

County of Kern

Economic Development Strategy Update July 2010

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Table of Acronyms

Acronym	Name
ACORE	American Council on Renewable Energy
AFB	Air Force Base
AFT	American Farmland Trust
ARRA	American Recovery and Reinvestment Act of 2009
AWEA	American Wind Energy Association
AWE	Alliance of Women in Energy
BLS	Bureau of Labor Statistics
BOT	Board of Trade
BRAC	Base Realignment and Closure
CCVEDC	California Central Valley Economic Development Corporation
CAO	County Administrative Office
CEDS	Comprehensive Economic Development Strategy
CEQA	California Environmental Quality Act
CSUB	California State University at Bakersfield
CSU	California State University
CVB	Convention and Visitors Bureau
DHS	Department of Human Services
DOD	Department of Defense
DOE	Department of Energy
DOL	Department of Labor
DSA	Development Services Agency
EDA	Economic Development Administration
EDD	Employment Development Department
EEO	Equal Employment Opportunity
EKEA	East Kern Economic Alliance
EIA	Environmental Impact Assessment
EIR	Environmental Impact Review
EIS	Environmental Impact Statement
ETR	Employers' Training Resource
KCCD	Kern Community College District
Kern COG	Kern Council of Governments
KEDC	Kern Economic Development Corporation
KEDF	Kern Economic Development Foundation
KWEA	Kern Wind Energy Association
LMI	Low and Moderate Income
LQ	Location Quotient
MOU	Memorandum of Understanding
NAICS	North American Industry Classification System
NASA	National Space and Aeronautics Administration
PCD	Planning and Community Development
R&D	Research and Development
SBIR	Small Business Innovation Research
SIC	Standard Industrial Classification
SOC	Standard Occupational Code
VC	Venture Capital
WIB	Workforce Investment Board of Kern, Inyo and Mono

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EXECUTIVE SUMMARY

The Continued Path to Sustainable Prosperity: Kern County's Economic Development Strategy Update

Kern County's economic foundation remains at an important juncture where decisions made today will shape the County's ability to adequately provide for its residents in the coming decades. Many of Kern County's industries are strong and the economy is becoming more diversified. However, population growth, ongoing air quality concerns, home price depreciation, persistent low wages and educational outcomes all present challenges which must be addressed. At the same time, the changing business environment in several of Kern's leading industries – from energy to agriculture to aerospace – require creativity, innovation, and adaptability to ensure that Kern's employers remain competitive.

The purpose of the Kern County Economic Development Strategy Update is to provide a synopsis of economic development activities in Kern County over last five years while preparing the County for the major issues that will affect the County for decades. Because the challenges are great and resources are limited, coordination and collaboration is required. This strategy thus necessitates and enables the County's economic actors – business owners, government agencies, educational providers, labor unions, chambers, interest groups, employees and individual citizens – to collaborate in promoting economic development.

The Approach: Competitiveness Via Quality

For almost a decade, Kern County has been using a “cluster-based economic development” approach in its economic strategy. The cluster-based approach recognizes that economic development builds from a community's strengths and that successful economies focus on improving the quality of what they produce and the inputs needed for that, not just on reducing their costs relative to competitors. The approach has identified several rules for the success of a strategy. These rules have informed the analysis and recommendations in this document.

These rules are:

- **Recognize economic growth at a regional level - focus on the entire County:** Businesses are no longer as concerned about which city or jurisdiction they are in. Instead they care about a general environment where they locate and what advantages they can draw from local inputs—from skills to innovation to transportation to quality of life. Moreover, everything we do within our individual communities has an impact on the broader region and county in which we live. Challenges such as air and water quality, congestion and farmland preservation reach across jurisdictional boundaries and require broad-based solutions.
- **Grow the County's industry clusters – the drivers of our economy:** Our economic performance is driven by our “portfolio” of industry clusters. Clusters are groups of related businesses who export products and services from the County (bringing in new dollars), their suppliers as well as the public and private providers of economic inputs, such as trained workers, innovation, financing, transportation as well as business climate. Clusters grow and change over time. Competitive clusters generate high value-added jobs whose multipliers (salaries and expenditures within the County) create other jobs. A healthy economy has a diverse portfolio of competitive and newly emerging clusters. Cluster needs and actions exert an important impact on the surrounding region's performance—prosperity, disparity and sustainability. These clusters are what our County “does for a living” and bring net new

revenue into our communities by exporting goods and services beyond our communities' boundaries. Identifying our clusters is based on understanding our economic niche and how our economy links with larger regional economies (such as Southern California and the entire San Joaquin Valley).

- **Build the local advantages that support clusters:** Clusters only take shape and grow in regions where they can find advantages for their operations—the more responsive to their needs, the better. This is why technology-driven clusters tend to be located close to sources of skilled workers and innovation—as well as close to each other—so they can take advantage of similar workforce and infrastructure. An economy that is able to create advantages in workforce preparation, in supplying finance, transportation, energy and water, efficient regulation and administration and provide a high quality of life will form, expand and attract more companies around specific clusters. Building and adapting local advantages for clusters is the core of a sustainable and prosperous economy.
- **Collaborate to achieve ongoing economic growth:** Economic strategy requires thinking beyond traditional industry and community boundaries. Learning how to work collaboratively across community and jurisdictional boundaries will be necessary to solve shared competitiveness challenges. High performing economies around the world have achieved their status because their communities, businesses and institutions have built a collaborative culture. A collaborative culture is an environment in which all stakeholders are open to change and are willing to negotiate trade-offs and constructive agreements with one another—they get things done, often in creative ways. A collaborative economic culture enables businesses, governments and organizations to work together, to commit to new ways of doing business and to make investments that will have a mutually beneficial pay off. Learning and applying collaborative practices is the key to building the advantages that will help form and grow clusters and achieve a sustainable and prosperous economy.

General Diagnosis of the County

Kern's economy is based on the diverse assets of agriculture, energy, healthcare, logistics and aerospace/defense industries. Despite this seeming economic diversification, the overall performance of the County has been mixed in recent years when compared to the State and other counties, although noticeable progress has been made overall. This is due in part to the cyclical and uncertain nature of oil and aerospace which are often affected by factors beyond the County. Further, the agricultural sector consists largely of low paying and often seasonal employment which limits the positive multipliers within the economy.

Moreover, key industries in the County, like value-added agriculture, are regional and national leaders, and new ones, such as transportation and logistics, are emerging and growing. The County also has distinctive assets related to renewable energy and aerospace, two areas with significant potential to expand and develop. Aerospace's potential is driven by the emergence of private sector space-travel activities as well as other private sector aerospace activities and government contracts related to the County's two military bases. Lower business costs, the availability of land, and relatively lower costs of living also add to Kern's attractiveness and competitive advantage. On the other hand, lackluster new business growth, lower educational attainment and skills gaps, out migration of young people, a high incidence of low-to-moderate income residents, and air quality issues are significant disadvantages in the County that need to be addressed.

Kern's Cluster Portfolio: What Drives Performance

The key to building Kern County's economic prosperity over time is to strengthen each of our industry clusters. Industry clusters are the engines of Kern County's economy. Clusters are led by export-oriented lead industries, supplied by local supplier companies, and supported by an array of public and private institutions. These clusters have high economic multipliers and are wealth generators for the County because their economic activity utilizes many supplier and service inputs that represent high-quality jobs. In addition, clusters, as the name implies, continually attract capital, skilled and less-skilled labor to the County making the economy both deeper and broader. Clusters drive our economy because they produce goods and services that are sold outside the County and thus bring new economic wealth to Kern County.

The clusters compete in markets outside the County—across California, the United States, and the world—and their competitiveness in these markets largely determines the prosperity of the entire County. The exporting industries in these clusters are also linked to related supply industries and to economic input institutions. These 'value-chain' linkages are an integral feature of industry clusters: The better the value-chain linkages the stronger the cluster. With strong linkages, information can move more rapidly between customers, producers and suppliers; skilled labor can be attracted and shared; firms can react more quickly to market changes; and new technologies can be more rapidly incorporated. In turn, the clusters will be able to grow more rapidly and perform more competitively in the global economy.

Therefore, making a cluster deeper means adding more value locally—retaining wealth while reducing dependency on others. Broader clusters means that as clusters develop, they add new export market-serving segments, so that the economy is more robust or resilient in the face of global economic cycles, since one cluster segment may be doing well when another is not. Building and maintaining a strong cluster portfolio means that our County must enable each of these interdependent groups to maximize their innovation and efficiency so that they cause more enterprise to form, enable existing companies to expand, and attract new businesses into the County.

The research behind this report identified six significant industry clusters in Kern County. These are:

Value-Added Agriculture is the leading employment cluster with the bulk of the State's agriculture operations concentrated throughout the Valley. The cluster builds on Kern's historic role as a leading center for crop production, particularly vegetables, nuts, citrus and cotton. The cluster also benefits from the food processing component, particularly carrot and tomato processing.

Transportation and Logistics is a fast growing industry with tremendous potential within Kern. This is a leading cluster and supports the competitiveness of the Energy and Natural Resources and Value-added Agriculture clusters through the use of warehousing and distribution services. Given Kern's location to the immediate north of Los Angeles County with California's two major north-south interstates running through the County as well as the only year-round pass over the Sierras in the San Joaquin Valley, it is a natural place for growth in Transportation and Logistics. Kern has become the location for major distribution centers.

Energy and Natural Resources is reframed from the Energy and Chemicals focus in the 2005 Strategy. Although there will remain a focus on moving into downstream activities such as additional chemicals and plastics manufacturing, there will also be a focus on developing seed

activities in renewable energies (wind, solar, biomass, and geothermal) as well as ongoing support for the major petroleum extraction and refining activities. These are principally energy industries.

Aerospace and Defense remains a leading industry cluster for the County and particularly for East Kern where the economy of most communities is dependent on the strength of the aerospace and defense industries. The County has some of the best natural assets in the West for continued expansion in aerospace and defense. The 2005 Base Realignment and Closure (BRAC) process resulted in the decision to consolidate naval weapons and armament research, development and testing at the U.S. Naval Air Weapons Station at China Lake, resulting in a projected 1,400 new direct jobs. The potential for space tourism continues to be great, though other states are fiercely competing for this business.

Tourism, Recreation & Entertainment continues to suggest continued growth opportunities in both annual expenditures and employment. This includes the generation of tourism and visit activity from people traveling between major cities in Northern and Southern California as well as those from large metro areas in Southern California seeking a close weekend get-away destination. To enhance this potential, Kern County must continue current marketing activities and look for additional promotional opportunities.

Healthcare Services has been recast to reflect the vast array of services and networks in the County. Throughout the San Joaquin Valley, population growth has resulted in major increases in hospital and health care employment. In addition, the general growth in health care spending has served as the catalyst for the recent or planned expansion of several regional facilities.

Economic Development Strategy Update Chapter Overview

The following provides a summary of the 2010 Economic Development Strategy Update. The purpose of this summary is to highlight the major elements of each of the update's sections.

Chapter 1. defines the rules for overall economic success and outlines the far-reaching goals of the Kern County Economic Strategy:

- Goal 1: Expand Jobs and Overall Prosperity
- Goal 2: Foster Inclusion and Increased Equity
- Goal 3: Promote Sustainability and High Quality of Life

Chapter 2. sets the stage for overall competitiveness of the County by providing a general analysis and key findings.

First, measures of a high performing economy are examined:

- Prosperity: Providing for the County's Needs
- Equity: Analysis of Opportunities for Low and Moderate Income People in Kern County
- Sustainability: Improving Environmental Outcomes

Second, the County's economic foundations are also examined in order to determine how the region's current framework supports competitiveness:

- Human Resources (Preparation, Advancement, Renewal)
- Finance (Initiation, Expansion, Restructuring)
- Infrastructure (Water, Sewer, Sites, Bandwidth)
- Transportation (Air, Rail, Highway Access)
- Quality of Life (Housing, Climate, Recreation)

Business Climate (Tax, Regulation, Administration)

- Innovation (Discovery, Development, Deployment)

Chapter 3. focuses on the major industry clusters in the County: Value-Added Value-Added Agriculture, Energy and Natural Resources, Transportation and Logistics, Tourism/Recreation/Entertainment, Healthcare Services, and Aerospace and Defense.

Chapter 4. details the five strategic Flagship initiatives that drive the partners in the Strategy process. These initiatives are broad and complex and require support from many industry and public sector leaders. The underlying theme for all the Flagships is that these cross-cutting initiatives are what need to be solved in order to ensure the County's economic future.

These initiatives are:

- Cluster Network Development Strategies
- Human Resources and Skills Development
- Land Use and Infrastructure Planning
- Tourism Marketing and Branding Kern County
- Financing Entrepreneurship and Innovation

Chapter 5. concerns the steps necessary to implement and monitor the Strategy.

To implement the countywide strategy recommends that the following steps be taken:

- Maintain KEDC as the lead agency responsible for implementation;
- Continue KEDC's leadership and oversight responsibility for the Stewardship group including the group's responsibilities to report on progress and oversee activities;
- Foster a collaborative effort with the County and Cities on economic development;
- Maintain responsible agencies for each flagship;
- Prioritize among flagships; and
- Secure funding for key recommendations, starting with the hiring of cluster developers

Ideally, the monitoring system will track the following dimensions of the Kern County economy:

- Economic Performance: How the County is doing in generating prosperity, reducing disparity, and enhancing sustainability.
- Cluster Competitiveness: The employment, concentration and growth rates of clusters over time, for both emerging and established clusters.
- Economic Foundations: The strength and success of economic input institutions that meet human resource, finance, physical infrastructure, information infrastructure, business climate and quality of life needs of the County.
- Progress of Flagship Initiatives: The progress and success of Flagship Initiatives as they are carried out.
- Progress of Cluster Action Initiatives: The progress of the implementation of each cluster's actions.

Chapter 6. restates the purpose of Strategy Update to:

- Reinforce Countywide and regional thinking;
- Make a commitment to growing our clusters;
- Focus efforts on improving our local inputs; and
- Reward collaboration and inclusion

Background

Since Kern County's last full strategic planning effort five years ago, performed by ICF Consulting, the landscape of economic development in Kern County has changed dramatically. The Kern Economic Development Corporation (KEDC) is now well-positioned to update the Economic Development Strategy document. KEDC has helped re-define Kern County's long-range economic development strategy, and realigned its internal organizational structure in order to support the updated strategy. KEDC crafted this document in order to promote the coordination of economic development in the community, detailing what major issues are facing each stakeholder group and what successful economic development would look like in the future.

The following dates were critical in establishing the next iteration of the Strategy document:

- In April 2005, the Kern County Board of Supervisors (Board) approved a new Countywide Economic Development Strategy (Strategy) submitted by ICF Consulting in February 2005.
- On October 31, 2006, the Board affirmed its support of the Strategy and made a referral to the Resource Management Agency to report back on continued efforts to strengthen the public/private partnership and the involvement of the Kern Economic Development Corporation (KEDC) in the process. At issue was how best to keep Strategy implementation moving forward in the face of limited resources and how to keep the Board informed of progress.
- In November 2006, with a new KEDC President & CEO in place, KEDC's Board of Directors reaffirmed its staunch support for the Strategy, acknowledging it as the blueprint for guiding KEDC's efforts to grow existing businesses and develop new businesses and job opportunities in Kern County. As a testament to its commitment to the Strategy, KEDC restructured and augmented its staff to support each of its six clusters (the Board of Trade continued to service the Tourism, Recreation and Entertainment Cluster, and their Executive Director sits on KEDC's Board).
- On July 17, 2007, the Stewardship Group designated KEDC as the lead organization for the management of the Stewardship Group and the County's Economic Development Strategy.
- On October 2, 2007, the Board approved Amendment No. 1 to the Strategy, officially adopting the Stewardship Group's July 2007 recommendations, and designating KEDC as the organization to lead the stewardship of the Strategy.

This update includes the most current statistical data, figures, and tables when and where available, and much of the previous Strategy document has been retained. It was determined that there was no need to radically depart from the previous document, and most adopted changes are based on what has been learned over the past five years of implementation and after having been verified as relevant five years hence. By so doing, much continuity is retained in the ongoing implementation of the Strategy.

Some of the more significant changes that have been made include the following:

- Business and Professional Services cluster has been removed. It was determined that businesses identified within this cluster provide more of a supporting role to the other clusters than function as a stand-alone cluster.

-
- Other business clusters have been renamed: Energy and Chemicals has been re-identified as Energy and Natural Resources; Transportation, Logistics & Warehousing has been re-identified as Transportation and Logistics; and Healthcare Services and Medical Technologies has been re-identified as Healthcare Services.
 - County agency and departmental changes have been incorporated to reflect reorganizations to improve operational efficiencies and to accommodate recession-induced budgetary impacts. In particular, the County Administrative Office has now assumed primary responsibility for the County's active involvement in economic development.

At the time of this update is an unprecedented downturn in the economy that many are comparing to the Great Depression.

1 Mission and Objectives of the Kern County Economic Development Strategy

The purpose of an economic development strategy is to guide decisions that will achieve the long-term economic stability of the County. That means finding ways to manage the major challenges of the day by strengthening existing industries in the County, providing demonstrable career opportunities for young people, accommodating changing demographics, effectively planning for the rapid population growth, its land use and air quality impacts and otherwise promoting sustainable economic well-being. The original strategy was specifically designed in 2005 to guide economic development activities in Kern County. The purpose of the strategy was to frame the economic challenges and start the process of designing their solutions.

The 2010 update represents a great deal of collaborative work and dialogue with stakeholders across Kern County's 8,000-plus square miles. The update provides critical and timely revisions of the original document and offers a relevant analysis of the current state of Kern County's economy.

1.1 Rules for Economic Success

Kern County has been using a "cluster-based economic development" approach in its economic strategy. This approach is grounded in decades of experience and is currently being implemented in hundreds of communities throughout the world. The cluster-based approach recognizes that economic development builds from a community's strengths and that successful economies focus on improving the quality of what they produce and the inputs needed for that, not just on reducing their costs relative to competitors. In preparing this strategy update, KEDC continues to utilize a cluster-based approach, following several rules set forth in the 2005 document. These rules are:

Recognize economic growth at a regional level - focus on the entire County:

Businesses are no longer as concerned about which city or jurisdiction they are in. Instead they care about a general environment where they locate and what advantages they can draw from local inputs—from skills to innovation to transportation to quality of life. Moreover, everything we do within our individual communities has an impact on the broader region and county in which

we live. Challenges such as air and water quality, congestion and farmland preservation reach across jurisdictional boundaries and require broad-based solutions.

Grow the County's industry clusters – the drivers of our economy:

Our economic performance is driven by our “portfolio” of industry clusters. Clusters are groups of related businesses who export products and services from the County (bringing in new dollars), their suppliers as well as the public and private providers of economic inputs, such as trained workers, innovation, financing, transportation as well as business climate. Clusters grow and change over time. Competitive clusters generate high value-added jobs whose multipliers (salaries and expenditures within the County) create other jobs. A healthy economy has a diverse portfolio of competitive and newly emerging clusters. Cluster needs and actions exert an important impact on the surrounding region's performance—prosperity, disparity and sustainability. These clusters are what our County “does for a living” and bring net new revenue into our communities by exporting goods and services beyond our communities' boundaries. Identifying our clusters is based on understanding our economic niche and how our economy links with larger regional economies (such as Southern California and the San Joaquin Valley).

Build the local advantages that support clusters:

Clusters only take shape and grow in regions where they can find advantages for their operations—the more responsive to their needs, the better. This is why technology-driven clusters tend to be located close to sources of skilled workers and innovation—as well as close to each other—so they can take advantage of similar workforce and infrastructure. An economy that is able to create advantages in workforce preparation, in supplying finance, transportation, energy and water, efficient regulation and administration and provide a high quality of life will form, expand and attract more companies around specific clusters. Building and adapting local advantages for clusters is the core of a sustainable and prosperous economy.

Collaborate to achieve ongoing economic growth:

Economic strategy requires thinking beyond traditional industry and community boundaries. Learning how to work collaboratively across community and jurisdictional boundaries will be necessary to solve shared competitiveness challenges. High performing economies around the world have achieved their status because their communities, businesses and institutions have built a collaborative culture. A collaborative culture is an environment in which all stakeholders are open to change and are willing to negotiate trade-offs and constructive agreements with one another—they get things done, often in creative ways. A collaborative economic culture enables businesses, governments and organizations to work together, to commit to new ways of doing business and to make investments that will have a mutually beneficial pay off. Learning and applying collaborative practices is the key to building the advantages that will help form and grow clusters and achieve a sustainable and prosperous economy.

Other approaches to economic development stress the importance of tools such as tax incentives and cost cutting as a strategy to lure businesses to a region or community. While this approach has been successfully applied in specific cases, it is not always successful. In fact, many businesses which receive subsidies often do not last in the community for years into the future. This is due to several reasons. The most important is that subsidies do not ensure that the community provides other needs which are essential for a competitive business. These other factors include tailored training and skilled workers, industry-appropriate financing, and specialized infrastructure – all attributes of a well-functioning cluster economy and cluster-based strategy.

Rural areas, such as many parts of Kern, have been effectively applying the cluster approach. Yet, given the lack of agglomerations found in urban areas, the clustering notion is somewhat more complicated. Typically, rural areas develop clusters which take one of several forms:¹

Extensions of metropolitan clusters:

This occurs when there is a large economic region in relatively close proximity to the rural area. Often, particular services are pushed outside of the metropolitan region due to cost or overcrowding. In Kern, the transportation and logistics cluster is a key example of this phenomenon. Major distribution centers are located in Kern because of its proximity to the Los Angeles market and the Port of Long Beach.

Small “niche micro-clusters”:

This occurs when there is a particular set of skills or niche activities in the total area that often have historic roots. These clusters are small but can support the growth of other clusters. For example, a niche cluster in pottery manufacturing in rural North Carolina can support the growth of the rural region’s tourism. In Kern, the focus could be on artisan foods in an agri-tourism environment or even local artists producing goods for sale in small rural communities.

“Hub and Spoke Clusters”:

This occurs when there are several large firms surrounded by a group of supplier firms. In Kern, the aerospace industry is the best example of one of these types of clusters where there is a larger entity (China Lake and Edwards Air Force Base) which is surrounded by a large number of supplier industries.

“Satellite platforms”:

This occurs when there is a large natural resource and an agglomeration of local branch plants. For Kern, this would be the oil and gas industry within the Energy and Natural Resources cluster.

1.2 Goals of the Kern County Economic Strategy

The Kern County Economic Strategy, as a cluster-based strategy, will have three overarching goals. These goals reflect a summary of the values and desires expressed by participants throughout this process. They are goals which the County should apply to all its decisions and which the County should use to judge its success.

1.2.1 Goal 1: Expand Jobs and Overall Prosperity

Kern County’s high unemployment rate and low wages have been a historic challenge for the County. Any economic development strategy must strive to combat this through increasing the overall jobs throughout the County—particularly year-round employment in higher paying industries. This strategy proposes that growing the County’s clusters is the best way to increase the overall number of jobs. This is for two reasons. First, cluster industries in Kern are growing more quickly relative to the overall economy. Second, when

¹ These various forms are referenced in Reviews of Economic Development Literature and Practice: No. 12 Rural Knowledge Clusters: The Challenge of Rural Economic Prosperity. (Munnich, Lee Jr., Schrock, Greg, and Cook, Karen). Economic Development Administration, 2002. They are referring to Rosenfeld et al 2000.

cluster industries grow, their employees increase the demand for a wide range of goods and services in the County which results in overall job gains. (This impact is called a “multiplier effect”). In particular, the County should strengthen segments within the clusters with the greatest export potential. At the same time, the County should support the growth of its clusters into higher value-added activities which in turn will result in higher wages for its workforce. As the cluster industries grow, they will result in more jobs throughout the entire economy (through their multiplier impact) as employees in the clusters will require new goods and services. Finally, the County should forge greater linkages between Kern’s secondary schools, colleges, and clusters to help promote the development of local innovations and increase workforce skills and use of technologies. Developing strong linkages between the clusters and the local educational providers is essential for ensuring the flow of well-educated and trained people into the clusters.

1.2.2 Goal 2: Foster Inclusion and Increased Equity

Economic growth sometimes results in increasing the disparities within a community. Some call this the creation of the “hourglass economy” where there are increasing jobs at the top and bottom ends of the economy. It is easy to recognize that with a reduced middle class, many local institutions – from social services to education – are strained. A healthy economy provides opportunities for people at multiple ends and decreases these disparities. Part of reducing disparities involves including aspects of the community that have historically not participated as directly in the benefits of growth. Kern County today has many elements of disparity which must be reduced to strengthen the overall economy. Kern has high levels of poverty and unemployment while many local industries pay low wages. As growth occurs, the County should ensure that existing residents have the skills to be able to secure jobs in the competitive clusters. The County should support industries with high quality jobs and solid wages that provide career ladder opportunities. Incentives should be targeted in such a way to benefit low and moderate-income people and communities. Further, the County should encourage high adoption of technology among students and the workforce to ensure higher skilled and quality jobs come to and remain in Kern. Finally, the County should encourage greater collaboration between the public and private sectors to solve shared competitiveness challenges.

1.2.3 Goal 3: Promote Sustainability and High Quality of Life

Economic competitiveness is not simply a matter of job growth and opportunities. Competitiveness is also about ensuring that growth does not degrade the environment and quality of life. Sustainability here is understood to mean meeting the present needs of the population without compromising the ability of future generations to meet their needs. Kern County’s current growth patterns are threatening this sustainability, both economically and environmentally. The needs of the present population are for good jobs, adequate and affordable housing, available and healthy food, safe neighborhoods, accessible open space and a high quality of life. Current population growth is leading to the loss of agricultural lands which provide raw materials for some of Kern’s most competitive industries while sprawling land uses are encroaching on industrial land and jobs, increasing congestion, worsening the air quality and destroying aspects of the open space which make Kern County a unique environment to live in. In order to ensure that future generations are able to achieve all of these goals in Kern County, there is a need to begin applying principles of sustainability today. These principles apply to land use planning as well as to the kinds of industries which are encouraged throughout the County. Some of the specific goals should be to manage

growth in a way that limits the conflict between housing and jobs, preserves farmland, maintains open space and improves the quality of life throughout the County. In doing so, the County will sustain the rural natural environment which is essential to both retain the people who are there and continue to attract people who are seeking an alternative to the urban environments elsewhere. Further, the County should encourage compact development which makes efficient use of land and infrastructure as a way to save money and land. Finally, the County should encourage industries and firms to incorporate sustainable practices that result in reduced air/water pollution and overall environmental impact. These practices can include co-generation, use of renewable energies, co-location of suppliers and customers and locations in greater proximity to transit and the increase in non-automobile modes of transport.

In summary, these three strategic goals should be applied as a “lens” to decision-making throughout the County. Throughout the implementation of this strategy, County officials should ask the following questions when looking at new policies, programs, or investments:

How will this investment support the growth of Kern’s economic engines, its industry clusters?

How will this activity or policy result in reducing disparities by increasing the participation of Kern’s low and moderate-income (LMI) population?

How are these decisions helping us preserve our agricultural heritage and open spaces and improve our air quality?

To accomplish this, Kern County will help the formation of new industries which are innovative and globally competitive, develop a workforce which is highly skilled and adaptable and able to succeed in the existing and emerging knowledge economy, grow the overall number of jobs in order to ensure that the fast-growing population will have sufficient employment to meet its needs and plan for its future through intelligent solutions to land use conflicts which require some sacrifice in order to ensure a prosperous economy in the future.

1.3 Method of Approach

This economic development strategy employed a methodology based on a combination of quantitative fact-finding and analysis followed by focus groups and discussions with representatives of a wide range of companies and organizations throughout the County and adjacent areas.

The focus groups, interviews and further discussions allowed most elements of this plan to be tested and elaborated. While there are important stakeholders in the County who could not be interviewed, there is no particular element of this plan that reflects the opinion of any one person alone, and all comments were scrutinized from the perspective of experience with many other regions throughout the country.

The vision at the core of this plan has already been presented to business leaders and public officials active in promoting the development of the County economy.

1.4 Organization of this Document

There are four components to the *Kern County Economic Development Strategy*, each corresponding to a chapter of this document:

Economic Overview: This chapter introduces an overview of the current economy. The chapter provides the framework that guided this analytic process and should guide the County as it continues to analyze and support its economic growth. This chapter also introduces the economic input “foundations” that support competitiveness.

Industry Cluster Overviews: This chapter explores the status of Kern’s industry clusters, the competitive challenges they face and provides recommendations for how to overcome these challenges and for the overall vision of the cluster’s future. These cluster overviews present benchmark data comparing Kern’s cluster with competitor economies throughout California.

Strategic Flagship Initiatives: This chapter proposes the set of strategic initiatives through which the County and its partners will strengthen the competitiveness of the County’s cluster-based economy. Each Flagship includes goals, structure, recommendations and resource requirements. These Flagships are based on the analytic work conducted for Kern County, an understanding of best practices and focus groups and interviews with representatives of Kern’s industry clusters and economic input foundations.

Implementation and Monitoring: This final chapter focuses on how the Flagships proposed can be formalized and implemented. The steps proposed emphasize the importance of re-energizing the cluster approach to managing collaboration. The goal of the implementation process is to engage clusters in working together on a continuing basis over time and with the public sector and other institutions over time. This chapter also proposes how to monitor and measure the outcomes of the strategy.

1.4.1 Why Purposeful, Collaborative Action?

Kern County has already demonstrated a strong spirit of collaboration, throughout focus groups and cluster groups which began after the 2005 strategy. However, the process of developing and promoting clusters in an economy is not always natural and the dynamics of this process must be understood. As any student of Silicon Valley’s miracle will tell you, the Silicon Valley is anything but natural. There certainly were existing economic foundations and fortuitous events that shaped the clustering of technology-based industries in that region; however, there was also a continuing stream of purposeful strategic and opportunistic action to leverage advantage where it existed and to attract and create advantage where it did not. While Silicon Valley is not necessarily the goal for Kern County, a vibrant economy with an admirable quality of life is. Whether it is Silicon Valley (which lost its farmland for higher value activities) or Napa Valley (which retained its farmland by moving into the highest value products from its farms), economic success stories come where leadership and vision are the catalysts and talent, knowledge and resources the ingredients.

The “natural” element of clustering results from far-sighted individuals who, often out of self-interest or in order to achieve their own vision, realize the need to collaborate to address common challenges. In smaller regions, and with respect to certain industries, these informal support mechanisms for clustering can work. However, in today’s global environment, wholly unplanned clustering is more the exception than the rule. At the same time, however, government agencies or other public institutions cannot easily create clusters

de novo unless the conditions are right. There must be some natural tendencies towards clustering in a region, some reasons why clustering in a particular industry makes sense in a region, for purposeful action to be effective. These conditions or competitive advantages may include such elements as the presence of key or major players in a specific industry or distinctive competencies in a local University. Leading regions around the world are realizing the strategic value of capitalizing on such distinctive advantages and of catalyzing and supporting the industry clusters which are the drivers of robust, competitive, innovative economies.

This recognition is fueling the rising tide of purposeful collaborative action—i.e., intervention—aimed at addressing competitiveness gaps in regions around the world. Kern County recognized this process when it initiated a cluster-based competitiveness strategy in 2005. Now, again, Kern must institute a comprehensive, formal, yet flexible framework for managing a series of initiatives to support cluster-based economic development.

That is because the purposeful collaborative actions usually necessary to accelerate economic development must also usually be continual over the years for economic growth to be sustained. The actions must be rethought and renewed periodically, and new actions introduced, to account for changes in local companies and institutions, the local economy, and global markets and technologies. Institutions set up to provide for continual long-term action must themselves be renewed periodically. Sometimes continued collaborative action and periodic renewal take place as a matter of course through momentum, but more often there has to be an intervention specifically aimed at revitalizing the institutions.

1.4.2 *Expectations: Small Solutions, Not Grand Illusions*

Cluster-based economic development strategies are not about reports or committees. Successful strategies are about learning how to change again and again. The actions developed to enhance Kern County's clusters and overall economy is practical and necessary. If there is significant progress on implementing the proposed initiatives, each cluster will advance. Through this strategy participants from the public and private sectors have come to learn that successful economies achieve their goals, not because of an external agency, but because the people and their institutions and organizations are capable of seeing the world around them differently and are willing and able to change. These changes are never easy, but each time a change is accomplished that accomplishment reinforces the value of undertaking further actions. With this strategy, Kern County is on its way to developing a more prosperous, equitable, sustainable and innovative economy.

2 Setting the Stage for Competitiveness: General Analysis and Key Findings

2.1 General Conclusions about Kern County

Kern County is a dynamic and rapidly changing County. Population growth presents an opportunity to continually expand the labor force but it also puts increasing strains on the County's underlying infrastructure, from roads to schools, and is threatening some of the County's prime farmland and industrial activities as residential development is placed in areas where it is competing directly with economic activities. In recent years the County has made

significant improvements in key economic and social areas such as the growth in average weekly wages, but has not performed as strongly as some neighboring counties in other measures such as the overall unemployment rate.

Kern's economy is based on the diverse assets of agriculture, energy and natural resources, aerospace, healthcare, and transportation and warehousing services. Despite this seeming economic diversification, the overall performance of the County has been mixed in recent years when compared to the State and other counties, although noticeable progress has been made overall. This is due in part to the cyclical and uncertain nature of energy and aerospace, which are often affected by factors beyond the County. Further, the agricultural sector consists mostly of low paying and primarily seasonal employment that limits the positive multipliers within the economy.

Moreover, key industries in the County, like Value-Added Agriculture, are regional and national leaders, and new ones, such as Transportation and Logistics, are emerging and growing. The region also has distinctive assets related to renewable energy and aerospace, two areas with significant potential to expand and develop. Wind, solar, and biomass are growing forms of locally-generated renewable energy. Aerospace potential is driven by the emergence of private sector space-travel activities as well as a highly-skilled workforce in East Kern, particularly in engineering, whose training can be applied in new aerospace manufacturing. Lower business costs, the availability of land, and relatively lower cost of living factors also add to Kern's attractiveness and competitive advantage. On the other hand, lackluster new business growth, lower educational attainment and skills gaps, out migration of new graduates, a high incidence of low-to-moderate income residents, and air quality issues—especially within the San Joaquin Valley—are significant disadvantages in the County that still need to be addressed.

2.2 Measures of a High Performing Economy

Economic strategy begins with a clear sense of how the region has been performing in the past, and what its primary challenges are. Countywide economic performance is not a one-dimensional concept, however, and its assessment needs to go beyond traditional economic indicators. For these reasons, this report considers three dimensions of economic performance: Prosperity, Equity/Disparity, and Sustainability. This overview provides a brief assessment of each of these three factors of high performing economies. In general, Kern County's economic performance continues to be mixed.

2.2.1 Prosperity: Providing for the County's Needs

Prosperity refers to the ability of an economy to provide its residents with their material wants and needs. In practical terms, prosperity is closely tied to issues of employment, income, and business growth. The following components were examined to assess the region's prosperity:

- Population and Migration
- Demographic Characteristics
- Labor Force and Employment
- Income and Wages
- Business Growth Patterns

Population and Migration

Kern County's population is largely concentrated in its urban areas. The population of Kern County was 839,587 in 2010, compared with the 2000 population of 661,645. During the 5-year period between 2005 and 2010, Kern County grew by 11.4%. Over this period, Kern County was the fifth fastest growing county in the State.

The population of the "Consolidated Plan Jurisdiction" (Kern County minus Bakersfield, Taft, Maricopa, Delano, and Wasco) was 410,230 in 2010. Going forward, Kern County's growth is expected to continue its strong increase in population, albeit at a slower pace than in the previous decade.

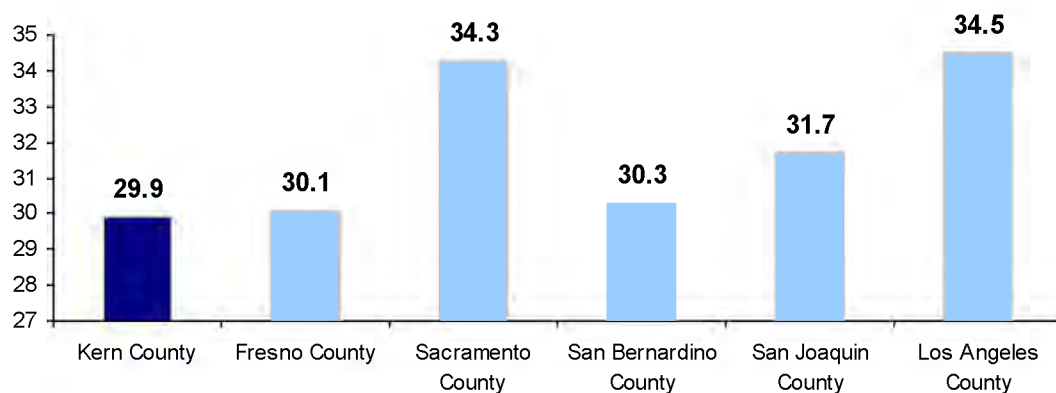
In ten years, the County is projected to add another 175,000 people or the equivalent of another three cities the size of Delano. Kern will also cross the 1 million person threshold. Moreover, the population is expected to climb to 1.5 million by 2050, which is almost twice the current population. (State Department of Finance). Kern County's significant population growth represents a pressure to maintain strong and ongoing economic growth (as well as thoughtful and efficient land use planning).

Although the population is growing rapidly, Kern County has also witnessed significant out-migration of young people, and the retention of skilled, young professionals continues to be a challenge in many parts of the County. This could be motivated by a lack of opportunity within the community, as well as strong pull factors from nearby regions. Thus, this trend should be reversible, if opportunities to earn a living and maintain a high quality of life within the region are enhanced, particularly for young people.

Demographic Characteristics

Kern County has a relatively young population, despite the growing trend of young people leaving the County. According to the U.S. Census, in the 2006-2008 period, the median age in Kern County was 29.9, compared to the low-to-mid 30s median ages found in neighboring counties. Sacramento County has one of the highest median ages in the Central Valley (34.3), followed by San Joaquin (31.7) and Fresno Counties (30.1).

Figure 1. Median Age of the Population, 2006-2008



Source: Census, American Community Survey, 2006-2008

Relative to national standards, Kern County is ethnically diverse, though less diverse than neighboring Los Angeles County. The County is predominantly Hispanic/Latino (45.1%) and White (43.9%). In the coming decades the County will become increasingly Latino.

Table 1. Kern County, by Race and Ethnicity, 2007

	Percent	Number
White	43.9%	354,905
Hispanic or Latino:	45.1%	365,032
Black or African American	4.9%	39,740
Asian	3.5%	28,395
American Indian and Alaska Native	0.9%	7,502
Native Hawaiian and Other Pacific Islander	0.1%	760
Two or more races	1.5%	12,366
	TOTAL	808,700

Source: CA OFM, April 2009

Labor Force and Employment

Today, Kern County has a year-round labor force of nearly 367,000, which has been growing at an average annual rate of 3.2% since 1999. This is almost triple the California average of 1.1%. In addition, Kern County's annualized total employment growth (2.7%) was more than six times greater than the State's 0.4% growth between 1999 and 2009. The County's total employment also grew faster than the growth of its labor force during the same period, suggesting that the economy was adding jobs faster than new labor. Kern County's labor force and employment are growing faster than Fresno, Los Angeles, Sacramento, San Bernardino, and San Joaquin Counties (see table below).

Although mirroring a similar State and regional pattern, Kern County's unemployment rate has been historically high compared to other comparable counties and California as a whole (see table below). In 2005, there were 40,000 people out of work, compared with over 64,000 people today. In the 2000s, the annual unemployment rate ranged from a low of 7.6% (2006) to a high of 14.4% (2009). Even at the height of the boom in 2006, the annual unemployment in Kern was far higher than the State average of 4.9%. (However, Kern County's unemployment rate has been lower than that of neighboring Fresno County since 1995.) Unemployment in Kern may be structural, but it is not unchangeable.

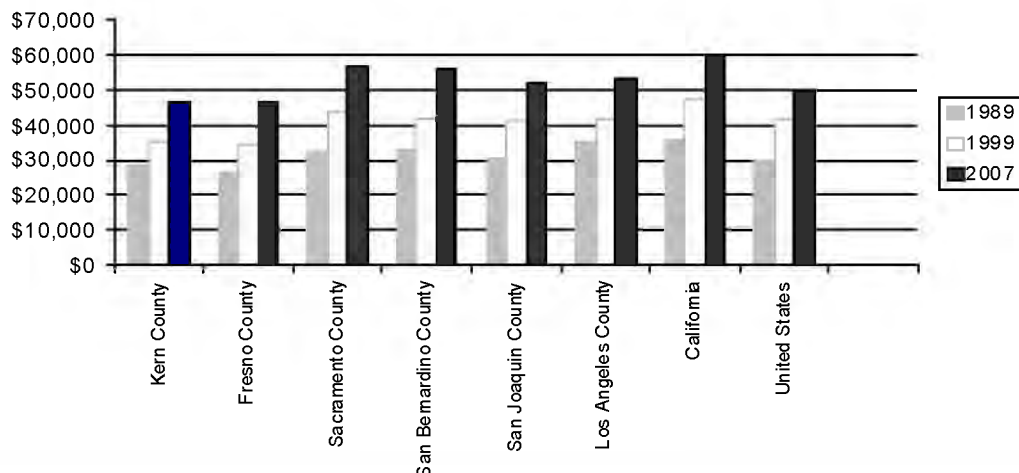
Table 2. Labor Force Employment Trends, 1999-2009

County	TOTAL LABOR FORCE			TOTAL EMPLOYMENT		
	1999	2009	Average Annual Change, 1999-2009	1999	2009	Average Annual Change, 1999-2009
Kern	278,900	366,900	3.2%	246,900	314,200	2.7%
Fresno	377,800	438,700	1.6%	326,500	372,500	1.4%
Sacramento	582,100	687,600	1.8%	557,400	609,600	0.9%
San Bernardino	749,000	864,300	1.5%	703,600	806,400	1.5%
San Joaquin	250,300	299,500	2.0%	228,100	253,300	1.1%
Los Angeles	4,579,600	4,896,100	0.1%	4,309,400	4,328,600	0.0%
California	16,430,600	18,250,200	1.1%	15,566,900	16,163,900	0.4%

Source: Calmis

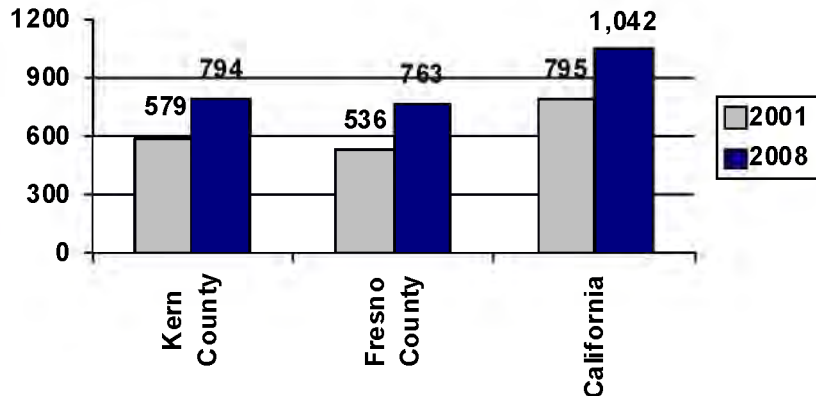
Incomes and Wages

Kern County had a median household income of \$44,716 in 2008, which is slightly higher than Fresno County's level of \$43,534, but noticeably lower than Sacramento, San Bernardino, and San Joaquin Counties, as well as the entire State. Additionally, Kern's median household income has grown 23.8% since 1989, slower than the growth in all of these counties, including Fresno. It should be noted that Kern's cost of living is lower than in some of the comparison counties that are reflected by the lower incomes. For example, according to Bankrate.com, Fresno County is approximately 13% more expensive than Kern County. To maintain the same standard of living, a family earning \$44,716 in Kern County would have to earn \$50,436 in Fresno County. The figure below shows median household income levels in 1989, 1999, and 2007 for Kern and comparison counties.

Figure 2. Median Household Income, 1989, 1999, and 2007

As depicted in the figure below, average weekly wages in Kern County have been higher than wages in Fresno County, but lower than overall wages in the State. Since the beginning of the decade, Kern County has had a modest growth in average weekly wages, from an annual level of \$579 in 2001 to \$794 in 2008, representing a 4.6% annual growth rate average. This growth compares favorably to the statewide growth in average weekly wages of 3.9%.

Figure 3. Average Weekly Wages, 2001-2008 (All Establishments)



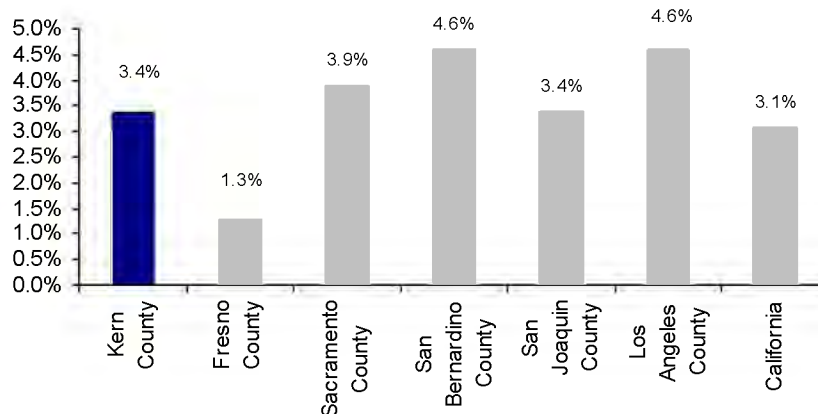
Source: BLS

Business Establishments

Kern County had approximately 18,224 business establishments in 2008, up from an estimated 15,577 establishments in 2003. The annual growth rate for business establishments in Kern County was 3.4%, which was more than double that of Fresno

County. In addition, Kern County's business establishment also surpassed the statewide average. The figure below indicates the growth in business establishments for Kern County and comparison regions.

Figure 4. Annual Growth Rate in Business Establishments, 2003-2008



2.2.2 Equity: Analysis of Opportunities for Low and Moderate Income People in Kern County

The economic growth that generates prosperity can threaten sustainability if it aggravates social disparity and exclusion, or creates a sense of a widening gulf between “haves” and “have-nots.” Broad-based support for economic strategy is essential, if a County is to be able to maintain a long-term focus on its fundamental objectives. Questions to consider include how well is Kern doing at providing opportunities for people with low and moderate incomes? Do the County’s jobs pay wages which are supportive of raising a family or buying a home? Are there concentrations of poverty or low educational outcomes which are limiting economic growth?

