Dredge Operators
49-9043.00 Maintenance Workers, Machinery
47-2061.00 Construction Laborers
53-7011.00 Conveyor Operators and Tenders

53-7041.00 Hoist and winch operators
53-7062.00 Laborers and Freight, Stock, and Material Movers, Hand
49-9043.00 Maintenance Workers, Machinery
49-3042.00 Mobile Heavy Equipment Mechanics, Except Engines
53-7011.00 Conveyor Operators and Tenders
47-2061.00 Construction Laborers
49-9041.00 Industrial Machinery Mechanics

47-5099.00 Other extraction workers
N/A***

19-4042.00 Environmental Science and Protection Technicians, Including Health
13-1041.01 Environmental Compliance Inspectors
17-2081.00 Environmental Engineers
19-2041.00 Environmental Scientists and Specialists, Including Health
11-9121.02 Water Resource Specialists
17-2051.02 Water/Wastewater Engineers
19-2041.03 Industrial Ecologists
19-5011.00 Occupational Health and Safety Specialists
19-4012.00 Agricultural Technicians
19-5012.00 Occupational Health and Safety Technicians

19-4051.00 Nuclear Technicians
17-3021.00 Aerospace Engineering and Operations Technologists and Technicians
17-2041.00 Chemical Engineers

17-2171.00 Petroleum Engineers
17-2041.00 Chemical Engineers
17-2051.00 Civil Engineers
17-2081.00 Environmental Engineers
17-2112.00 Industrial Engineers
17-2112.03 Manufacturing Engineers
17-2141.00 Mechanical Engineers
17-2051.02 Water/Wastewater Engineers

17-2151.00 Mining and geological engineers, incl. mining safety engineers
17-2041.00 Chemical Engineers
17-2051.00 Civil Engineers

17-2081.00 Environmental Engineers
17-2112.00 Industrial Engineers
17-2051.02 Water/Wastewater Engineers
17-2131.00 Materials Engineers
19-2042.00 Geoscientists, Except Hydrologists and Geographers
17-2112.03 Manufacturing Engineers
11-9021.00 Construction Managers

Underground mining machine operators
N/A***

17-2041.00 Chemical engineers**
19-2031.00 Chemists
17-2112.00 Industrial Engineers
17-2112.03 Manufacturing Engineers
17-2131.00 Materials Engineers
19-2032.00 Materials Scientists
17-2141.00 Mechanical Engineers
17-2031.00 Bioengineers and Biomedical Engineers

19-2041.00 Environmental scientists and specialists, incl. health
19-2041.01 Climate Change Policy Analysts
13-1041.01 Environmental Compliance Inspectors
17-2081.00 Environmental Engineers
19-2041.02 Environmental Restoration Planners
19-4042.00 Environmental Science and Protection Technicians, Including Health
19-2041.03 Industrial Ecologists
19-5011.00 Occupational Health and Safety Specialists
11-9121.02 Water Resource Specialists
19-5012.00 Occupational Health and Safety Technicians
19-1013.00 Soil and Plant Scientists

53-7021.00 Crane and tower operators
49-3042.00 Mobile Heavy Equipment Mechanics, Except Engines
53-7062.00 Laborers and Freight, Stock, and Material Movers, Hand
49-9043.00 Maintenance Workers, Machinery
53-7011.00 Conveyor Operators and Tenders
49-9041.00 Industrial Machinery Mechanics
53-7063.00 Machine Feeders and Off bearers
47-2061.00 Construction Laborers

41-2011.00 Cashiers**
43-4051.00 Customer Service Representatives
41-1011.00 First-Line Supervisors of Retail Sales Workers
41-2031.00 Retail Salespersons
53-7065.00 Stockers and Order Fillers
43-4171.00 Receptionists and Information Clerks
43-9061.00 Office Clerks, General

47-1011.00 First-line supervisors of construction trades and extraction workers
11-9021.00 Construction Managers
53-1042.00 First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand
53-1043.00 First-Line Supervisors of Material-Moving Machine and Vehicle Operators
53-1044.00 First-Line Supervisors of Passenger Attendants
39-1014.00 First-Line Supervisors of Entertainment & Recreation Workers, exc. Gambling Services
49-9071.00 Maintenance and Repair Workers, General
43-1011.00 First-Line Supervisors of Office and Administrative Support Workers
17-2112.00 Industrial Engineers
11-1021.00 General and Operations Managers
47-2111.00 Electricians

53-3031.00 Driver/sales workers**
53-3032.00 Heavy and Tractor-Trailer Truck Drivers
53-3033.00 Light Truck Drivers
53-7065.00 Stockers and Order Fillers
53-3053.00 Shuttle Drivers and Chauffeurs
41-2011.00 Cashiers
35-3023.00 Fast Food and Counter Workers
41-3091.00 Sales Representatives of Services, exc. Advertising, Insurance, Financial Services, Travel
43-5011.00 Cargo and Freight Agents
43-4051.00 Customer Service Representatives
41-2031.00 Retail Salespersons
11-3071.00 Transportation, Storage, and Distribution Managers

53-3032.00 Heavy and Tractor-Trailer Truck Drivers**
53-7062.00 Laborers and Freight, Stock, and Material Movers, Hand
53-3033.00 Light Truck Drivers
53-3053.00 Shuttle Drivers and Chauffeurs
53-3054.00 Taxi Drivers
47-4051.00 Highway Maintenance Workers
53-3052.00 Bus Drivers, Transit and Intercity

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HIGH ROAD
TRAINING PARTNERSHIP

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The Kern High Road Coalition is part of the California Workforce Development Board's High Road Training Partnership, which is funded through California Climate Investments, a statewide initiative that puts billions of Cap-and-Trade dollars to work reducing greenhouse gas emissions, strengthening the economy, and improving public health, and the environment — particularly in disadvantaged communities.

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Mission Statement

The UC Merced Community and Labor Center conducts research and education on issues of community, labor and the environment, in the San Joaquin Valley and beyond.