Several indicators of disparity are useful to review, including:

- Income Distribution
- Incidence of Low Income Families
- Educational Outcomes

The following section explores some of these questions by focusing on economic opportunities available to Low and Moderate Income² (LMI) individuals in Kern County. Over 293,000 persons or 46.4 percent of Kern County’s population are LMI residents. This sub chapter explores the demographic characteristics of Low and Moderate Income individuals especially with regard to education attainment, employment, income distribution, poverty, unemployment, self-employment and small business ownership. Later in this report we will describe the employment opportunities and the prevalence of entry-level jobs in highly-recommended clusters for LMI individuals and dislocated workers from declining industries as well as look at employment opportunities and the prevalence of entry-level jobs in each highly recommended cluster by occupation.

GEOGRAPHIC CONCENTRATIONS OF LOW AND MODERATE INCOME PEOPLE

Low and moderate income people are found throughout Kern County; however they are concentrated in certain communities. As indicated in the table below, the proportion of low and moderate income people in low income communities ranges up to 70 percent. Communities with relatively higher concentrations of low income people present an important opportunity for economic development efforts.

² “Low-income person is a member of a family that has an income equal to or less than the Section 8 very low-income (50 percent of median income) limit, and moderate-income person is a member of a family that has an income equal to or less than the Section 8 low-income (80 percent of median income) limit, pursuant to 24 Code of Federal Regulations 570.3.

Table 3. Low and Moderate Income Cities/Communities, 2000

City/Community	Total Population	Low/Moderate	Low/Moderate Universe	Percentage Low/Moderate
Arvin	12956	9119	12874	70.8%
Bodfish	1823	1055	1840	57.3%
Buttonwillow	1266	763	1255	60.8%
Delano	38824	20865	33972	61.4%
Fellows	153	89	155	57.4%
Ford City	3512	2062	3503	58.9%
Lake Isabella	3315	2285	3319	68.8%
Lamont	13296	9143	13196	69.3%
Lost Hills	1938	1381	1972	70.0%
Maricopa	1111	588	1098	53.6%
McFarland	9618	5927	8491	69.8%
Mettler	157	118	159	74.2%
Mojave	3836	2165	3607	60.0%
Oildale	27885	14920	27827	53.6%
Onyx	476	352	521	67.6%
Shafter	12736	7244	12113	59.8%
South Taft	1898	1230	1850	66.5%
Unincorporated Areas	139246	68092	131361	51.8%
Wasco	21263	8699	15072	57.7%
Weedpatch	2726	2199	2842	77.4%
Weldon	2387	1510	2457	61.5%
Wofford Heights	2276	1282	2237	57.3%

US 2000 Census

EDUCATION

Education attainment is the best predictor of income attainment, with low and moderate income residents having lower levels of education overall than other income groups. Overall, Kern County residents have lower levels of education attainment than California residents or the nation as a whole. As indicated in Table 4, 29% of Kern County adults have less than a high school degree (compared to 32% reported in 2005), while only 20% of California's adult population is without a high-school degree. Conversely, only 15% of Kern's adult population have a Bachelor's degree or higher compared to 30% for California's adult population as a whole.

Table 4. Educational Attainment, Kern County, California, U.S., 2006-2008

	Number	Kern Percent	California Percent	United States Percent
Less than high school diploma	134,651	29%	20%	16%
High school graduate	126,784	27%	22%	30%
Some college or associates degree	135,113	29%	29%	28%
Bachelor's degree	43,559	11%	19%	16%
Graduate or professional degree	17,130	4%	10%	10%
Total	410,418	100%	100%	100%

Universe: Population 25 years and over

US Census, American Community Survey

A comprehensive economic development strategy for Kern County should include efforts on the part of area school districts to improve high-school graduation rates, programs to enable adults to obtain their high-school equivalency degree, and vocational training programs at the high school and junior college level that prepare individuals for entry-level occupations in the County's leading industries (i.e. its clusters). In today's global labor market, unskilled and uneducated people will likely continue to experience wage erosion and discontinuity in their employment history.

INCOME DISTRIBUTION

Median household income in Kern County was \$44,716 in 2008. Half of Kern County households earned less than \$50,000 per year (see Table 5). California's median household income is 36% higher (\$61,017).

Table 5. Household Income Distribution, Kern County and California, 2008

Earning Less Than (Annual Income)	Percent of Kern County's Population	Percent of California's Population
\$10,000	7%	5%
\$25,000	24%	20%
\$50,000	54%	42%
\$75,000	68%	59%
\$100,000	79%	72%
\$150,000	92%	87%
\$200,000	97%	93%

US Census, American Community Survey

Wage and salary income remains the dominant source of household income overall at 82.0%, while social security and retirement payments account for 24.2% and 13.9% of

income, respectively. 6.4% of households receive cash public assistance versus the U.S average of 2.3%. Women are more likely to be low-income workers than men. Women

earned a median of \$32,119 for full-time work during 2008, while men earned a median of \$42,259 for full-time work during the same period in Kern County.

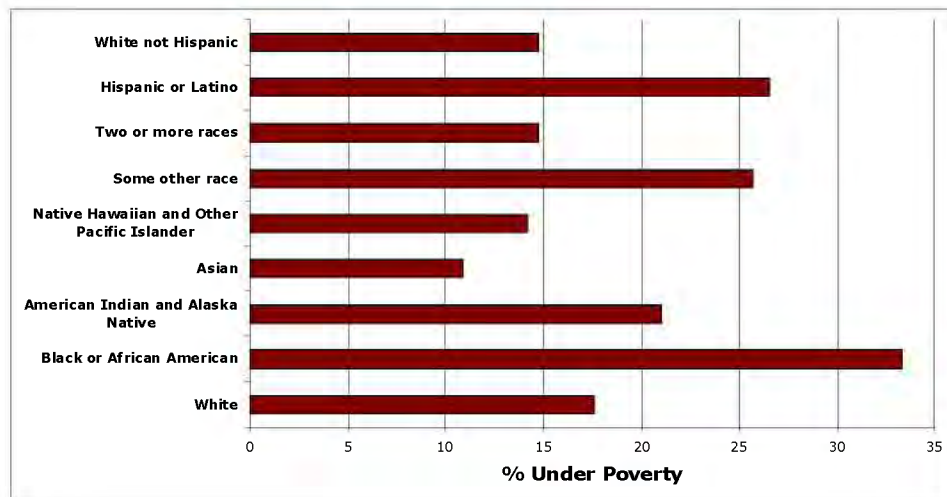
POVERTY STATUS

Eighteen percent of people lived in poverty in 2008 in Kern County, while only 10 percent of Californians lived in poverty. Thirty-nine percent of Kern's female-headed households with children are poor, representing the highest rate of poverty of any group in Kern County.

Black and Hispanics are more likely to live in poverty than other races, with 33 percent of blacks and 27 percent of Hispanics under the poverty line in 2008. Only 18 percent of whites are classified as poor.

(In 2008, the U.S. Census Bureau set poverty thresholds based on size of the household. For example, the poverty line for a household with four people, including two children would be \$21,834.)

Figure 5. Kern County Percent under Poverty by Race, 2006-2008



Source: US Census

EMPLOYMENT

As shown in Table 6 below, Kern County residents work in a variety of occupations.

Table 6. Employment by Occupations, Kern County, 2008

Top 10 Occupations	Number	Percent
1) Office and Administrative Support Occupations	36,010	16.0%
2) Transportation and Material Moving Occupations	28,910	12.8%
3) Farming, Fishing and Forestry Occupations	28,370	12.6%
4) Farmworkers and Laborers	25,990	11.5%
5) Sales and Related Occupations	21,890	9.7%
6) Construction and Extraction Occupations	21,030	9.3%
7) Educational Training and Library Occupations	20,150	8.9%
8) Food Preparation and Serving Related Occupations	19,430	8.6%
9) Installation, Maintenance, and Repair occupations	13,230	5.9%
10) Production Occupations	10,550	4.7%
Total of Top 10	225,560	100%

CA Employment Development Department

UNEMPLOYMENT & UNDEREMPLOYMENT

Overall unemployment and under-employment are long-standing and serious economic development issues for Kern County. In April of 2010, 18.3% of Kern's adult population was unemployed, while the official unemployment rate for the nation was just under ten percent. (An under-employed person is one who must accept a lower-skilled job or a job with fewer hours than he/she wants.) While there are no reliable statistics on underemployment, Kern's high unemployment and relatively undiversified industrial base are perfect conditions for under-employment. Unemployment and under-employment contribute to lower incomes and rising poverty in the county.

SELF-EMPLOYMENT

Overall, 18% of Kern County households earn income from self-employment activities. As shown in Table 7 this rate is comparable to other California counties. A total of 42,405, households earned \$2 billion in aggregate self-employment income in 2007, or \$47,193 per household, again comparable to self-employment income in similar California counties.

Table 7. Self Employment, 2007

	Kern County	Sacramento County	Fresno County	San Luis Obispo County	California
Total Households	239,662	503,357	280,493	104,382	12,200,672
With self-employment income	42,405	88,908	45,074	23,117	2,757,179
% with Self Employment Income	18%	18%	16%	22%	23%
Aggregate Self-employment Income (000)	\$ 2,001,517	\$4,118,460	\$ 2,176,058	\$1,182,605	\$ 144,493,566
Average Self-employment Income	\$ 47,193	\$45,756	\$ 48,356	\$ 51,174	\$ 52,410

Source: *US Census*

2.2.3 Sustainability: Improving Environmental Outcomes

A goal of a well-conceived economic development strategy is sustainability, a term that particularly refers to the relationship between human society and the environment. In Kern County, this relationship is of critical importance, given the increasing pressures on the environment driven by population and industrial growth. The County not only includes some of the most fertile farmland in the world, but also the fragile high desert ecosystems and the southernmost portion of the Sierra Nevada Mountains. Kern is a distinct and diverse geographical region. Economic and population growth impacts these and other aspects of the environment in fundamental ways. Two types of environmental issues are profiled in this section:

- Urbanization and loss of farmland
- Air quality

URBANIZATION AND LOSS OF FARMLAND

Throughout the Central Valley, loss of agricultural lands is a growing concern. Although new urbanized economies are resulting in an increasingly diversified economy, the loss of farmland threatens not only the nation's most productive agricultural region, but also the identity and character of the communities throughout the Valley. The American Farmland Trust (AFT), a national farmland conservation group, has ranked the Sacramento and San Joaquin Valleys as the most threatened agricultural areas in the United States.

Kern County's rangeland has decreased by more than 334,000 acres, from 2004 to 2009, while Kern County's agricultural lands still far outweigh the urbanized areas. According to the 2009 Agricultural Crop Report, prepared by the Kern County Agricultural Commissioner's Office, there are approximately 2.3 million acres of farmland in Kern County of which 836,198 acres were harvested in 2009. Conversions have primarily been in Metropolitan Bakersfield General Plan focused on the urban expansion of the City of Bakersfield. The County's California Land Conservation Act (Williamson Act) program is an important tool for encouraging farm production and discouraging premature conversion.

According to the Kern County 2008-2009 Williamson Act Open Space Subvention Report, a total of 1, 471,498 acres of farmland in Kern County is currently enrolled in the Williamson Act contracts for a term of 10 years. 145,150 acres are enrolled in the 20 year Farmland Security Zone Contracts. Kern County is second only to Fresno County for the amount of acres in the program.

AIR QUALITY

Kern County is split into two air quality districts: San Joaquin Valley Unified Air Pollution Control District (western Kern County) and Kern County Air Pollution Control District (East Kern County/Mojave Desert Air Basin). For most pollutants, the San Joaquin Valley is designated as a non-attainment area. In some cases, the Valley is designated as severe and extreme, meaning that it exceeds acceptable and healthy levels of ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and inhaleable particulate matters. East Kern County/Mojave Desert Air Basin is only non-attainment in the category of eight-hour ozone.

Controlling the levels and emissions of various types of air pollutants from point, mobile, and other sources to achieve attainment and maintenance of National Ambient Air Quality Standards (NAAQS) is an ongoing challenge for the County, and one that is an important consideration for future planned economic growth. In addition to industrial growth, a critical challenge for compliance in non-attainment areas is reducing offsite (indirect source) emissions generated from housing development. The Kern COG Transportation model estimated that each new house produces an average of 60-70 vehicle miles traveled per day, contributing to direct and indirect mobile source pollution impacts.

While Kern County and its two basins still face stringent and changing regulatory requirements to achieve State and federal standards in the near future, most indicators, such as concentration measurements, show an improvement in air quality in both air pollution districts. Although Fresno and Kern Counties have had significantly higher ozone levels than the rest of the San Joaquin Valley Basin, Kern County showed the best improvement and drove overall air quality improvement in the Basin in the 1990s. Still, according to the 2008 Kern Council of Governments' (Kern COG) Blueprint document 63% of respondents thought that local government agencies were not doing enough to improve air quality.

In 2008, SB 375 was signed into law as a follow up to AB 32 (climate change legislation passed in 2006). The law connects reduction of greenhouse gas emissions from cars and light trucks to land use and transportation policy.

Historical and comparable data for one-hour ozone and PM-10 measurements are presented below for Kern County's basins as well as the Los Angeles and the San Francisco Bay Area basins.³

³ San Joaquin Valley Unified Air Pollution Control District, "Severe Ozone Attainment Demonstration Plan," from <http://www.valleyair.org/Workshops/postings/06-19-01/SOADP%20Package.pdf>

Table 8. Highest Maximum Hourly Ozone Measurements (in ppm)

Air Basin	1990	2000	2008
Mojave Desert (Eastern Kern)	0.270	0.163	0.146
San Joaquin Valley (incl. Western Kern)	0.170	0.165	0.149
San Francisco Bay Area	0.130	0.156	0.134
South Coast (Los Angeles)	0.330	0.184	0.176

Source: California Air Resources Board

**Table 9. Highest 4 Daily Maximum Hourly Ozone Measurements
Days Exceeding National Standards**

Air Basin	1990	2000	2008
Kern County	37	16	14
Fresno County	14	23	9
Los Angeles	120	13	17

Source: California Air Resources Board

2.3 Kern's Cluster Portfolio: What Drives Performance

The key to building Kern County's economic prosperity over time is to strengthen each of our industry clusters. Industry clusters are the engines of Kern County's economy. Clusters are led by export-oriented lead industries, supplied by local supplier companies, and supported by an array of public and private institutions. These clusters have high economic multipliers and are wealth generators for the County because their economic activity utilizes many supplier and service inputs that represent high-quality jobs. In addition, clusters, as the name implies, continually attract capital, skilled and less-skilled labor to the County making the economy both deeper and broader.

Clusters drive our economy because they produce goods and services that are sold outside the County and thus bring new economic wealth to Kern County. The clusters compete in markets outside the County—across California, the United States, and the world—and their competitiveness in these markets largely determines the prosperity of the entire County. The exporting industries in these clusters are also linked to related supply industries and to economic input institutions. These 'value-chain' linkages are an integral feature of industry clusters: The better the value-chain linkages the stronger the cluster. With strong linkages, information can move more rapidly between customers, producers and suppliers; skilled labor can be attracted and shared; firms can react more quickly to market changes; and new technologies can be more rapidly incorporated. In turn, the clusters will be able to grow more rapidly and perform more competitively in the global economy.

Therefore, making a cluster deeper means adding more value locally—retaining wealth while reducing dependency on others. Broader clusters means that as clusters develop, they add new export market-serving segments, so that the economy is more robust or resilient in the face of global economic cycles, since one cluster segment may be doing well when another is not. Building and maintaining a strong cluster portfolio means that our County must enable each of these interdependent groups to maximize their innovation and efficiency so that they cause more enterprise to form, enable existing companies to expand, and attract new businesses into the County.

For these reasons, there is a general public interest in ensuring that these clusters succeed, and they are important focal points for economic strategy. Cluster-based economic development is not about the government “picking winners”, as an older generation of state-led economic development tried to do. Rather it is about creating a customized economic development strategy that reflects the existing strengths of the County, and recognizes that actions and initiatives must be tailored to the specific needs of its economy and the clusters.

2.3.1 *Kern’s Industry Clusters*

The research behind this report identified six significant industry clusters in Kern County which is one less than five years ago. It was determined that the Business and Professional Services Cluster is less of a stand-alone industry cluster than it is general support to all the business clusters. These sectors were determined by examining detailed employment-by-industry statistics in Kern County (which is synonymous with the Bakersfield Metropolitan Statistical Area). In order to be designated as a cluster, an industry or group of industries had to be a clear economic strength of the County with a pre-existing set of competitive advantages. Empirically, the best way to determine this is by looking at how specialized Kern is in the industry: if the County has more people employed in the industry than the US average, it is probably due to some long-standing competitive advantage of the County which can serve as the basis of a cluster strategy. In other cases, the County does not have more people employed compared with the US average, yet the number appears to be growing quickly and has key segments which are highly specialized and above average concentration.

The six clusters have been organized into several distinct categories to describe their stage of lifecycle.

- Value-Added Agriculture: Established Cluster
- Energy and Natural Resources: Transforming Established Cluster
- Transportation and Logistics: Established Cluster
- Tourism, Recreation & Entertainment: Emerging Cluster
- Healthcare Services: Emerging Cluster
- Aerospace and Defense: Transforming Emerging Cluster

Table 10. Kern County Clusters

Cluster	Employment	Concentration	Competitiveness	Leading Segment
Value-Added Agriculture	Large (54,000)	High Rising (8.8)	Established Mature Competitive Advantage	Support Activities Crop Production Food Manufacturing
Energy & Natural Resources	Medium (17,700)	High Rising (4.3)	Established Mature Competitive Advantage	Support Activities & Construction Oil & Gas Extraction Oil & Chemicals Manufacturing
Transportation & Logistics	Medium (13,200)	High Constant (1.3)	Established Competitive Advantage	Transportation Logistics Support Activities
Tourism, Recreation & Entertainment	Large (21,800)	Low Rising (0.65)	Potential for Becoming an Emerging Industry	Accommodation & Food Services Art, Entertainment & Recreation
Health Care Services	Medium (20,100)	Near One Falling (0.77)	Emerging Gaining Competitiveness	Ambulatory Health Care Services
Aerospace & Defense	Large (23,300)	High Rising (3.1)	Established Maintaining Competitiveness	Civilian Workers & Contractors Defense Department Personnel

2.3.2 Methodology for Selection of Clusters or Selection of Clusters

In selecting Kern's leading industry clusters in 2005 and for this update, three techniques were used:

- Quantitative analysis of economic factors;
- Review of existing County clusters and definitions;
- Discussions with County economic development professionals and leaders and private sector members of the proposed cluster.

Analysis and meetings in early 2010 resulted in a list of six clusters of differing sizes and maturities within Kern's economy. The following is a table of the clusters and the corresponding cluster from the prior economic development strategy update. One cluster from the 2005 Strategy – Business and Professional Services – was removed as previously explained.

2004 County of Kern Economic Development Strategy (ICF Consulting)	2010 County of Kern Economic Strategy Update (KEDC)	Explanation
Value-Added Agriculture	Value-Added Agriculture	Food processing operations will provide higher wage jobs for the County's workforce.
Energy and Chemicals	Energy and Natural Resources	The emergence of alternative energy technologies such as solar, wind, biomass and geothermal are part of the area's rich natural resources portfolio. Mining activity is also increasing in the region.
Transportation, Logistics & Warehousing	Transportation & Logistics	The previous designation was redundant in nature. Most activity revolves around the distribution of goods through the area and from the area.

Less Dominant or Smaller Clusters

2004 County of Kern Economic Development Strategy (ICF Consulting)	2010 County of Kern Economic Development Strategy (ICF Consulting)	Explanation
Business and Professional Services	N/A	Call centers are the only sub-cluster which have been relevant in the past. However, this type of operation has little export-related value and most have located in "low-cost" regions of the U.S. and overseas.

Tourism, Recreation & Entertainment	Tourism, Recreation & Entertainment	Tourism remains and film is incorporated as a specific tourism segment (attracting people who will film movies in Kern due to the natural amenities). Recreation and Entertainment are included in Tourism because they are components to making Kern a more attractive location for tourists and local residents.
Health Services and Medical Technologies	Healthcare Services	The healthcare industry is growing rapidly throughout the Central Valley to meet the demand from a growing population. Many of these jobs are high skilled and well-paying. Kern must position itself to benefit from this growth and become a key center for health care. Collaborative efforts must be undertaken to stem the "leakage" of expenditures into the LA Basin.
Aerospace and Defense	Aerospace and Defense	Aerospace and Defense continue to be a leading cluster in East Kern. The BRAC-related activity promises to bring 1,400 new jobs to China Lake and the Mojave Spaceport is proving to be a center for aerospace cluster activities.

The 2010 Strategy represents changes from the 2004-2005 economic development strategy. These changes are due to a reassessment of the contributions to the economy of the previously defined clusters. As economies change over time it is necessary to reevaluate prior categories and definitions.

Value-Added Agriculture is the leading employment cluster with the bulk the State's agriculture operations concentrated throughout the Valley. The cluster builds on Kern's historic role as a leading center for crop production, particularly vegetables, nuts, citrus and cotton. The cluster also benefits from the food processing component, particularly carrot and tomato processing.

Energy and Natural Resources is reframed from the Energy and Chemicals focus in the 2005 Strategy. Although there will remain a focus on moving into downstream activities such as additional chemicals and plastics manufacturing, there will also be a focus on developing seed activities in renewable energies (wind, solar, biomass, and geothermal) as well as ongoing support for the major petroleum extraction and refining activities. These are principally energy industries.

Transportation and Logistics is a fast growing industry with tremendous potential within Kern. This is a leading cluster and supports the competitiveness of the Energy and Natural Resources and Value-added Agriculture clusters through the use of warehousing and distribution services. Given Kern's location to the immediate north of Los Angeles County with California's two major north south interstates running through the County as well as the only year-round pass over the Sierras in the San Joaquin Valley, it is a natural place for growth in Transportation and Logistics. Kern has become the location for a significant number of major distribution centers in established industrial complexes along Seventh Standard Road and Interstate 5.

Tourism, Recreation & Entertainment continues to suggest continued growth opportunities in both annual expenditures and employment. This includes the generation of tourism and visit activity from people traveling between major cities in Northern and Southern California as well as those from large metro areas in Southern California seeking a close weekend get-away destination. To enhance this potential, Kern County must continue current marketing activities and look for additional promotional opportunities.

Healthcare Services has been recast to reflect the vast array of services and networks in the County. Throughout the San Joaquin Valley, population growth has resulted in major increases in hospital and health care employment. In addition, the general growth in health care spending has served as the catalyst for the recent or planned expansion of several regional facilities.

Aerospace and Defense remains a leading industry cluster for the County and particularly for East Kern where the economy of most communities is dependent on the strength of the aerospace and defense industries. The County has some of the best natural assets in the West for continued expansion in aerospace and defense. The 2005 Base Realignment and Closure (BRAC) process resulted in the decision to consolidate naval weapons and armament research, development and testing at the U.S. Naval Air Weapons Station at China Lake, resulting in a projected 1,400 new jobs. The potential for space tourism continues to be great, though other states are fiercely competing for this business.

2.3.3 Additional Kern County Economic Sectors

The six clusters identified all constitute groupings of industries where the County has a competitive advantage. However, there are other sectors that have contributed broadly to employment in the County which are excluded from the focus of this strategy. Specifically, the four main sectors not included in this list of clusters are:

- Government (Federal, State, Local)
- Construction (Residential, Commercial)
- Retail (All types of stores, Auto dealers, Hotels)
- Professional and Business Services (Headquarters, Call Centers)

These sectors are typically not included in a cluster-based economic development strategy unless there is a strong case that their activities are “export-oriented.” In each of these four cases, there is an “export” component of these sectors but it is neither the most significant nor the leading edge of the sector.

Government is the largest single source of employment for the County. Government jobs range from teachers and local government to state agencies and prisons to federal departments and employees. The biggest growth component of this employment is teachers, which is driven by increases in population. This is not export oriented. State employment has also grown quickly and can be argued to be “export-oriented” given that the funding for the employment is shared among residents from throughout the State. However, the main growth has been in prison jobs and given the revenue picture for California, this growth is unlikely to continue in the immediate future. Federal jobs have declined in the past decade with military accounting for a large proportion of the decline. However, these defense-related jobs are considered part of the Aerospace and Defense cluster and the strategy to maintain and gain employment should be treated within that cluster. In summary, government is an important part of the employment base for Kern but cannot be treated as a key cluster. Control over this employment growth for the most part does not reside within Kern hence naming government a strategic industry would not effectively transfer ability to successfully implement this strategy within Kern.

Construction and retail are similar in that they are largely driven by population growth. The construction industry in Kern has contracted as a result of the recession and Kern County’s

weakened housing market, however construction jobs appear to be stabilizing. Kern County has many construction occupations with high location quotients (i.e. a higher concentration than for the national economy). Further there are local firms who export their construction services but there are not a sufficient number of such firms to constitute a distinct construction cluster. In summary, construction is a key industry for Kern County but is not an industry cluster. The County's strategy with construction should be to ensure that the local workforce is trained for the jobs within that industry through vocational and apprenticeship programs. Supporting these occupations will also directly benefit the existing clusters which also require similar vocational skills.

Retail is also driven by population growth. Given the size of Kern, the County as a whole has limited retail "leakage" where residents are leaving the County to shop for basic items elsewhere. Specific communities within the County may recognize retail as an important part of their strategy and may conduct retail studies and strategies to identify what is missing from their communities and what people are shopping for outside of their community which could be brought in. Countywide there may be some retail employment which is truly export oriented. In these cases, the strategic approach is part of the tourism cluster (such as any shopping along I-5). Any strategy to grow retail must look at retail as a segment within the tourism industry for people passing through the County or spending time in one of the County's distinct communities. Significant life-style center projects like the proposed Bakersfield Commons will provide amenities that will aid recruitment efforts for "creative class" employees.

Professional and business services are relatively dependent on the success of the County's six identified clusters. Call centers are the only sub-cluster which has been relevant in the past. However, this type of operation has little export-related value and most have located in "low-cost" regions of the U.S. and overseas.

In summary, government, construction, retail, and professional and business services are not included because they are either principally local serving or controlled by factors beyond the County's control. Each of these sectors may be an important part of an individual city or community's economic strategy. However, they are not the main focus of the overall countywide economic development strategy.

The purpose of a cluster strategy is to focus the economic development efforts and activities towards the growth and expansion of the industries with the greatest potential to improve the economic performance of the entire economic region – which in this case is Kern County. This approach does not preclude the County from assisting firms which are not within one of the identified clusters. For example, if a furniture or apparel manufacturer was planning a move to Kern County and wanted assistance with land use or job training issues, the County should, in most circumstances, support the new business. However, the County should not do so at the expense of any firm within the clusters or if this new firm's approach to business was not in line with the County's expressed economic development goals. In applying the cluster logic to economic development, the County should be focusing its efforts in the directions which will yield the best results – that is, towards attracting, retaining, and expanding firms within the existing portfolio of clusters and for supporting firms whose business approach align with the County's economic development goals.

2.4 The County's Economic Foundations: The "Infrastructure" that Supports Competitiveness

The formation, expansion and attraction of companies into Kern's clusters depend largely on the County's capacity to provide sources of economic input advantages. In today's fast-paced economy greater pressure is now being focused on economic institutions to become agile producers of inputs to clusters—just as companies must be agile in responding to global markets. This poses a substantial cultural shift for places whose institutions have viewed themselves as governing rather than supplying the economy. Yet, in successful economies, the distinctiveness of economic institutions has continually proven to have made the difference between being a leader or a follower in the global economy. Evidence is fairly conclusive that economies with the institutional capacity to generate skilled workers that the economy requires, capacity to provide the financing that enterprise requires, as well as telecommunications and physical infrastructure, and business climate and quality of life can become leaders. No element of the community is exempt from needing to understand and to learn to competitively serve the surrounding economy.

Understanding how institutions that shape key economic foundations function and interact with the surrounding economy is a critical part of devising an economic competitiveness strategy. This understanding needs to be extended to comprehension of the relationships between firms and economic foundation institutions. New forms of co-operation between firms and economic foundation providers are essential. Kern County's future will depend upon the ability of its economic foundation institutions and providers to create that distinctive advantage or edge required by the established and emerging clusters that define the County.

The goal is to create a "vital cycle" in which the jobs and investments of successful clusters then attract the new ideas, people, and capital that, in turn, further enhance economic foundations—from human resources to overall quality of life—providing even more advantage for the industry clusters.

The following are the seven categories of economic foundations that have major impacts on the competitiveness of clusters, and the sustainable prosperity of economies. These economic input foundations provide distinctive competitive advantages for the industry clusters, generating productivity improvements that result in more and higher-quality jobs and more investment in the economy.

- **Human Resources** (Preparation, Advancement, Renewal): Developing and sustaining the workforce skills needed for competitiveness.
- **Finance** (Initiation, Expansion, Restructuring): Providing the continuum of capital needed to form and expand companies.
- **Infrastructure** (Roads, Water, Sewer, Bandwidth, Energy): Access to land; Funding sewer/water; Cost-effective development.
- **Transportation** (Mobility, Storage): Ensuring the flow of goods.
- **Business Climate** (Tax, Regulation, Administration): How the taxes, regulations and policies impact competitiveness and how the responsiveness of local governments affect employer and resident needs.

- **Quality of Life** (Housing, Climate, Recreation): Providing for the amenities and services that draw new people to the County.
- **Innovation** (Discovery, Development, Deployment): Generating knowledge and moving it to the marketplace.

The sections that follow will profile Kern County's strengths and weaknesses in each of these seven categories.

2.4.1 Human Resources (Preparation, Advancement, Renewal)

Human Resources are widely recognized as the key to success in the knowledge economy. But what is less commonly recognized is that building a knowledge economy requires both educating people and ensuring that jobs are available that reward their investment in education. There are three key systems of labor market and skills development that are assessed in terms of workforce skill levels and production of graduates. These systems are assessed as follows: preparation (K-12), advancement (college and university), and renewal (continuing education and retraining). The goal is developing and sustaining the workforce skills needed to compete.

Kern's human resources foundation is anchored by K-12 schools, community colleges, and universities. Annually, Kern graduates approximately 10,000 students from high school. Kern also graduates nearly 2,200 students annually from trade schools, colleges, and universities. The following are the enrollment figures for these institutions:

Bakersfield College	Certification and Associates Degrees Enrollment: 18,000
Cerro Coso Community College	Certification and Associates Degrees Enrollment: 4,600
California State University, Bakersfield	Undergraduate and Graduate Degrees Enrollment: 8,000
*Fresno Pacific University Bakersfield Center	Undergraduate and Graduate Degrees Enrollment: 2,400
*National University	Undergraduate and Graduate Degrees Enrollment: 300
*Point Loma Nazarene University	Undergraduate and Graduate Degrees Enrollment: 300
*Kaplan College	Certification and Associates Degrees Enrollment: 700
*San Joaquin Valley College	Certification and Associates Degrees Enrollment: 700
*Santa Barbara Business College	Certification and Associates Degrees Enrollment: 280
Taft College	Certification and Associates Degrees Enrollment: 9,300
*University of La Verne	Undergraduate and Graduate Degrees Enrollment: 7,929
*University of California, Merced	Undergraduate and Graduate Degrees Enrollment: 875
*University of Phoenix	Undergraduate and Graduate Degrees Enrollment: 675

Enrollment numbers are for the Kern County location only.

**Indicates satellite campuses for the larger institution of the same name located elsewhere.*

In addition to the formal academic institutions, the human resources system in the County is supported by the many workforce development courses, training providers, and counselors.

The following are some of the key countywide and regionally-specific challenges facing the human resources system. These challenges are based on concerns raised by representatives from the various communities and economic development staff from the cities and the County. In most cases, there is a parenthetical reference to where this is a distinct challenge. In no way does this suggest that these challenges are only in that city or community.

Link Workforce Training with Cluster Needs: Continue to improve the connection between the workforce development / job training activities and overall economic development. (Countywide)

Data Gathering on Occupational Growth: Need for better information on occupation growth and skill needs. Need to be able to identify future workforce skill needs and demand by employers. (Countywide)

Additional Vocational Training: Need for more vocational training in the high schools and beyond. Few people from Kern County enter the University of California system yet the local school systems are mostly focused on putting people into universities. Institutions like Cero Coso Community College (Energy), Westec (Agriculture), Taft College (Healthcare) and Bakersfield Adult School (Healthcare) offer vocational-based training. (Countywide)

Job Retraining: How to assist laid off workers in finding employment at the same or higher wages, especially in cyclical industries like the agriculture and oil sectors. (Countywide)

Quality of Workforce: Difficulty identifying skilled and dependable workers. Lack of motivation or discipline (soft skills) is a challenge for employers. Few certification processes that could provide a ready-and-able workforce to employers. Although, ETR has recently implemented WorkKeys certifications. (Countywide)

Overcome Perceptions of Low Education: The perception (and reality) that Kern County has a low educated workforce is a limiting factor for outside firms looking to locate within the County. (The County recently ranked 197 out of 200 metropolitan areas in educational attainment (Forbes, April 2010)). Rather, KEDC communicates the importance of work ethic as the region has some of the nation's lowest attrition rates in the transportation and logistics industry, as well as, the number of under-employed workers in the County. (Countywide)

Size of Rural Workforce: Lack of overall workforce size in the more rural areas of the County. This impedes growth of new industries because there is not an available workforce. (This is true throughout East Kern and all other rural areas of the County)

More High Skilled Workers: Need for larger concentration of highly-educated or skilled workers particularly for firms using advanced manufacturing and processing equipment. (Countywide)

School Quality Encouraging Sprawl: Poor quality schools in older urban areas encourage urban sprawl and result in increased urban blight. For example, wealthier residents in poor performing school districts move out of their neighborhood into new developments where they perceive the schools to be better. This results in lower income families remaining behind in the older neighborhoods because they cannot afford to move. Since the low income families also lack the resources to continually improve their homes or communities,

their neighborhoods experience increased blight which then further encourages people to move to the new sprawling developments. The challenge is how to improve schools and encourage people to remain within the older urban areas. (Bakersfield)

New Schools: How to build sufficient new classrooms for the growing population. In particular there will be an additional 43,000 students attending K-12 schools within the next 10 years. (CA Department of Finance)

More Training Despite Reduced Budget: How to continually provide employment services to employers and job seekers with a reduced WIB budget. (Countywide)

2.4.2 Finance (Initiation, Expansion, Restructuring)

There are three key levels at which financial systems operate: Initiation (seed and early-stage financing), expansion (venture, joint ventures, commercial credit) and restructuring (mergers and acquisitions and specialized credit facilities). These are typically assessed in terms of known levels of seed or angel capital investment (qualitative), venture capital placements and other transactions. The goal is to provide the continuum of capital needed to form and expand companies.

Non Traditional Lending: Lack of venture capital or high risk capital for non-traditional lending. This affects the growth of new start-up firms or growing existing companies in the County who are not part of an established and recognized industry. (Bakersfield and Kern County noted this with wide agreement from others throughout the County)

Disconnect Between Lenders' Approach and Industry Realities: Bankers/lenders often use information on an industry which is incompatible with the reality of the industry in Kern County. For example, when identifying growth prospects of an industry, they may use a 2 digit NAICS code analysis which presents a different picture of that industry's structure and dynamics than the more specific 4 or 6 digit NAICS code which is a segment of that larger 2 digit industry. This limits growth of Kern businesses because the lenders do not have an accurate picture of the industry. (Countywide)

2.4.3 Infrastructure (Roads, Water, Sewer, Sites, Bandwidth)

There are several forms of physical infrastructure key to cluster operations: Operations (power, water, waste) and facilities (availability of industrial sites, parks). These are typically assessed in terms of energy, water and waste costs and quality, and acres of quality industrial real estate. The goals are access to usable land, ensuring the flow of goods and funding for sewer/water. In addition, the information infrastructure is also key to competitive cluster development: Bandwidth (high speed, high capacity infrastructure), digital switching services and information services availability. These are assessed in terms of quantity of fiber and fiber connectivity (hubs, server hotels), wireless (cellular and satellite) service, and number of information service providers and specialized services.

Road and rail transportation of people and cargo are perhaps the most decisive aspects of Kern's physical infrastructure as far as economic development is concerned. The County is conveniently located within 100 miles of Los Angeles, 200 miles of San Diego and Las Vegas, and 300 miles of San Francisco and Sacramento. Water and sewer are also important economic development factors to Kern.

The County's "Infrastructure" foundation consists of the roads, rails, land, and high speed internet availability. Passing through the State are two of the key north south highways in the State, Interstate 5 and Highway 99. Also passing through the County is the major east west highway heading towards Barstow which connects with Interstates 15 and 40. The County has airports in Bakersfield, California City, Mojave, Inyokern, Shafter, Taft, Lost Hills, Tehachapi, Delano, and Wasco. Rail access includes the Union Pacific and Burlington Northern/Santa Fe lines with an inter-modal facility in Shafter. In addition, Amtrak's San Joaquin route originates in Bakersfield and runs on BNSF track northward through the valley.

The following are some of the key countywide and regionally-specific challenges facing the infrastructure system.

Funding New Infrastructure: Lack of money for new sewer and water infrastructure. Need to generate sufficient revenues to pay for the maintenance and upgrading of existing infrastructure, as well as, to pay for unfunded mandates. (Arvin, Delano, McFarland, Lamont, Bakersfield and County of Kern)

Inconsistent Infrastructure Quality: There is inconsistency in the quality of the infrastructure throughout the County, particularly between the incorporated and unincorporated areas. (Countywide)

Size of County Affects Communication: Large size of the County affects communication among the cities. This was noted as a key challenge to working together as well as sharing information. Kern COG's Blueprint Participants in the December 2008, "Presentation of Draft Report" noted that more meetings such as this one, which brought people together from throughout the County, are helpful as a way to reduce the barriers which are the result of the County's size. (Countywide)

Broadband Access: Need for high speed broadband access to rural areas. Many areas still lack access to high speed internet which affects their ability to grow economically, particularly for industries such as tourism which rely so heavily on the internet for information. (Kern River Valley)

Lack of available industrial facilities and capital to develop them. This was presented as a problem that communities do not have available buildings for new industries although they have available land for industrial activities. Kern County has one of the lowest industrial vacancy rates in the U.S. Specifically, if someone is looking to move into the County within six months, there are not enough vacant buildings, or spec buildings to accommodate their requests. (Bakersfield, Taft, Ridgecrest)

2.4.4 *Transportation (Air, Rail, Highway Access)*

In a fast-moving global marketplace, the transport and storage of goods is a key service. Highways, rail lines and airport facilities are all key parts of a transportation infrastructure. When speed to market is prized, having access to a high quality transportation infrastructure is a major competitive advantage. Transportation is typically assessed in terms of frequency and costs of air service, miles of highway and rail lines.

Kern County is fortunate based on its existing transportation infrastructure and its proximity to major markets. Some of its key transportation strengths include:

- California's major north/south transportation corridors (Highway 99 and Interstate 5)

- Year-round transportation to the east– Highway 58 to Interstates 40 and 15
- Proximity to Los Angeles and the Bay Area and their port facilities
- Two major rail lines (Union Pacific and Burlington Northern Santa Fe)
- New inter-modal facilities / inland port facilities in process
- Designation for a high speed rail terminal
- Multiple airport facilities (14 publicly-owned airports including Meadows Field in Bakersfield, Minter Field in Shafter, Mojave Airport and Inyokern Airport)
- Foreign Trade Zone. In January 2010, the US Department of Commerce designated the County of Kern Department of Airports as administrator of the newly created Foreign Trade Zone Number 276 for sites within Kern County.

East/West Across Bakersfield:

The Thomas Road Improvement Program (TRIP) is a unique partnership between the City of Bakersfield, County of Kern, Caltrans and the Kern Council of Governments. The program was created to manage and expedite the completion of projects designated for funding in the 2005 Federal Transportation Act.

The Westside Parkway. The project is a high capacity transportation facility that will ultimately extend from Truxtun Avenue near State Route 99 to Heath Road at Stockdale Hwy. The facility will reduce congestion and improve connectivity in west Bakersfield. Construction is scheduled for completion in 2012.

SR 99/7th Standard Rd Project. This project will widen 7th Standard Road within project area to construct a separate parallel bridge adjacent to and north of the existing bridge crossing State Route 99, modify on- and off-ramps, and construct an overpass for 7th Standard Road over the Union Pacific Railroad. Construction is scheduled for completion in 2010.

SR 178/Fairfax Road Interchange Project. The construction of the SR-178 and Fairfax Road Interchange will relieve traffic congestion by providing additional capacity on both SR-178 and Fairfax Road, and by providing more efficient access on and off SR-78. The project began more than 10 years ago when the City prepared a Project Study Report; Caltrans approved the document in May 1997. Construction was scheduled for completion in 2009.

Roadways Receiving Upgrades: Overall growth in the County has resulted in increased use and wear and tear on the roads. Implementation of the American Recovery and Reinvestment Act has made improvement of some local surface streets possible; however, long-term maintenance of the roadways needs to be addressed. Without a long-term plan, the County may lose some of its competitiveness in transportation and logistics activities, which would affect all clusters. Some of the impacts on the roads may be attributable to the increase in transportation and logistics activities on the County's roads, however. According to the American Association of Highway Officials, a single truck (weighing 80,000 pounds) has the same impact on the roads as 9,000 cars. (Countywide).

The following are some of the key countywide and regionally-specific challenges facing the transportation system:

Industrial Sites with Rail: Need for more industrial sites which are directly served by rail and control of residential encroachment that affects the growth in both rail and industrial uses.

Controlling Encroachment: Residential development is encroaching on airports and rail lines. Formerly agricultural lands have turned over to residential uses which are often incompatible with the land use needs surrounding these important infrastructure facilities for the County.

2.4.5 *Quality of Life (Housing, Climate, Recreation)*

Quality of life has historically been one of the draws of Kern County, particularly as it related to affordable homes and stable communities. Key elements to the County's quality of life include its low cost of living, an amenable year-round climate, and easy access to various recreational activities. Average temperatures year-round are between the 40s and the 90s. The County has several professional sports teams, including minor league basketball and ice hockey. In addition to the Kern County Fair (the sixth-best attended of 78 fairs in California), there are many annual festivals including the Bakersfield Jazz Festival and the Mountain Shakespeare Festival.

The following are some of the key countywide and regionally-specific challenges facing the County's quality of life.

Retaining and Attracting Young Professionals – Young professionals comment that, in order to keep local graduates in Kern County, and to attract young professionals to the area, there is a need for more activities targeting that audience. Specifically, there is a desire for more activities and events for people to gather in the evening/night.

More Recreational Opportunities: Need for more recreational and cultural opportunities across the board, particularly for younger people. There is the need for more places for young people to go to which give them a chance to learn something instead of simply hanging out.

Assistance to Low Income: Need for more assistance for low-income families. Many people ask for this assistance.

Improving Overall Issues: How to improve the many challenges that affect the ability to raise a family and attract highly-skilled or educated workers. These include poor air quality in the San Joaquin Valley, high drop out rates, high infant mortality, high poverty rates, low wages, and low educational attainment.

2.4.6 *Business Climate (Tax, Regulation, Administration)*

There are three key features of metropolitan business climate that are crucial to industry clusters: Tax levels, regulatory efficiency, and administrative complexity. These can be assessed in terms of new concepts such as 'return on taxation,' which is critical to companies (value received in public services for tax dollar per employee), regulatory efficiency (permit burden), and administrative quality (degree of 'smart infrastructure' in place). The issue is how the taxes, regulation and policies impact competitiveness.

The business climate in Kern County is supportive of economic growth and development of new jobs. There is a general agreement that economic growth is good and needed on the part of elected officials throughout the County.

In order to better respond to the needs of local businesses and other clients, the County is in the process of consolidating all planning and related functions into Planning and Community Development under the Development Services Agency.

The following are some of the key countywide and regionally-specific challenges facing the County's business climate.

Reform State Laws: Need to reform many statewide laws and regulations which affect economic development and create a perception that California is not business friendly. These include the California Global Warming Solutions Act of 2006 (AB 32), SB 375 (anti-sprawl legislation), SB 975 (prevailing wage requirement for receipt of government subsidy), and the California Environmental Quality Act (CEQA). Other states are actively (and successfully) recruiting California businesses. This issue cannot be overstated.

Costs of Fees: Increasing building fees at the County and City levels. County residents and business people noted that this is also a reality that cities all across California are facing and that Kern still has relatively low fees and permit processing times are fast.

Air Quality Regulations: Limitations imposed by the Air Quality District in the Valley region of the County impacts the ability to expand industrial activities in the Valley. Though some residents mentioned that these air quality limits in the Valley may present an opportunity for industrial growth in East Kern, other limitations in the eastern half of the County (such as infrastructure, workforce, proximity) suggests otherwise.

2.4.7 *Innovation (Discovery, Development, Deployment)*

Understanding the economic impact of innovation requires recognition of the "innovation pipeline." This is made up of the public and private institutions and organizations that (a) conduct research and create new knowledge, (b) develop new applications for this knowledge, and (c) move these applications to the marketplace in the form of new or expanding businesses that sell the applications as products or processes. The extent to which a particular County or region is able to participate in the various steps of the pipeline impacts the economic impact of innovation in the economy. The innovation pipeline works well when the discovery, development, and deployment systems generate a high volume of high-quality content that flows speedily from one system to the next.

Kern County has elements of an innovative economy but is too concentrated in the Discovery stage. Some product development is occurring but it is often taking place within individual firms and thus having limited benefit to the overall economy. Some of the specific key challenges in innovation in Kern are:

- Need for greater support for the development of renewable energy technologies.
- Need for expansion of technology-based employment opportunities in eastern Kern.
- Need for better local systems to support the commercialization of innovative ideas.
- Need for access to funding for high risk innovative ventures.

2.5 Summary: A Mixed Picture of Dynamic Assets and Mounting Challenges

The analysis of economic performance (prosperity, disparity, sustainability), clusters and economic foundations reveals significant gaps in the County's systems that must be addressed in order to strengthen the overall economic outcomes for the County. Some of the major challenges which will affect Kern's economic growth over time:

- Persistent high unemployment rate
- Relatively low average wage across many industries
- Low educational attainment – particularly the number of college graduates
- Moderate population growth
- Land use, "leapfrog" residential development, and the infrastructure costs of sprawl

These are challenges which will shape the economic performance and prosperity of the County. There is no specific recipe for how these challenges will affect the County's economic growth. But it is evident that they must continue to be addressed.

The subsequent chapter details the competitive position, challenges and opportunities for each of the six highly-recommended clusters discussed above. These cluster overviews shed greater insight into the specific challenges facing the County. Each cluster overview is followed by recommendations for the cluster.

3 Shaping the Future: Cluster Overviews

3.1. Introduction to Cluster Overviews

3.1.1 *Our Economic Portfolio Goal: Building Competitiveness*

Cluster strategy is about finding commonly shared problems across members of related industries—whether producers, suppliers or economic input institutions—and collaborating to develop creative solutions. The resolution of these problems, through new County and regional solutions creates a locally shared advantage that cluster members can use to compete globally.

High performing economies rarely need cluster strategies. The reason for this is that their industries commonly work together on shared issues and local institutions seek out their “customers” in specific industries to ensure they are delivering what is needed—whether skills, innovation, finance, planning or infrastructure.

High performing economies are distinct because everyone is a supplier, of some kind, to someone else, and everybody knows it. The economy is about everyone and everyone is prepared to negotiate new roles and relationships or “deals” with one another. In high performing economies colleges and universities have ongoing dialogues with each industry to align degrees and courses; universities and laboratories have both a policy and culture fostering innovation among research faculty and laboratory staff with linkages to diverse commercialization partners; there are a wide range of channels for securing capital for early stage proof of concept or production scale up that are known to entrepreneurs and existing firms; infrastructure for industry development, transportation, power and water is focused on meeting the needs of the next generation economy through technology parks and innovation zones; local governments have quality control and customer assurance programs for all services, from permits to tax assessment, and; quality of life is recognized as a “product” that must be delivered—whether quality schools and health care, or recreation and entertainment.

Government programs alone cannot deliver these outcomes. Achieving an environment of advantages in economic inputs that evolve over time as needs and opportunities change is the product of every institution and firm in an economy learning the virtues and culture of collaborative innovation. Building a strong economy requires thinking of our economy as a portfolio of clusters that must be carefully managed. In Kern County there are some emerging clusters and some established ones. Each has an array of competitiveness challenges. Cluster competitiveness is, essentially, enabled by addressing these challenges. If we can address them and build our capacity to respond and adapt to changing markets and other conditions, we will have created new sources of advantage.

Kern’s industry clusters identified in 2005 and recast in 2010 have already started on this path. By focusing on achieving small solutions as clusters and by the County recognizing their strategic import, the clusters will continue to grow and expand within Kern County.

3.1.2 *Overview Elements*

This chapter presents an analysis of each of Kern County’s recommended industry clusters and a series of recommendations for improved competitiveness. In February 2010, KEDC hosted and convened workshops (focus groups) for six of the clusters and additionally

carried out dozens of interviews with business and government leaders. In the focus groups, participants from each cluster helped identify challenges and opportunities that affect their cluster. Collectively, the analyses and recommendations in this chapter are the cluster overviews. However, as noted above, each overview is only the starting point for the cluster and for the County. These strategies, like this overall strategy, are living, working documents that should be the foundation for ongoing action. The prospects are good for ongoing action.

In a subsequent chapter, we will identify Flagship initiatives which will be the implementing glue of the entire Kern County Economic Development Strategy. These specific initiatives will be how the County tackles the challenges identified in the cluster overviews.

Each cluster overview is comprised of the following elements:

Overview: A summary of the cluster's key characteristics.

Cluster Performance: A discussion of the cluster's competitive position, including absolute and relative employment growth, life cycle stage—seed, emerging, expanding or transforming—and their specialization (measured by location quotient) benchmarked to selected competitors to provide an indication of the cluster's competitiveness.

Cluster Segments: An identification and description of the cluster segments, including comparison of size and concentration.

Cluster Map: A schematic of the cluster's three layers—exporting industries, suppliers, and economic foundations.

Cluster Distribution: A map of total employment levels across the various areas of the County.

Cluster Entrepreneurial Dynamism: A description of the presence of new firms in the cluster compared to other counties.

Cluster Occupations: A list of top entry-level occupations in the cluster.

Economic Foundation Challenges: An identification of the cluster challenges in economic foundation areas.

Key Insights for Strategy Implementation: A summary of the strategic directions for the cluster which the County should endorse based on the cluster and foundation analyses.

Vision and Recommendations: A conclusion with specific recommendations which emerged from the analysis for each cluster. In many cases, the clusters will be responsible for implementing these recommendations in a collaborative manner as part of the cluster network to be developed within the Kern Economic Development Corporation (KEDC).

3.2 Value-Added Agriculture Cluster: Innovating and Increasing Value

3.2.1 Overview: *The Expanding Value-Added Agriculture is the County's Most Dominant Cluster*

In terms of employment, Kern County's value-added agriculture cluster is the largest and most significant of the clusters in Kern's economy.⁴ It is an expanding cluster which is highly specialized and concentrated and overall employment growth that outpaces most competitor Counties. Ensuring the competitiveness of the various segments of this cluster should be a high priority in the County's economic development efforts.

Value-added agriculture employs over 53,000 people in the private sector. Key employment strengths are in all forms of crop production, primarily fruit, vegetables, other crops, cattle, sheep, goats, and other animal production. The leading crops in the County in 2009 were grapes (\$664 million), milk (\$438 million in revenue), almonds (\$435 million), carrots (\$343 million), and citrus (\$333 million). The County is also strong in agricultural support activities, such as crop harvesting, farm labor contractors and crew leaders, and farm management services.

While Kern County is home to important agricultural resources and primary production activities, the County is weaker in more downstream and higher value added areas of the value-added agriculture cluster. In particular, the County does not have significant levels of most forms of food processing and beverage manufacturing (despite key strengths in preserved food and vegetable processing, primarily carrots). However, the County has experienced some growth in the food processing area, a positive indicator of the County's potential to move into and compete in higher value-added activities. The gap between primary production and manufacturing activities is even more important given the below-County-average wages in primary production compared with the above-County-average wages for manufacturing. Additional growth in the food processing segments will support overall wage improvements for the cluster.

3.2.2 Cluster Performance

Kern County's value-added agriculture is a highly concentrated industry, operating with a large workforce.

Growth: Total employment in value-added agriculture decreased from 58,000 in 2003 to 53,863 in 2008. The cluster's employment declined seven percent as over 4,100 jobs were lost, most likely due to ongoing drought conditions and decreased water allocations from the state.

Concentration: Value-added agriculture remained a highly concentrated cluster. Its location quotient slightly increased from 8.7 in 2003 to 8.8 in 2008. These numbers indicate that the local industry is nearly nine times more specialized than its nationwide counterpart.

⁴ Value-added agriculture includes all segments of the broader agriculture economy. The use of the term value-added implies that in order to remain competitive, all aspects of the industry must focus on value-added activities.

Growth Share Matrix: With negative growth and slightly higher concentration, value-added agriculture became less competitive in 2008. As illustrated in the following growth share matrix, the cluster's position moved from the northeast quadrant to the northwest quadrant marked by negative growth, but high concentration.

Figure 6: Value-Added Agriculture Growth Share Matrix, 1993-2008

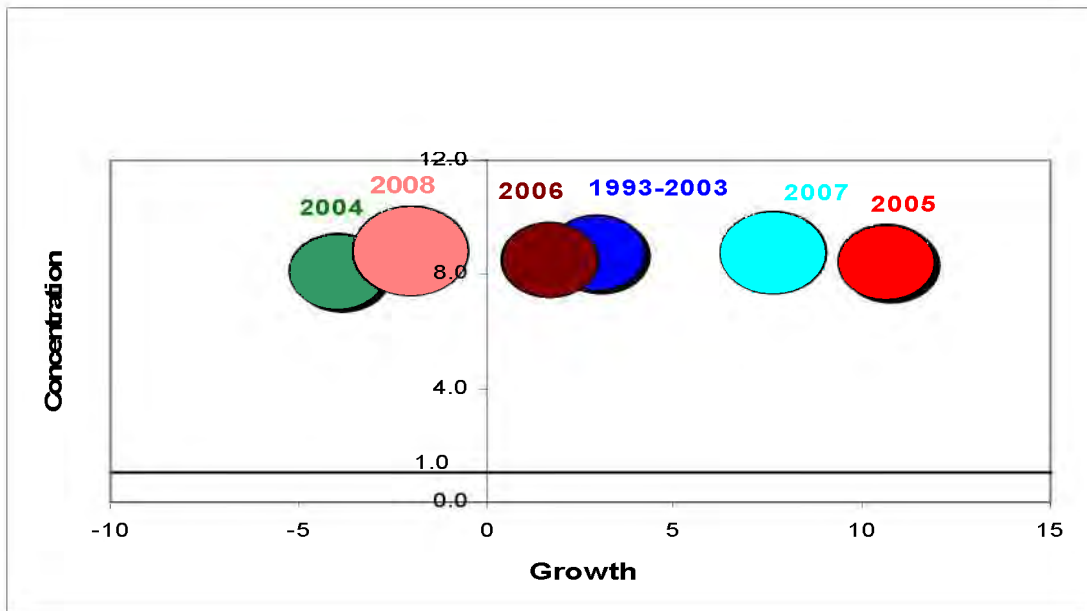
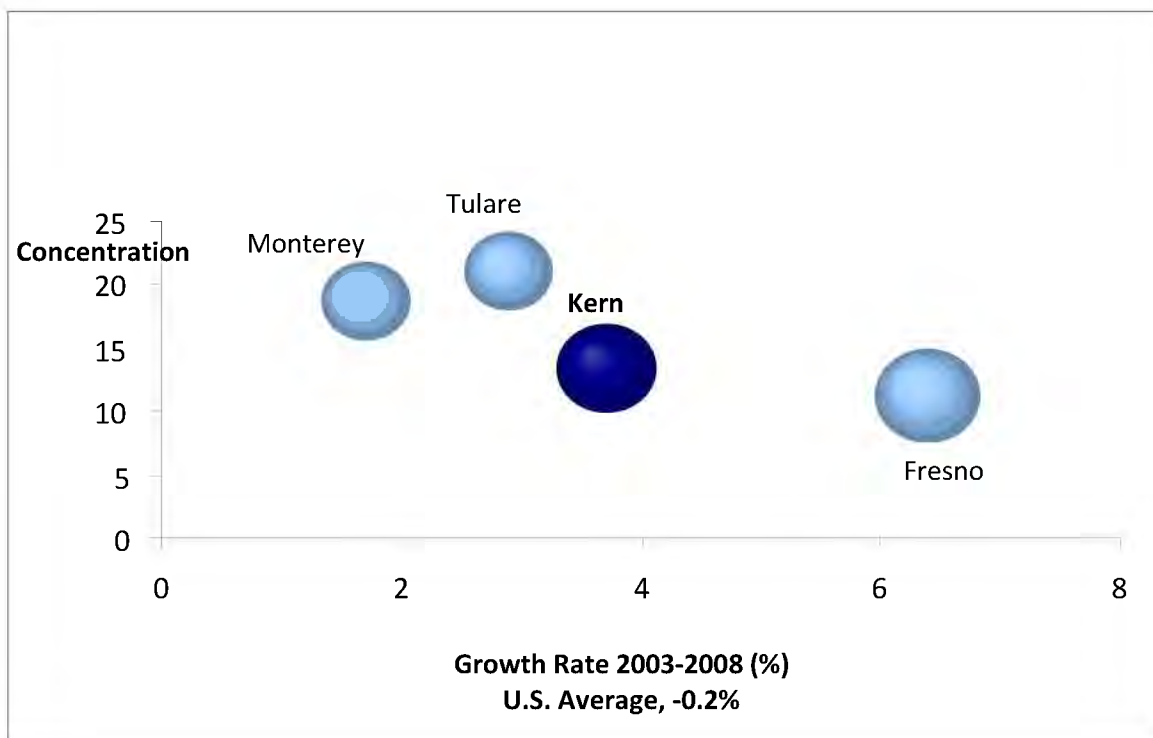


Figure 7: Value-Added Agriculture Growth Share Matrix, Kern County Competitors



3.2.3 Cluster Segments: Concentrated in Crop Production

Value-added agriculture is a long-established industry in Kern County. This cluster includes three segments: (1) primary production; (2) agricultural support activities; and (3) agricultural products manufacturing. In 2008, the employment share of agricultural support activities and agricultural products manufacturing increased at the expense of primary production. The segment of primary production includes crop production; animal production; and forestry and logging.

Agricultural support activities consist of three industries: crop production; animal production; and forestry. Agricultural products manufacturing is comprised of food manufacturing and beverages and tobacco products manufacturing.

The employment share of agricultural support activities represented 58% of the cluster in 2008. Primary production comprised 33% of industry employment. The employment share for agricultural products manufacturing was 10% of all sector jobs.

Table 11. Employment Conditions, Value-Added Agriculture, 2008

NAICS Code	Industry	Employment	Wage	Concentration
	Value-Added Agriculture	53,863	\$663	8.8
111 112 113	Primary Production	17,131	\$507	6.1
115	Agricultural Support Activities	31,220	\$705	18.9
311 312	Agricultural Products Manufacturing	5,512	\$776	1.3

Figure 8: Value-Added Agriculture, Employment Shares, 2008

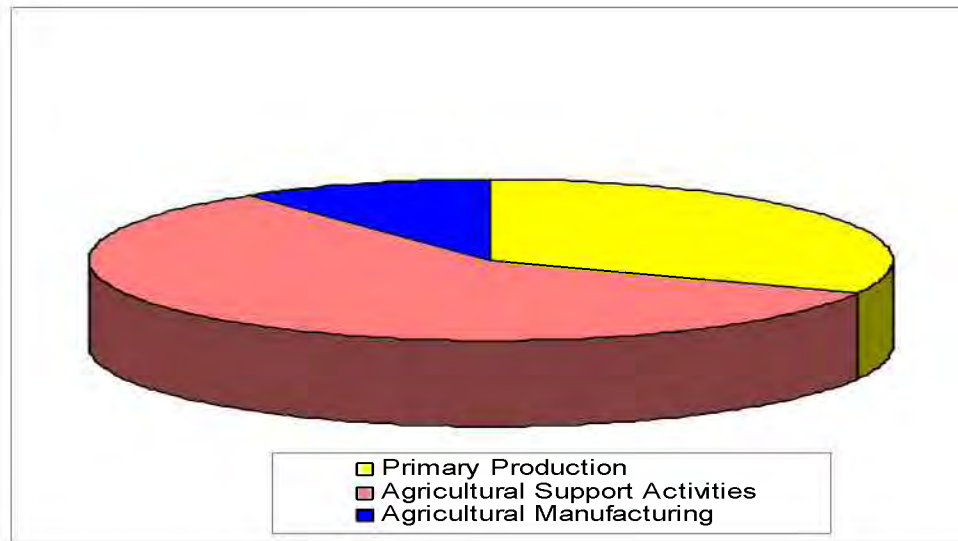
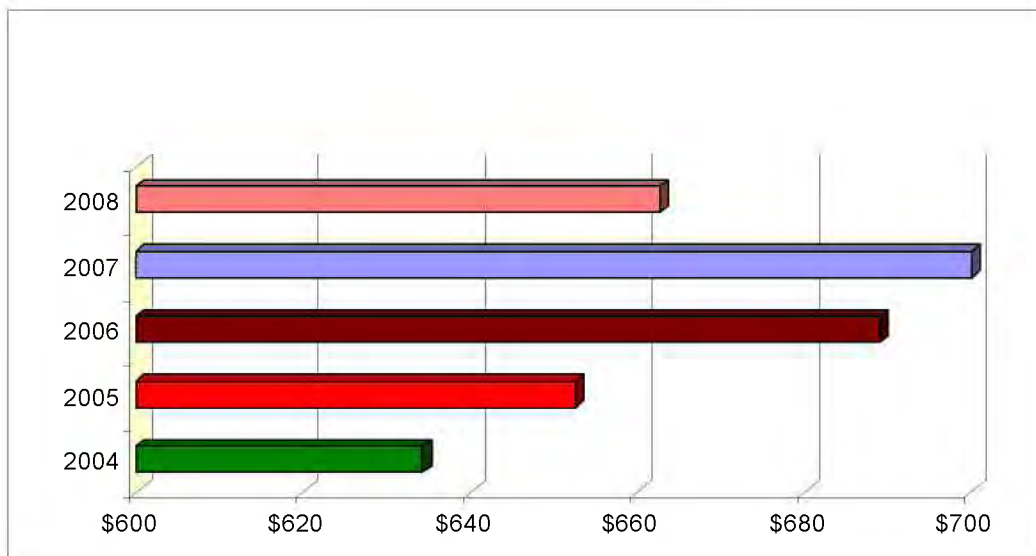


Figure 9: Value-Added Agriculture, Average Weekly Wages, 2004-2008

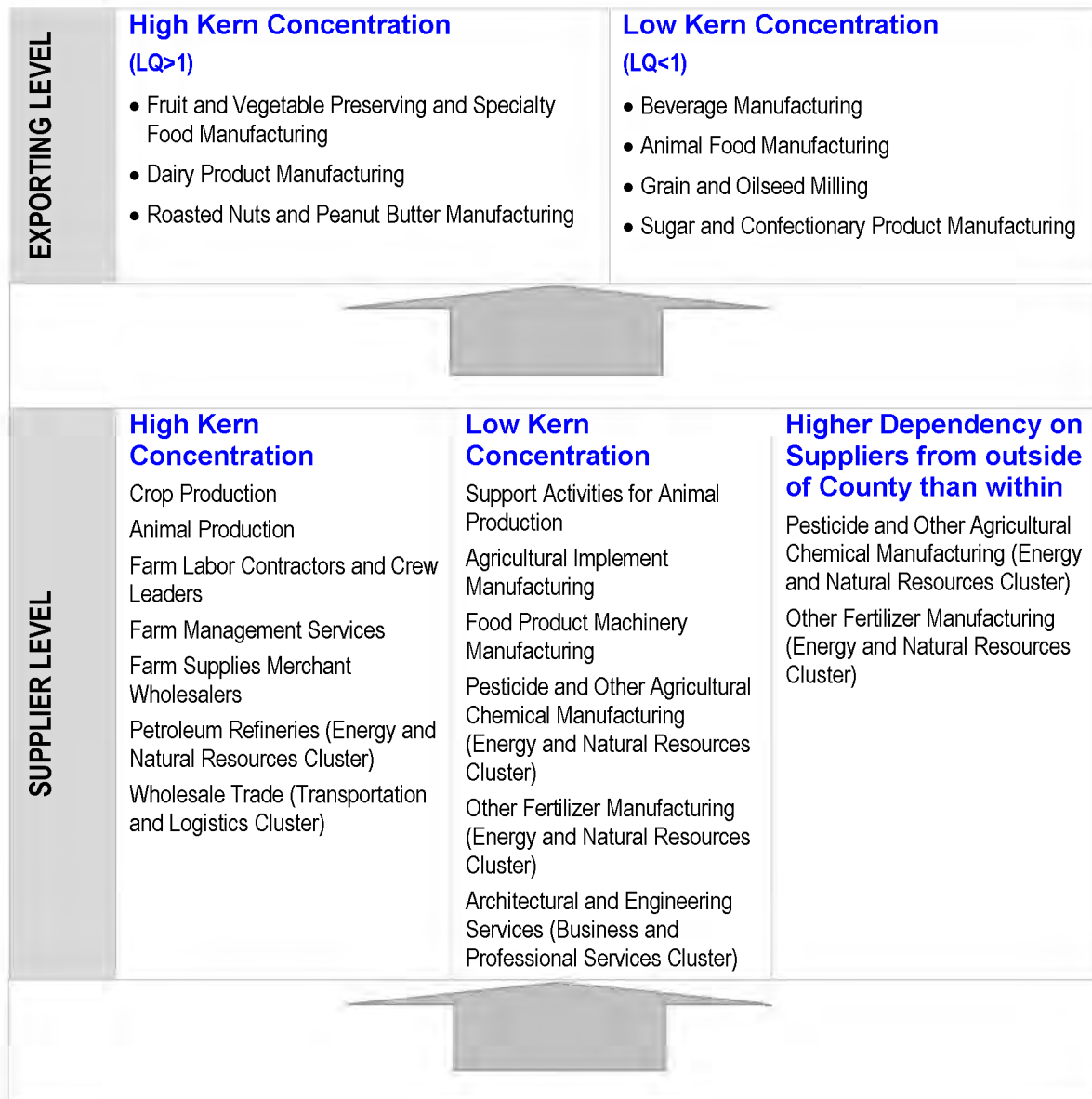


3.2.4 Cluster Map: Limited Manufacturing

The figure, on the next page, depicts the various segments and sub-segments of the cluster definition according to the three “layers” of a cluster – exporters, suppliers, and economic input foundations. In addition to the cluster definitions, the map shows the segments from other clusters on which this cluster depends. The figure also indicates areas where the County exhibits strong or weak concentration of activities (based on its location quotient), as well as supply-level segments characterized by relatively higher dependency on suppliers from outside of the County. The economic foundation level encompasses the categories that help enable and support the cluster by providing key inputs and resources that the cluster depends on.

Most areas of agricultural production are highly concentrated in the County, while pesticides and fertilizers are key imports for the cluster. As indicated below at the supplier level, the cluster in Kern County has a relatively higher dependency on pesticide and fertilizer suppliers and manufacturers from outside of the County. Not surprisingly, in supplier segments that are strongly concentrated in Kern, the County relies less on imported supplies (suppliers from outside of the County).

Figure 10: Value-Added Agriculture Cluster Map

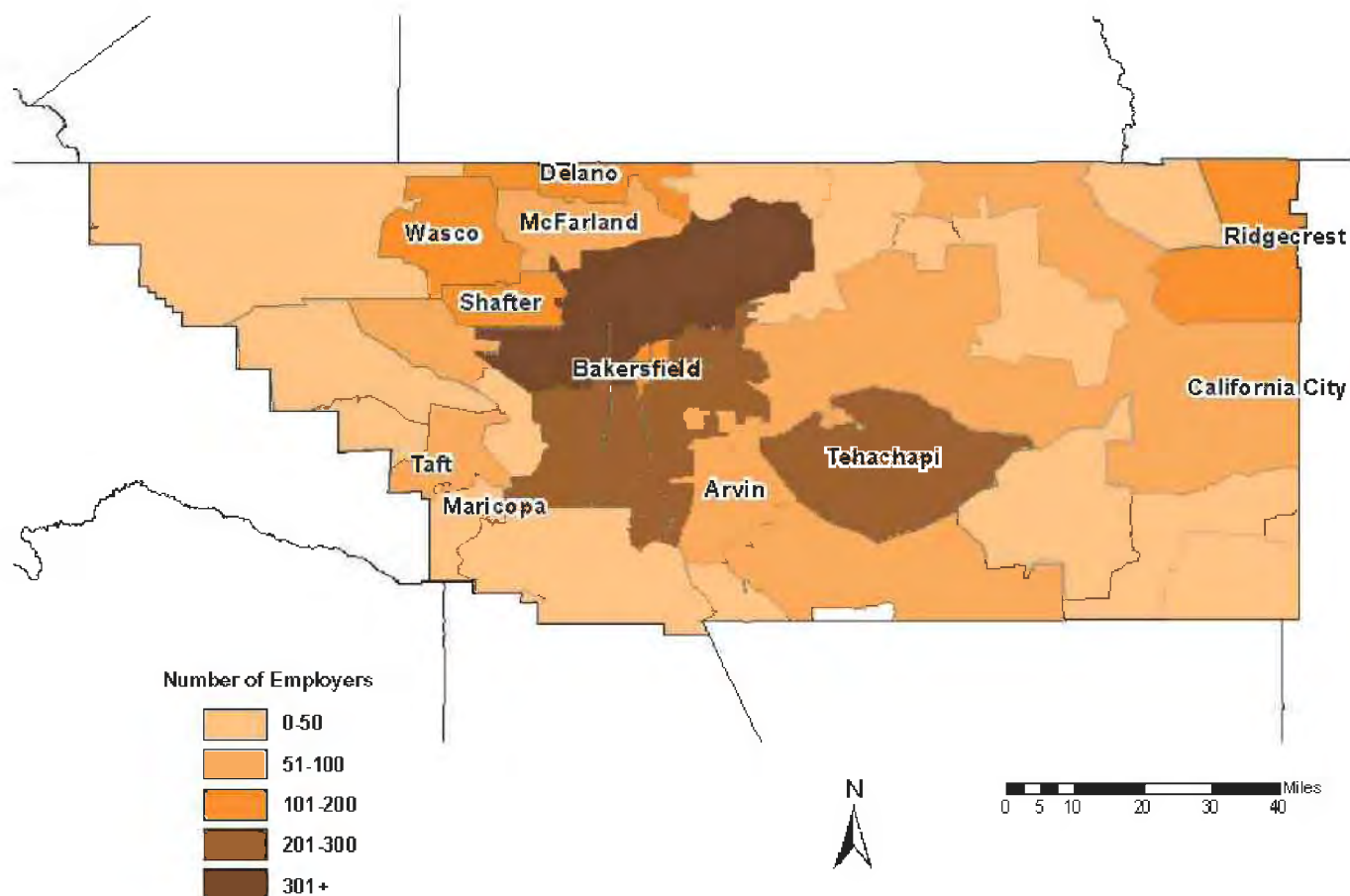


ECONOMIC FOUNDATION LEVEL	Human Resources (i.e., Employers' Training Resource): Skilled technicians	Infrastructure: Water and sewer, energy
	Innovation: Company lab research	Transportation: Roads and Rail
	Land Use Planning: Ag, Residential and industrial zoning policies	Marketing: Farm Bureau

3.2.5 County Distribution: Employment Concentrated in the Valley

Value-added agriculture is an important economic activity primarily in the fertile, valley areas of Kern County. Agricultural activity takes places throughout the County, but most of the employment is located throughout the valley areas to the north and immediate east and south of Bakersfield. The zip-code map below shows distribution of agricultural employers by place of business across the County.

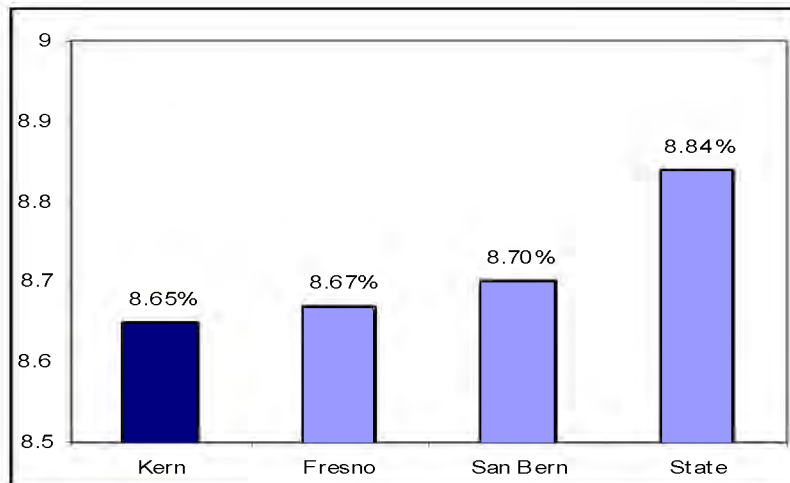
Figure 11: Value-Added Agriculture Regional Distribution, Employers



3.2.6 Moderate Entrepreneurial Dynamism

Entrepreneurial dynamism is comparatively moderate in Kern County's value-added agriculture cluster. Kern is lagging Fresno County, San Bernardino County, and the State in the number of new firms (2 years old or less) as a share of the total firms in the County.

Figure 12: Value-Added Agriculture Entrepreneurial Dynamism, 2006



Source: US Census

3.2.7 Cluster Occupations: Wide Range of Entry-Level Occupations

For the entry level occupation analysis the value added agriculture cluster includes the following sectors: Crop Production (NAICS 111), Animal Production (NAICS 112), Support Activities for Agriculture and Forestry (NAICS 115), Food Manufacturing (NAICS 311), Beverage and Tobacco Product Manufacturing (NAICS 312).

Top Entry-Level Occupations, Value-Added Agriculture Cluster, Kern County, 2006

OCCUPATION	Jobs	Median Wage (Hourly/Annual)
Farmworkers and Laborers, Crop and Nursery	33,760	\$8.83/hr
Packers and Packagers, Hand	2,870	\$18,385
Landscaping and Groundskeeping Workers	2,640	\$10.85/hr
Farmworkers, Farm and Ranch Animals	1,110	\$8.74/hr
Weighers, Measurers, Checkers, and Samplers	300	\$9.77/hr
Food Cooking Machine Operators and Tenders	110	\$12.27/hr

3.2.8 Economic Foundation Challenges

The cluster-specific economic foundation challenges range from infrastructure and business climate, to human resources, marketing, and innovation. The following challenges were identified by various stakeholders in the cluster:

INFRASTRUCTURE

Public Transportation to Transport Workers to Job Sites: The County has limited public transportation routes, particularly in rural areas. This presents a significant challenge to residents of rural communities, many of whom are low-income immigrants, who need to access food processing jobs in other areas such as Bakersfield. Additionally, many of the firms in value-added agriculture have 24-hour operations, but public transportation is not provided on a 24-hour basis. While Golden Empire Transit District recently began service to the industrial complex at Interstate 5 and Laval Road, access to public transportation still remains a problem for certain parts of the County, particularly in rural communities with high levels of employment in agriculture.

Contamination of Farmland and Water: Managing and reducing contamination of land and water affecting farmland is a challenge for the cluster. Key potential sources of the contamination include human sludge, as well as the use of pesticides and fertilizers.

Water and Sewer Capacity: The County lacks sufficient water and sewer capacity for food processors. In this area, one of the issues is how to expand the use of gray water. Available water for crop production remains a critical issue.

HUMAN RESOURCES

Weak Perception of Cluster Career Ladders: Changing the perception of the range of occupations and job opportunities throughout Value-Added Agriculture is a challenge for the cluster. The common perception is that Value-Added Agriculture is only about picking crops.

Higher-Skill Jobs in the Cluster: Higher-skill jobs in the cluster have limited support in training and workforce development (such as water technicians or engineering). Working with the schools and training programs to ensure that people are receiving training is an important issue for the cluster.

INNOVATION

Attraction of Innovators: The majority of agriculture innovation is taking place within individual firms. There remains a challenge in attracting high quality agriculture innovators into Kern County beyond the specific benefits they receive from these individual companies.

Perception of Kern in Agricultural Innovations: Despite its many agricultural assets and contributions, Kern County does not have a strong image as a place to incubate new agriculture technologies. The perception of being an innovative agricultural region is typically due to either the presence of a University research center or a highly competitive and publicly accessible agricultural industry such as winemaking.

Expansion of Existing Operations: New innovations will come from within existing farms as opposed to starting new farms. The challenge is to create more opportunities of innovation such as the baby carrot which led to firm expansion locally and resulted in thousands of food processing jobs, many of which pay higher than the County median.

MARKETING

Local Buying Campaigns: Kern County agricultural products should be branded so that people can realize how much is grown here. Lack of gateway (I-5, Hwy. 99) produce retailers. Best practices include local agricultural retailers at Highway 58 and General Beale Road and Interstate 5 and Copus Road, and signage along I-5, Highways 99 & 58.

Tax Structure: Need to address California's onerous tax structure and regulatory environment, e.g. AB 32.

BUSINESS CLIMATE

Regional Planning: Kern COG's 2008 Regional Blueprint Program helped articulate the need for more urban density and preservation of agriculture and oil areas.

While in 2010, there is sufficient land to support growth in residential, agricultural and industrial areas, within 10 to 15 years, there will likely be increasing conflicts among uses.

Kern County's Value-Added Agriculture cluster faces important challenges. The following table summarizes the key insights based on the diagnosis of the cluster's performance and economic foundation challenges. These conclusions relate to the strategic priority areas of the County's economic development plan.

Table 12. Summary of Value-Added Cluster Diagnosis

Conclusion	County's Strategic Priority Area
<i>Cluster Analysis</i>	
▪ Value-Chain Depth: Opportunity exists to increase the number of firms and employment in the higher value-added, higher wage food manufacturing segments building on existing capacity in Fruit and Vegetable Preserving and Specialty Food Manufacturing and Dairy Product Manufacturing. ▪ Growth and Concentration: Growth opportunities exist in niche areas within strong cluster segments including almond and pistachio processing, cold storage, hothouse development, and industry suppliers. Need to focus on permanent crops which will grow the entire supply chain. ▪ Enterprise Zones are an opportunity: Arvin, Delano, Shafter, and Taft.	Business Attraction and Expansion

Economic Foundation Analysis

▪ Contamination: Need to manage and reduce contamination of land or water affecting farmland. ▪ Water and Sewer: Need to ensure sufficient water and sewer capacity for food processors, and expand use of gray water. The November 2010 ballot has an \$11 million bond to build more waterways in California. Water is a political issue, not something that can be resolved locally; it is a state/national issue.	Infrastructure
▪ Transportation: Need to provide affordable and convenient access to job sites	Transportation
▪ Skills Training Programs: Need to support the higher-skill jobs within agriculture by working with the schools and training programs to ensure that people are receiving training and extension services.	Human Resources
▪ Branding: Need to promote “Buy Kern,” building off the “Buy California” theme ▪ Perception of Cluster Career Ladders: Need to change the perception of the range of occupations and job opportunities throughout Value-Added Agriculture.	Marketing
▪ Regional Planning: Need to protect and maintain agricultural and industrial land by improving regional planning which designates and protect key areas from residential development and other encroachment.	Land Use
▪ Land Costs: Need to manage urban development pressures which may affect the ability for new farms to come into operation ▪ Attraction of Innovators: Need to attract high quality agriculture innovators into Kern. ▪ Improve Perception of Kern in Ag Innovations: Need to improve the perception of Kern as a place to incubate new agriculture technologies. ▪ Expand Existing Operations: Need to create more opportunities for existing firms.	Business Attraction and Expansion

3.2.9 Vision and Recommendations

VISION:

Kern County will continue to innovate in extracting value from its agricultural assets, while moving increasingly into downstream activities.

RECOMMENDATIONS:

- Focus business attraction and expansion efforts on three segments: food processing, niche agriculture (e.g. organics), agricultural technology (e.g. irrigation equipment).
- Establish additional training programs that support growth in food processing jobs and related career ladders.
- Encourage the co-location of food processing for more efficient use of infrastructure and transportation for workers.
- Encourage increased use of gray water by food processors.
- Foster expanded export activity – U.S. Dept. of Commerce, Chambers of Commerce - in targeting countries and brokers working with agriculture organizations and individual agriculture operators.
- Establish agriculture marketing center in south valley for promoting local products.
- Create Center for experimentation on new agriculture technologies.

-
- Need for additional political actions by coalition of farmers, especially in light of water issues in near and long term.
 - Develop positive reputation of Kern County as an agriculture center – Buy Kern County!
 - Create additional cold storage locally for products.
 - Collaborate with local schools to train additional workforce skills and new technologies in support of jobs beyond basic agriculture.

3.3 Energy and Natural Resources Cluster: Moving Downstream and Capturing the Wind

3.3.1 Overview: Energy and Natural Resources Cluster is Historically one of the Key Parts of County's Economic Base

Kern County has a long history of upstream and downstream activities in the energy and Natural Resources sectors, stemming from the rich presence of natural resources. Kern County has developed an extremely strong oil and gas production capacity, but the County's record in downstream petroleum-based activities, however, is mixed. The County is very strong in petrochemicals, but weak in further downstream chemical and plastics manufacturing segments.

The Energy and Natural Resources cluster has nearly 18,000 private sector jobs in oil and gas production, field services, electricity, refining, chemicals, and plastics. There is also some employment in alternative energy operations. The cluster is not only a significant source of overall employment, but also a provider of high-paying, moderate-to-high skill jobs such as those in technical and engineering occupations. All industry segments, which comprise the cluster, pay significantly higher wages than the County average. In some more specialized or highly-skilled areas, wages are double the County average.

More recently, Kern County has witnessed development of its alternative/renewable energy industries, particularly wind energy and solar. Wind assets in Kern County, particularly in the Tehachapi area, are among the best in California and the nation. In regards to solar, Kern County is considered the third-sunniest region in the U.S.

Wind energy has been a consistent energy provider in Kern County since the early 1980's and continues to grow at a steady pace. The Tehachapi mountain range is home to over 12 large-scale wind farms with an energy capacity exceeding 700 megawatts. There are more than 5,000 wind turbines in the Tehachapi-Mojave wind corridor, producing 1.3 terawatt hours (1.3 million megawatts) each year. Wind energy is set to expand with the completion of the Wind Hub Substation, a 500 KV transmission line that is being constructed by Southern California Edison.

Kern County is attracting commercial and utility scale solar at a fast pace. With 280 sunny days per year, Kern County is the logical location for new solar fields in California. The Mojave Desert has some of the best solar isolation (the measure of solar radiation energy) in the country. With major population centers nearby and the expansion of transmission lines, the region is attracting considerable solar investment. Currently there are more than 19 commercial solar projects (20 megawatts or less) in the permitting process and two utility

scale solar projects (200+ megawatts) in the approval pipeline with the California Energy Commission.

A \$2 billion, hydrogen-powered electricity generating facility is being proposed in an oil producing region of Kern County area that would capture and sequester (store) most of its carbon related emissions. This facility will be similar to the cleanest natural gas power plants. Instead of using natural gas to run its turbine electrical generators, this plant will use hydrogen. The result will be local power generation in a local area with growing power demands - enough power for over 150,000 homes - along with 90% reduction in the emission of carbon dioxide, the most common greenhouse gas. CO2 emissions will be captured and stored deep underground, preventing release into the atmosphere and will assist in extracting oil (enhanced oil recovery).

Finally, biomass conversion activities have strong linkages with the County's agricultural base. Agricultural waste and other diverted bio-waste products are among the key feedstock for biomass activities.

3.3.2 Cluster Performance: Transforming Cluster with Growing Employment and Diversification Relative to Competitors

Kern County's Energy and Natural Resources cluster is well-concentrated and fast-growing. The following are the factors which are used in assessing cluster performance:

Lack of Employment Dynamism. The energy and natural resources cluster has had positive growth dynamics in the period between 2003 and 2008. Overall, cluster employment had an average absolute increase of 8% annually during this period.

Life Cycle: Transforming Cluster. The cluster is in the transforming stage of its lifecycle, a stage characterized by fluctuating growth and high concentration relative to the national average. Renewable energy technologies are providing additional jobs for the cluster.

Weak Competitive Position: When compared with other counties, Kern County's energy and natural resources cluster is growing faster than that of San Bernardino County, Los Angeles County, Orange County, and Houston, Texas. Over the last five years, Kern County has experienced the fastest average annual growth of 7.4% relative to the United States and among the competitor counties, despite its relatively small total employment size and employment concentration.

Figure 13: Energy and Natural Resources Growth Share Matrix, 1993-2008

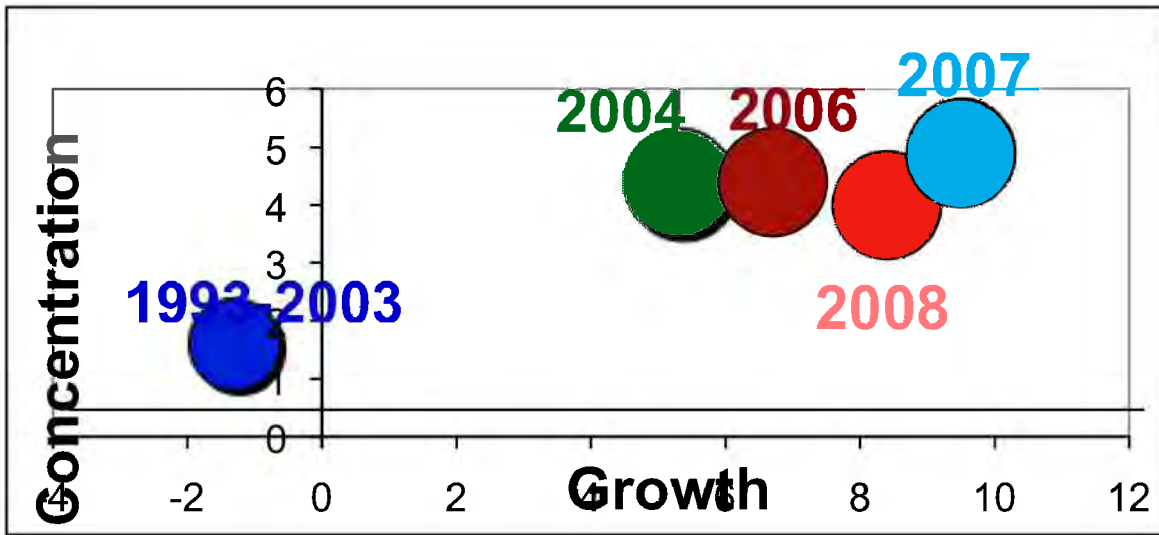
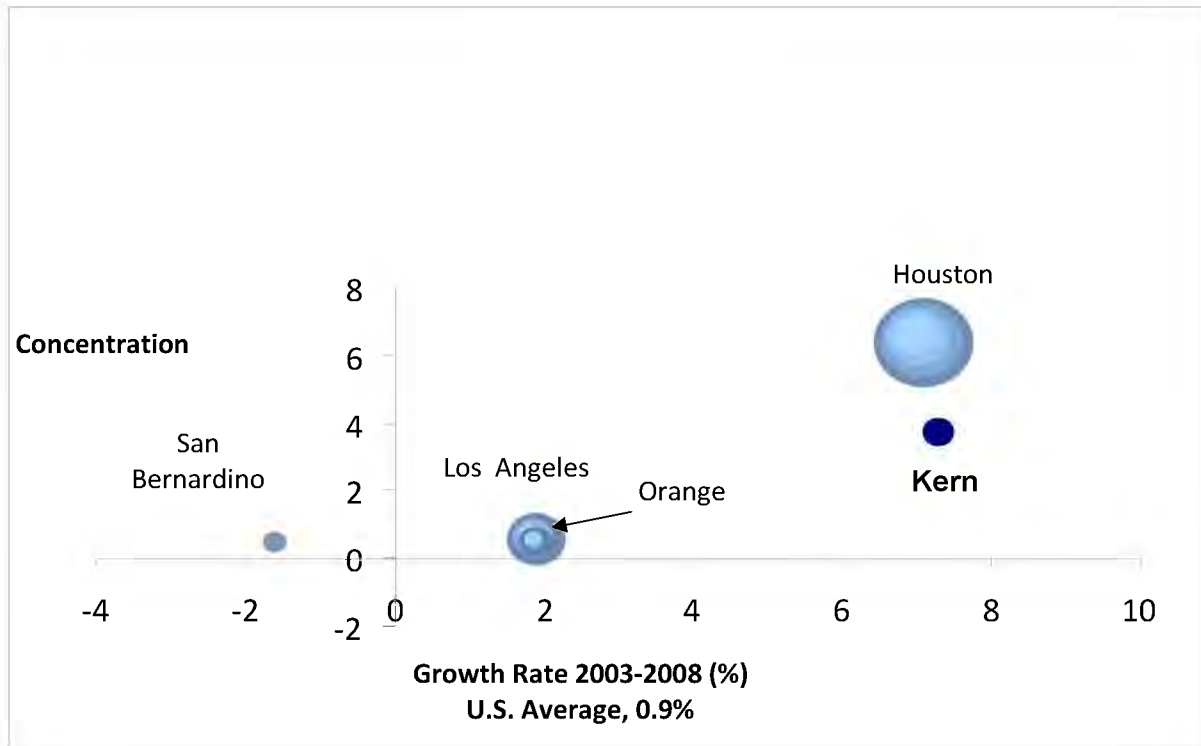


Figure 14: Energy and Natural Resources Growth Share Matrix, Kern County Competitors



3.3.3 Cluster Segments: Strengths in Extraction and High Wages

Kern County's energy and natural resources cluster consists of approximately 300 firms in extraction, manufacturing, and power industries, with the largest number of firms in support activities and related civil engineering construction. The table below indicates the industry segments that comprise the cluster, and their corresponding employment, business establishments, average weekly wages, and concentration. Key elements of the cluster's structure are:

Substantial Jobs. Across the cluster, there are approximately 17,700 private sector jobs. This is an increase of almost 40% since 2003.

High Concentration. The location quotient, which compares the County's relative employment size to that of the United States, is the key measure of employment concentration. Kern County's energy and natural resources cluster has above national average employment concentration overall. Among the cluster segments, Kern County is heavily concentrated in oil and gas extraction (14.1), as well as in support activities for mining and heavy and civil engineering construction (8.5).

Strong Wages. The cluster generates higher-than-County average wages. The energy and natural resources cluster is a high-wage industry. Oil and gas extraction, consisting of highly skilled engineering and geological jobs, was the highest paying segment of the cluster with an average weekly wage of \$2,228. However, workers employed by support activities and construction earned \$1,323 per week.

Table 13. Employment Conditions, Energy and Natural Resources, 2008

NAICS Code	Industry	Employment	Wage	Concentration
	Energy & Chemicals	17,713	\$1,579	4.9
211	Oil & Gas Extraction	3,440	\$2,228	14.1
213 237	Support Activities for Mining & Heavy and Civil Engineering Construction	11,352	\$1,323	8.5
324-326 33313 33391	Petroleum, Chemical, and Plastics Manufacturing	2,921	\$1,186	1.9

Figure 15: Energy and Natural Resources Employment Shares, 2008

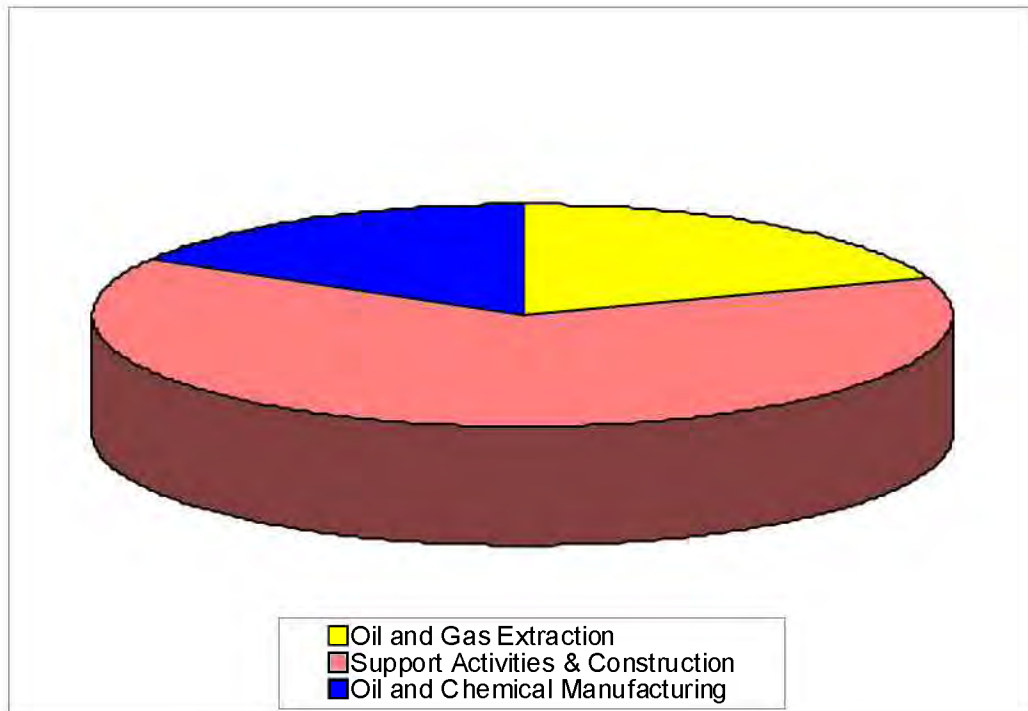
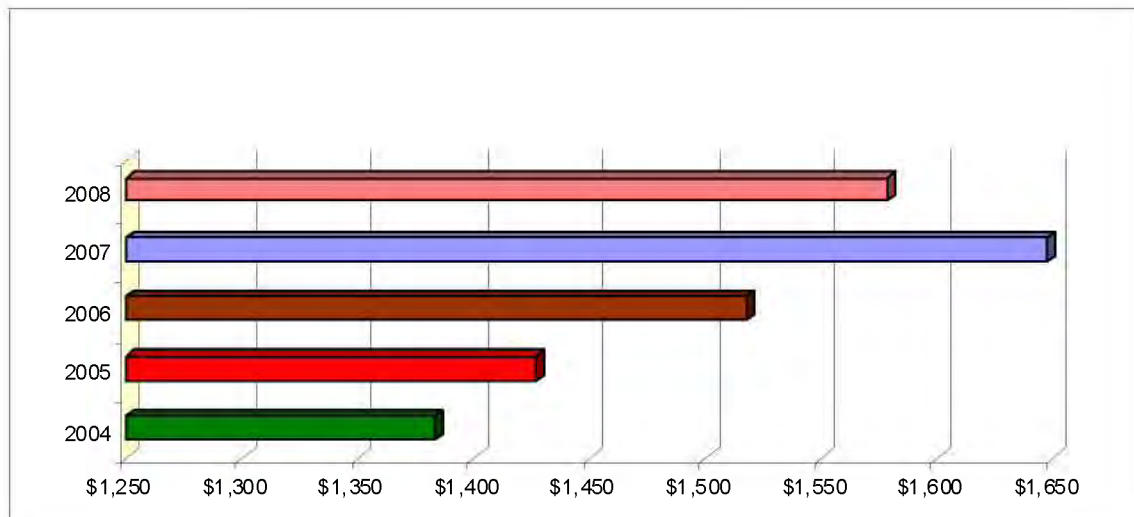


Figure 16: Energy and Natural Resources, Average Weekly Wages, 2004-2008

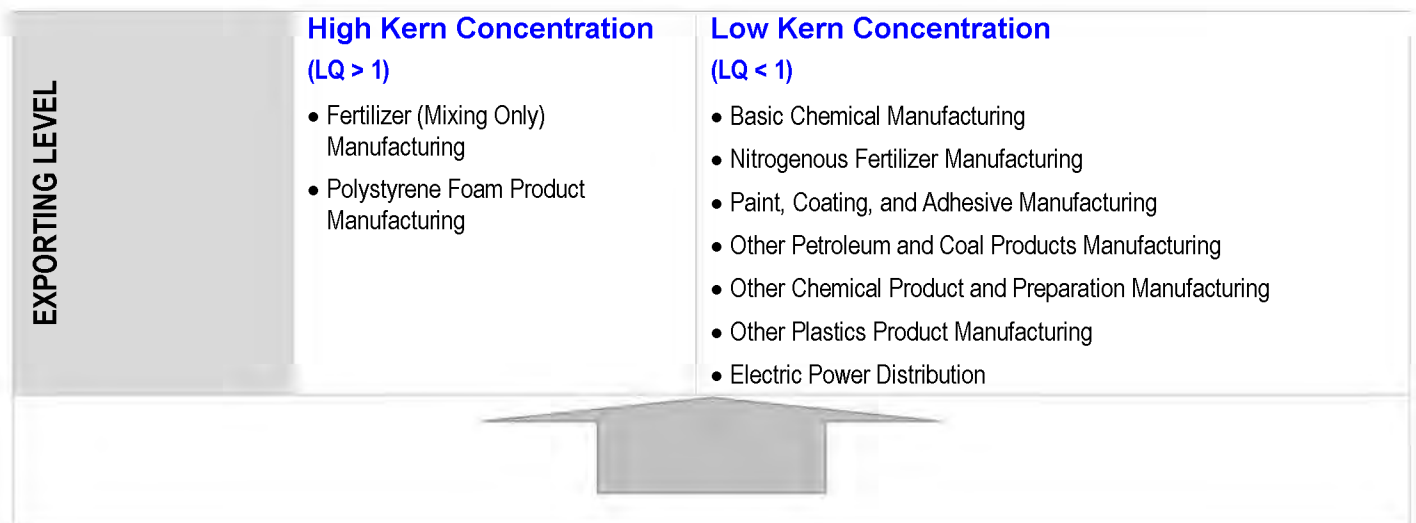


3.3.4 Cluster Map: Limited Downstream Activities

The figure below depicts the various segments and sub-segments of the cluster definition according to the three “layers” or levels of a cluster – exporters, suppliers, and economic input foundations. In addition to the cluster definitions, the map shows segments from the transportation and logistics cluster on which this cluster depends. The figure also indicates areas where the County exhibits strong or weak concentration of activities (based on its location quotient), as well as supply-level segments characterized by relatively higher dependency on suppliers from outside of the County. Not surprisingly, in supplier segments that are strongly concentrated, the County relies less on suppliers from outside of the County. The economic foundation level encompasses the categories that help enable and support the cluster by providing key inputs and resources that the cluster depends on.

The County’s energy and natural resources cluster has more industry segments with high concentrations at the supplier level. There are a few highly concentrated segments at the exporting level. But most areas of chemical and plastics manufacturing, which constitute some of the key exporters of energy and natural resources cluster, are weak in Kern County.

Figure 17: Energy and Natural Resources Cluster Map



SUPPLIER LEVEL

**High Kern Concentration
(LQ >1)**

- Oil and Gas Extraction (crude, natural gas, and LNG extraction)
- Natural Gas Distribution
- Support Activities for Oil and Gas Operations
- Petroleum Refineries
- Drilling Oil and Gas Wells
- Mining and Oil and Gas Field Machinery and Equipment Manufacturing
- Oil and Gas Pipeline and Related Structures Construction
- Power and Communication Line and Related Structures Construction
- Pipeline Transportation (Transportation and Logistics Cluster)
- Truck Transportation (Transportation and Logistics)
- Wholesale Trade (Transportation and Logistics)

**Low Kern Concentration
(LQ <1)**

- Pump and Compressor manufacturing
- Electric Bulk Power Transmission and Control
- Hydroelectric Power Generation
- Fossil Fuel Electric Power Generation
- Water and Sewer Line and Related Structures Construction

**Higher Dependency on Suppliers from
outside of County than within**

- Mining and Oil and Gas Field Machinery and Equipment Manufacturing
- Electric Bulk Power Transmission and Control
- Hydroelectric Power Generation
- Fossil Fuel Electric Power Generation

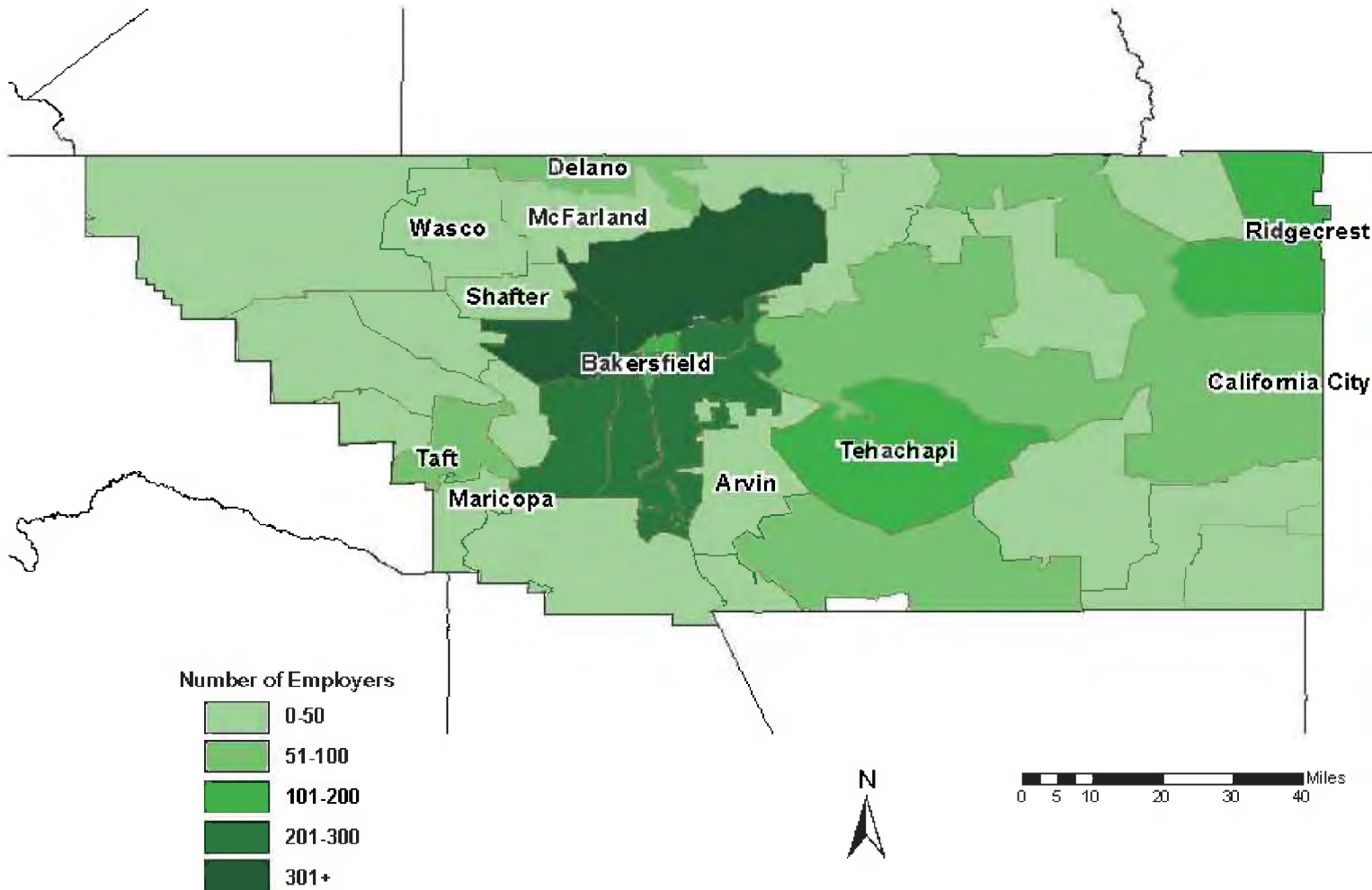
**ECONOMIC
FOUND-
ATION
LEVEL**

- Human Resources: ETR, CSUB, Antelope Valley College, Bakersfield College, Taft College
- Infrastructure: Pipelines
- Transportation: Roads, Rail, Air Service from Meadows Field

3.3.5 County Distribution: Employment Concentrated in Valley, West

The largest pockets of employment in the energy and natural resources cluster are located in the valley, west (around the Taft area), and in the areas to the north of Bakersfield as indicated in the map below. The zip-code map indicates distribution of employer levels across the County.

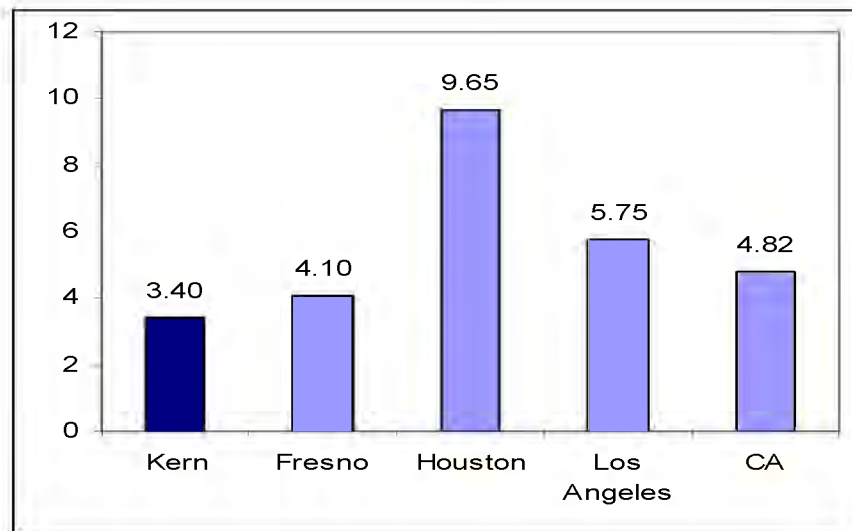
Figure 18: Energy and Natural Resources Regional Distribution, Employers



3.3.6 Lagging Entrepreneurial Dynamism

Measured as the share of total companies 2 years old or less, entrepreneurial dynamism is relatively weak in Kern County's energy and natural resources cluster. Kern lags most of the competitor regions, namely Houston, Texas (Harris County), Los Angeles County, and San Bernardino County (See figure below). Approximately 3% of the companies in Kern County's energy and natural resources cluster are younger than three years, which compares unfavorably to Houston's 10% and even Los Angeles County's 6%.

Figure 19: Energy and Natural Resources, Entrepreneurial Dynamism, 2006



3.3.7 Cluster Occupations: Significant Opportunities for Low to Moderate Skilled Employment

Top Entry-Level Occupations, Energy and Natural Cluster, Kern County, 2006

OCCUPATION	Jobs	Median Wage (Hourly/Annual)
Roustabouts, Oil and Gas	2,180	\$21.06/hr
Helpers, Extraction Workers	680	\$21.30/hr
Service Unit Operators, Oil, Gas, and Mining	620	\$18.60/hr
Derrick Operators, Oil and Gas	450	\$21.06/hr
Rotary Drill Operators, Oil and Gas	320	\$26.73/hr
Helpers, Installation and Repair Workers	250	\$12.20/hr
Power Plant Operators	190	\$31.85/hr

3.3.8 Economic Foundation Challenges: Industrial Zoning, Political and Policy Support

The cluster-specific economic foundation challenges range from infrastructure and business climate, to human resources, marketing, finance, and innovation. The following cluster challenges were identified by various stakeholders in the cluster.

BUSINESS CLIMATE

Possibility of Oil Severance Tax threatens jobs: Efforts at the State level to pass an Oil Severance Tax over the past several years have failed, however various legislators continue to seek methods of making such a proposed tax popular enough to convince fellow legislators to support it (e.g. the most recent attempt was based on a plan to tax oil companies and use the money to defray higher education costs). Passing an Oil Severance Tax would unfairly target Kern County, which produces 70 percent of the oil produced in California and could result in the loss of 7,000 jobs in Kern County.

Addressing barriers due to strict environmental regulations: Many businesses in the cluster face challenges with adhering to strict environmental regulations, such as air quality controls, and keeping informed of changes to existing regulations or new legislation. Oil and energy related companies are stringently regulated.

Encouraging support from the State and federal government on renewable energy: KCCD has been particularly successful in securing one-time ARRA funds (over \$4 million) for training development for “green” jobs. Securing future funding for this purpose will require collaboration among education and State and federal agencies.

Increasing local demand for renewable energy. The weakness of the local market for renewable energy products and services is a challenge for the County. The County does not have the strong renewable energy consumption mandates seen in other counties, such as renewable-powered public transit and buildings.

Increasing the supply of biomass feedstock through regulations and incentives, and reducing price of feedstock: The costs associated with acquiring biomass inputs are high. The challenge is to encourage potential suppliers of biomass to divert important inputs to biomass plants, instead of traditional waste streams (i.e., landfill), or create a new market for agriculture operators. Without incentives for people who have the fuel (feedstock), it is not going to be economical to put more plants in.

Attracting viable renewable energy companies to Kern: Kern County is receiving a lot of interest from fledgling renewable energy companies, many of whom are not financially sound or viable. Attracting viable companies to develop new renewable energy facilities and help sell to local and export markets continues to be a challenge for the cluster.

Recruit and Retain Renewable Energy: It is important to recruit and retain domestic and international companies that install, operate and manufacture renewable energy projects specifically wind and commercial scale solar in Kern County

Working more synergistically to leverage and develop competencies related to renewable energy: The County has diffuse, unorganized resources and competencies which are not being fully explored and harnessed to develop strengths in renewable energy.

HUMAN RESOURCES

Limited supply of qualified workers for renewable energy companies: It is difficult to find qualified people such as mechanical engineers, and hard to compete for skilled mechanics and others with power plant experience that can otherwise get higher wages/salaries in traditional energy areas.

Prepare workforce for new skill set: Average age in this cluster is 50. In next 5 to 10 years, many firms will face major turnover. In addition to this gap, the skills of the past are not the skills that will be needed in the future. Operations are increasingly driven by technology. Many in the workforce lack strong computer and technology skills.

Retaining skilled workers in Kern County: It is difficult to retain highly-skilled employees and their families in the region. Kern County and the surrounding oil economy are not as attractive (in terms of available amenities) as other regions with strong energy and natural resources clusters, such as the cities of Houston or New Orleans.

MARKETING

Position Renewable Energy efforts in a positive manner: Renewable energy should be promoted as part of an effort to “diversify energy sources,” rather than a “global warming” issue.

Strengthening Market Linkages and Supply Chain in Renewable Energy: Supply chain for turning the resources and assets into viable products in the marketplace is weak and County could possibly lose that potential. Coordination and linkages across industries that are producers and users of renewable energy are underdeveloped. The County has technologies and equipment present, but lacks the companies that develop/manufacture and use the technologies.

Limited Coordinated Marketing of Kern’s Renewable Assets: Existing renewable energy activity in the County is fragmented with a few independent operators. The County also lacks strong documentation and promotion of its renewable energy assets and infrastructure.

INFRASTRUCTURE

Limited Refinery Capacity: There are only two refineries left in Bakersfield. Although the Big West refinery has recently been sold to Alon, an Israeli-owned company, and will likely remain reopen, there remains the question whether the facility will serve merely as a distribution or limited refinery function.

Renewable Energy Siting Issues: There are limited areas in the county for wind due to biological restrictions and R-2508 Airspace protection. These remained areas need to have transmission capacity protected and be promoted for wind.

Limited Airline Service: There are no direct flights between Kern County and other energy markets, such as Houston.

Improving quality of roads: The poor state of the roads and highways is a burden on trucks used to transport materials and products.

Resolving Competing Land Uses: Maintaining a balance between industry and developers in land use planning is an important issue facing the County.

FINANCE

Limited Expansion Capital for Renewable Operators: 95% of the smaller companies lack the capital resources to expand. The County does not have adequate capital funding mechanisms in place. Creating an attractive permitting environment will attract capital.

INNOVATION

Innovating and diversifying renewable energy technology uses and applications to create value: There is some renewable energy activity in the County but most of the renewable energy produced just goes up on the grid. The County lacks the strong research and training capacity at local higher education institutions to be leading innovators in renewable energy. Training workers to support and maintain alternative energy developments and the production of energy is, however, gaining ground through private capital investment (private vocational training) and efforts underway by KCCD and CSUB.

Technology advances needed to improve oil recovery: With current technology, it is estimated that 60 percent of Kern County's oil can be extracted (at one time this number was only 20 percent). Further improvements in technology are needed in order to better extract oil from Kern County's reserves.

3.3.9 Key Insights for Strategy Implementation

Kern County's energy and natural resources cluster faces important challenges. The following table summarizes the key insights based on the diagnosis of the cluster's performance and economic foundation challenges. These conclusions relate to the strategic priority areas of the County's economic development plan.

Table 14. Summary of Energy and Natural Resources Cluster Diagnosis

Conclusion	County's Strategic Priority Area
<i>Cluster Analysis</i>	
▪ Value-Chain Depth: Kern County has significant strength and depth at the supplier level. Need to improve presence of refined products manufacturing and traditional and renewable power generation. ▪ Growth Dynamics: The industry is slow-growing with above-average concentration, and lagging behind competitor counties. This transforming cluster needs new sources of innovation and productivity to improve competitive position. ▪ Entrepreneurship: Entrepreneurship is weak compared to that of competitor counties. County needs to address barriers and challenges to new business development.	Business Attraction and Expansion
<i>Economic Foundation Analysis</i>	
▪ Need to consider renewable energy siting issues: There are limited areas in the county for wind energy production due to biological restrictions and R-2508 Airspace protection. These remaining areas need to have transmission capacity protected and be promoted for wind energy. ▪ Need to address competing land uses: Need to ensure balance between industry and developers in land use planning priorities. ▪ Need to address industrial zoning: Need to continuously work to understand and balance perspective of both industry and government. ▪ Need to increase airline service: Energy executives often require travel between Kern County and Houston.	Land Use and Infrastructure

▪ Need to increase supply of qualified skilled workers in renewable energy: Hard to find qualified people such as mechanical engineers, and hard to compete for skilled mechanics and others with power plant experience who can get more competitive wages elsewhere in the cluster. ▪ Need to reduce high turnover rates, particularly in renewable industry: Need to attract people who are willing to work and be trained in-house. ▪ Need to prepare workforce for new skills requirements: Need to train for the skills that will be required in the future. Need to focus on partnership with community colleges and trades schools to develop and improve needed curriculum and technology skills training. ▪ Need to retain skilled workers in Kern County: It is difficult to get people to settle in Bakersfield with their families long-term. Bakersfield is not as attractive as other area with strong energy and natural resources clusters, such as Houston.	Human Resources
▪ Need to improve coordinated marketing of Kern's renewable assets: Need to show the documentation of the various assets. ▪ Need to strengthen local demand conditions for renewable energy: Renewable energy consumption is weak at the local level. Need to develop ways to encourage or mandate local renewable energy utilization to help strengthen local market for renewable energy products and services, encourage commercialization of research in the County, and attract renewable energy businesses. ▪ Brand renewable energy as a diverse energy source: Need to establish distance between the renewable energy cluster and global warming. The importance of, and future of, renewable energy is not necessarily tied to global warming.	Marketing
▪ It is important to recruit and retain domestic and international companies that install, operate and manufacture renewable energy projects specifically wind and commercial scale solar in Kern County ▪ Need to strengthen market linkages and supply chain: Need more coordination and linkages across industries that are producers and users of renewable energy. Need the companies that develop/manufacture and use the technologies to be located in the County. Need attraction of companies to develop new renewable facilities and help sell to markets, particularly to world markets. ▪ Need to Increase refinery capacity: Only two refineries left in Bakersfield, and they face challenges with compliance. ▪ Need to address waste diversion to increase the supply of biomass feedstock: Need to encourage potential suppliers of biomass to divert important inputs to biomass plants to increase availability of and drive down price of feedstock.	Business Attraction and Expansion
▪ Need to mitigate barriers in environmental regulations. Need to work with industry to help overcome their issues with environmental regulations (i.e. San Joaquin Unified Air Pollution Control District and air quality issues in oil and gas). ▪ Protect Kern County against Oil Severance Tax: Need to aggressively fight any future effort at the state level to institute an Oil Severance Tax which would unfairly penalize Kern County and translate to thousands of lost jobs.	Business Climate
▪ Need to increase expansion capital for renewable operators: 95% of the smaller companies lack the capital resources to expand. Need capital funding mechanisms in place. ▪ Need to innovate and diversify technology uses and applications to create more value: Need to go beyond just placing energy on the grid. Need to continue to develop research and training capacity at local higher education institutions to be competitive. High-end research at the regional university will serve to attract manufacturers and commercialization entities to the County who benefit from spin-offs and technology transfer.	Finance and Innovation
▪ Need to encourage additional support from the Federal and State levels on renewable energy: Need strong programs, mandates, and coordination such as California Governor's mandate for 33% renewable by 2020 to accelerate growth. Need to support stronger renewable energy mandates at State Level. Need to explore Federal support for renewable energy: Need to secure additional DOE and DOL green training funding.	Collaboration

3.3.10 Vision and Recommendations: Harness Alternative Energies and Move Downstream

VISION

Kern County will become California's leading source for wind, solar, and biomass power and will become one of the leading places for downstream activities in plastics (bio- and petroleum-based).

RECOMMENDATIONS

- Pursue opportunities to secure State and federal support of alternative energy technologies.
- Promote collaboration by industry and educational institutions to train County citizens and place them in alternative energy jobs.
- Support infrastructure projects essential to alternative energy development. (In mid-2010, SCE's Tehachapi Renewable Transmission Project (TRTP) will deliver electricity from new wind farms in the Tehachapi area to SCE customers and the California transmission grid.)
- Encourage public/private coordination of initiatives and legislation such as AB 811 and CEQA.
- Address waste diversion to increase the supply of biomass feedstock and encourage potential suppliers of biomass to divert important inputs to biomass plants to increase availability and drive down price of feedstock.
- Make public commitment to expansion of renewable energy in County through local utilization and purchase of locally-produced renewable energy.
- Bring together assets in renewables, such as wind, solar and biomass, to expand this opportunity and help make Kern a center for these new technologies and attract companies to develop renewable facilities in County.
- Support new research at Cerro Coso, Taft College, and CSUB that develop innovations with commercial applications in Kern County.
- Maintain political support for existing refineries and allow for development of new refineries and power plants.
- Focus attraction on expansion into downstream activities such as plastics, given Kern's strong position for manufacturing.
- Foster growth of KEDC-led Green Employers' Council to promote best practices and training opportunities for County residents.
- Engage in efforts to deal with endangered species act, air offsets, and proposed oil severance taxes.

3.4 Transportation and Logistics Cluster: Ready to Move Ahead

3.4.1 Overview: Transportation and Logistics is a Strong, Emerging Cluster in the County

Driven by the availability of cheap land for warehousing and distribution and access to key transportation infrastructure, including the Ports of Long Beach, Los Angeles and Oakland, and the major north-south and east-west highways and interstates in California, the Transportation and Logistics cluster's presence and growth in Kern County has been significant in the past ten years. Employing over 13,000 people with above-average wages in the key segments of road, air, rail, logistics, warehousing, and wholesale trade, the cluster has achieved overall growth of 2% in the 5-year period between 2003 and 2008.

Kern County has strengths in facilities support, specialized freight, trucking and logistics services for road and rail, rental, leasing, and equipment repair. The County's industry cluster is also strong in wholesale trade, which depends on the strong availability of transportation providers and services across various modes. The Transportation and Logistics cluster's strengths also appear tied to the County's strengths in energy and agriculture, two export-oriented industries that are heavily dependent on the large-scale transport of materials and final products. However, general long-distance truck freight and air transportation are weaknesses in the industry cluster in Kern County.

3.4.2 Cluster Performance

Kern County's Transportation and Logistics cluster has achieved moderate growth and concentration. These employment dynamics suggest that the County's Transportation and Logistics cluster is increasingly a key competitive countywide player. The following are the factors that are used in assessing cluster performance:

Positive Growth Dynamics. This cluster is performing well overall in terms of employment growth. Between 2003 and 2008, employment in Transportation and Logistics grew on average 2% annually, driven by growth in warehousing/storage, trucking, and support activities cluster segments.

Life Cycle: Just Expanding. In an analysis of 5-year dynamics in the cluster, Kern County's Transportation and Logistics cluster is barely into the expanding stage of its lifecycle, a stage characterized by high growth and high concentration relative to the national average.

Relatively Moderate Growth. The growth share matrix shows the cluster's growth relative to the U.S. and competitor counties. While growing slower than major transportation hub of San Bernardino, the County's five-year growth in Transportation and Logistics has been higher than the U.S. average growth. Kern County is also outpacing Fresno and San Joaquin Counties.

Comparatively Good Concentration. The location quotient, which compares the County's relative employment size to that of the United States, is the key measure of employment concentration. Transportation and Logistics is slightly more concentrated in Kern County compared with the concentration of the industry in the whole of the United States. However, Transportation and Logistics activities are more concentrated in the neighboring county of San Bernardino, which has location quotients of 1.7.

Figure 20: Transportation and Logistics Growth Share Matrix, 1993-2008

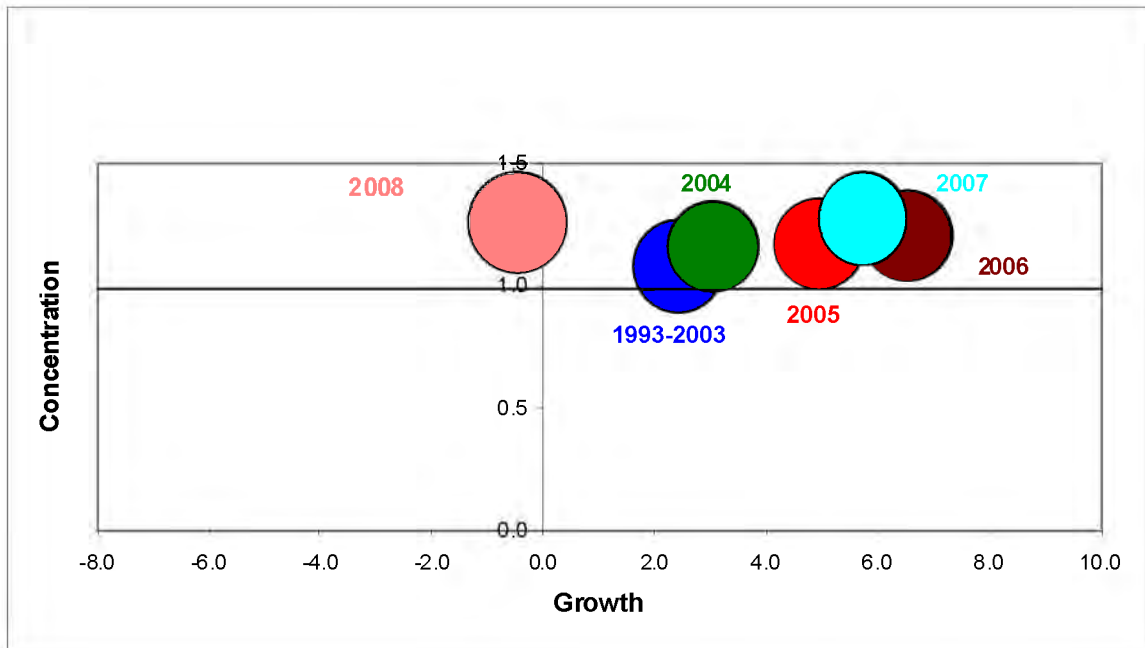
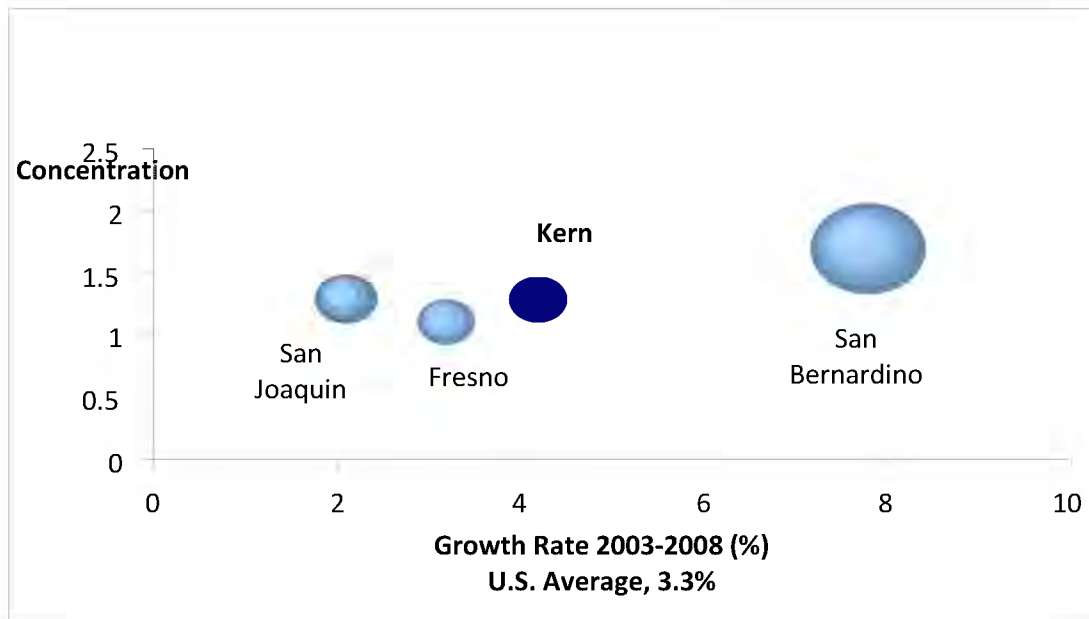


Figure 21: Transportation and Logistics Growth Share Matrix, Kern County Competitors



3.4.3 Cluster Segments

The Transportation and Logistics cluster consists of more than 13,000 employees and nearly 1,200 firms in the different wholesaling, transportation, equipment rental/leasing, repair and maintenance, support activities, and local service providers (i.e. couriers/messengers). As indicated in the table below which identifies the NAICS definitions that comprise the cluster, the largest numbers of business establishments are found in the truck transportation segment. Other key elements of the cluster's structure are:

Truck Transportation Segment Leads in Employment. The leading segment for employment is truck transportation (4,381). Other key cluster employers include logistics (4,482) and warehousing and storage (1,636).

Above Average Concentration. Kern County's Transportation and Logistics cluster is slightly more concentrated than the U.S., with a location quotient of 1.3. The leading cluster segments in concentration are pipeline transportation (3.9), truck transportation (1.31) and warehousing and storage (1.22). The segments with the weakest concentration include air transportation (0.18), transit and ground passenger transportation (0.27), and farm product raw material merchant wholesalers (0.19).

High Wages. Workers in the transportation and logistics cluster made \$883 a week in 2008. Transportation paid its workers an average weekly wage of \$843. In logistics, workers earned a weekly total of \$1,005. Firms in the support activities segment paid their workers \$1,000 per week. Warehousing and storage firms provided weekly labor compensation of \$685.

Table 15. Employment Conditions, Transportation and Logistics, 2008

NAICS Code	Industry	Employment	Wage	Concentration
	Transportation and Logistics	13,192	\$883	1.3
481, 484 485-486, 488	Transportation	4,381	\$843	1.1
4235, 4238, 42448, 42449 4245-4247	Logistics	4,482	\$1,005	1.3
493	Warehousing & Storage	1,636	\$685	1.3

Figure 22: Transportation and Logistics, Employment Shares, 2008

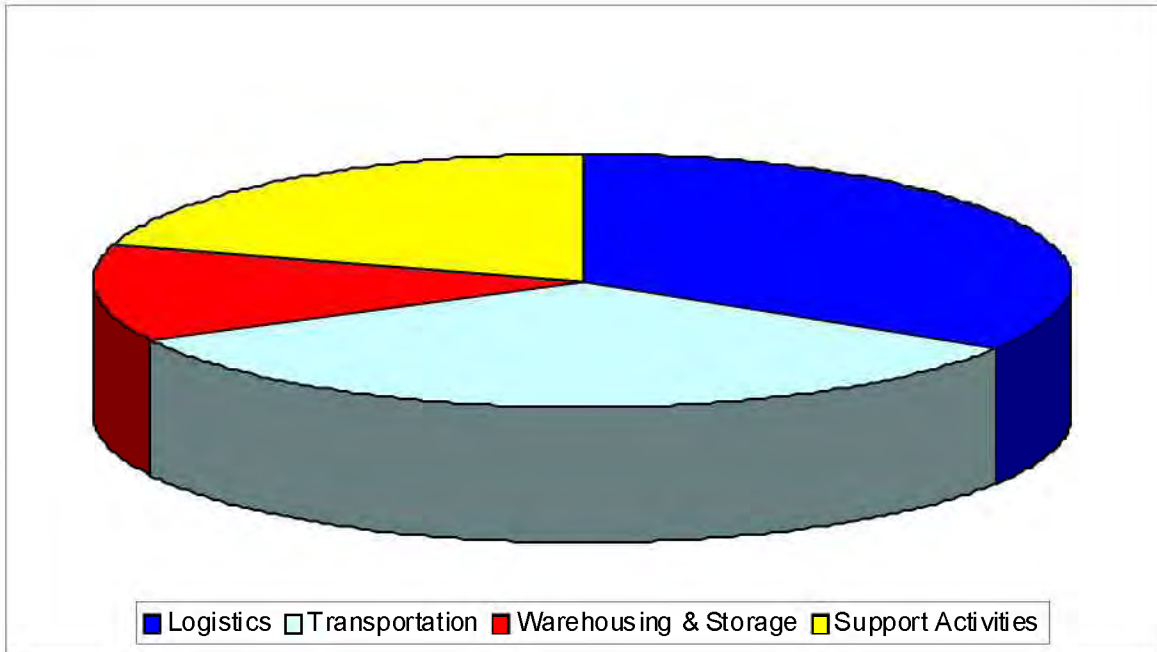
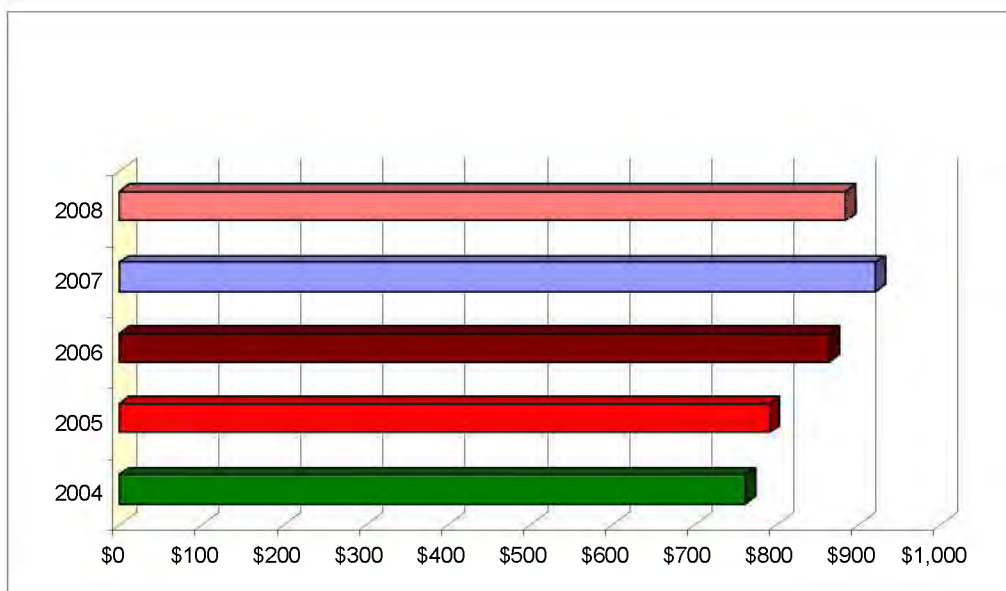


Figure 23: Transportation and Logistics, Average Weekly Wages, 2004-2008

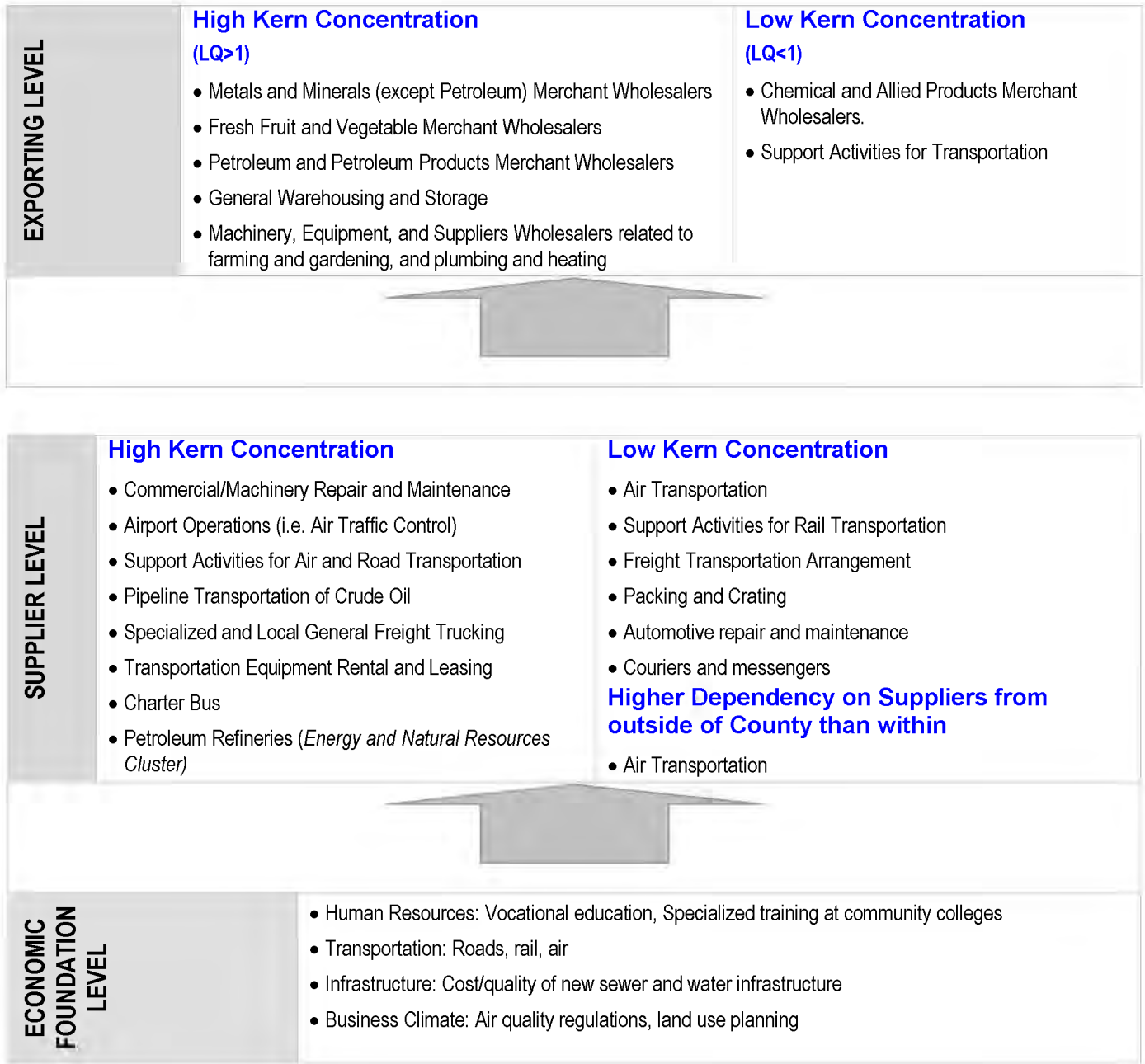


3.4.4 Cluster Map

The figure below depicts the various segments and sub-segments of the cluster definition according to the three “layers” or levels of a cluster – exporters, suppliers, and economic input foundations. In addition to the cluster definitions, the map shows the segments from other clusters on which this cluster depends. The figure also indicates areas where the County exhibits strong or weak concentration of activities (based on its location quotient), as well as supply-level segments characterized by relatively higher dependency on suppliers from outside of the County. Not surprisingly, in supplier segments that are strongly concentrated, the County relies less on suppliers from outside of the County. The economic foundation level encompasses the categories that help enable and support the cluster by providing key inputs and resources that the cluster depends on.

Kern County has a strong presence of transportation and logistics activities at both the exporting and supplier levels. Most categories of merchant wholesaling, with the exception of that of petroleum, chemical, and allied products, are highly concentrated in the County at the export level. At the supplier level, the cluster in Kern County not only has a high concentration of key input activities, but is also well-supplied by companies located in the County. One exception is air transportation, a segment in which the County appears relatively more dependent on suppliers from outside of the County. Not surprisingly, in supplier segments that are strongly concentrated in Kern, the County relies less on imported supplies (suppliers from outside of the County). Many of the high concentration segments at both the supplier and exporting level appear to be strongly linked to the County’s activities in agriculture and energy and natural resources.

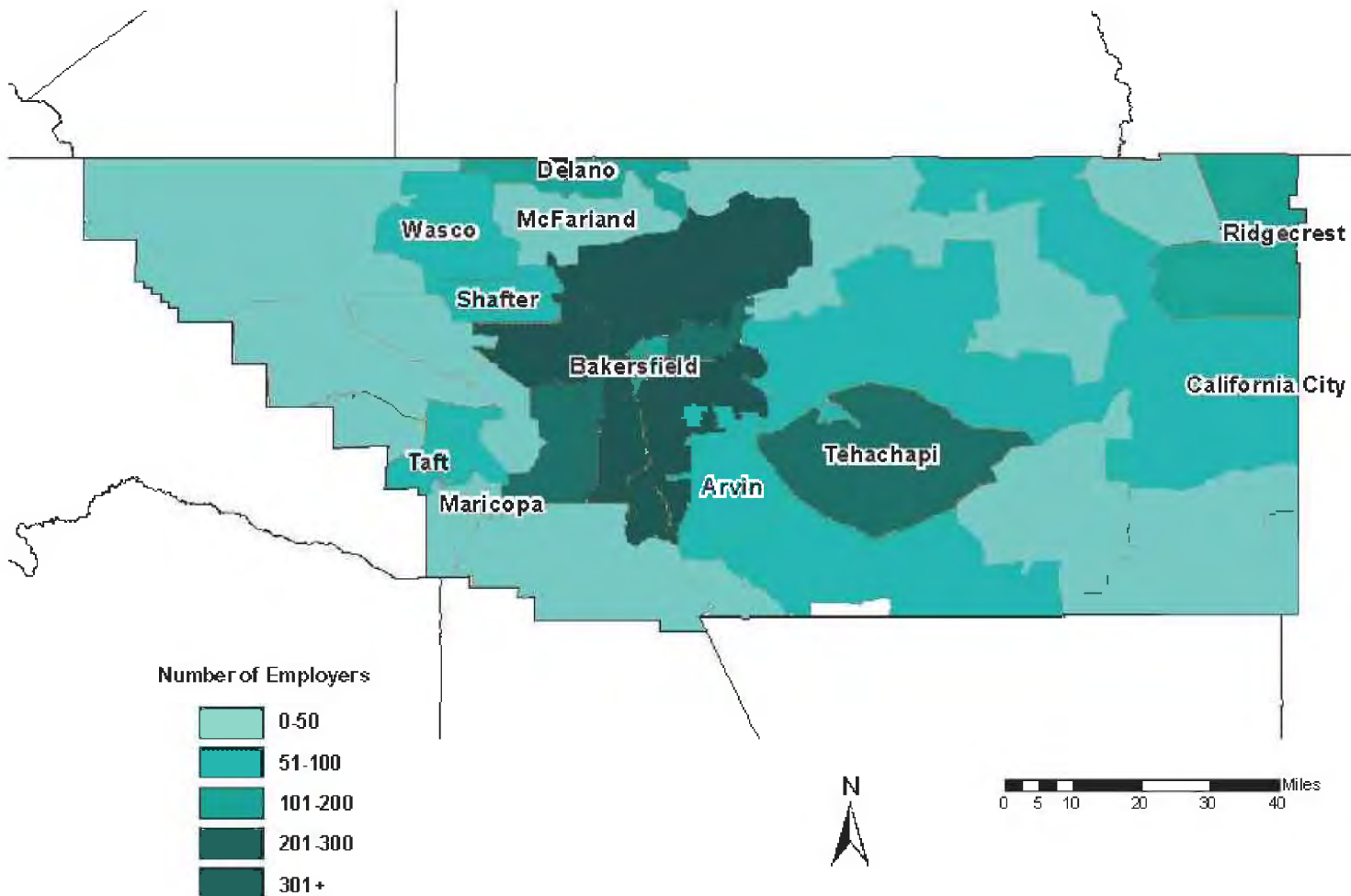
Figure 24: Transportation and Logistics Cluster Map



3.4.5 County Distribution: Employment Strongest in the Upper Valley

The highest levels of employment are located in the western part of Kern County along the I-5 and Highway 99 corridors, with moderate levels located along the Tehachapi area (Highway 58). The zip-code map below shows distribution of employer levels across the County

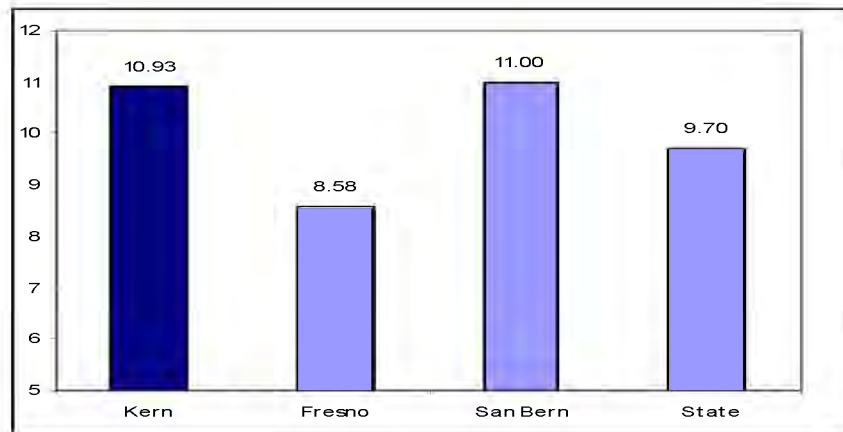
Figure 25: Transportation and Logistics Regional Distribution, Employers



3.4.6 Entrepreneurial Dynamism is Even with Competitors

Kern's entrepreneurial dynamism, measured as the share of total companies less than 2 years old (see figure below), is fairly even with key competitors. Approximately 11% of the companies in Kern County's Transportation and Logistics cluster are younger than three years, which compares favorably to the approximate 11% to San Bernardino.

Figure 26: Transportation and Logistics Entrepreneurial Dynamism, 2006



3.4.7 Cluster Occupations

For the entry level occupation analysis, the Transportation, Logistics & Warehousing cluster includes the following sectors: Air Transportation (NAICS 481), Truck Transportation (484), Transit and Ground Passenger Transportation (485), Pipeline Transportation (486), Support Activities for Transportation (488), Couriers and Messengers (492), Warehousing and Storage (493), Commercial and Industrial Machinery and Equipment Rental and Leasing (532-533).

Top Entry-Level Occupations, Transportation and Logistics Cluster, Kern County, 2006

OCCUPATION	Jobs	Median Wage (Hourly/Annual)
Truck Drivers, Light or Delivery Services	2,350	\$28,331
Driver/Sales Workers	1,440	\$18,546
Shipping, Receiving, and Traffic Clerks	860	\$25,921
Production, Planning, and Expediting Clerks	370	\$47,978
Taxi Drivers and Chauffeurs	160	\$9.50/hr

3.4.8 Economic Foundation Challenges

The cluster-specific economic foundation challenges range from infrastructure and business climate, to human resources, marketing, and innovation. The following challenges were identified by various stakeholders in the cluster.

HUMAN RESOURCES

Training and Skills Development: The challenge is to develop and attract a trained labor force to serve needs of diverse jobs and employers of various sizes, as well as strengthening job-ready skills. For example, some businesses have difficulty hiring vehicle and maintenance mechanics, hydraulic and fork-lift operators, and other key support occupations. Faced with this challenge, some firms have relied on in-house training, which is very costly.

Job Security: The cluster has many seasonal workers who are unable to find year-round sources of employment. The seasonality in employment and lack of the equivalent of a year-round job with benefits may hurt the attractiveness and competitiveness of jobs in the cluster. The seasonal nature of employment is partially due to the agriculture industry. (Certain businesses in the cluster however, such as Famous Footwear, do offer more stability year-round.)

INFRASTRUCTURE

Congestion on Key Arteries: The County has growing congestion and competing uses on key transportation corridors, which may impact the County's ability to expand the cluster and move goods. In addition to the regional transportation projects mentioned in Chapter 2, Highway 46 will be widened over the next several years.

BUSINESS CLIMATE

Communicating Changes in Traffic Laws to Affected Users: Changes in traffic regulations are not effectively reaching affected businesses. For example, changes in road regulations for truckers in the city limit have constrained some facilities, and have led to increased traffic citations.

Public Financing of Infrastructure: Kern County has been unable to adopt a self-funding program such as a half-cent sales tax (Measure I) to pay for the development of transportation infrastructure.

Safety Regulations: Improving safety regulations for agriculture truck drivers, specifically, and all truck drivers, generally, is one of the issues in this cluster.

SUPPLY CHAIN/MARKETING

Linking Transportation and Logistics Providers: Some firms in the cluster have difficulties in identifying backhaul opportunities with trucking companies.

Relatively High Cost of Logistics Providers: There is a high cost of container transportation for businesses, particularly the larger distribution centers like Target and Sears. Due to the low number of manufacturers/customers, there are limited scale efficiencies from the supplier's perspective. For example, it is not always cost-effective or profitable for rail transport providers to service short-distance inter-modal customers.

3.4.9 Key Insights for Strategy Implementation

Kern County's Transportation, Logistics & Warehousing cluster faces important challenges. The following table summarizes the key insights based on the diagnosis of the cluster's performance and economic foundation challenges. These conclusions relate to the strategic priority areas of the County's economic development plan.

Table 16. Summary of Transportation and Logistics Cluster Diagnosis

Conclusion	County's Strategic Priority Area
<i>Cluster Analysis</i>	
▪ Value-Chain Depth: Need to sustain Kern County's strong presence of transportation and logistics activities at both the exporting and supplier levels, as well as improve capacity in air transportation. ▪ Moderate Growth, High Wages: Need to build on existing strengths in Transportation, Logistics & Warehousing to catch up with competitors in terms of employment growth and the number of firms.	Business Attraction and Expansion
<i>Economic Foundation Analysis</i>	
▪ Training and Skills Development: Need to develop and attract trained labor force to serve needs of diverse jobs and employers of various sizes, and need to strengthen job-ready skills. ▪ Job Security/Year-Round Employment: Need to provide year-round employment for seasonal workers; need to set up internal job sharing to even out seasonality in employment. ▪ Marketing cluster as a career opportunity. Need to increase value for alternative and technical/trade career paths among high school students; need to promote the idea of vocational training to school system as a way to address the serious shortcomings of current system – drop outs, dead ends, etc.	Human Resources
▪ Congestion on Key Arteries: Need to continue to expand and move goods in the face of growing congestion and competing uses. ▪ Increasing use of Kern Airport (Meadows). Air cargo has lots of opportunity as a result of expansion of Kern County Airport. ▪ Waste Management: Need sufficient alternatives to support waste hauling to landfills. ▪ Public Financing of Infrastructure. Need to adopt a self-funding program such as ½ cent highway tax to pay for development of the infrastructure. ▪ Communicating changes in traffic laws to affected users and facilities. Need to communicate changes in regulatory environment affecting businesses. ▪ Safety regulations: Need to improve safety regulations for agriculture trucks/drivers, specifically, and all truck drivers, generally.	Infrastructure

3.4.10 Vision and Recommendations

VISION:

Kern County will become the Transportation and Logistics center for the San Joaquin Valley and will increase employment growth rate relative to San Bernardino County.

RECOMMENDATIONS:

- Attract more logistics providers to County to increase competition and drive down costs.
- Establish training programs for Logistics Workers and Equipment Maintenance and Operators.
- Adopt new mechanism for funding transportation infrastructure, such as an increase in the local sales tax.
- Zone for industrial land along rail lines to reduce negative impact of residential encroachment.
- Establish greater linkages with Ports such as Oakland (e.g., Shafter's intermodal rail facility).
- Communicate changes in traffic laws more effectively to transportation firms to prevent surprise ticketing, e.g., oversize loads such as wind turbine blades.
- Continue working with Golden Empire Transit District and Kern Regional Transit to provide transportation alternatives to employees at distribution centers.
- Continue road expansion and improvements, despite problems of local control over highway/road monies.
- Continue discussions with air cargo operators looking at Kern County sites.
- Support KEDC, Kern COG, and County efforts to attract California High Speed Rail Authority's Heavy Maintenance Facility to Shafter or Wasco sites. (The project could result in 1,500 full-time jobs and \$100 million in annual wage income.)

3.5 Tourism, Recreation & Entertainment Cluster: Sharing the Wealth

3.5.1 Overview: Tourism, Recreation & Entertainment Cluster Has Strong Potential

The performance of Tourism, Recreation & Entertainment in Kern County, continues to suggest continued growth opportunities in both annual expenditures and employment. This includes the generation of tourism and visit activity from people traveling between major cities in Northern and Southern California as well as those from large metro areas in Southern California seeking a close weekend get-away destination. To enhance this potential, Kern County must continue current marketing activities and look for additional promotional opportunities.

The county should identify such tourism opportunities and promote them to external markets with the goal of economic benefit of new money into the region. Particular emphasis should be placed on unincorporated County communities to realize a direct return on County investment; however, incorporated cities will also benefit from such expenditures. Various programs and resources are available to support private sector development of the tourism-related businesses and attractions that help define this industry cluster.

The cluster has almost 23,000 jobs that continue to be primarily in accommodation and food services. Increasing strengths are in sports and recreation uses of County outdoor assets that support things such as offroading, water sports, and hiking. Due to Kern County's proximity to the Los Angeles media and entertainment industry, the County is often used for "on location" shooting for film and video.

3.5.2 Cluster Performance: Positive Growth and Weak Concentration

Kern County's Tourism, Recreation & Entertainment cluster is growing at about the rate of the overall economy but is growing faster than competitors. Still, the cluster remains weakly concentrated. The following are the factors used in assessing cluster performance:

Positive Absolute Growth. The cluster has experienced average annual employment growth of 3.6% between 2003 and 2008.

Life Cycle: Seed Cluster. The cluster is in the seed stage of its lifecycle, a stage characterized by low growth and low concentration relative to the national average.

Modest Growth and Concentration. The cluster is performing modestly against competitors with an average employment growth rate of 3.6% which is significantly higher than the national rate of 2.0%. Additionally, employment growth for 2008 is an improvement over the previous two years.

Figure 27: Tourism/Recreation/Entertainment Growth Share Matrix, 1993-2008

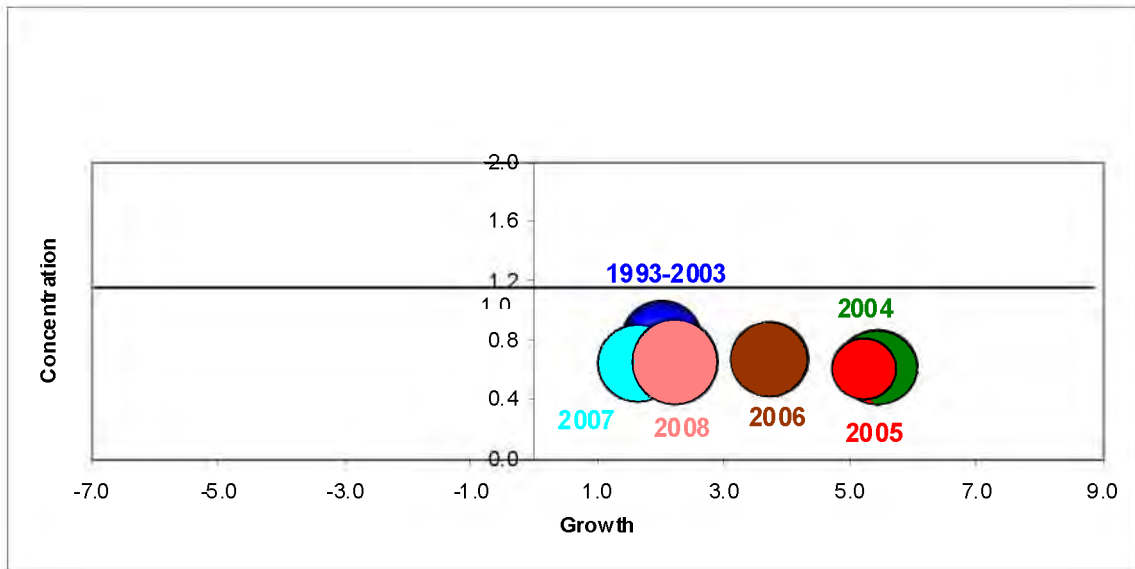
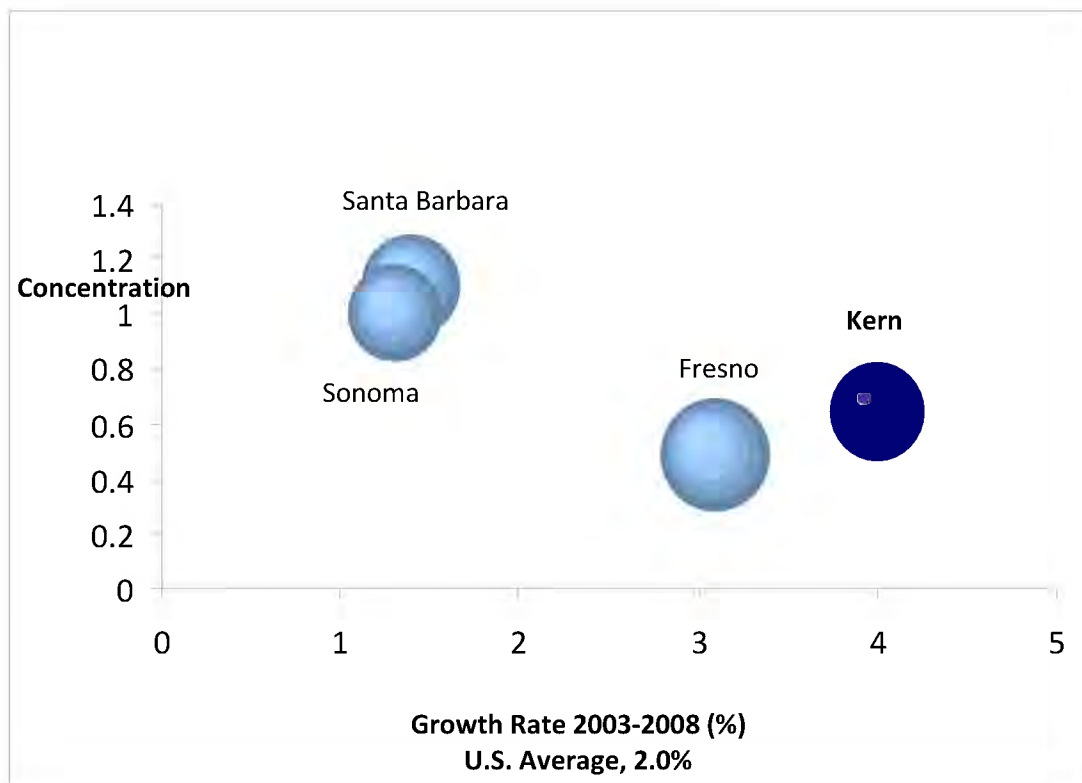


Figure 28: Tourism/Recreation/Entertainment Growth Share Matrix, Kern County Competitors



3.5.3 Cluster Segments: Strength in Accommodation and Food Services though Low Concentration Overall

The Tourism, Recreation & Entertainment cluster consists of approximately 1,200 firms in motion picture and sound recording; arts, entertainment, and recreation; and accommodation and food services segments. The table below indicates employment by segment, average weekly wages, and industry concentration for each of the segments. Key elements of the cluster's structure are:

Most Employment in Accommodation and Food Services. Kern County's Tourism, Recreation & Entertainment cluster employs approximately 21,800 people, most of whom (roughly 87%) work in the accommodation and food services businesses, followed by arts, entertainment, and recreation (nearly 12%). Employment in motion picture and sound recording, which is slightly over 300 and it accounts for only 1.4% of cluster employment.

Below-Average Concentration. The location quotient, which compares the County's relative employment size to that of the United States, is the key measure of employment concentration. Kern County's Tourism, Recreation & Entertainment cluster is not strongly concentrated in Kern County with an overall location quotient of 0.65, which is below the national average concentration for this industry cluster. Among the segments, accommodation and food services has the largest concentration (0.93), followed by arts, entertainment, and recreation (0.62) and motion picture and sound recording industries (0.39).

Low Wages in Leading Employment Segment. Average weekly wages across the segments average around \$750. Wages are low in accommodation and food services, while higher in recreation and film production.

Table 17. Employment Conditions, Tourism/Recreation/Entertainment, 2008

NACIS Code	Description	Employment	Wage	Concentration
	Tourism, Recreation & Entertainment	21,784	\$756	0.65
512	Motion Picture & Sound Recording Industries	312	\$851	0.39
71	Arts, Entertainment, & Recreation	2,451	\$945	0.62
72	Accommodation & Food Services	19,021	\$471	0.93

Figure 29: Tourism/Recreation/Entertainment, Employment Shares, 2008

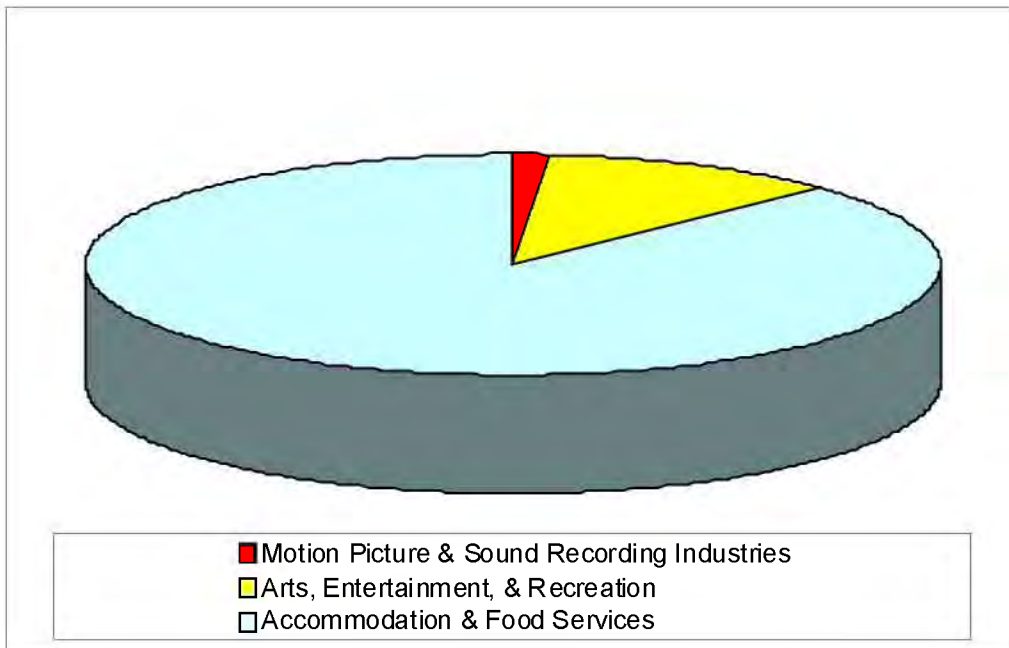
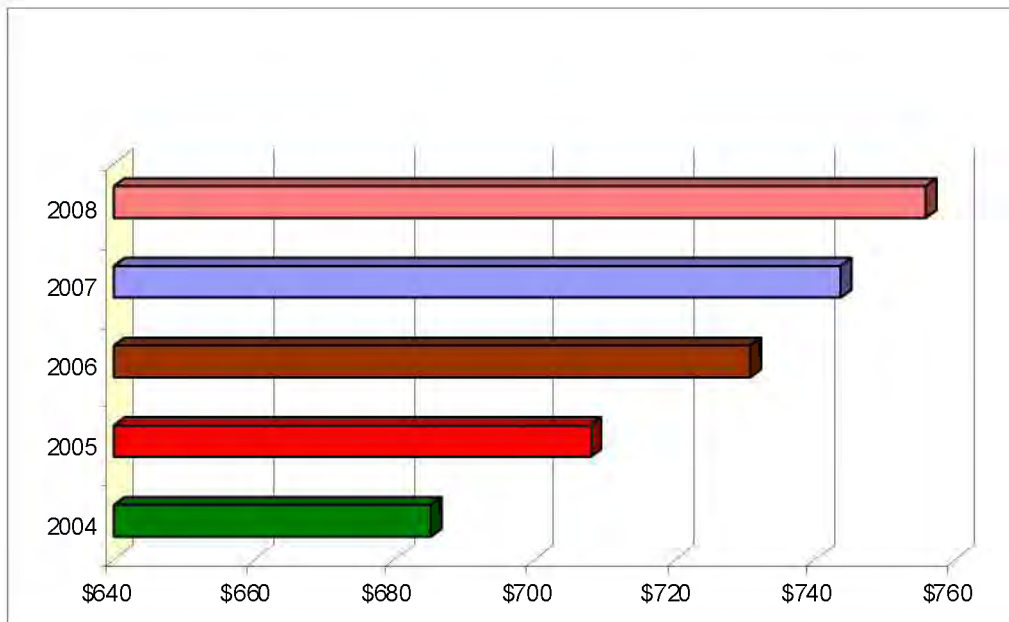


Figure 30: Tourism/Recreation/Entertainment, Average Weekly Wages, 2004-2008



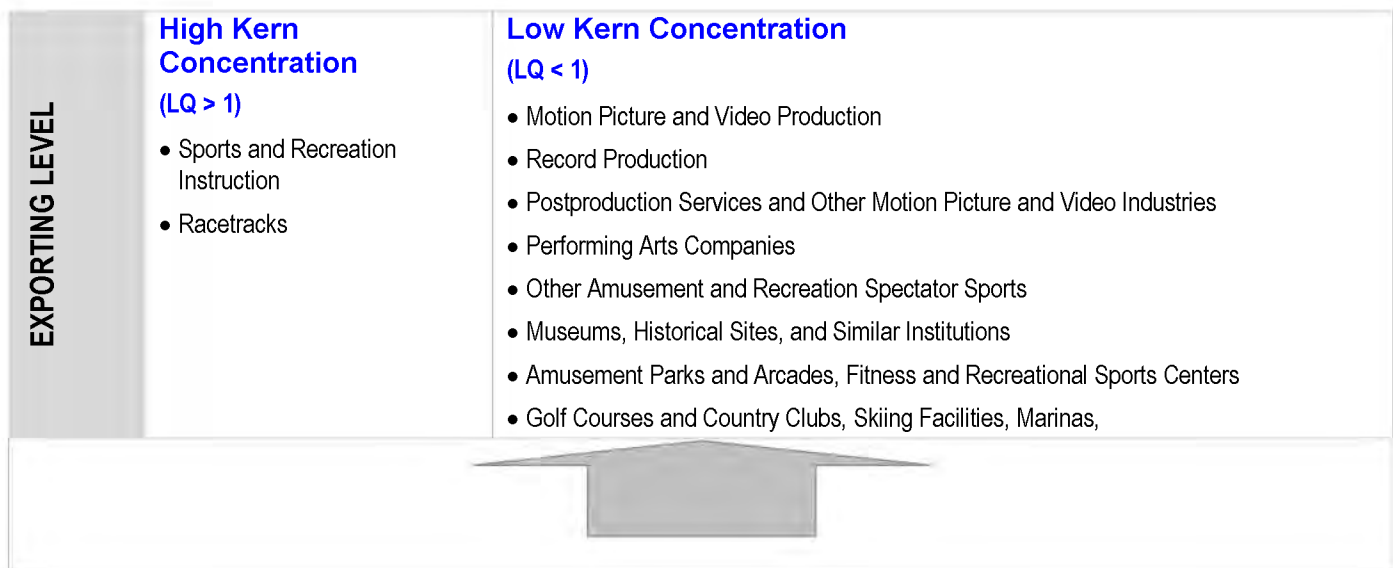
3.5.4 Cluster Map: Limited Amenities

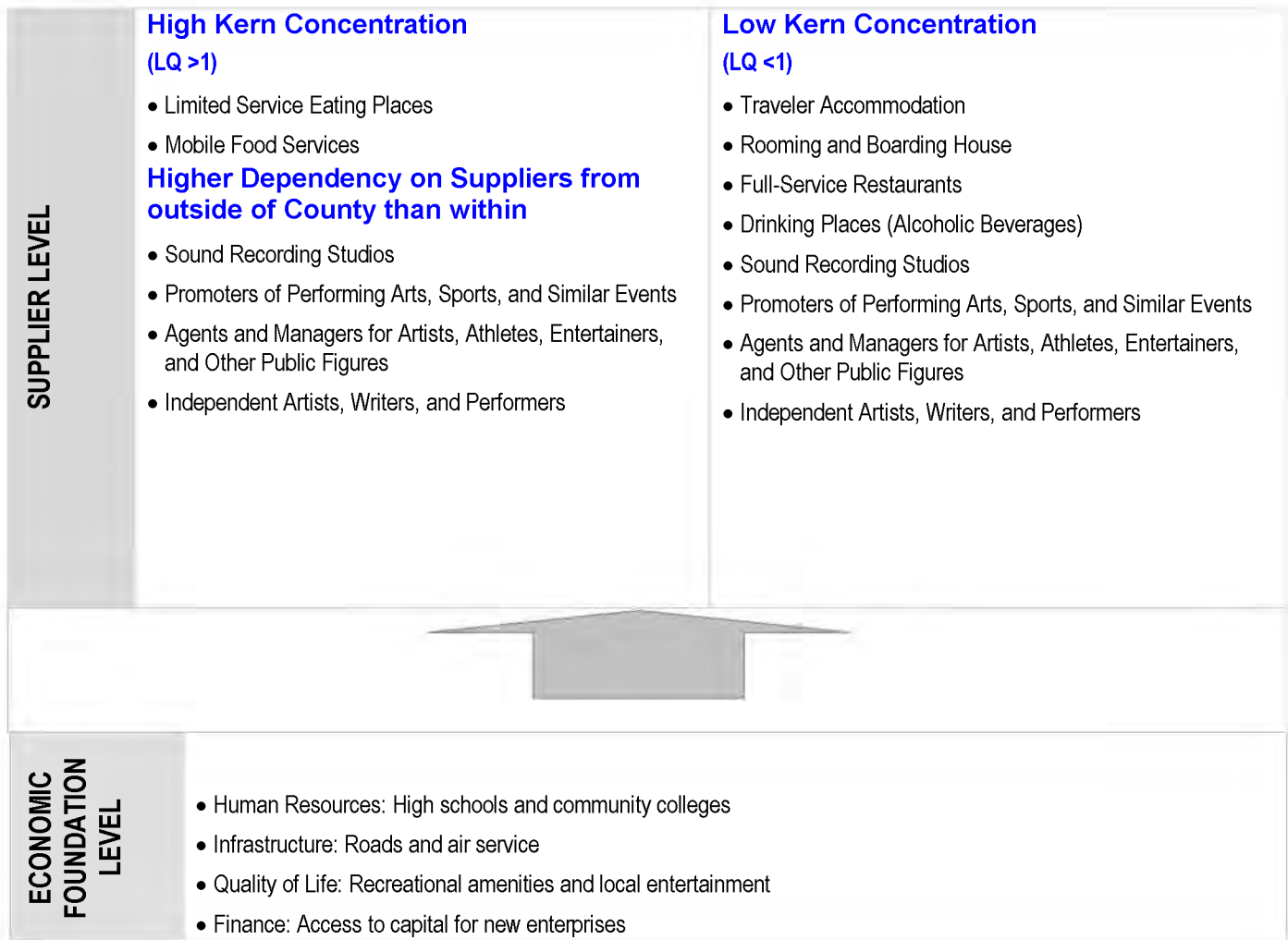
The figure below depicts the various segments and sub-segments of the cluster definition according to the three “layers” or levels of a cluster – exporters, suppliers, and economic input foundations. In addition to the cluster definitions, the map shows segments from other

clusters on which this cluster depends. Specifically, the cluster relies on the transportation cluster for wholesale suppliers, and the value-added agriculture cluster for food product suppliers to restaurants and other eateries. The figure also indicates areas where the County exhibits strong or weak concentration of activities (based on its location quotient), as well as supply-level segments characterized by relatively higher dependency on suppliers from outside of the County. Not surprisingly, in supplier segments that are strongly concentrated, the County relies less on suppliers from outside of the County. The economic foundation level encompasses the categories that help enable and support the cluster by providing key inputs and resources that the cluster depends on.

Kern County does not have a strong presence of well-concentrated segments at the exporting and supplier levels. Many of the suppliers in this cluster are coming from outside of the County. The relatively higher dependency on firms outside of Kern is particularly noticeable in the arts and entertainment areas – two areas where Kern County neither has many business establishments nor strengths. Kern’s cluster also relies on meat and snack food product suppliers from outside the County because the County is weak in snack and animal food product manufacturing segments (see Value-Added Agriculture).

Figure 31: Tourism/Recreation/Entertainment Cluster Map

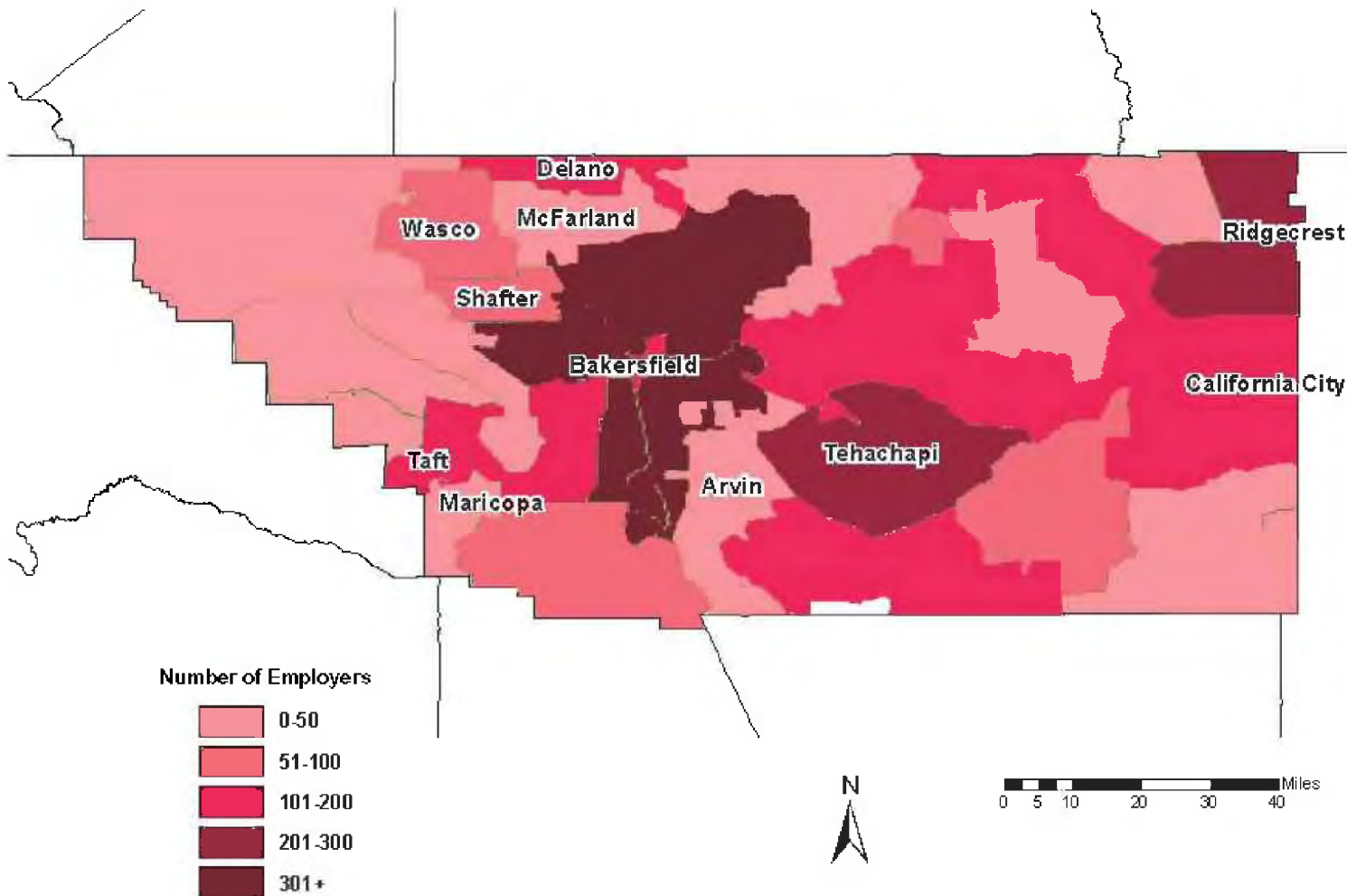




3.5.5 County Distribution: Employment Concentrated in the Valley

The Tourism, Recreation & Entertainment Cluster is well distributed throughout the County. The larger levels of employment continue to be in and around Bakersfield and the Kern River Valley. At the same time there is tourism employment spread throughout the County. The zip-code map below indicates distribution of employer levels across the County.

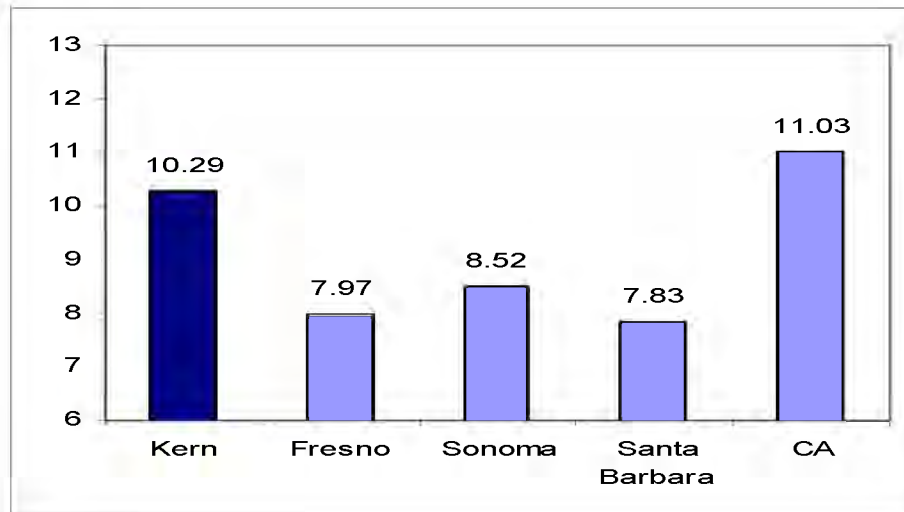
Figure 32: Tourism/Recreation/Entertainment Regional Distribution, Employers



3.5.6 Healthy Entrepreneurial Dynamism

Kern has a healthy presence of new businesses in this cluster when compared to other Counties. Kern's entrepreneurial dynamism, measured as the share of total companies 2 years old or less, is significantly above competitor Counties such as Fresno, Sonoma, and Santa Barbara and roughly the same as the State.

Figure 33: Tourism/Recreation/Entertainment Entrepreneurial Dynamism, 2006



3.5.7 Cluster Occupations

For the entry level occupation analysis, the Tourism, Recreation & Entertainment cluster includes the following sectors: Performing Arts, Spectator Sports, and Related Industries (NAICS 711), Museums, Historical Sites, and Similar Institutions (NAICS 712), Amusement, Gambling, and Recreation (NAICS 713), Accommodations (NAICS 721), and Food Services and Drinking Places (NAICS 722).

Top Entry-Level Occupations, Tourism/Recreation/Entertainment Cluster, Kern County, 2006

OCCUPATION	Jobs	Median Wage (Hourly/Annual)
Combined Food Preparation and Serving Workers	3,990	\$8.90/hr
Counter Attendants, Concession, and Coffee Shop	1,770	\$9.57/hr
Amusement and Recreation Attendants	810	\$9.10/hr
Bartenders	610	\$9.01/hr
Cooks, Institution and Cafeteria	490	\$15.17/hr
Cooks, Short Order	370	\$10.16/hr
Ushers, Lobby Attendants, and Ticket Takers	90	\$9.52/hr

3.5.8 Economic Foundation Challenges: Branding, Fragmentation, Workforce

The cluster-specific economic foundation challenges range from infrastructure and business climate, to human resources, marketing, and finance. The following cluster challenges were identified by various stakeholders in the cluster.

BUSINESS CLIMATE

- ***Competing Regional Interest:*** There is a growing perception that promotion of the cluster elements will benefit countywide. As a result, stakeholders are looking for added opportunities for cooperation and coordination of efforts.
- ***Filmmaking:*** For over 100 years Kern County has been a location for filmmaking. To capitalize on opportunities in this area, the county has an official film commission, promoting Kern County's unique attributes to the motion picture industry. The goal is to attract production while securing economic benefit through purchases of local goods and services and through payments to property owners for the use of their facilities.

HUMAN RESOURCES

- ***Professionalizing the industry:*** There is a continuing need to upgrade the quality of training for those in the tourism and hospitality staff. This will require recognition by business operators to train staff and professionalize operations.
- ***Build Positive Attitudes:*** Need to improve perception of tourism cluster by those working in the field
- ***Low workforce quality/local training:*** To upgrade the quality of the workforce in this cluster, there needs to be better opportunities for training with numerous educational institutions. Present training is handled by the entities in the tourism cluster.

MARKETING

With an emphasis on young people with families, Kern County currently has ongoing marketing initiatives that include the operation of a multiple web presences, social networking, maintenance of a countywide 24-hour visit information system, publication and distribution of an annual visitors guide and participation in travel expositions. It also provides free marketing consultation services and administers Kern County's tourism promotion grant program.

Kern County is both a positive and a negative location. Positive because Kern County is "only two hours away" from Los Angeles. Negative, because it is "only two hours away" from Los Angeles. This makes it an easy destination from L.A. but contributes to a perception that this is not a desirable destination. Part of the problem is a long-standing perception is that the county is hot and has bad air. But other communities are hot and have dealt with the same perception (i.e. Palm Springs)

- ***Packaging Tourism Offerings:*** There are renewed efforts to pursue packaging of tourism offerings including Historic Tours, Pass through Tours and Space Tourism.

- ***Working Cooperatively in Kern County:*** Key attractions and communities focusing on the tourism cluster are looking to more cooperative efforts to maximize opportunities considering limited funds and resources.
- ***Making County Residents Aware of Tourism Opportunities:*** There are increasing efforts to educate county residents as well as those in the tourism industry i.e. hotel staff more aware of tourism attractions. With current economic conditions, more residents are looking at “staycations” and other opportunities for recreation locally.
- ***Capitalize on influx of Off-Roaders and Self-Contained Travelers:*** With approximately 40,000 off roaders and self-contained travelers visiting Kern County on a regular basis, additional efforts should be made to capitalize on the housing, dining, and attraction opportunities that appeal to this population.

INFRASTRUCTURE

- ***Lack of high-quality tourism infrastructure:*** There continues to be a shortage of hotel space and restaurant opportunities especially in Eastern Kern County. Market and demand conditions will determine the direction and pace of adding such facilities. This ties heavily into the marketing efforts.
- ***Attractions that encourage tourists to stop:*** Primarily through the initiatives of local communities, more efforts must be placed toward providing attractions that will make visitors more aware of local opportunities and get them out of their cars and recreational vehicles.
- ***Improving arterial access routes:*** More work needs to be done in this area to improve access to current attractions and recreational opportunities especially in mountain regions.
- ***Film Making Facilities:*** While Kern County primarily provides locations for filmmaking, more projects to provide studios and other related businesses and facilities should be encouraged.

FINANCE

- ***Funding for Branding and Visibility:*** Funding is limited. Currently, Kern County has limited resources to promote the county’s tourism assets.
- ***Local initiatives:*** Most initiatives to bolster tourism, recreation, and entertainment must come from local communities with the potential of promotional support from the Board of Trade. Tied in with such initiatives are locally-inspired beautification efforts.

3.5.9 Key Insights for Strategy Implementation

Kern County’s Tourism, Recreation & Entertainment cluster faces important challenges. The following table summarizes the key insights based on the diagnosis of the cluster’s performance and economic foundation challenges. These conclusions relate to the strategic priority areas of the County’s economic development plan.

Conclusion	County's Strategic Priority Area
<i>Cluster Analysis</i>	
▪ Value-Chain Depth: Explore opportunities to develop cluster segments beyond sports and recreation, and limited service restaurants. ▪ Employment and Wages: Wage level is low relatively to other clusters in the County, but can increase with a stronger tourism market and offerings.	Business Attraction and Expansion
<i>Economic Foundation Analysis</i>	
▪ Need to improve tourism infrastructure in the Mountain areas. Need to increase the number and quality of hotels and lodging in this area. ▪ Need to expand restaurant infrastructure. Need to encourage growth in the number and diversity of high-quality restaurant offerings. ▪ Need to improve arterial access routes to Ridgecrest and Kern River Valley (Highways 395, 178, and 14). Better transportation would open up development in tourism and other industries.	Infrastructure
▪ Need to professionalize the industry: Need to get staff to see tourism and hospitality occupations as a career and not just a job. ▪ Need to provide better training opportunities to upgrade skills: There is need for additional training to improve hospitality and quality of service. ▪ Need to coordinate training efforts: Business operators should collaborate with associations to coordinate and tailor training programs.	Human Resources
▪ Need to Brand and Market Diversity of Tourism Assets: Tourism marketing is diffuse and not coherent. Need to develop regional theme(s) to better capture and convey variety of existing tourism assets, including outdoors, natural resources, arts and entertainment and golfing. ▪ Need to Package Distinctive Tourism Offerings: Need to provide the convenience of destination packages, pre reservations for recreational activities, and mapped-out itineraries. Need to increase piggy back packages with tourism- and traveler-related companies, as well as with airlines that will be servicing the new airport. ▪ Need to work cooperatively and cohesively with others in Kern County who are trying to promote Tourism: Board of Trade has played a role here, but the entity needs to work as closely as needed with others to maximize the limited funds and resources available.	Marketing
▪ Need to increase funding for positioning, branding, and visibility: Need funds to help support marketing, such as a presence at trade shows and in travel magazines. ▪ Need to resolve competing regional interests: Consider equally the tourism interests and priorities of all Kern's sub-regions and develop an integrated plan that builds on and showcases each region's tourism assets. Create an effective management plan that considers the roles of each chamber of commerce. ▪ Need to push the Bed Tax: Need to put the tax back on the election ballot and make sure to communicate that the taxes are coming from visitors, not residents. ▪ Need to cultivate local filmmakers and talent: Need to explore growing local film industry, improving the film festival, and cultivating local filmmakers and talent to create their own industry in County and add value in the County. ▪ Need to explore attracting studios and developing post-production infrastructure to service media and entertainment industry: A studio could serve as a big employment generator and anchor for film activities in the County. ▪ Need to Balance Priorities of Tourism with Other Clusters: For example, the County suffers from air quality problems which are negatives for tourism. So need to balance the transportation needs with that of tourism.	Collaboration Business Attraction and Expansion

3.5.10 Vision and Recommendations: Connect Your Assets, Lay Claim to Southern California Tourists

VISION:

Kern will become recognized as a destination of choice for weekend getaways from Southern California while growing from its existing strengths.

RECOMMENDATIONS:

- Develop and extend a brand intended to highlight the positive aspects of Kern County as a visitor destination.
- Identify specific geographic and demographic audiences for county product to maximize a return on investment of money and time.
- Foster cooperation and communication among tourism-related entities to facilitate unified marketing efforts.
- Educate and develop a quality tourism and recreation cluster workforce to enhance the visitor experience.
- Identify promotable tourism assets.
- Increase promotion of outdoor recreation and family-friendly tourism activities.
- Identify and promote visitor experiences (businesses other than dining or lodging) to better realize economic benefits from self-contained travelers (RVers).
- Explore new and innovative marketing methods and partnerships.
- Develop and maintain relationships with decision makers and front-line representatives involved in the location of commercial filming projects.
- Identify and promote unique filming locations.
- Develop and maintain efficient film permitting and fee structures.
- Facilitate the development of education opportunities to create a trained and effective tourism and film workforce.
- Work with the Bureau of Land Management regarding off-road recreation.

3.6 Healthcare Services Cluster: A Healthy Position for Growth

3.6.1 Overview: Healthcare Services Cluster is Growing

Kern County has over 21,000 jobs in the healthcare services cluster. The growth in this sector has been driven largely by the growing population. As a result, the cluster's key strengths are in areas driven by patient care needs, including medical and mental health practitioners, medical and diagnostic labs, and homes for the elderly. On the other hand, the supply chain for health-related equipment and technologies appears to be weak in Kern County. The County does not have a strong presence of medical devices and equipment manufacturing firms, which are key sources of procurement of materials and supplies for hospitals, medical offices, and other health care facilities in the County. Moreover, wages in the cluster, while typically higher than the County average, range significantly, depending on the nature of the occupation.

3.6.2 Cluster Performance: Emerging Cluster With Strong Growth

Kern County's Healthcare Services cluster is performing well. The following are the factors that are used in assessing cluster performance:

Strong Absolute 5-year Growth. Kern's Healthcare Services cluster grew 3.5% annually between 2003 and 2008.

Life Cycle: Emerging Cluster. The cluster is in the emerging stage of its lifecycle, a stage characterized by high growth and low concentration relative to the national average.

Mixed Competitive Position. Kern County grew faster than the U.S. average. As indicated below, Kern County grew faster than Fresno, Riverside, and San Bernardino. In terms of concentration, Kern's cluster trails all of its competitor Counties.

Figure 34: Healthcare Services Growth Share Matrix, 1993-2008

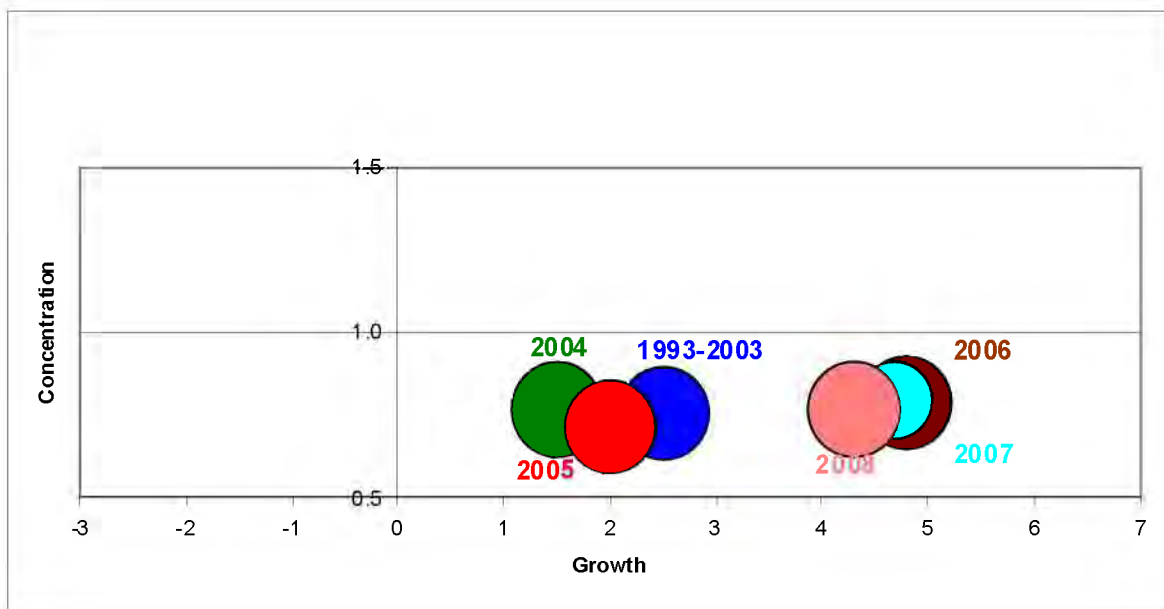
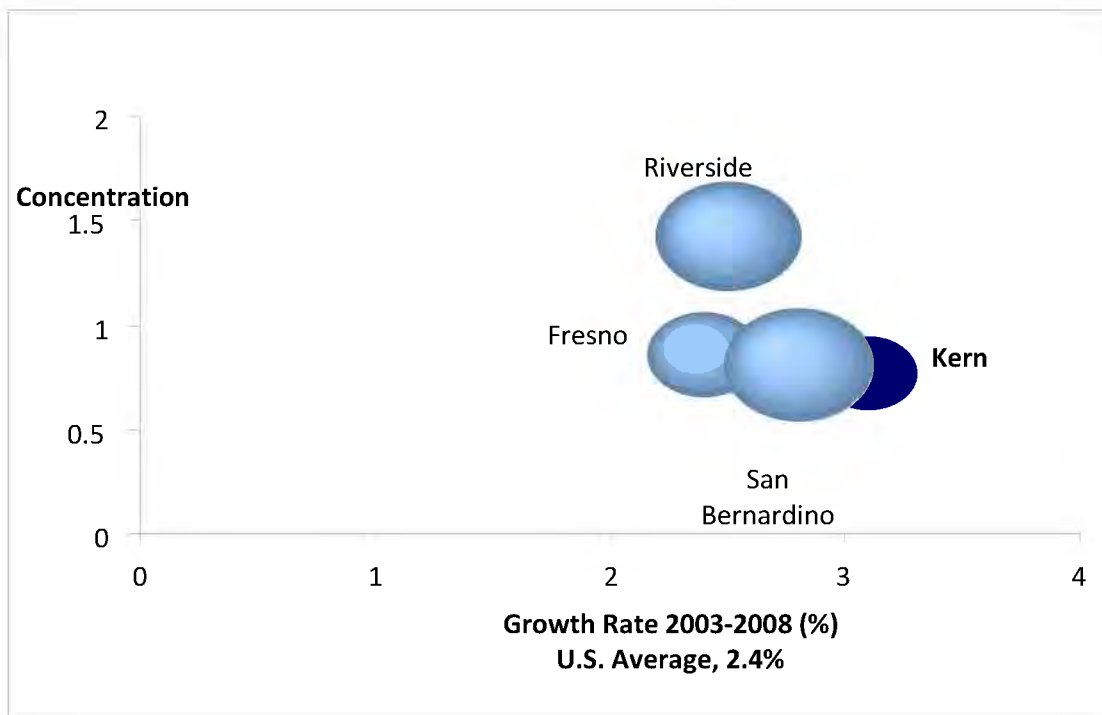


Figure 35: Healthcare Services Growth Share Matrix, Kern County Competitors



3.6.3 Cluster Segments: Low Concentration Across Cluster

Kern County's cluster consists of more than 1,400 firms, primarily in health care services, and to a much lesser extent in medical equipment and supplies manufacturing. The cluster also consists of instrumentation and testing manufacturing, but the data available for Kern County does not indicate firms or employment in this area. The table below lists the industry segments that comprise the cluster, and their corresponding employment, business establishments, average weekly wages, and concentration. Key elements of the cluster's structure are:

Large Cluster. The Healthcare Services Cluster employs more than 21,000 people. The largest employment levels are found in ambulatory health care services (10,210), followed by hospitals (5,963), nursing and residential care facilities (3,547). The smallest segment is the medical equipment and supplies manufacturing with approximately 450 jobs.

Ambulatory Services Segment Leads in Concentration. The location quotient, which compares the County's relative employment size to that of the United States, is the key measure of employment concentration. Kern County's health services and medical technologies cluster is not strongly concentrated in Kern County. The cluster has a location quotient of 0.77 overall, which is below national average concentration. Among the various segments, ambulatory health care services leads with a concentration of 0.9. The medical equipment and supplies' segment has the weakest concentration among the four key segments present in Kern County.

Higher Wages in Medical Manufacturing. The average weekly wage in the cluster ranges from \$441 in nursing and residential care facilities to \$1,034 in hospitals. Weekly wages in ambulatory health care services and medical equipment/supplies manufacturing averaged \$936 and \$949, respectively.

Table 19. Employment Conditions, Healthcare Services, 2008

NACIS Code	Industry	Employment	Wage	Concentration
	Healthcare Services	20,131	\$840	0.77
621	Ambulatory Health Care Services	10,210	\$936	0.90
622	Hospitals	5,963	\$1,034	0.75
623	Nursing and Residential Care Facilities	3,547	\$441	0.72
3391	Medical Equipment & Supplies Manufacturing	411	\$949	0.70

Figure 36: Healthcare Services, Employment Shares, 2008

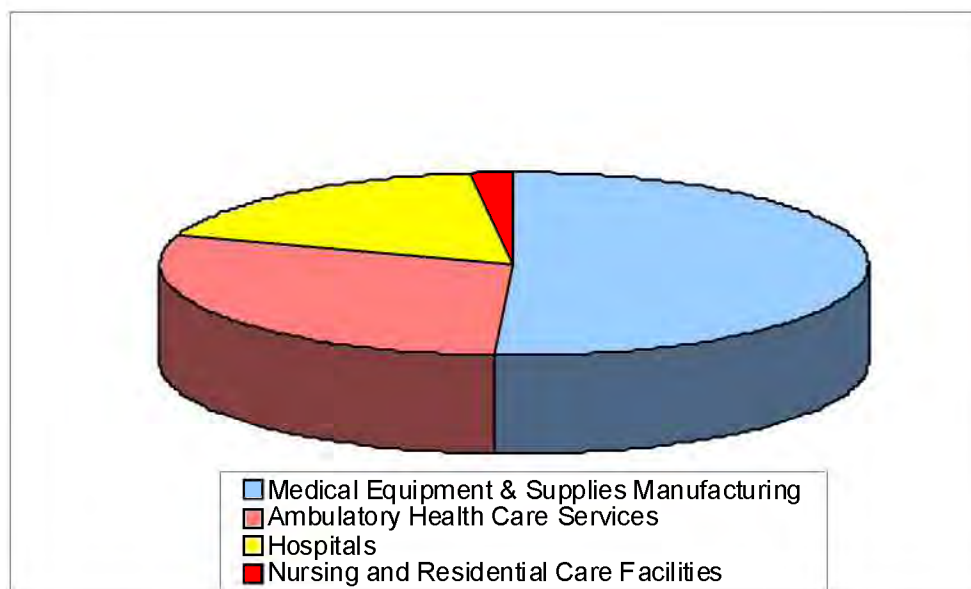
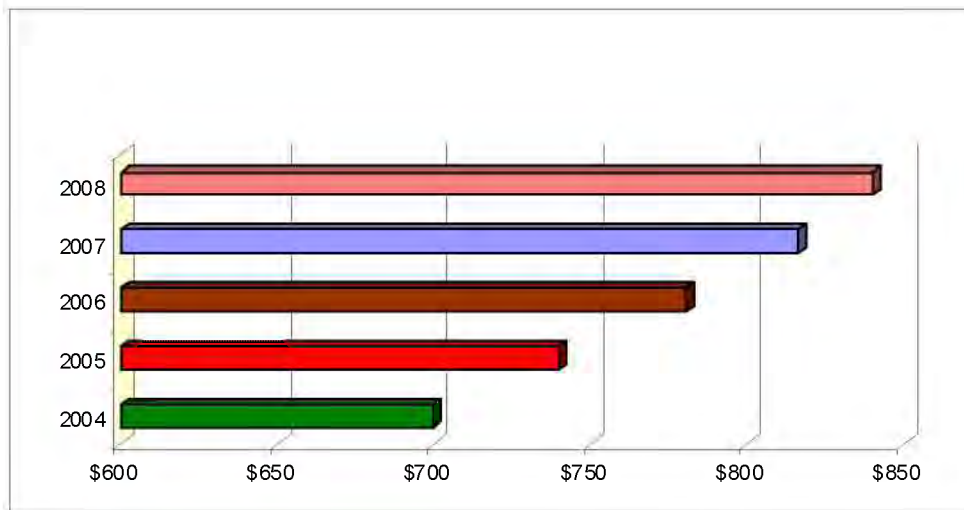


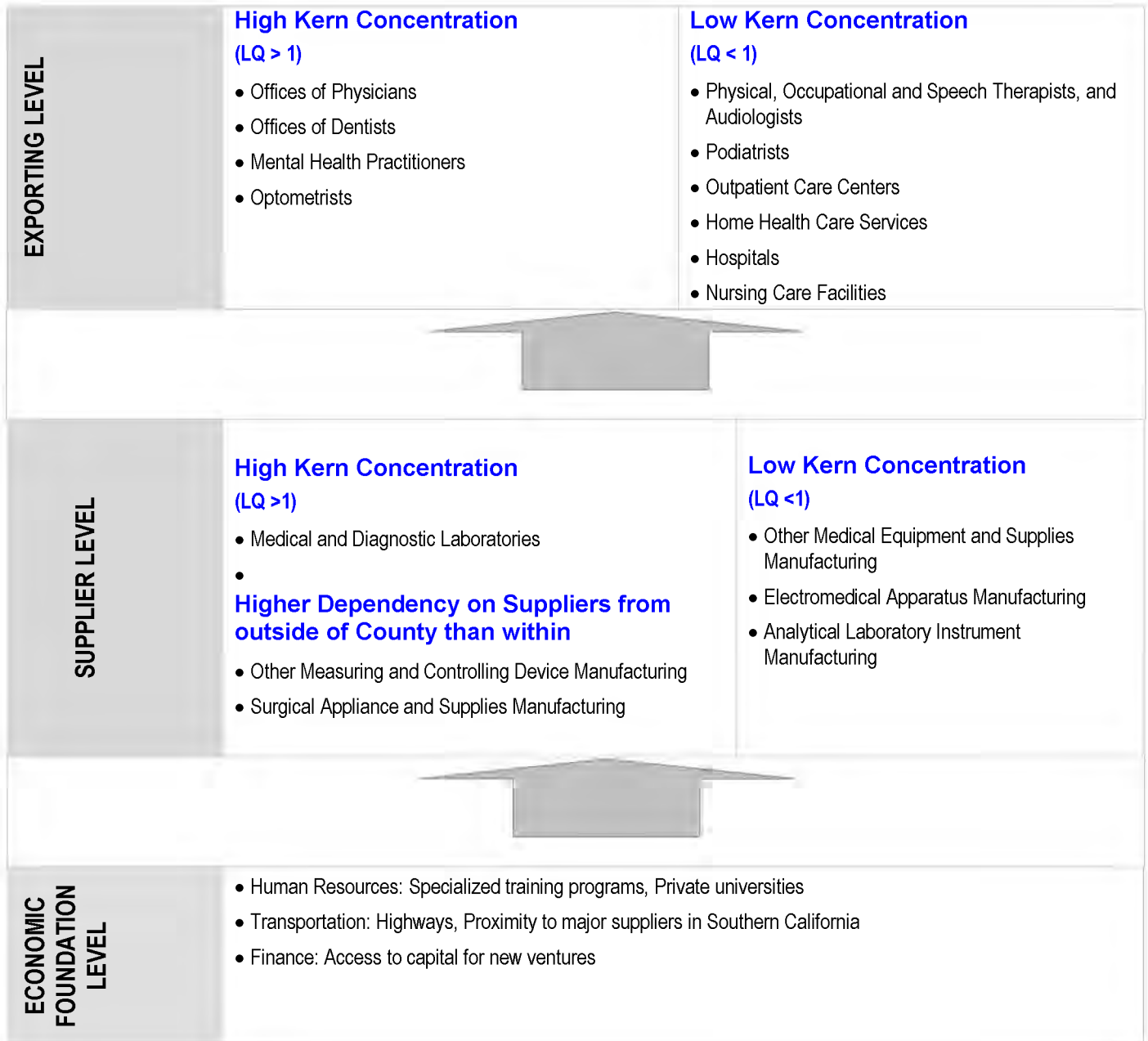
Figure 37: Healthcare Services, Average Weekly Wages, 2004-2008



3.6.4 Cluster Map: Lack of Supply Chain

The figure below depicts the various segments and sub-segments of the cluster definition according to the three “layers” or levels of a cluster – exporters, suppliers, and economic input foundations. In addition to the cluster definitions, the map shows segments from other clusters on which this cluster depends. The figure also indicates areas where the County exhibits strong or weak concentration of activities (based on its location quotient), as well as supply-level segments characterized by relatively higher dependency on suppliers from outside of the County. Not surprisingly, in supplier segments that are strongly concentrated, the County relies less on suppliers from outside of the County. The economic foundation level encompasses the categories that help enable and support the cluster by providing key inputs and resources that the cluster depends on. The cluster map reinforces that Kern has strengths in some areas of health care services, but lacks depth in the supply chain for medical equipment and supplies.

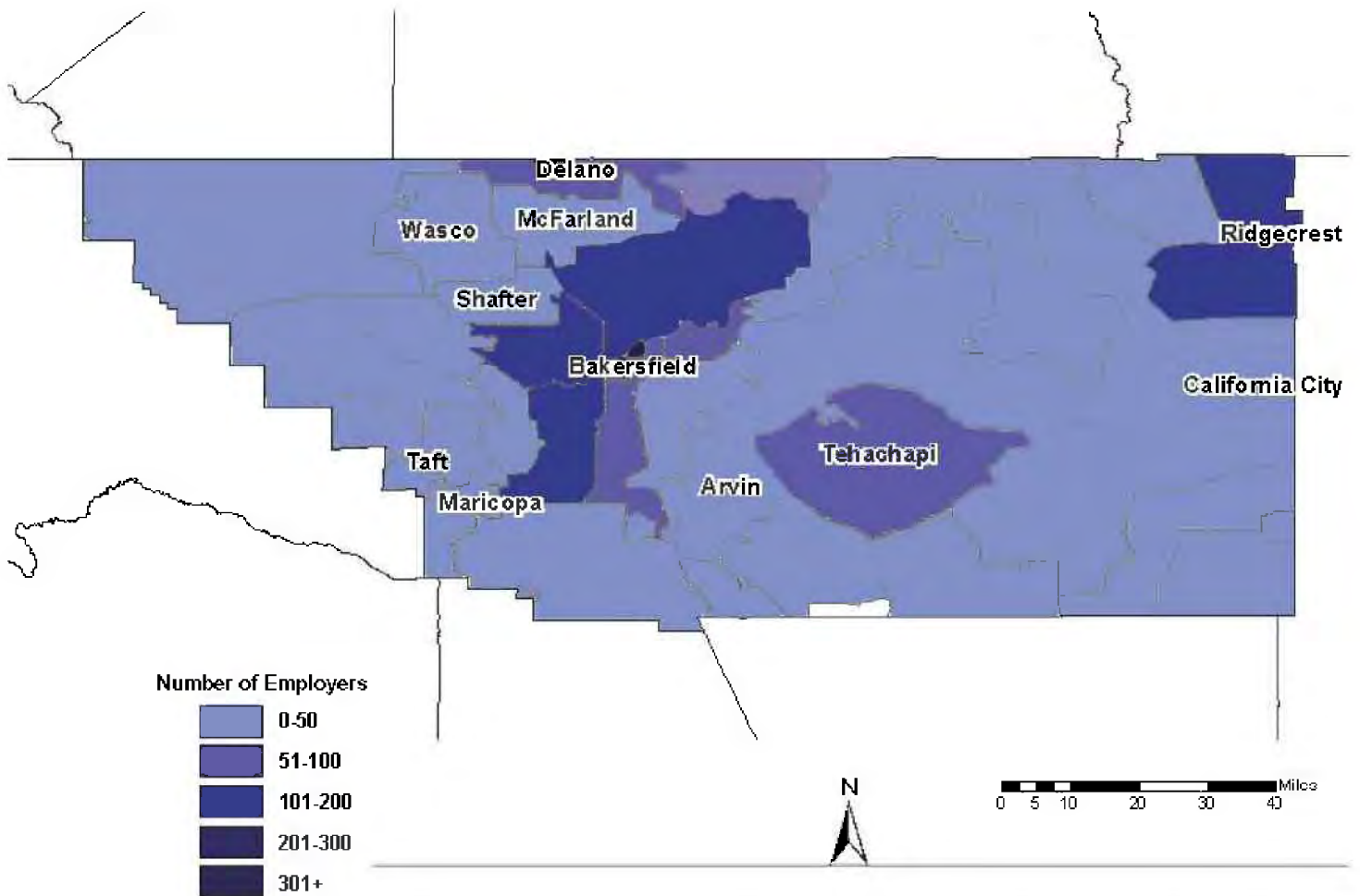
Figure 38: Healthcare Services Cluster Map



3.6.5 County Distribution: Employment Primarily in Valley, Mountains, and East

Employment in Kern's Healthcare Services is primarily located in the Valley, Mountains, and East. The zip-code map indicates distribution of employer levels across the County.

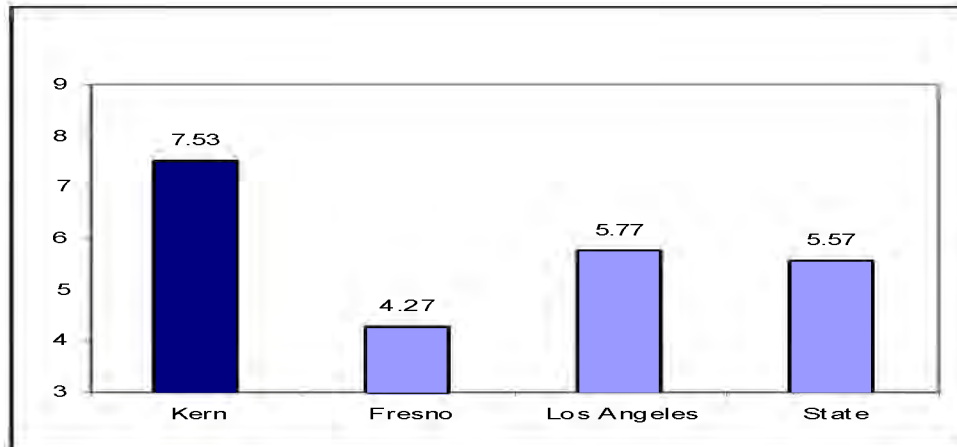
Figure 39: Healthcare Services Regional Distribution, Employers



3.6.6 High Entrepreneurial Dynamism

Measured as the share of total companies 2 years old or less, entrepreneurial dynamism in Kern's Healthcare Services cluster is vibrant compared to other competitor Counties. Kern's entrepreneurial dynamism is at 7.5%, while Fresno's measures 4%.

Figure 40: Healthcare Services Entrepreneurial Dynamism



3.6.7 Cluster Occupations

For the entry level occupation analysis, the health services and medical technologies cluster includes following industry sectors: Ambulatory Health Care Services (NAICS 621), Hospitals (NAICS 622), and Nursing and Residential Care Facilities (NAICS 623).

Top Entry-Level Occupations, Healthcare Services Cluster, Kern County, 2006

OCCUPATION	Jobs	Median Wage (Hourly/Annual)
Personal and Home Care Aides	3,660	\$19,926
Medical Assistants	1,850	\$25,726
Nursing Aides, Orderlies, and Attendants	1,460	\$22,201
Home Health Aides	1,060	\$19,989
Dental Assistants	880	\$25,389
Pharmacy Aides	280	\$20,427
Food Servers, Nonrestaurant	180	\$8.57/hr

3.6.8 Economic Foundation Challenges: Skills, Local Suppliers, Marketing

The cluster-specific economic foundation challenges range from human resources and supply chain/marketing, to infrastructure and business climate. The following cluster challenges were identified by various stakeholders in the cluster.

HUMAN RESOURCES

Developing and accessing the needed range of skilled health care personnel from nurses to various technicians. There is limited local training for some areas facing labor shortages such as nurses, and many of the existing programs are still not large enough to meet demand. The lack of qualified workers, particularly nurses, is a barrier to provision of care.

Development of new training curriculum to better prepare potential employees. Hospitals and other medical facilities are moving to an electronic (paperless) medical record system and new employees are not being trained in advance for the new system.

Attracting and Retaining qualified physicians and nurses: Many of the health care residents/workers are not attracted to Kern County or leave after training because the County is not perceived as an attractive place for a young physician or nurse or, in many cases, their spouse. There is a shortage in all medical specialties; however this is being experienced throughout the country. Hospitals have had doctors decide not to come to work in Kern County after seeing negative stories reported by local media. In addition, Kern County tends to be a “training ground” for local nursing graduates who work at local hospitals immediately after graduating, however they leave for other areas after receiving 18-24 months of experience.

Physicians are approaching retirement age: The need for recruiting new physicians is amplified by the fact that so many doctors are at or approaching retirement age.

Limited resources to sustain and expand nursing programs: Instructors and trainers face challenges in keeping local grant-based nurse training programs running. Many of the instructors will be retiring, and there is limited funding to grow these programs.

Marketing and attracting students to private universities: Private universities, some of which have an accelerated format, can be an alternative to the CSU. National University has found that many of their current students tried to go to CSU system but could not afford it. However, private universities in the County such as National University are new and do not have enough students enrolled, particularly in nursing.

Expanding high school medical training programs: There is a lack of interest at the K-12 level for health care fields. Awareness and preparation programs such as the job shadow program at Stockdale H.S. and the medical program at Kern Valley H.S. are limited in the County.

Diversifying the pool of health care workers. The pipeline of students going into the field does not strongly reflect the full diversity of Kern, particularly the Hispanic community.

Improving comprehension of non-native doctors: How to ensure non-native doctors and medical personnel have the English-speaking skills to be fully understood by patients, particularly older ones, is a challenge.

MARKETING/SUPPLY CHAIN

Expanding local supply chain for medical supplies: There continues to be a strong dependency on outside sources for procuring medical supplies for hospitals and other health care providers. This spending represents a significant loss to the local economy.

Marketing the quality of medical services in Kern County: General perception of the general quality of medical services in Kern County has not changed. There have been additions of new specialty services in Kern County in recent years (e.g. cyberknife surgery); however awareness and appreciation of these additions are often lost in the broader quality debate of “local vs. out-of-area” care. There should be an attempt to market these improvements and focus efforts on improving the overall quality.

Competition with Tijuana and other communities: There is a perception that treatment in Mexico is less expensive for those without insurance and, as a result, some Kern County residents seek care out of the country. Local patients are also lost to service providers in Santa Barbara, Los Angeles and other communities.

Expanding connections with other clusters to grow cluster: There is a lack of synergies between aerospace technology and health services. For example, aerospace instrumentation firms have technologies to calibrate instruments which could be used in the development of medical technologies.

INFRASTRUCTURE

Ensuring that health services keep up with growth of the County: There is an absence of 24-hour care in certain rural areas of Kern County. Physical capacity in hospitals is constrained. It is projected that by 2016, Kern County will experience a shortage of hospital beds. More long-term acute care is needed.

Improved public transportation needed: Additional and more frequent bus service, especially in southeast Bakersfield, is needed as many non-professional employees at local hospitals rely on public transportation to get to work.

Expanding infrastructure to enable communications to rural areas: The communications infrastructure in outlying areas is weak, which poses a challenge for health care delivery. Part of the problem is County’s inability to offer communications services that might compete with the private sector.

BUSINESS CLIMATE

Addressing problem of growing uninsured population: 17% of the population is uninsured; there is also very high Medi-Cal and Medicare populations. Collectively, almost half of population is not insured or is covered only by a government program.

3.6.9 Key Insights for Strategy Implementation

Kern County’s health services and technology cluster faces important challenges. The following table summarizes the key insights based on the diagnosis of the cluster’s performance and economic foundation challenges. These conclusions relate to the strategic priority areas of the County’s economic development plan.

Conclusion	County's Strategic Priority Area
<i>Cluster Analysis</i>	
▪ Value-Chain Depth: Maintain health services strength while building key segments of the supply chain, such as medical equipment manufacturing and medical technology. ▪ Employment and Wages: Employment in manufacturing segments is weak. There are opportunities to provide increased employment and higher wages by expanding into medical, laboratory, and analytic device/instrumentation manufacturing. ▪ Entrepreneurships/New Firms: County needs to strengthen the dynamism of the cluster in terms of the growth of new firms.	Business Attraction and Expansion
<i>Economic Foundation Analysis</i>	
▪ Need to expand infrastructure: improve communications infrastructure in outlying areas to better provide health communications technology services. Need to assure security, cost effectiveness and expanded broadband access to wider coverage area. Need to improve public transportation service.	Infrastructure
▪ Need to ensure that health services keep up with growth of the County: Need to increase physical capacity in hospitals and provide 24-hour service in rural areas. ▪ Need to train the needed range of skilled health care personnel. Need to expand local training capacity, especially for nursing. ▪ Need to attract and retain qualified physicians and nurses: Need to market Kern as a favorable and attractive location for nurses and doctors, particularly young ones. ▪ Need resources to expand nursing program: Need for instructors and trainers to keep local grant-based nurse training programs running. ▪ Need to market and attract students to private universities: Need to market National and other private universities as an accelerated format for training and certifying students. Some of these programs save 1/3 of the time, with the same amount of training and quality. ▪ Need to expand high school medical training programs. Need to promote an interest in K-12 for health care fields, and expand existing H.S. programs. ▪ Need to diversify the pool of health care workers. The pipeline of students going into the field should better reflect the full diversity of Kern, particularly the Hispanic community. ▪ Need to improve comprehension of doctors: Need to ensure doctors and medical personnel are fully understood by patients, particularly older ones. ▪ Need to market the quality of medical services in Kern County. Need to change perception of quality of medical services in Bakersfield, and convey improvements that have been made over the past few years.	Human Resources
▪ Need to expand local supply chain for medical supplies: Need to reduce dependency on outside sources for supplying medical supplies for hospitals and other health care providers and capture economic benefits from purchasing goods and services locally. ▪ Need to Expand Connections with Other Clusters to Grow Cluster: Need to explore ways to create synergies between aerospace technology and health services. For example, aerospace instrumentation firms have technologies to calibrate instruments which could be used in the development of medical technologies. ▪ Need to maintain growth and expand exports. Need to keep up with local demand and continue to serve surrounding rural counties such as Tulare and Kings. Potentially serve patients in bigger markets such as Los Angeles, San Diego, or Fresno if Kern has unique competencies.	Marketing Business Attraction and Expansion

3.6.10 Vision and Recommendations: Think Valley-wide, Make and Supply Locally

VISION:

Kern County will become the leading health services and medical technologies cluster for Southern San Joaquin Valley and will become renowned for providing care to key market segments, such as the elderly.

RECOMMENDATIONS:

- Capture outsourcing of lab work from LA.
- Expand catchment area for hospital care to possibly include Tulare and Kings through the development of distinct capabilities within Kern's health services.
- Continue to focus on keeping patients local. Less leakage of patients than in the past in West Kern, not so in East Kern.
- Increase regional import substitution by identifying goods and services currently purchased outside the County for which a competitive Kern County business opportunity could be created. Options include expanding local medical suppliers to meet growing needs of hospitals. Consider using a web-based buyer-supplier system.
- Explore possibilities in medical equipment manufacturing particularly analytic device / instrumentation manufacturing, and recruiting medical supply companies from LA basin.
- Expand computer education for medical personnel due to new paperless systems.
- Expand training programs for Billing and Posting Clerks, Clinical Lab Technicians and Rehabilitation Therapists.
- Expand vocational high school medical training programs. Provide apprenticeships.
- Diversify the pool of health care professionals through more concerted marketing and outreach into Latino community.
- Counter perception of better, quality medical service elsewhere.
- Prepare for possible impacts of national healthcare reform.
- Address the challenge of recruiting qualified staff/physicians with no desire to change lifestyle moving to Kern County.
- Encourage recruitment in Midwest for employees wanting a comparatively reasonable cost of living with the benefits of living in California.
- Develop 24-hour care facilities in targeted areas (Taft, East Kern)

3.7 Aerospace and Defense Cluster: Ready to Reach New Heights

3.7.1 *Overview: Aerospace is a Small Cluster with Potential to Grow and Expand*

Aerospace and Defense activities are a vital part of the economy in Eastern Kern, and have the potential to contribute more broadly to Kern's overall economy. Kern County has key strengths in aircraft manufacturing, as well as key assets in aviation and aerospace research from defense-related activities at China Lake and Edwards Air Force Base. The cluster also benefits from the number of aerospace contractors and small firms in the County. The County is also the site of a new set of aerospace activities centered around the Mojave Airport. The privately-funded suborbital flight by SpaceShipOne and SpaceShipTwo (led by aeronautical engineer Burt Rutan) represents a possible new segment within Kern County's illustrious history in aerospace. After many years of research, development, test, and evaluation and several notable successes, the likes of Paul Allen and Richard Branson, provided the venture capital necessary to help achieve this historic goal of a privately funded suborbital flight.

The County's competitiveness in the aerospace and defense cluster depends heavily on the existence of many of the missions at the military installations. The many high-level scientists and engineers associated with defense activities, some of whom spin-off research and technologies into the private sector are an important source of talent and entrepreneurship for the cluster. Additionally, implementation of Base Realignment and Closure (BRAC), a six-year period following the 2005 BRAC Commission Final Report, could impact growth prospects for the cluster by bringing additional opportunities to eastern Kern County.

Moreover, supply chain weaknesses could be a growth challenge. The cluster consists of a few manufacturers and has a relatively stronger dependency on inputs from outside of the County. The cluster also faces challenges with capturing the benefits of research in the County, private sector workforce development, marketing and awareness of the cluster's contributions to the County and State economy, and access to venture capital funding particularly for research and development-intensive new enterprises.

The following sections profile the performance and structure of the cluster. It is important to note that absolute employment figures are underestimated in this analysis. Employment levels are based on NAICS data, which does not fully classify all the firms engaged in aerospace-related activities. There are a large number of technical and engineering contractors conducting aerospace work; many of them are not captured by the NAICS categories for aerospace. With these limitations in mind, the employment picture for aerospace and defense is actually much larger when these engineering contractors and public sector defense jobs are included. Nevertheless, the trends and benchmarks are useful gauges of the cluster's competitiveness and growth potential relative to other aerospace regions in California.

3.7.2 *Cluster Performance: Emerging Cluster with Aerospace Employment on the Upswing*

Kern County's aerospace and defense cluster is an emerging cluster. This is measured through the private sector employment in direct aerospace jobs (primarily aerospace product and part manufacturing). The following are the factors which are used in assessing cluster performance:

- **Significant Job Gain and Rising Concentration in Civilian Workers and Contractors:**

Employment of civilian workers and contractors serving Naval Air Weapons Station China Lake and Edwards Air Force Base increased from 13,000 in 2003 to 14,643 in 2008. Likewise, this segment's location quotient increased from 1.1 to 1.2. Hence, this industry segment maintained slight competitive advantage over its nationwide counterpart.

- **Rapid Employment Growth and Rising Concentration in Department of Defense Personnel:** In 2008, this segment consisted of 6,800 people. Its location quotient is 7.5. These data indicate that Department of Defense personnel stationed in Kern County are nearly eight times more specialized in the provision of military products and services than the same group nationwide.

- **Job Creation and Higher Concentration in Aerospace Manufacturing and Supplies Firms:** In this segment, employment fell from 1,353 in 2003 to 1,168 in 2008. In the meantime, the segment became less concentrated as its location quotient contracted from 1.11 to 0.63.

Figure 41: Aerospace and Defense Growth Share Matrix, 1993-2008

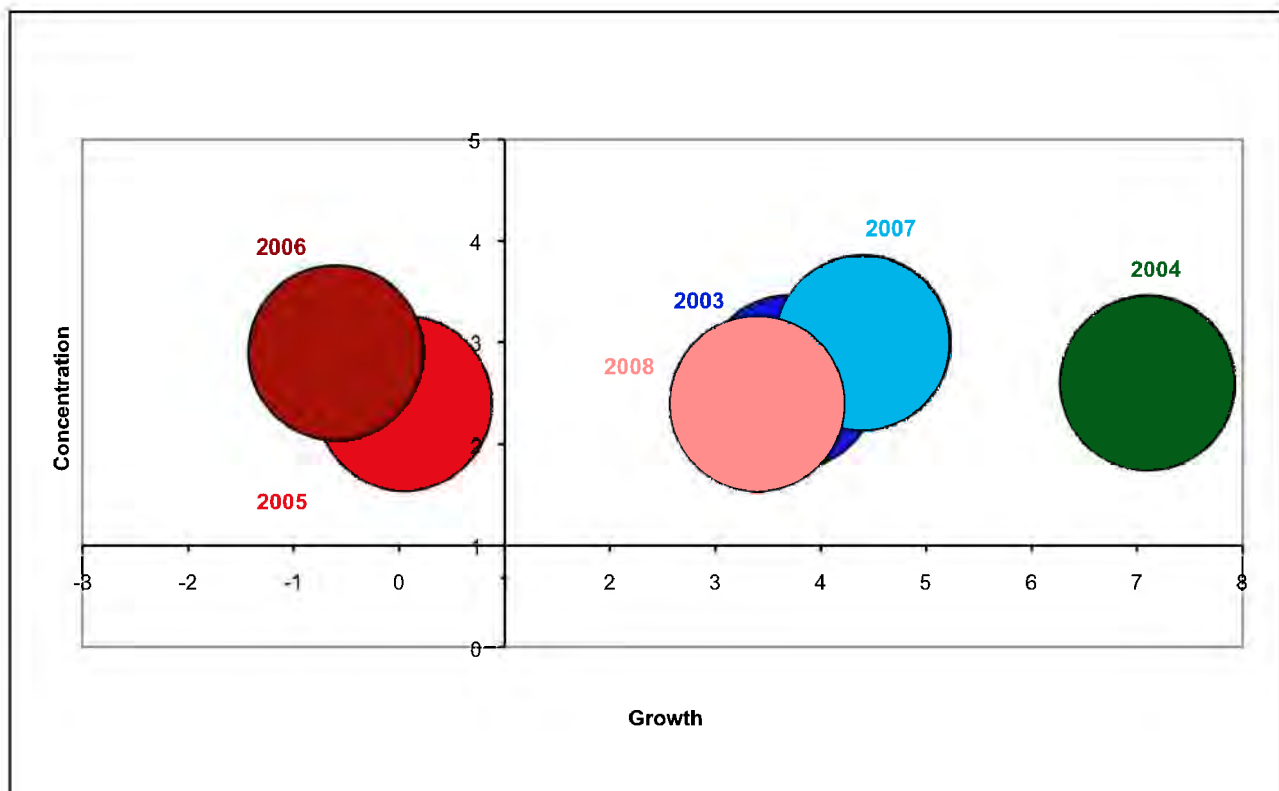
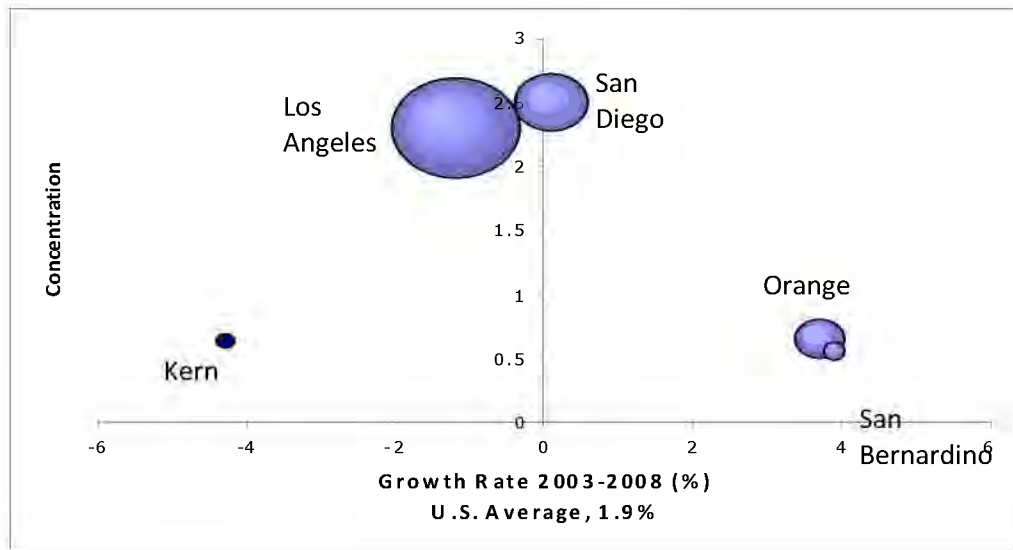


Figure 42: Aerospace Growth Share Matrix, Kern County Competitors



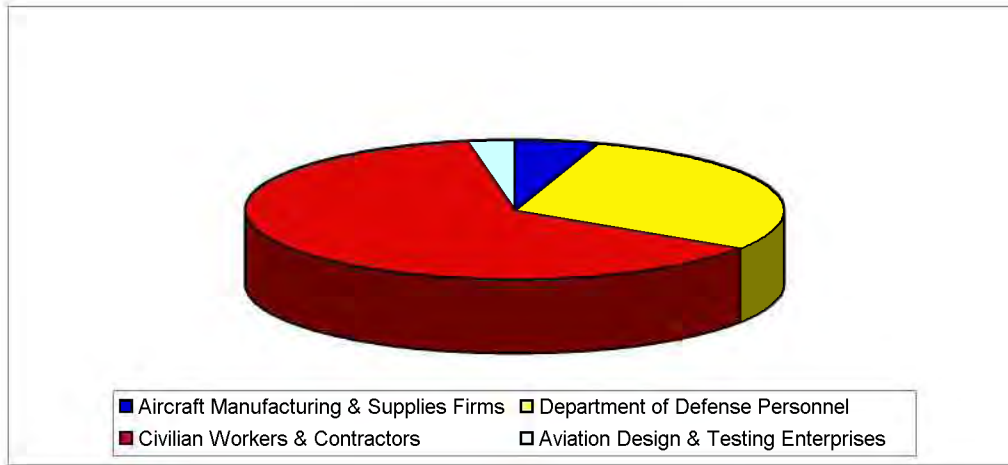
3.7.3 Cluster Segments: Manufacturing Key to Cluster

Kern County's private sector aerospace and defense cluster consists of aircraft manufacturing firms and key suppliers. The table below indicates the key industry segments that comprise the cluster, and their corresponding employment, business establishments, average weekly wages, and concentration. Key elements of the cluster's structure are:

Table 21. Employment Conditions, Aerospace and Defense, 2008

NAICS Code	Industry	Employment	Concentration
	Aerospace & Defense	23,261	3.1
N/A	Department of Defense Personnel	6,800	7.5
N/A	Civilian Works and Contractors	14,643	1.2
3364 332813 33299	Aircraft Manufacturing & Supplies Firms	1,168	0.63
N/A	Aviation Design & Testing Enterprises	650	N/A

Figure 43: Aerospace and Defense, Employment Shares, 2008



3.7.4 Cluster Map: Aircraft Manufacturing is Leading Export Segment

The figure below depicts the various segments and sub-segments of the cluster definition according to the three “layers” or levels of a cluster – exporters, suppliers, and economic input foundations. In addition to the cluster definitions, the map shows segments from the transportation and logistics cluster on which this cluster depends. The figure also indicates areas where the County exhibits strong or weak concentration of activities (based on its location quotient), as well as supply-level segments characterized by relatively higher dependency on suppliers from outside of the County. The economic foundation level encompasses the categories that help enable and support the cluster by providing key inputs and resources that the cluster depends on.

Kern County appears to have weaknesses at the supplier level. There are no highly concentrated segments at the supplier level, and Kern County has a strong dependency on inputs from outside of the County. It is unclear how deep the existing supply chain goes in Kern County. However, Kern has strengths at the exporting level of the cluster with the aircraft manufacturing segment.

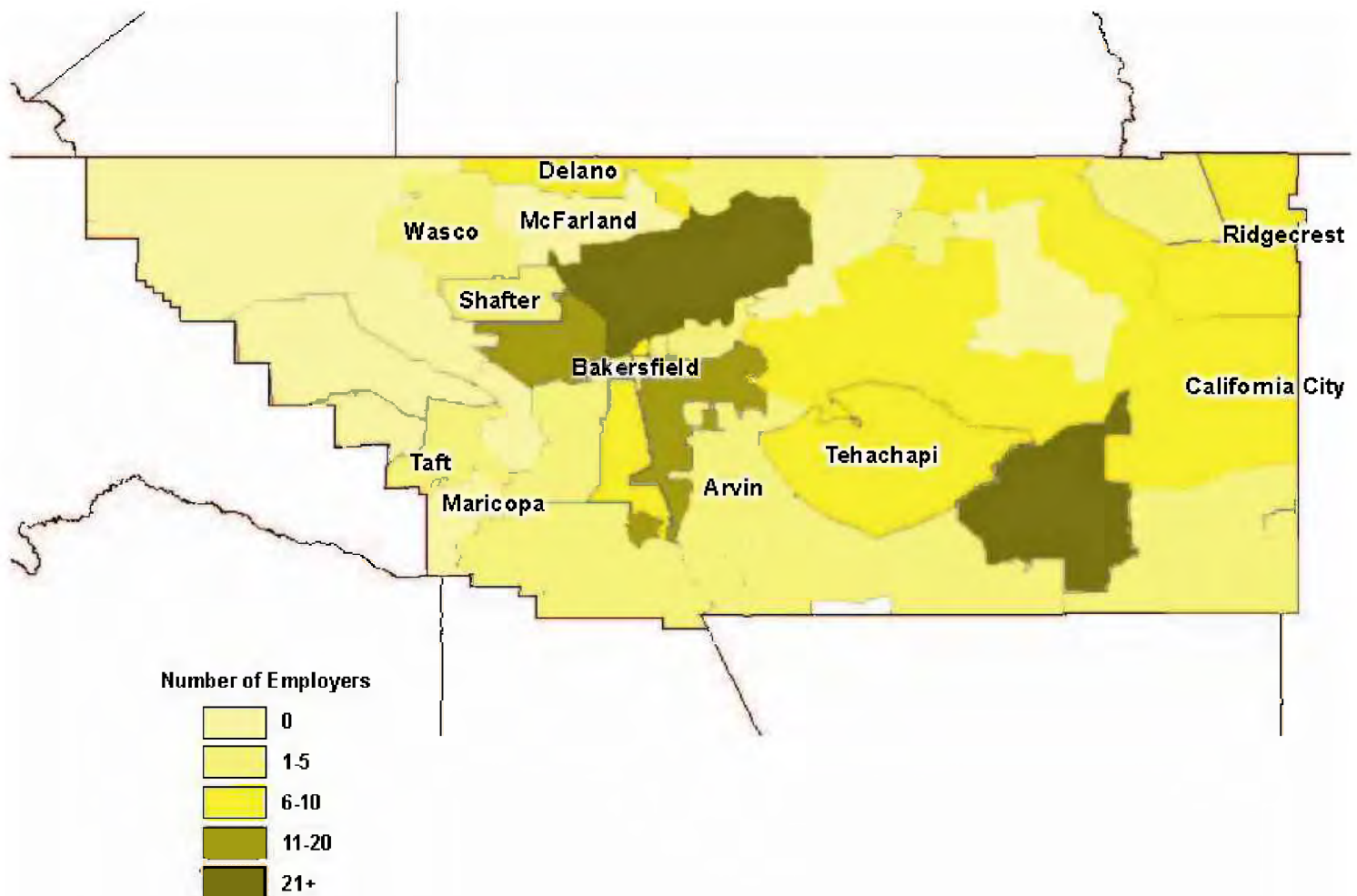
Figure 44: Aerospace and Defense Cluster Map



3.7.5 County Distribution: Employment Concentrated in the East

The largest pockets of employment in the County's aerospace and defense cluster are located in the eastern part, in and around China Lake, Mojave Air and Spaceport, and Edwards Air Force Base. (Please note that this map illustrates private-sector aerospace employment only) The zip-code map indicates distribution of employment levels across the County

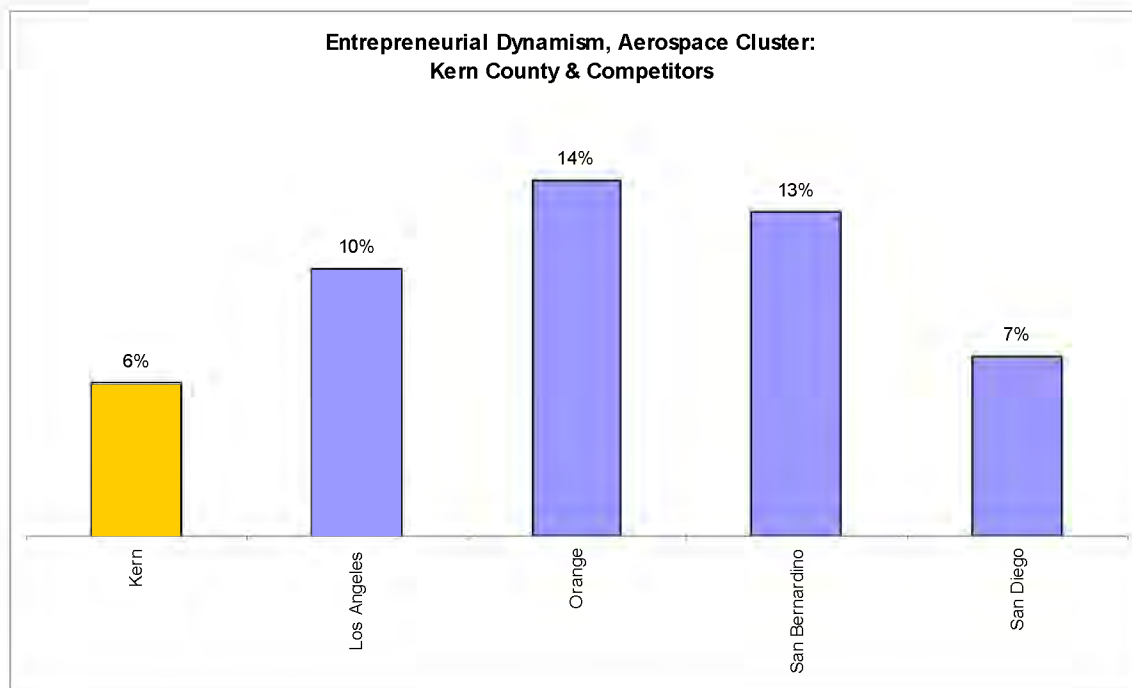
Figure 45: Aerospace Regional Distribution, Employment



3.7.6 Lagging Entrepreneurial Dynamism

Measured as the share of total companies 2 years old or less, entrepreneurial dynamism is relatively weak in Kern County's aerospace and defense cluster. Kern lags most of the competitor counties, namely Los Angeles, Orange, San Bernardino, and San Diego Counties. (See figure below) Only 6% of the companies in Kern County's aerospace and defense cluster are younger than three years, which compares unfavorably to Orange County's 14% and even San Bernardino's 13%.

Figure 46. Aerospace Entrepreneurial Dynamism, 2003



3.7.7 Economic Foundation Challenges: Skills, Political Support, Access to Finance

The cluster-specific economic foundation challenges range from infrastructure and business climate, to human resources, marketing, finance, and innovation. The following cluster challenges were identified by various stakeholders in the cluster.

BUSINESS CLIMATE

State Political Support for Aerospace: There is low recognition and visibility at the State level for the contributions of aerospace, particularly from Kern County, to the State economy. There is a lack of understanding and appreciation of the impact of the bases and government-run aerospace facilities to the County and broader state.

Lack of Targeted Aerospace Incentives: There are no investment tax credits for firms or economic/workforce training incentives at the State level for the aerospace industry cluster. As a result, aerospace is moving to other states that provide financial incentives. New Mexico is our strongest competitor and offers three deductions (Research and Development

Tax Deduction, Aircraft Manufacturing Tax Deduction, and Aircraft Refurbishing or Remodeling Tax Deduction) for the aerospace industry. In 2008, Sierra County (NM) voters approved a tax aimed at financing New Mexico's \$200 million spaceport.

Stringent State Policies Limiting Growth: State and federal environmental regulations placed on businesses in California are significant barriers to the development and implementation of projects. In some cases, the EIS/EIR process is streamlined when tied to federal money (Mojave experience); on the other hand, it can be bogged down if there is a threat to endangered species or other sensitive environmental areas.

Government Aerospace Classifications: Government classification for aerospace jobs does not capture the complexity and full supply chain of the industry.

China Lake High Technology Consortium: Naval Air Warfare Center – Weapons Division is the initiator of a unique partnership of academia, industry, venture capital, nonprofits, and government working collaboratively to address technology requirements for both the military and commercial marketplace. Utilizing a vast array of talents in the Consortium, solutions are developed around technology transfer from government labs, education and training, commercialization of capabilities, to accomplish non-traditional/accelerated technology acquisition for the warfighter, and dual-use product development (i.e., commercial marketplace as a second use), and economic growth for the local region (i.e., primarily eastern Kern County to be a benefit from new job creation and private capital investment). The Consortium is not an entity but rather a collaborating, self-directing, self-organizing, group of entities working together, as needed, when needed, in pursuit of common and self-interest that are expected to yield economic benefits.

HUMAN RESOURCES

Recruiting and Retaining Skilled Employees: How to recruit and retain qualified, highly skilled workers is a critical challenge facing the cluster and the County. In particular there is a shortage of engineers, computer scientists, and skilled technicians for aerospace. Recent efforts to recruit BRAC-affected workers from Port Hueneme in Oxnard have been relatively unsuccessful. Retention is also a concern based on the perception of the quality of life in Mojave and other places in eastern Kern.

Limited Support from Local Colleges for Aerospace: The CSUB campus is not offering the skills and workforce pipeline for critical areas related to aerospace. Part of the problem stems from CSU Bakersfield's inability to set up an engineering school. East Kern community leaders have created the High Desert University Foundation in order to build a four-year university. A private developer has donated a 640-acre site, along with \$10 million to help with the first phase of building the university, and a \$5 million endowment. The site is located between Mojave Airport/Spaceport and the Hyundai/Kia automotive test center.

Marketing Private Sector Aerospace's Contributions: How to increase awareness of and support for Kern County's existing aerospace private sector is a key challenge for the cluster. The commercial aerospace companies have a difficult time raising their profile because military defense spending is the main component of aerospace. How to attract a major aerospace employer to the County to act as a private sector anchor to the cluster is a related issue. The County and State have lost many of the main aircraft manufacturing conglomerates.

Marketing Aerospace as a Career Opportunity: There is a perception among young people that aerospace could be volatile career path with low job security due to the up and down in defense/military funding.

Low Recognition/Visibility among General Population: Many people do not know how advanced the industry is and what technology is available in the market. The perception is that the industry is limited to constructing airplanes.

Limited Business/Product Marketing Funds: Lack of marketing dollars to do outreach and marketing is a problem. This is usually a low priority within firms.

INFRASTRUCTURE

Transportation Isolation: Limited access to rail, air, and highway in eastern Kern County.

Expanding Bandwidth/Infostructure: There are bandwidth problems when dealing with customers located in remote areas. This is a less significant challenge in Mojave since they now have wireless internet capabilities.

Housing Shortages: Due to shortages of housing in communities like Mojave, many employees at Edwards AFB and other local facilities live in other outlying communities.

FINANCE

Accessing Early and Late-Stage Capital: Aerospace companies find it difficult to source initial funds and operating capital. Although there are strong levels of invention disclosures/patents, there is limited technology transfer or a commercialization infrastructure in the County to attract venture capital. Aerospace is perhaps perceived as very high risk from the investor perspective.

INNOVATION

Accessing R&D funds: The County has low levels of R&D investment in aerospace, particularly outside of government R&D sources such as NASA and the military. Existing sources of R&D investment include State and military, but the County is not a strong magnet for R&D dollars, particularly from industry. How to access new sources for R&D for major aerospace research ventures is an important issue.

How to Manufacture Locally Produced R&D: Kern is strong in R&D, but often does not retain what is developed in the County. Manufacturing and assembly are often outsourced.

3.7.8 Key Insights for Strategy Implementation

Kern County's aerospace and defense cluster faces important challenges. The following table summarizes the key insights based on the diagnosis of the cluster's performance and economic foundation challenges. These conclusions relate to the strategic priority areas of the County's economic development plan.

Table 22. Summary of Aerospace and Defense Cluster Diagnosis

Conclusion	County's Strategic Priority Area
<i>Cluster Analysis</i>	
▪ Value-Chain Depth: Strong concentration in the aircraft manufacturing segment, but weaknesses in supplier depth need to be addressed. ▪ Employment and Wages: Need to increase opportunities in aerospace, which would create higher paying jobs.	Business Attraction and Expansion
<i>Economic Foundation Analysis</i>	
▪ Transportation Isolation: Need to improve access to rail and highway, and increase capacity of regional airport (Ridgecrest)	Infrastructure
▪ Need Expanded Bandwidth/Infostructure: Need expanded bandwidth to send information to remote counties, particularly for firms which conduct a lot of FTP work.	
▪ Need New Housing: Mojave needs new housing; need to attract investors/builders.	
▪ Need to recruit and retain skilled employees: Need to recruit and retain qualified, highly skilled workers. In particular there is a shortage of engineers, computer scientists, and skilled technicians.	Human Resources
▪ Need Expanded Support from Local Colleges for Aerospace: Need curriculum that is more responsive to skills and workforce pipeline for critical areas, including aerospace and business administration.	
▪ Need to market private sector aerospace's contributions: Need to increase awareness of and support for Kern County's existing aerospace private sector. Need to communicate how far advanced the industry is and what technology is available in the market.	Marketing
▪ Need to Market Aerospace as a Career Opportunity: Perception among young that could be volatile career path/low job security due to the up and down in funding.	
▪ Need to Increase Business/Product Marketing Funds: Need to address lack of marketing dollars to do outreach and marketing.	
▪ Need State Political Support for Aerospace: Need focus on aerospace from the governor's office, and a catalyst from the State to accelerate investment and workforce attraction.	
▪ Need to attract an anchor: Need to attract a major aerospace employer to the County to act as a private sector anchor to the cluster. Lost many of the main aircraft manufacturing conglomerates from the State. Need to attract a large employer to generate activity in the industry. Perhaps this is being addressed by smaller but prominent companies.	Business Attraction and Expansion
▪ Need Targeted Aerospace Incentives: Need to develop incentive strategy, such as providing investment tax credits for firms or economic/workforce training incentives at the State level for the aerospace industry cluster. Need to explore working with other counties with aerospace to address State-level issues.	
▪ Need to address stringent State policies limiting growth: State and federal environmental regulations placed on businesses in California is a significant barrier.	
▪ Need New Government Aerospace Employment Classifications: Need to better classify those working in the industry directly or indirectly.	
▪ Need EDA to Prioritize Funding: Need to get EDA to address and fund the priority challenges within Kern. In particular, they should support the existing plans and applications submitted to EDA for solving water needs.	
▪ Need to Access Start-Up Capital: Need to explore ways to tap into start-up capital and support the growth of spin-offs and new firms. Also, need business training for entrepreneurs such as strengthening business planning skills.	
▪ Need to get access to funds for R&D: Need to access new sources for R&D for major aerospace research ventures. Need for matchmaking and funding from the State.	
▪ Need to manufacture locally produced R&D: Kern is strong in R&D, but often does not retain what is developed in the County. Need to prevent outsourcing of manufacturing and assembly jobs.	

3.7.9 Vision and Recommendations: The Future of Space Travel is Here

VISION:

Cluster to build from its worldwide position as originator of private 'space travel' and expand aerospace manufacturing.

RECOMMENDATIONS:

- Develop political support for growth in new aerospace segments (such as space tourism development).
- Attract major "anchor" manufacturer to County to help spur aerospace activities.
- Establish financing program to bring high risk capital to deserving entrepreneurs and help investors understand the dynamics of the industry (and help entrepreneurs understand business planning).
- Support ongoing work with K-12 students to encourage awareness and preparation in sciences and to expose students to interesting technologies.
- Create four year degree opportunities for Eastern Kern. Support High Desert University Foundation's efforts to build a university.
- Promote Mojave Air and Space Port as a National Center for Innovation.
- Use East Kern Economic Alliance (EKEA) as the marketing arm of the region.
- Promote China Lake High Technology Consortium.
- Support Naval Air Warfare Center – Weapons Division technology transfer and related initiatives. (Kern County and China Lake Technologies, LLC (CLT), a nonprofit, entered into a memorandum of understanding wherein CLT will act on the County's behalf as a Partnership Intermediary to Naval Air Warfare Center – Weapons Division for technology transfer and related initiatives.)

3.8 Cross-Cutting Cluster Issues

The following challenges emerged across all the clusters in the County. These are shared opportunities and challenges that should be addressed at a countywide level.

Collaboration: Limited communication between and across firms and government. Need to further engage and build private sector leadership in economic development. State needs to be made aware that its regulatory environment is causing businesses to leave Kern County (including several businesses which have left the Mojave Air and Spaceport).

Job Growth: Need more job opportunities to combat persistent high unemployment, particularly in higher skill and wage jobs and in lower-polluting industries.

Human Resources: Limited skills across labor force, disconnect between supply and demand, need for vocational programs and higher skilled workforce.

Land Use: New development is resulting in competing land uses between industrial, agricultural and residential uses and unplanned encroachment limits the ability for firms to

expand. The recession has brought down land prices, opening up new opportunities (when businesses are prepared to expand again).

Infrastructure: Fast growth is putting strains on infrastructure – particularly water and sewage; Need for innovations in energy generation to lower energy costs.

Transportation: Fast growth threatens the advantages of accessibility as congestion grows on County roads and rail lines. Much of the network is aging and needs upgrades. TRIP and ARRA projects are improving certain areas; however a stable, long-term and dedicated funding source is needed.

Air Quality: Poor air threatens health of community residents and is a major deterrent for new businesses and residents and leads to not only a negative perception of the area, but also creates a stifling regulatory environment. Further, urban sprawl creates worse air quality due to the high car use. These mobile source emissions may inadvertently restrict industrial growth due to the greater challenges in controlling car emissions relative to stationary source emissions.

Marketing: Internal and external perception of County hurts clusters; tourism needs stronger countywide voice that unites urban and rural areas.

Finance: There is a lack of local high risk capital for innovators, insufficient funds for microenterprise activities in low income communities.

These challenges are not identical for each cluster but are shared to some extent by all clusters. The conclusion from the cluster overviews is that the clusters alone cannot solve these challenges because the scale of the challenge involves agencies and entities from throughout the County and the needs cut across multiple industries. In order to solve the specific recommendations within each cluster overview, there is a need for a series of countywide initiatives focused on these cross-cutting areas. The cluster overviews have demonstrated that working to resolve these challenges is the key for the County's economic future.

The following chapter describes five Flagship initiatives proposed as a way to solve these cross-cutting challenges.

4 Strategic Flagship Initiatives

4.1 Introduction

A crucial achievement of this strategy has been finding common denominators for countywide action. Kern County business and community leaders regularly expressed concerns for a number of shared economic challenges, from skill levels to access to financing, to the need to reduce land use conflicts to the need for a revamped countywide brand. When so many firms and stakeholders share in common a series of concerns that affect the economy's ability to grow and stay competitive, this is a sure sign that the County needs to take action.

This chapter describes five crosscutting initiatives, called "Flagships" which are proposed to solve these shared competitiveness challenges. The Flagships emerged from discussions with industry cluster groups and County and City representatives from throughout the County. The name Flagship is applied because these initiatives are broad and complex and require support

from many industry and public sector leaders. Many of the Flagships are issues which Kern County has struggled with in the past while other ones are proposing new programs which have not before existed. The underlying theme for all the Flagships is that these initiatives are what need to be solved in order to ensure the County's economic future.

Solving these challenges requires stakeholders from throughout the County being ready to make changes. Change may take the form of tough decisions, hard investments, developing new working relationships or including new voices. At times there will be differences among participants, between different clusters and sub-regions of the County. At these times and throughout the implementation of this strategy, the goals focus on the cross-cutting needs and challenges – those areas of concern which are shared and which must be solved in order to maintain the competitiveness of the County's economy.

The following are the cross-cutting County issues and the proposed Flagship which will tackle each specific challenge:

Table 23. Cross-cutting Challenges and Recommendations

Cross-Cutting Problem(s)	Recommendations / Flagship Initiative	Actor(s)
Collaboration: Limited communication between and across firms and government; state needs to be made aware of the affect of regulations on local business	Cluster Networks and Business Expansion, Attraction and Retention: Permanent cluster networks, co-chairs and groups.	Lead: Kern Economic Development Corporation (KEDC) Supporting: County Administrative Office (CAO) and other county agencies/departments as needed.
Job Growth: Need more job opportunities to combat persistent high unemployment	Cluster Networks and Business Expansion, Attraction and Retention: Cluster-focused expansion, attraction and retention strategy.	Lead: KEDC Supporting: County Administrative Office (CAO) and other County agencies/departments as needed.
Human Resources: Limited skills across labor force, disconnect between supply and demand, need for additional vocational programs.	Workforce Skills Pipeline: Commitment to align training with needs of clusters; establish specific programs to address short term and pipeline needs.	Lead: WIB Supporting: ETR, CSUB, Community Colleges, Private Universities and colleges, school districts, and any other educational providers.
Land Use: Reconcile competing land uses (industrial, agriculture, residential) which threaten to slow economic growth over time.	Infrastructure and Land Use Advisory Group: County/ City land use planning to identify needs and conflicts	Lead: County Development Services Agency (DSA, formerly RMA), and Planning and Community Development Supporting: COG, Cities
Infrastructure: Fast growth putting strains on infrastructure – particularly water and sewage; Need for energy generation.	Infrastructure and Land Use Advisory Group: Structured approach to infrastructure funding and planning.	Lead: Development Services Agency, County Administrative Office (CAO) and other County agencies/departments as needed Supporting: COG, Cities
Transportation: Fast growth resulting in congestion on rail and roads.	Infrastructure and Land Use Advisory Group: Plan and fund key transportation needs	Lead: Development Services Agency, County Administrative Office (CAO) and other County agencies/departments as needed Supporting: COG, Cities, CalTrans, Transportation Foundation
Air Quality: Hazardous health impacts from poor air; Regulations limit new industry.	Infrastructure and Land Use Advisory Group: Encourage new developments which do not worsen air quality	Lead: Development Services Agency, County Administrative Office (CAO) and other County agencies/departments as needed

Cross-Cutting Problem(s)	Recommendations / Flagship Initiative	Actor(s)
		Supporting: COG, Cities
Marketing: Internal and external perception of County hurts clusters; tourism needs stronger countywide voice.	Tourism Marketing Agency: Marketing and branding strategy and County tourism agency.	Lead: Board of Trade Supporting: KEDC, Chambers of Commerce
Finance: Lack of local high risk capital for innovators, insufficient funds for micro	Finance and Entrepreneurship Programs: Venture Forums, Entrepreneurship, Microenterprise.	Leads: KEDC, Planning and Community Development

These cross-cutting issues are discussed in detail in the following chapter. A subsequent chapter describes the implementation structure for all the Flagships as part of the overall County economic development strategy.

4.2 Flagship 1: Cluster Network Development Strategies

4.2.1 Summary

KEDC currently has business developers that work with assigned industry clusters to foster collaboration among the private and public sectors and result in improved partnering and problem-solving of competitiveness challenges. In 2007, KEDC reoriented its business attraction, retention and expansion program to better respond to the needs of each industry cluster network.

4.2.2 Goals

Build Collaborative Culture: Foster collaborative culture across Kern's highly recommended clusters to solve competitiveness challenges and foster increased business communication.

Organize Cluster Networks: Develop set of cluster networks which form the glue that makes the entire strategy work effectively. Each network will bring together producers, suppliers and foundations within the cluster in an ongoing basis and as needed to meet and develop collaborative actions to overcome key competitiveness challenges.

Strengthen Business Attraction and Retention: Improve the County's attractiveness to the targeted industry clusters and encourage relocation of firms with critical cluster capabilities and market linkages to Kern County that can fill gaps in existing cluster value-chains and that result in an increase in solid employment opportunities.

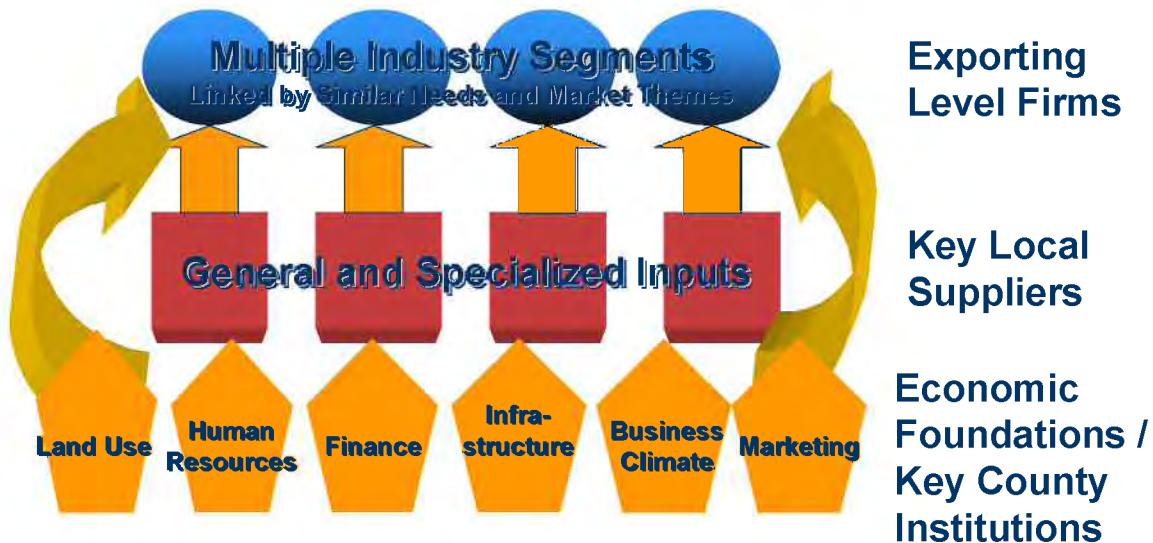
4.2.3 Background

Kern County has been working with industry cluster networks and in business attraction for several years. The value of enabling and building competitive clusters is well understood. However, the development of a collaborative culture is an ongoing responsibility that requires continual support. Further, there is additional need to target the attraction and expansion strategies to the cluster needs. Business, government and community leaders throughout the County have identified the need for and value of working together in greater collaboration in the future. In addition, effective implementation of a cluster competitiveness strategy requires a specific group or mechanism to continue to rally and support the participants in generating and developing collaborative actions. This mechanism is referred to as a "cluster network".

A cluster network is an association of export-oriented firms, supplier firms, and related economic foundations within an industry cluster. The cluster network provides a vehicle for bringing together different individuals and organizations with common interests and thus motivations for collaboration. An effective cluster network should be representative and inclusive of all industry-related actors. The network also provides a forum for the exchange of strategic ideas and knowledge, and for collaborative action. Having vibrant, strong cluster networks will greatly facilitate the management of strategy implementation.

Figure 47: The Structure of a Cluster Network

The Structure of a Cluster Network



The logic is that cluster working groups are a forum to “convene the marketplace.” That is, cluster participants should collaboratively work together representing the entire value-chain of the cluster. This is not a structure characteristic of traditional industry associations. By convening the marketplace in this manner, the members of the cluster had the opportunity to learn more about one another and explore new collaborations that might enhance product or product marketing. Through the process of working together the cluster participants will become a market laboratory in which innovations emphasize businesses working together in new ways, rather than seeking new governmental programs. Moreover, as a partner in the process, government becomes a supplier of inputs--such as training or infrastructure--rather than the arbiter of industrial policy. As the clusters gain experience as a laboratory of market innovation, they should become comfortable in collaborating locally in order to compete globally.

The cluster process works through fostering discovery of common interests, identification of actions on which participants agree to work together, and development of explicit market solutions--business to business or business to government teaming or formation of new joint ventures for the marketplace. In addition, the cluster process also enables suppliers and institutions that would not ordinarily work together or communicate directly with businesses to learn how to be more responsive to their end user and in doing so improve competitive advantage in Kern.

Cluster networks exist to help promote targeted new investment in Kern County and they are convened as needed. New investment comes from two sources—home grown investments and relocations or new investments from outside of the County

To attract private sector investment, the County’s Economic Development Incentive Program seeks to offer financial rewards to private investors, but--for all intents and

purposes—is ineffective due to SB 975, legislation whose effect generally cancels any intended incentive. (SB 975 mandates when a private development project is classified as a "public work," triggering the payment of prevailing wages.) The cities of Arvin, Delano, Taft (provisional) and Shafter have California Enterprise Zones that offer tax benefits and credits. KEDC also offers attraction, retention, and expansion services. These services have been effective but could be improved through a more comprehensive program that engages the clusters in the attraction of needed suppliers in their industry and builds support for collective funding of promotion programs.

4.2.4 Strategy 1: Build and Maintain Countywide Cluster Networks

KEDC is responsible for the five of the six cluster networks: Value-Added Agriculture; Energy and Natural Resources; Transportation and Logistics; Aerospace and Defense; and Healthcare Services. Kern County's Board of Trade is responsible for the Tourism, Recreation, and Entertainment cluster. Responsibilities include maintenance of the vitality and cohesiveness of the cluster networks and meeting only as needed,

4.2.5 Strategy 2: Restructure the Business Expansion, Attraction and Retention Program

Leadership: Maintain KEDC as the point of contact and lead agency **Overview:** Develop collaborative programs focusing on US and international markets to promote Kern's business advantages and to attract new investment to the County's clusters. This effort will include packaging Kern County's economic assets, directly introducing them to corporations and investors and indirectly promoting the County through trade forums world-wide. This part of the Flagship will develop attraction targets based on cluster needs and focus on recruiting companies in clusters in which production needs match the advantages in skills, technology, physical infrastructure and business climate that the County offers.

Staffing: Maintain key staff at KEDC with responsibility for "portfolio" management of clusters who will be the cluster developer and managing business attraction and retention.

Background: Maintain cluster developer visits and assist existing Kern businesses on issues such as available incentives, financing availability and permit processing.

Update Materials: Maintain current marketing packages for each targeted cluster.

- Incorporate cluster information from the Strategy into marketing material. Design, produce, and distribute quarterly business newsletter (*EDConnections*).
- In concert with the California Central Valley Economic Development Corporation (CCVEDC), implement, upgrade, and maintain Enterprise Zone collaterals, along with other web-based tools and data that support business relocation decisions.

Develop Expansion Program: Monitor countywide expansion project requests and participate in the expansion requests.

Develop Retention Program: Develop early warning system to identify potential retention firms. Visit 100 County-wide firms per year as a part of its BRE (Business Retention and Expansion) program and coordinate efforts with local jurisdictions. Implement Business Enhancement contract as a part of WIB's Rapid Response funding. Contact over 800 firms in the County and meet with over 200 companies. There is potential for this program to be funded on an on-going basis.

Develop Attraction Program: Support growth of key cluster segments. Target incentive funds and programs towards clusters and key cluster growth segments.

- Design, develop, produce, and distribute business recruitment folders with updated business statistics, general City information, incentive zone information, and other relevant information.
- Identify, attend, and exhibit at trade shows and professional conferences to generate business relocation leads that meet the profile of strong attraction targets. In doing so, partner with other economic development agencies in the County to attend trade shows and professional conferences compatible with the County's targeted clusters and cluster segments.
- Develop relationships with key site selection entities.

Proposed list of expansion and attraction targets

Pursue specific attraction and expansion targets, focusing on cluster segments with the greatest potential for growth in the short-term, and cluster segments that are strategic priorities for overall cluster development in the long-term.

Short-term: Focus on targeting businesses in cluster segments with high growth potential, given existing cluster strengths and competitive position, to further drive overall growth in the cluster.

Aerospace: Aerospace/Aviation Manufacturing and Assembly; Aerospace Maintenance and Engineering Support; and Space Tourism.

Healthcare Services: Medical and Diagnostic Laboratories, Hospitals, Specialized Health Care Facilities

Tourism, Recreation & Entertainment: Recreational and Vacation Operators

Transportation and Logistics: Distribution and Warehousing

Energy and Natural Resources: Plastics Product Manufacturing, Basic Chemical Manufacturing, Chemical Product and Preparation Manufacturing and Renewable Energy Technologies

Value-Added Agriculture: Fruit and Vegetable Preserving and Specialty Food Manufacturing; Beverage Manufacturing; Animal Food Manufacturing; Grain and Oilseed Milling, Sugar and Confectionary Product Manufacturing, Snack Foods, Roasted Nuts, Perishable Prepared Food, and other Food Manufacturing.

Long-term: Focus on targeting business in cluster segments with strong potential strengths and opportunities in the County, particularly those that support existing businesses and clusters and represent supplier areas with deficiencies in local capability. These segments may have been characterized by either slow 10-year growth or concentration, but have the potential to accelerate growth due to distinct advantages and assets in the County.

Aerospace: Aerospace/Aviation Manufacturing and Assembly; and Space Tourism.

Healthcare Services: Medical Equipment and Supplies Manufacturing, Analytical Laboratory Instrument Manufacturing, Surgical Appliances and Supplies Manufacturing

Tourism, Recreation & Entertainment: Filmmaking (e.g. Post-Production Services)

Transportation and Logistics: Air Transportation.

Energy and Natural Resources: Renewable Energy Production and Services.

Value-Added Agriculture: Food Product Machinery Manufacturing; Agricultural Implement Manufacturing.

4.3 Flagship 2: Human Resources and Skills Development

4.3.1 Summary

This flagship proposes that the WIB and its staff agency ETR continue to focus a portion of their workforce development efforts on the distinct needs of the County's industry clusters. The flagship also proposes that all education-training providers throughout the County align their efforts with the needs of the industry clusters in order to foster greater expansion of skilled employment in the clusters.

4.3.2 Goals

Align Training with Cluster Needs: To align workforce development, training and education in Kern County in a way that responds directly to the immediate and long-term needs of the County's clusters.

Develop Higher-Skill Workforce: To support the growth of a higher-skilled workforce through the creation and management of an ongoing skills pipeline which looks at training and workforce needs (demand) and existing skills and training programs (supply) and establishes a collaborative working relationship between all education and training providers and economic development stakeholders in Kern County.

4.3.3 Background

Kern County carries out many training programs across a variety of industries. While many of these programs directly serve the needs of the County's highly-recommended industry clusters, there remain gaps in existing training and education programs in meeting the workforce development needs for LMI individuals entering the highly-recommended clusters.

This background section explores the training needs for the top five entry-level occupations for each highly-recommended cluster. Entry-level jobs are those that require on-the-job training, work experience, or vocational training as described below. In addition, this section briefly describes current vocational training programs which prepare LMI people for entry level work opportunities in the highly recommended clusters. Finally, this section will identify new vocational or short-term training programs might be needed in the County to meet the entry-level workforce needs of the highly recommended clusters.

ON-THE-JOB TRAINING

On-the-Job Training is often the most important form of training for low and moderate income individuals entering new employment opportunities. Indeed on-the-job training is the most significant source of education or training for a number of the recommended cluster occupations. On-the-job training is split into three distinct categories which include:

Long-term on-the-job-training. Occupations that require more than 12 months of on-the-job training or combined work experience and formal classroom instruction for workers to develop the skills needed for average job performance.

Moderate-term on-the-job-training. Occupations in which workers can develop average job performance after 1 to 12 months of combined on-the-job experience and informal training.

Short-term on-the-job-training. Occupations in which workers can develop skills needed after a short demonstration or up to one month of on-the-job experience and instruction.

WORK EXPERIENCE

Some occupations require skills obtained through work experience in a related occupation. Virtually all industries have career ladders, which allow un-experienced workers to gain employment in an entry-level job through which they obtain on-the-job training and ultimately enough experience to move up based on work experience in an occupation.

VOCATIONAL TRAINING

Some occupations require completion of a post-secondary vocational education program in a training school.

CURRENT TRAINING PROGRAMS IN KERN COUNTY

Currently Kern County offers training programs in a number of areas for low and moderate income individuals that connect with employment opportunities in specific clusters. As indicated in the Table below, Kern County currently offers training programs which prepare LMI individuals for employment opportunities in all the recommended clusters. Current training programs are focused more heavily on preparing LMI individuals for jobs in Business and Professional Services and Healthcare Services clusters. Note that this table is illustrative of training programs and is not meant to be a complete demonstration of all County programs.

Table 24. Existing County Training Programs for LMI People

Training Programs	Cluster Served
Office administration	Healthcare Services
Computer aided drafting	Energy & Natural Resources; Aerospace
Welding certification	Energy & Natural Resources
Certified nurse assistant	Healthcare Services
Medical assisting	Healthcare Services
Medical office worker	Healthcare Services
Laundry worker	Tourism, Recreation & Entertainment
Food service assistant	Tourism, Recreation & Entertainment
Farm & heavy diesel mechanic	Transportation and Logistics
Truck driving	Transportation and Logistics; Value-Added Agriculture

TRAINING GAPS WITHIN KERN COUNTY FOR CLUSTER FOCUS

Among top ten occupations by cluster, those with over 200 jobs in Kern County, there are some opportunities for the County and its partners to better serve the workforce development needs of businesses while preparing LMI individuals for entry-level cluster-specific occupations through targeted training. The following occupations require training programs that are not readily available from the County⁵:

Energy and Natural Resources Cluster: Electricians, Plant and System Operators.

Transportation and Logistics Cluster: Bus Drivers, Airfield Operations Specialists, and Aircraft Service Technicians

Tourism, Recreation & Entertainment: Cooks, Prep-Cooks and Bartenders

Healthcare Services Cluster: Billing and Posting Clerks, and Clinical Lab Technicians and Technologists.

Value-Added Agriculture: Computer interface skills for manufacturing.

Structure: The Workforce Investment Board is the lead entity responsible for ensuring that County training and education programs are responsive to the short and long-term needs of the clusters and will work in a collaborative manner with education providers from K-12 through university. The WIB works with its Employers' Training Resource as well as the deans or heads of instruction for every public or private education and training institution in the County (Community Colleges to California State University, Bakersfield), the heads of human resources and training of every cluster company (or at least those that are most concerned with skills issues) and key State entities (Employment Development Department, EDD). Over time, more specific representatives will be needed for specific action initiatives (e.g., experts in a given discipline or occupational skill from both the instructional and the employer side). The following is a partial list of the public and private education and training providers in the County who should participate in this Flagship:

- Kern County's Career Services Centers
- Employers' Training Resource
- Kern County Department of Human Services
- CSUB Small Business Development Center
- Kern Superintendent of Schools
- Bakersfield College (Business Assistance Center)
- Cerro Coso College
- California State University, Bakersfield
- Taft College
- Bakersfield Adult School

⁵ Other sources of training may exist for these occupations and a complete survey of training resources within Kern was beyond the scope of work.

4.3.4 Strategy 1: Provide Specific Funding from WIB to Support Training for Cluster Occupations and Skills

[This section looks like a report on historical activity as opposed to forward looking strategies recommended for implementation. I have started to make some suggested changes but recommend further work in this section.]

Establish Cluster-based Training Responsibility at WIB: Implement ARRA funding from the U. S. Department of Labor for additional training in Solar, Nurse Assistant/Home Health Aide, Computer Specialist, Health Care Worker, Welding and Metal Fabrication, and Medical Billing. Identify and secure additional funding to reinstate training lost to budget cutting and support training opportunities through local colleges and private trainers.

- Submitted grant applications to secure additional WIA funds to provide occupational training and other services to targeted industry clusters:
- Received \$100,000 to build capacity for training in energy efficiency/renewable industries
- Partnered with Tulare and CCWC to apply for Department of Labor National Emergency Grant funds to provide service capacity to schools that lost funding in order to keep more training programs open.
- ETR is collaborating with the Central California Workforce Collaborative (CCWC) grant application for the Regional Industry Clusters of Opportunity Grant (RICOG). CCWC partners chose the Health Care Sector as the initial industry to focus on. Recently, the State Board adopted Sector Strategies as foundation for California's economic competitiveness and workforce development model. Plan is to position Local Boards as regional intermediaries; pulling together regional collaboratives of private/public entities to identify industry clusters that are emerging as catalysts for a region's economic recovery. Ultimately this project will result in local development and implementation of industry sector strategies. Funds will also assist the CCWC to continue supporting the www.careersinthevalley.com website to post job openings and continue to research and post Labor Market Information.
- ETR submitted a regional grant with the Tulare WIB for \$5 million to provide occupational training in the Health Care Sector or Other High Growth Emerging Industries. If grant funds are received the occupational training will be provided from entry level CNA to Bachelor's Degree Registered Nurses. Training partners are CSUB, Bakersfield College and Bakersfield, Delano, Tulare and Visalia Adult Schools. Employer and community partners include MAOF, Proteus, KMC, Kern County Mental Health, Public Health and Mercy/Mercy Southwest Hospital.
- Submitted 3 grant applications for expanding clean energy training capacity

-
- Partner with Proteus on an application for training funds for emerging and renewable industries.

Convene WIB/ETR with Clusters

ETR continues to use occupational clusters as a factor in evaluating training proposals submitted for funding. For the American Recovery and Reinvestment Act (ARRA) Request for Proposals (RFP) issued in early 2009, a cluster for “green” jobs was added. Examples of sectors are: solar, wind, hydro-electric and geothermal power; “green” construction; low-carbon fuel production, bio-gas, hydrogen, bio-fuel; transportation retrofit and public transit; climate science; and waste reduction.

4.3.5 Strategy 2: Establish New Training Programs at Kern’s Colleges and Schools to Support Key Skill Needs Among the Clusters

Convene Training Providers

- Kern High School District convenes periodic working luncheons with their Community Partners to address local employers training needs.

Ensure Responsiveness

- ETR implemented the WorkKeys, a job skills assessment system measuring real world skills that employers believe are critical to job success, in May 2008. Through September 12, 2009, ETR has given 6,510 WorkKeys assessments.
- KCCD and ETR are participating in a regionally-recognized, standardized Work Readiness Certificate program which documents job seeker capabilities prior to being hired or further trained. A certificate is only issued if the customer achieves a minimum score of 3 in all three assessments. Through September 12, 2009, ETR has issued 1,437 certificates.

Strategy Consistency with Flagship Goals

Align Training with Cluster Needs:

- A new health care proposal if successful will provide: RN residency training at KMC; expanded capacity for ASN/RN to earn a Bachelor’s Degree in Nursing (BSN); expand a CNA program to include skills in home health and restorative/rehabilitation.

Develop Higher-Skilled Workforce:

- By using WorkKeys to assess new hires, employers are better able to identify applicants whose skills meet the skill sets needed for their industry thus reducing turn-over.
- ETR continues to seek additional resources to expand occupational training in the industry clusters. Since 2001 we have received/collaborated on several health care industry grants

totaling more than \$3.3 million that focused on CNA, LVN and Associate Degree Nurse (ASN/RN) training.

- ETR recently funded an on-the-job training contract with Memorial Hospital to provide an 18-week RN Residency program to recent nursing graduates.
- A new health care proposal if successful will add a Computed Tomography course to the Radiologic Technician Associate Degree program at BC; provide RN students with lap tops to simulate skills in health care electronic records; create a Health Care Interpreter class; and provide IV Therapy certification for working LVNs.

4.3.6 Strategy 3: Ensure That K-12 Programs Provide Strong Basis and Various Options for Students

Establish innovative programs in schools: Increase number of qualified workers for the County's clusters by promoting careers and attractive work conditions to high school and college students. Starting in junior high schools there should be specific programs to prepare young adults for careers in Kern County. These include:

- Expand vocational programs throughout high schools to train for skills and careers in Kern's clusters.
- Establish School to Work Program: Last year of high school allow people to go into the workforce and learning skills appropriate to that work environment. Job shadowing is a part of this. (See Project Hope in Detroit)
- Establish new entrepreneurship programs to get young adults interested in starting and growing companies in Kern County. Develop business plan competition in the high schools with juries from business students at CSU Bakersfield and local business leaders.
- Expand mentoring programs: In 2009, KEDC created the Alliance of Women in Energy (AWE) mentoring initiative. This program matches women in energy with high school students and fosters growth in STEM careers.

Establish New Recruitment and Placement Program for Young Graduates: Placement program for young graduates and researchers from other parts of California into specific jobs within firms which are using innovative technologies. County role is to organize the local industries to share their job openings and then aggressively go after talented young graduates.

4.4 Flagship 3: Land Use and Infrastructure Planning

4.4.1 Summary

This flagship proposes that the County's Planning and Community Development department integrate this economic strategy into county-wide planning documents and review land use proposals based on the needs of the clusters. Goals

Conduct Comprehensive and Coordinated Planning: To manage land use and infrastructure planning activities in the County in a way that preserves prime agricultural land, accommodates the projected population growth and its transportation needs and reduces the potential for conflict between residential and industrial/agricultural activities in the County.

Align Planning with Cluster Needs: To ensure that the County's decision-makers understand the land use and infrastructure concerns of all clusters and balance cluster needs with growth pressures while maintaining sufficient open space, agriculture and industrial land to support the County's economic competitiveness. To coordinate investment decisions with cluster representatives.

Improve Transportation Mobility: To improve the movement of people, goods and services in and out of the County by identifying needs and mobilizing partners for planning and investment in needed improvements. To ensure that new transportation investments improve the competitive environment for the County's clusters and are made with consultation with the clusters.

Increase Use of Alternative Energies: To help foster increased usage of alternative sources of energy to reduce pollution and help spur the development of a local alternative energy industry.

4.4.2 Background

Long-range planning is difficult when local economies are changing fast, as is the case with Kern. Nevertheless, planners need to be strategic and consider the many forces at work on the economy. Cluster analysis provides a new basis for land use, infrastructure and transportation planning. Knowing which clusters are growing, and something about their typical needs for personnel, for facilities and for land provides a framework, or benchmark for establishing land use and other plans.

Kern County maintains a geographically advantageous and distinctive position within California and the entire West. For virtually every cluster in the County—from value-added agriculture to aerospace to tourism—accessibility and the costs and efficiency of goods movement are essential in enterprise formation, expansion and attraction. Improving the movement of people, goods and communications that are inbound, outbound and within Kern County is essential to maintaining and enhancing Kern County competitiveness. Transportation improvements will bring tangible economic benefits to all businesses in the County who need to ship or move goods on a timely basis as well as for residents who are moving throughout the County for work or during commute times. Moreover, incremental improvements will not only help retain and expand businesses already operating here, it will make Kern County more attractive as a location for production in each of the clusters for which goods shipment is a key cost factor. In Transportation, Logistics & Warehousing the weakest link in the chain can impede the entire value-chain from completing its delivery to end customers. Consequently every element of the road, rail or air service system in Kern

County may be crucial to countywide economic competitiveness; every advantage a factor in success. For this reason, this initiative has been formed to bring together users and producers of the County's transportation infrastructure to examine challenges and take action on strategic needs for the County's future.

4.4.3 Strategy 1: Conduct Land Use Planning in a Way which is Responsive to the Short and Long Term Needs of the Clusters

- **Review Planning Documents:** Although the Planning and Community Development Department had previously compiled General Plans of the incorporated cities in the County for purposes of identifying vacant industrial land, most of the cities and the City of Bakersfield and the County for Metropolitan Bakersfield are undergoing updates to their General Plans. Once the General Plan documents are updated, an inventory of planned vacant commercial and industrial land will be tabulated.
- **Modify Plans:** The Planning and Community Development Department is continuing to work with the City of Bakersfield in updating the Metropolitan Bakersfield General Plan and is continuing to work on completing the Kern River Valley Specific Plan and the Tehachapi Area Specific Plan. The Planning and Community Development Department is in the process of reviewing consultant bids for preparing an Indian Wells Valley Specific Plan. The Planning and Community Development Department continues to work on the Valley Floor Habitat Conservation Plan which, when approved, would help to streamline the endangered species habitat mitigation process for development projects. Efforts to recognize the importance of Meadows Field as an important economic generator for the County will be addressed in the update of the Metropolitan Bakersfield General Plan and the new Airport Economic Opportunity Area.
- **Establish New Process for Cluster Land Uses:** The Planning and Community Development Department is working with the Development Services Agency and member Departments at process improvement related to the land division application approval process. Process improvement measures will be implemented to facilitate approval of industrial and commercial parcel maps and other land division procedures.
- **Establish Industrial and Agricultural Zones:** The Planning and Community Development Department will be working through the Update of the Metropolitan Bakersfield General Plan to designate industrial land use areas as appropriate airport buffer uses in the vicinity of Meadows Field. The County continues to administer Williamson Act and Farmland Security Zone Programs which provide property tax incentives that encourage continued agricultural use.

4.4.4 Strategy 2: Support Cost-Effective Infrastructure

- **Encourage Cost-Effective Development:** The Planning and Community Development Department has been involved in Kern COG's Regional Blueprint Program which is intended to provide a "tool box" of measures that will assist communities in planning for infrastructure growth in a cost-effective manner.
- **Identify New Local Funding For Infrastructure:** The Planning and Community Development Department is coordinating with the Development Services Agency in the

development of a Capital Improvement Program that is intended to provide proposed impact fees to fund needed infrastructure required by new development.

4.4.5 Strategy 3: Ensure County Support and Access to Clean Energy Technologies

- **Provide Support for New Cluster:** The Planning and Community Development Department is actively involved in processing permits for clean energy technology with the recent approvals of over 1800 MW of wind energy development in California. Over 71 MW of Solar PV has been approved and is in various stages of construction county-wide. Another 2,290 MW in multiple commercial scale solar photovoltaic projects are being reviewed as well as over 500 MW of solar thermal projects in coordination with the California Energy Commission. In addition to oil extraction, the county is now a center for alternative energy production with the largest biodiesel production facility in California producing 30 million gallons a year and the conversion of a 49 MW coal power plant operating since 1986 to biomass (waste wood).

The Development Services Agency is developing a governance structure for future green energy efforts involving new development projects, other private sector partners, public agencies that will create a mechanism for funding alternative energy and conservation projects.

4.4.6 Strategy 4: Target New Transportation Investments Based on Cluster Needs

- **Support New Funding:** The Board of Supervisors has adopted an updated *Transportation Impact Fee for the Metropolitan Bakersfield Area* to fund needed road improvements to accommodate new growth. As well the outlying areas of Rosamond/Willow Springs and Tehachapi have Transportation Impact Fees.
- **Proposed New Transportation Investments:** The Roads Department and the Development Services Agency have also been working with the City of Bakersfield on the Thomas Regional Improvement Program (TRIP) to improve Metropolitan Transportation Infrastructure. The County is also coordinating with the City of Shafter on Seventh Standard Road Interchange and widening improvements.
- **Analyze Encroachments to Airports:** The Planning and Community Development Department is working in partnership with the Airports Department, County Counsel and the Administrative Office in devising strategies to protect the County's investment in Meadows Field. The Metropolitan Bakersfield General Plan Update will propose measures to address incompatible land use encroachment issues.

4.5 Flagship 4: Tourism Marketing and Branding Kern County

4.5.1 Summary

This flagship proposes that the Board of Trade or another countywide entity become the leading voice for tourism and tourism marketing by establishing a new countywide brand and working closely with the various local communities on their tourism and marketing strategies.

4.5.2 Goals

Improve County's Image: Strengthen the current external and internal image of the County by focusing on the diverse assets in Kern and on existing efforts to brand the County's distinct communities.

Align Tourism Activities Countywide: Align the various tourism marketing efforts throughout the County and channel these activities into a countywide initiative.

4.5.3 Background

The 1999 Kern Economic Development Strategy recommended that the Board of Trade focus on the development of three "clusters": tourism, retirement and film. While tourism remains a significant source of employment, retirement and film cannot be considered "clusters" deserving of specific countywide attention. Instead, there is a greater need for a renewed approach to marketing and tourism development and coordination on a countywide level.

4.5.4 Structure

The Board of Trade will maintain its tradition role as the Tourism agency for the County and work directly with the smaller communities. This Flagship does not have the same cluster participation as the other ones except in the event of a countywide branding process. Other than specific activities which require direct linkage with other clusters, this Flagship is the specific tourism cluster network development activity. Therefore, it is recommended that the leadership of the Board of Trade work closely with KEDC to understand their cluster network development process. While tourism will not have the same scale of cluster network development, knowledge of, and consistency with the KEDC process will be necessary to avoid retraining or unlearning later. Further, because KEDC will have the ongoing responsibility for marketing and branding of the other clusters, the Board of Trade should work closely with KEDC on any countywide branding activities.

4.5.5 Strategy 1: Establish Countywide Tourism Marketing and Development Entity

- **Consolidate Board of Trade/Conduct Tourism Strategy Coordination:** The department continues to develop and maintain working relationships with tourism partners, using the 2008 stakeholder survey as a guideline (the department received a rating of "B" or better from 80% of respondents in the survey, conducted by an independent agency). This information is valuable in maintaining maximum cooperation in marketing efforts.

-
- **Strengthen Core Assets/ Expand Growing Markets:** The department continues to work with regional partners to increase tourism activities. One Marketing and Promotions Associate serves that region (which includes Tehachapi and the Kern River Valley) from a satellite office located in Ridgecrest. The San Joaquin Valley, West Side and Mountain Communities are serviced by marketing staff based in Bakersfield.

The department remains actively involved in multi-county regional efforts administered by the California Travel and Tourism Commission, expanding County's exposure and reach. The department now participates in three regional organizations, adding the Southern Sierra in 2009 while continuing partnerships with the Central Valley and Desert regional organizations. Current budgetary restrictions have reduced the department's ability to participate in these organizations at the desired level.

Cooperative efforts between like-tasked Kern County agencies such as the Greater Bakersfield and Ridgecrest Area convention and visitors bureaus allow the department to more-effectively and efficiently promote the region through the pooling of resources while reducing duplication of effort.

- **Establish Tourism Packages:** The department continues to support all "tourism packaging" opportunities. Recently, efforts have begun to formulate packaged tour opportunities for the Amgen Tour of California (the Board of Trade has helped to secure a Bakersfield stage finish for May of 2010). However, as previously stated, "tourism packaging" is viewed as an opportunity more appropriate for private industry.
- **Work with Rural Communities:** The Tourism Promotion Grant Program continues to provide numerous opportunities to work closely with rural community organizations. During the reporting period, \$180,000 in grants was awarded countywide to front-line organizations for use in promoting Kern County as a tourism destination. Interactive Visitor Center Kiosks also provided a marketing presence in rural areas. The kiosk information has also be repurposed and placed on the web for consumer viewing via the Internet and PDAs, making regional and rural information that might otherwise be unavailable to potential visitors now accessible worldwide.
- **Film Activities:** Economic benefits from commercial filming have been adversely impacted by the recession. Film Liaisons in California Statewide, a consortium of California film commissions and offices, suggests this is a statewide trend. While economic incentives approved by the state are intended to curb the "runaway production" phenomenon, the immediate impact has to date failed to have a significant impact outside of the Greater Los Angeles area. Filming activities for the reporting period declined to an estimated \$12 million in economic impact based on Association of Film Commissioners International estimates. This revenue is reflective of location filming only and does not include other revenue streams such as local video, filming and sound recording studios.

4.5.6 *Strategy 2: Develop County Brand*

- **Develop Branding Tool Kit/Launch a Marketing and Branding Initiative:** A high-definition video library of tourism locations and general scenic shots throughout the county is available to stakeholders for promotional purposes. The department continues to provide tourism partners access to a unified set of branding materials

including logos, photos, and brochures via a web-based “tool kit” All materials are available for non-commercial use free of charge.

- **Establish Kern Brand:** The department continues focusing marketing efforts on active family experiences with an emphasis on outdoor recreation. Kern’s current marketing slogan is “Play Your Way.” It is being utilized in the current edition of the official Kern County Visitors Guide, regional visitor guides, the 2010 official California Visitors Guide, as well as the department’s Internet advertising endeavors.

Efforts to further expand and market the brand are hindered by the reduction in the department’s budget. Travel, trade show registration and participation in consumer and trade events has been reduced (and in some cases eliminated) due to insufficient funding.

- **Implement Plan:** Analysis of the Visitor Satisfaction Survey confirmed the department’s belief in its core strategy: marketing the county as a whole while assisting local areas in highlighting their communities and attractions. The Board of Trade continues to offer multiple resources to Kern County tourism entities. Department staff members serve as free marketing consultants to chambers of commerce, convention and visitor bureaus and other visitor-related entities, administers the tourism grant program, assists in the development of visitor marketing programs, and seeks opportunities to create cooperative efforts among the Kern County tourism “family.”

Flagship 5: Financing Entrepreneurship and Innovation

4.6.1 *Summary*

This flagship proposes that CAO and KEDC develop new programs which respond to the finance needs of Kern County's innovative entrepreneurs – whether in microenterprise or R&D intensive technology-based ventures.

4.6.2 *Goals*

Access to Capital for Microenterprises: Provide entrepreneurial opportunities for low and moderate income people to establish new business in the clusters by maintaining Kern Microenterprise Opportunity Program offering technical assistance and small business loans.

Access to Capital for High Risk Innovative Enterprises: Establish system to effectively provide support for countywide financial capital/angel/venture funding initiatives. Increase the availability of early stage (seed) and venture capital from within the County and beyond to increase the formation and expansion of cluster enterprises.

Inform Investors of Cluster Opportunities: Facilitate access to financing for start-up and growth companies by improving knowledge of the County and its industries among lenders/investors, and by linking entrepreneurs to lenders/investors/funding agencies.

4.6.3 *Background*

A hallmark of economic prosperity is the ability of a County to secure the financing needed to catalyze and grow new enterprise in emerging and expanding clusters. Though Kern may have limited sources of financing, the State of California overall has substantial capital among its high net worth individuals (angel investors), within existing institutions (pension funds) and from venture capitalists in both Southern California and the Bay Area.

The history of investment by individuals and institutions in Kern County suggests that capital has predominantly flowed to familiar asset categories, such as agriculture, oil, energy, real estate and construction and less to new enterprises formed within the County in newer ventures. The most notable exception to this trend is the funding for SpaceShipOne and Two by Paul Allen and Richard Branson. The reason for this pattern has to do with the investor's familiarity with existing types of investment and their risk-reward structure. In order for capital to flow to other investments, such as those within emerging or more risky clusters (including new aerospace activities), potential investors must be educated about the nature of these investments. They must also be provided with a sufficient volume of candidate deals (at different stages) that meet the test of the competitive marketplace. Additionally, local entrepreneurs seeking investment capital must educate potential investors regarding risk return characteristics and management requirements of knowledge-based investments and must do so in terms with which the investors are more familiar. When the investment climate meets these conditions—good understanding by investors of opportunities, risks and rewards, and high volume and choice of investments—a successful capital pipeline will emerge. This pipeline will both enhance the development of regional enterprise and attract more entrepreneurs and supporting investment.

To further understand the microenterprise opportunities in Kern County, the following section provides additional background.

Analysis of Entrepreneurial and Micro-Enterprise Opportunities

DESCRIPTION OF OVERALL MICROENTERPRISE AND ENTREPRENEURIAL OPPORTUNITIES

As indicated in the table below, 42,405 sole-proprietor establishments earned gross receipts of roughly \$2 billion (\$37,920 per sole-proprietorship) in 2007, the most recent year for which there is data at the County level.⁶ Among the highly-recommended clusters the self-employed are concentrated primarily in: Transportation, Logistics & Warehousing; and Healthcare Services.⁷ In the overall economy, the self-employed are prevalent in construction, retail trade, social assistance, and professional, technical and scientific services.

Overall future microenterprise and self-employment opportunities are likely to reflect similar concentrations, with the majority of new opportunities for LMI individuals in the retail trade, construction, real estate rental and leasing services, health care, professional and technical services, transportation and warehousing, and arts entertainment and recreation sectors.

Table 25, Non-employer Establishments, Kern County, 2007

NAICS Code	Description	Total Self-Employed	Receipts (\$1,000)	Receipts / Self Employed Person
Cluster: Value-Added Agriculture				
111-115	Forestry & Agriculture Support Services	343	31,606	\$ 92,145
311	Food Manufacturing	50	2,197	\$ 43,940
312	Beverage and Tobacco Manufacturing	9	864	\$96,000
	<i>Value-Added Agriculture</i>	393	34,667	\$ 88,211
Cluster: Energy and Natural Resources				
211-213	Oil & Gas Extraction	297	33,510	\$ 112,828
221	Utilities	46	2,024	\$ 44,000
237	Heavy & Civil Engineering Construction	255	14,341	\$ 56,239
324	Petroleum and Coal Products Manufacturing	D	D	D
325	Chemical Manufacturing	D	D	D
326	Plastics and Rubber Products Manufacturing	8	234	\$29,250
	<i>Energy & Natural Resources</i>	606	33,367	\$ 55,061

NAICS Code	Description	Total Self-Employed	Receipts (\$1,000)	Receipts / Self Employed Person
Cluster: Logistics and Warehousing				

⁶ Gross receipts are higher than income because sole-proprietorships subtract expenses from gross receipts to get self-employment income.

⁷ One note about Value-Added Agriculture, clearly most farm and agricultural workers are seasonal migrants often working in the underground economy, so the self-employment number for agriculture includes only the legal tax-paying self-employed and thus under-represents self-employment in the cluster as a whole.

*	Transportation & warehousing	3,573	373,007	\$104,396
5324	Commercial & Industrial Equipment Rental & Leasing	168	18,130	\$ 107,917
8113	Commercial, Industrial Machinery, & Equipment Repair and Maintenance (Except Automotive)	182	11,426	\$ 62,780
	<i>Transportation and Logistics</i>	3,923	402,563	\$ 102,616
Cluster: Healthcare & Technology				
62	Health care & social assistance	5,596	126,421	\$ 22,591
3391	Health Care Instruments Manufacturing	7	213	\$ 30,429
	<i>Healthcare Services</i>	5,603	126,634	\$ 22,601
Tourism, Recreation, & Entertainment				
71	Arts, entertainment, & recreation	1,271	14,377	\$ 11,312
72	Accommodation & foodservices	545	27,622	\$ 50,683
512	Motion Picture and Sound Recordings	87	2,714	\$ 31,195
	<i>Tourism, Recreation, & Entertainment</i>	1,903	44,713	\$ 23,496
Cluster: Aerospace				
336	Aerospace	<i>D</i>	<i>D</i>	<i>D</i>
All industries		42,405	2,001,507	\$ 47,200

Source: 2007 Economic Census

D= Withheld to avoid disclosure (e.g. one business in this sector)

* = NAICS codes: 481, 484-486, 488, 492, 493

4.6.4 Structure

This Flagship proposes a two-tiered approach based on the specific types of financing needs. PCD will be responsible for business lending programs available through the County's U.S. Department of Housing and Urban Development, Community Development Block Grant (CDBG), funds and will work with the CAO and KEDC to promote and implement their use. CAO will be responsible for the oversight of other economic development financing tools such as industrial development bonds (IDB)—if County is to be issuer. KEDC will often be the entity which brings these prospective IDB deals to the County for review. KEDC will also be responsible for the longer-term strategy of identifying and securing higher risk capital for new ventures in the cluster economy.

4.6.5 Strategy 1: Provide Micro-Enterprise Funding for Small Scale Start-Ups in the Clusters

- **Maintain Program:** Maintain and expand the number of potential users of the Kern Microenterprise Opportunity Program (KMOP) and continue to provide technical assistance and small business loans. Revisit KMOP Administrative Plan for possible program modifications to expand opportunities for the program's use. This may include taking steps to increase risk tolerance in the making of business loans.
- **Conduct Outreach:** Market KMOP through various channels including presentations to local banks, Chambers of Commerce, redevelopment agencies, Lender Roundtables, press releases, business development conferences/seminars/workshops, business consulting professionals, Early Childhood Council of Kern (formerly Local Initiative in Child

Care), Business Assistance Center of Kern Community College District (formerly Weill Institute Small Business Development Center), U.C. Merced Small Business Development Center (Bakersfield Office). Support through these channels may include presentations and distribution of collateral materials.

4.6.6 *Strategy 2: Provide Security for Large Scale Investments*

- **Large Scale IDB Project Financing:** Promote Industrial Development Bond program either through existing, active resource providers available throughout the State (e.g., California Communities Joint Powers Authority of which the County of Kern is a member) or through the County of Kern Industrial Development Authority.

4.6.7 *Strategy 3: Develop Access to High Risk Capital*

- **Funds for High Risk Innovators:** Identify and make referrals to venture capital resource providers.
- **Identify, Develop and Educate Investors:** The goal is to improve access to financing for, in particular, early stage companies in Kern. Host seminars for investors/traditional financial organizations in clusters to educate on risk management. Develop very specific insights into risk-return characteristics of specific investment opportunities that are taking shape in the County.

4.6.8 *Strategy 4: Evaluate Development of Business Incubator Projects*

- **Identify Viable Business Incubation Opportunities:** Within each of the clusters, and by working with cluster representatives, evaluate the financial feasibility and beneficial outcomes of developing a business incubator. Most successful business incubation programs require ongoing subsidy; therefore, identification of funding sources may also be required and may be a limiting factor.

In 2008, KEDC convened the Kern Business Incubator Steering Committee. The proposed incubator facility would support manufacturing and business development and serve as a resource for workforce education and training needs. The starting concept was to develop a multipurpose facility that would provide the necessary space, tools and services needed for several small businesses to generate products or sales under one roof. The proposed incubated industries would be energy technologies or agri-biotech based.

5 Implementing and Monitoring the Strategy

5.1 Implementation

To implement the countywide strategy presented here, KEDC recommends that the following steps be taken:

- Maintain KEDC as the lead agency responsible for implementation
- Continue KEDC's leadership and oversight responsibility for the Stewardship group including the group's responsibilities to report on progress and oversee activities
- Maintain responsible agencies for each flagship
- Prioritize among flagships
- Secure funding for key recommendations, starting with the hiring of cluster developers

5.1.1 Managing the Strategy: The Lead Agency

No countywide competitiveness strategy can succeed that does not have an organization dedicated to sustaining and overseeing the strategy's collaborative activities from the individual cluster groups and cluster action initiatives to the implementation of the other Flagships. KEDC recommends the County Administrative Office (CAO) serve as the lead agency responsible for overseeing the implementation of the entire strategy. CAO will be assisted by a variety of agencies and entities that will be individually responsible for various parts of the strategy. CAO will also work with KEDC, ETR, school districts and others on a stewardship group which will report progress of the strategy to the Board of Supervisors. These roles are explained in greater detail in the sections below.

5.1.2 Overseeing the Strategy: The Stewardship Group

The Stewardship group, led by KEDC, monitors the Flagships, the individual cluster actions and the overall implementation of the strategy. The group oversees and evaluates the outcomes of the Flagship initiatives, presents these outcomes to the Board and provides advocacy or community leadership on the implementation of recommendations or actions. Membership in this group will include both permanent and rotating members. The permanent members will be the agencies and entities who managed the economic development strategy:

- Kern County County Administrative Office (CAO),
- Kern Economic Development Corporation (KEDC), and
- Employers' Training Resource (ETR).

KEDC's permanent membership representative is responsible for leading and managing the stewardship group. KEDC coordinates with CAO and /or DSA for stewardship group reporting to the Board of Supervisors.

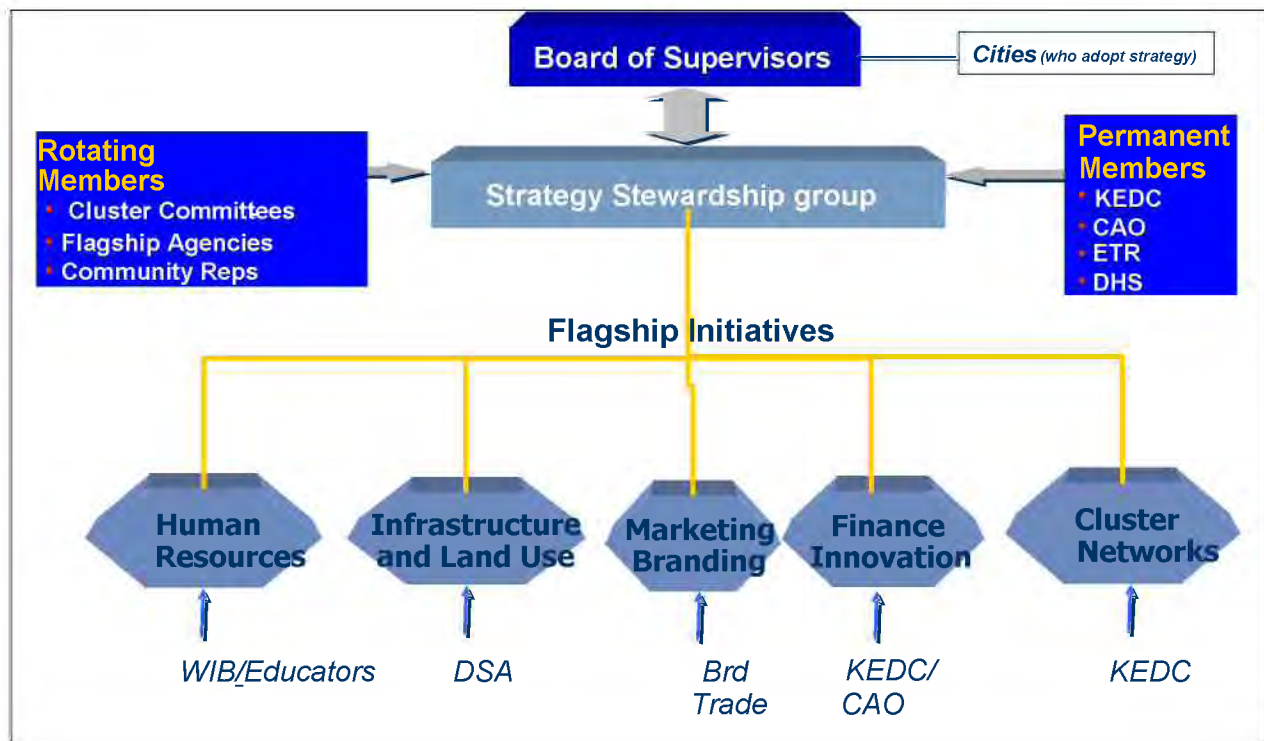
The Stewardship group produces an annual report on strategy progress (and meets on an annual basis). This fall event builds on the Stewardship activities, report on the progress of the cluster networks, Flagship advancement and monitoring of performance. The event could possibly coincide with the ongoing Kern Economic Summit.

5.1.3 Structure of Flagships: Roles for Leaders and Agencies to Play

Flagships require commitment and structure to effectively pursue. Therefore, each Flagship has been assigned to a particular agency or entity willing to take a leadership role in ensuring that the Flagship is pursued. This agency/entity will coordinate the activities of the Flagship and then work to build a supporting team to develop and implement the Flagship. Leadership may include hosting, convening, building collaborative teams and managing strategic decision-making.

The following table depicts how each Flagship will report to a Strategy Stewardship group which will ultimately report its progress to the Board of Supervisors and other cities which choose to adopt the countywide strategy. Note in the diagram that the “cities” are to the right of the Board of Supervisors to designate that they can also receive reporting from the Stewardship group. However, because this is a countywide strategy, the Board is the ultimate body responsible for the implementation of the strategy’s content.

Figure 48: Organization of the Strategy: Flagships, Stewards and Responsibilities



The following are descriptions for each of the agencies and their role in the overall strategy management:

Development Services Agency (DSA): The DSA provides leadership on two Flagships as well as the overall strategy. The key agencies within the DSA are Administrative Operations; Engineering, Surveying and Permits; Planning and Community Development; and Roads. The specific DSA role is more of oversight while the agencies within the DSA will be chiefly responsible for the specific initiatives.

County Administrative Office (CAO): CAO functions as the main agency which oversees the entire strategy implementation while sharing responsibility for the Finance, Innovation and Entrepreneurship Flagship. The Economic Development role for the County was recently reassigned to the CAO. Kern EDC will coordinate its flagship efforts accordingly.

Workforce Investment Board (WIB/Educators): The WIB is the chief entity responsible for workforce development in the economic strategy. The WIB's staff, Employers' Training Resource, manages the day-to-day work of the workforce development Flagship at the behest of the WIB board. The WIB and ETR engage all other major educational providers in the County to participate in the review and redesign of training programs to more appropriately meet the needs of the clusters (such as CSU Bakersfield, community colleges, private universities and public junior high and high schools).

Kern Economic Development Corporation (KEDC): As the County's main economic development arm, and steward of the strategy, KEDC is responsible for developing and managing the cluster networks and using those relationships to effectively shape its business expansion, attraction and retention programs.

Board of Trade: For the purposes of the implementation of the strategy, the Board of Trade's functions should be entirely focused on developing tourism and organizing a countywide branding strategy. The Board of Trade should identify personnel with expertise in tourism, branding and marketing as well as people with strong relationships throughout the County. It is essential for the tourism focus of Kern to align the various activities across the smaller communities with events in the larger cities.

5.1.4 Prioritizing Flagships

The five Flagships have been identified as the key strategic actions to take to implement the economic strategy and reach the goals set forth in the introduction. Since resources and time are limited, it is necessary to prioritize among these Flagships. Given the specific needs of Kern County, the following is a proposal for how to prioritize the Flagships.

The key to successful implementation of this strategy is the careful and effective development of cluster networks. These private-sector led networks provide the bottom-up energy and market-based information which should guide policy makers in the design of programs and the investment decisions for major public investments. The cluster networks are also proposed as the source of industry needs within all other Flagships. Without proper organization of the cluster networks, the other recommendations lack an organized linkage to the marketplace. KEDC business developers are responsible for maintaining and developing the cluster networks.

After the cluster networks, the two other Flagships with greatest urgency are Human Resources and Land Use and Infrastructure. Improving skills and managing population growth / urbanization are the key challenges before Kern County. Because these Flagships are staffed by entirely different agencies and do not require substantial new resources, it will not be difficult to implement these two Flagships simultaneously. However, the effectiveness of the Flagships is based on the extent to which the private sector, through the vehicle of the cluster networks, is well organized. Therefore, these Flagships will require the creation of cluster networks in order to be fully implemented.

The marketing/tourism Flagship and finance Flagship are both significant to the County's long term economic competitiveness. These Flagships do not require the immediate

attention of the other three. ICF [Does KEDC have any recommendation here?] proposes that the County implement aspects to these Flagships in the short term and then pursue other elements over the medium term.

5.1.5 *Applying Economic Strategy Goals to the Flagships*

Each Flagship has different objectives and recommendations. However, it is expected that within the Flagship initiatives, the participants will apply the key goals of the overall economic strategy to their decision-making. This is meant to ensure that the County's economic development proceed according to a series of collaboratively identified values and objectives. The following are suggestions for how decision-makers should review new policies or investments through implementing the strategy goals:

Expand Jobs and Overall Prosperity: How will this investment support the growth of Kern's economic engines, its industry clusters? Example: If the County is considering planning or additional funding for a road widening project, it should ask the question about which clusters will benefit and how. Will the project facilitate greater travel for commuters or exporters? What are the externalities caused by the road widening which may negatively impact a different cluster such as tourism?

Foster Inclusion and Increased Equity: How will this activity or policy result in increasing the participation of Kern's LMI population or increasing the diversity of the decision-makers? Example: If the County is proposing funding for a new community college program or community center in a particular part of the County, it should look at whether the action opens up new opportunities for low income people to participate in the economy or if there are better uses of these funds to foster equity. The County should also consider whether or not it is providing incentives for firms who also share the goal of fostering inclusion and equity, either through the level of employee remuneration or labor and employment practices. The County should encourage a high road approach to economic development at all times.

Promote Sustainability and High Quality of Life: How are these decisions helping us preserve our agricultural heritage and open spaces while improving our air quality? Example: If there is a request for County approval to rezone 100 acres of farm land to allow for a housing subdivision or a warehouse, the County should consider the overall rate of farmland conversion or the location of the farm land being converted. Will the new use take away needed open space or valuable and still productive soil. Will the change irrevocably alter the landscape in such a way that will be displeasing to the area residents?

As growth continues in the County it is likely that there will be increasing friction between different interests, particularly related to land uses, air quality and public investments. Applying these goals to decision-making will require decision-makers to frame their investments from a broad economic perspective which will ultimately benefit the County. The examples provided are only a few in the myriad examples likely to come before the County. The general goal will be to make the most of every opportunity and to expect the most for the County.

5.2 Reporting Progress: Suggestions for Kern's Monitoring System

As the strategy reaches its fifth year of implementation, it continues to be necessary to track the County's economic progress as well as Flagship initiatives and specific cluster actions that will shape the County's economic future are perpetuated through this update. The following is a proposal for how to implement a monitoring system of the County's economic progress. This monitoring system will use qualitative and quantitative data to follow economic achievements, tracking progress on a continuing basis and will allow Kern County to monitor and evaluate the County's economic performance. Regions around the world have begun to establish monitoring systems in order to track their progress and make adjustments to policies in order to achieve the desired results. Note that access to the data, time to compile and evaluate, and organizational boundaries when seeking out data add to the complexity and difficulty of collecting and reporting.

Ideally, the monitoring system will track the following dimensions of the Kern County economy:

Economic Performance: How the County is doing in generating prosperity, reducing disparity, and enhancing sustainability.

Cluster Competitiveness: The employment, concentration and growth rates of clusters over time, for both emerging and established clusters.

Economic Foundations: The strength and success of economic input institutions that meet human resource, finance, physical infrastructure, information infrastructure, business climate and quality of life needs of the County.

Progress of Flagship Initiatives: The progress and success of Flagship Initiatives as they are carried out.

Progress of Cluster Action Initiatives: The progress of the implementation of each cluster's actions.

The quantitative and qualitative information will be used in conjunction with information provided by stewards, cluster team members on the status and improvement of the competitive development of their clusters to tell the County's story during each year. Information will be produced based on reports from action initiatives and released through annual reports and annual meetings of the stewardship group. An annual report on the state of the County may also be produced using these information sources. This report will be used to help the public participate in the evolution of the County's economy as it progresses towards a sustainable and prosperous next generation economy.

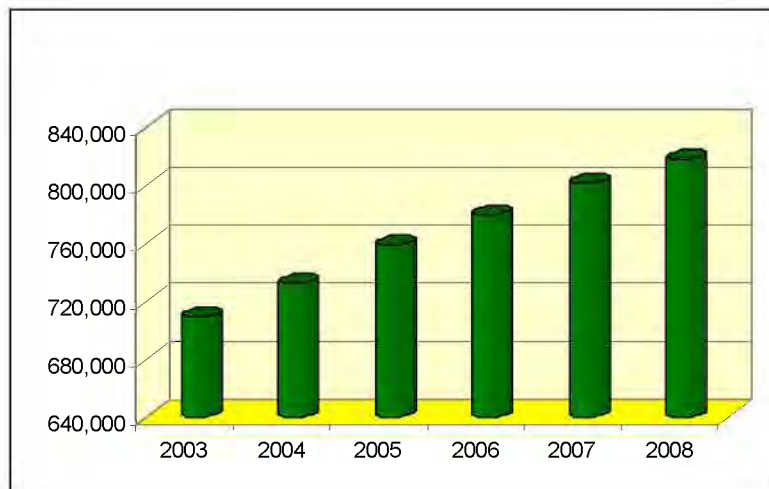
5.3 Economic Performance Indicators

Economic performance indicators track the overall health and well being of the County's economy and the well being of residents. The primary questions these metrics should address are:

5.3.1 Population

Kern County's population has grown from 708,400 in 2003 to 817,500 in 2008, thus hosting 109,100 more residents. In 2008 alone, the County's population grew by 16,800 (or 2.1 percent). If this trend continues, the County's population will exceed 1.0 million in 2016.

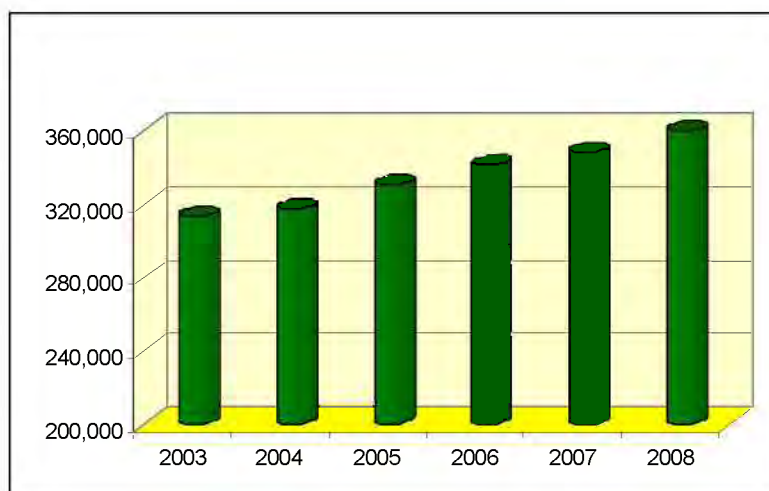
Figure 49: Population, 2003-2008



5.3.2 Labor Force

Kern County's workforce makes up 43 percent of its population. The remaining 57 percent are those who do not participate in civilian labor market activities (e.g., children, retired, members of armed forces, and prisoners). In 2008, the County's labor force grew by 14,900 (or 4.3 percent) from 348,800 to 363,700. Of these additional members, 7,700 were employed and 7,200 were jobless.

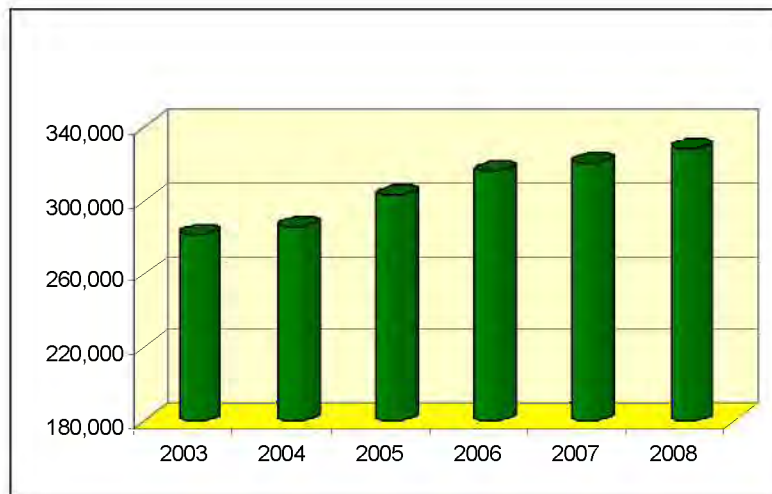
Figure 50: Labor Force, 2003-2008



5.3.3 Employment

In 2008, Kern County added 7,700 net jobs to accommodate its growing labor force. As a result, total employment grew 2.4 percent to reach 328,000 from 320,300. The farming industry contributed 3,700 jobs and the informal labor market -- accounting for self-employed workers and those who work outside the County -- added 4,500 paid positions. However, non-farm industries lost 500 jobs.

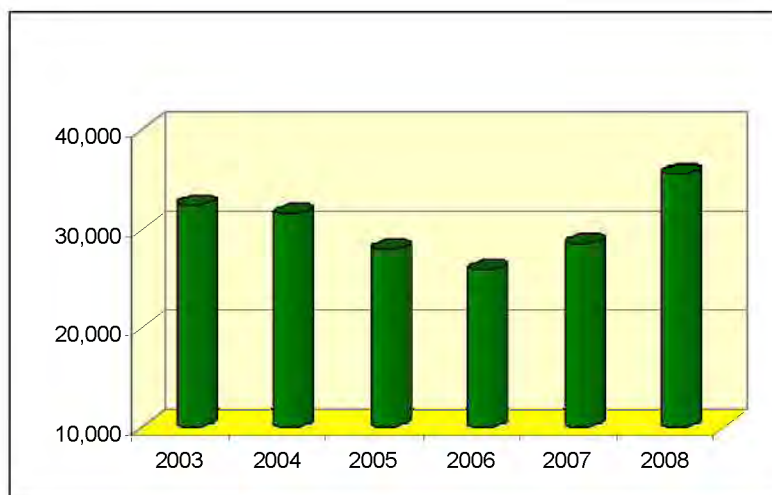
Figure 51: Employment, 2003-2008



5.3.4 Unemployment

With labor force growth exceeding employment growth, the number of unemployed workers increased 25.3 percent from 28,500 in 2007 to 35,700 in 2008. As a result 7,200 more workers were unemployed.

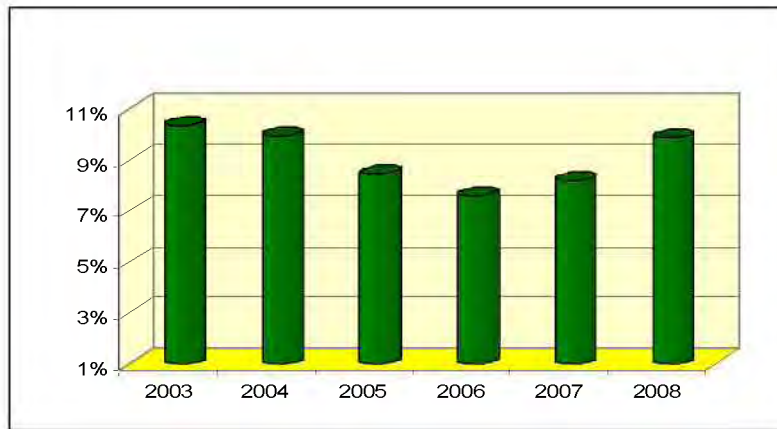
Figure 52: Unemployment, 2003-2008



5.3.5 Unemployment Rate

Kern County's unemployment rate remained in single digits. Nevertheless, its unemployment rate rose from 8.2 percent in 2007 to 9.8 percent in 2008. While fluctuating, the County's unemployment rate in 2008 was 1.7 percent lower than that of 2003.

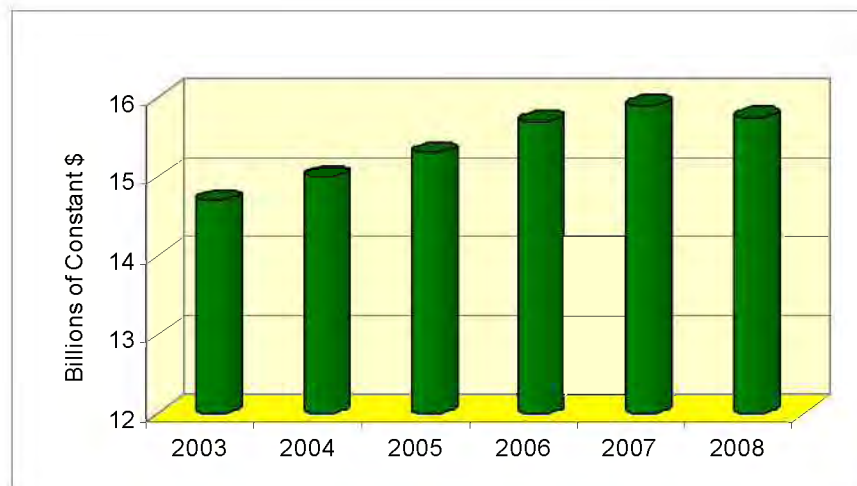
Figure 53: Unemployment Rate, 2003-2008



5.3.6 Personal Income

The size of a local economy is measured by its total personal income. Adjusted for inflation, personal income decreased from \$15.9 billion in 2007 to \$15.7 billion in 2008. Nevertheless, the County has added nearly \$800 million of income since 2003.

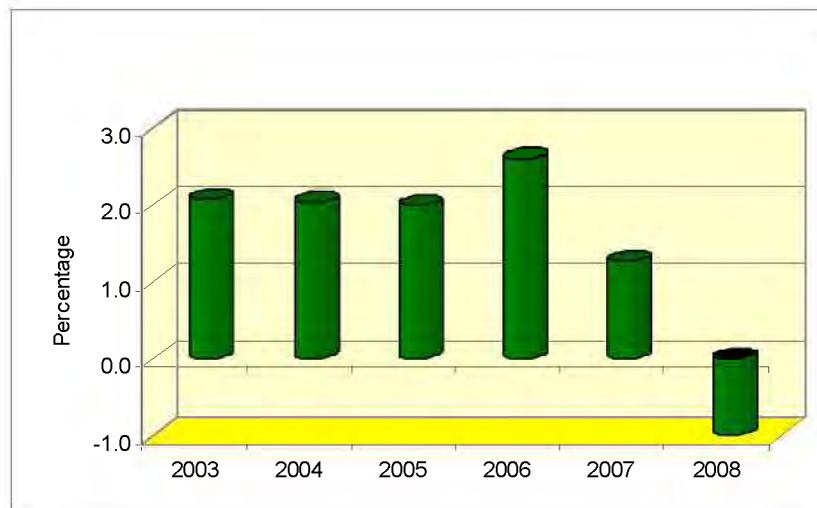
Figure 54: Personal Income, 2003-2008



5.3.7 Growth of Personal Income

Economic growth rate is defined as the percentage change of personal income. In constant dollars, Kern County's economy contracted 1.0 percent in 2008, thus losing \$200 million of income. The County's growth rate in 2008 was 3.2 percent lower than that of 2003.

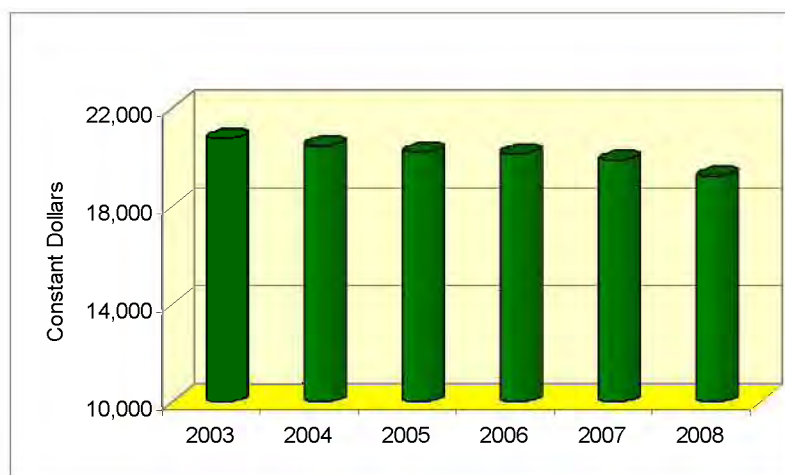
Figure 55: Growth of Personal Income, 2003-2008



5.3.8 Personal Income Per Capita

Personal income per capita is calculated as personal income divided by population. As a result of rapid population and negative income growth, Kern County's personal income per capita declined by \$650 from \$19,850 in 2007 to \$19,200 in 2008. Likewise, personal income per capita has fallen \$1,550 since 2003.

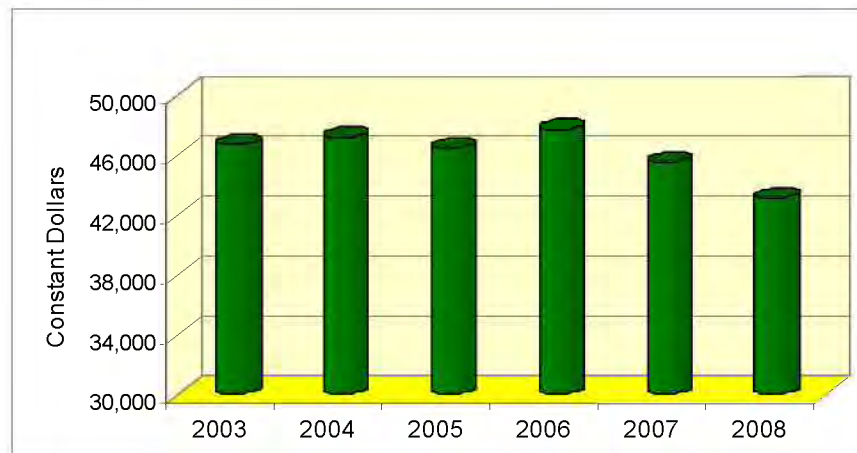
Figure 56: Personal Income Per Capita, 2003-2008



5.3.9 Personal Income Per Worker

Personal income per worker, a measure of labor productivity, is calculated as personal income divided by labor force. With the labor force growing faster than personal income, personal income per worker (adjusted for inflation) declined from \$45,600 in 2007 to \$43,200 in 2008 for a loss of \$2,400.

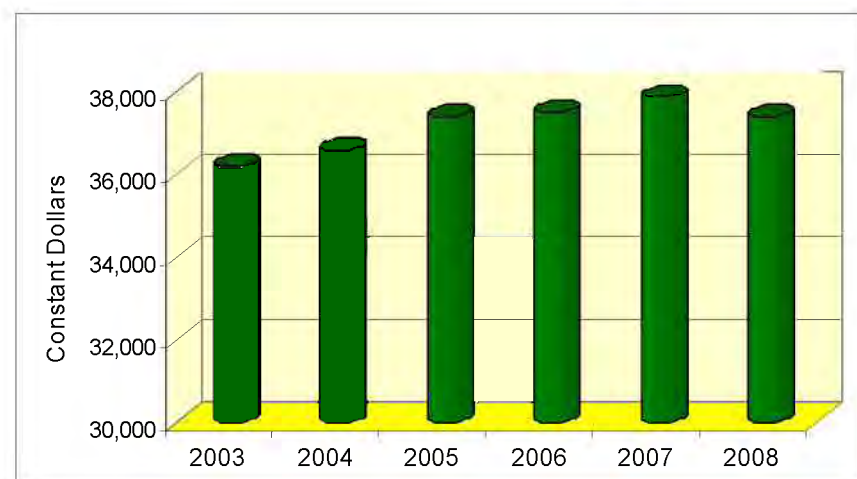
Figure 57: Personal Income Per worker, 2003-2008



5.3.10 Median Household Income

The median household income decreased from \$44,500 in 2007 to \$43,200 in 2008. Since 2003, the median household income has fallen nearly \$500.

Figure 58: Median Household Income, 2003-2008



5.4 Economic Foundation Performance Indicators

Kern County also needs to track the strengths and weaknesses of the fundamental sources of economic value provided by this County to its overall economy and its specific clusters. The following are the six major indicator categories of economic inputs ('economic foundations') which are essential to enabling and sustaining cluster formation, expansion and attraction.

Kern County needs to track the performance of its industry clusters to evaluate how well they are doing, the adequacy of the level of support that is being supplied, any competitive gaps that exist or are emerging. In addition to tracking the existing clusters, leaders must also continually scan to identify any seed or emerging industry clusters. Indicators that need to be tracked include:

Breadth: Concentration, number of companies, size, role in clusters

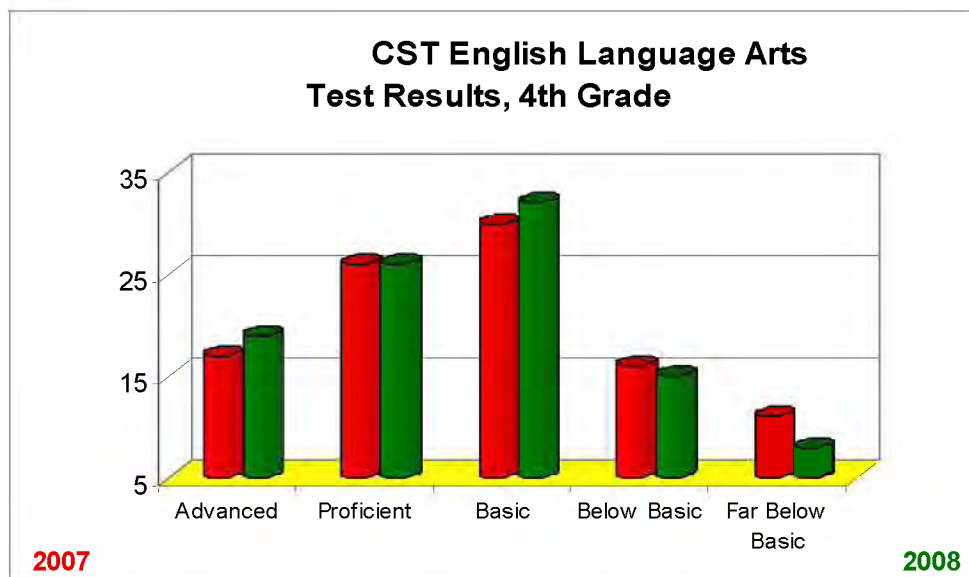
Depth: Representation of value-chain, market niche, level of specialization

Dynamism: Rates of growth, nature of transformation, change in concentration, relationship to other clusters, cluster-to-cluster connection

5.4.1 Language Proficiency

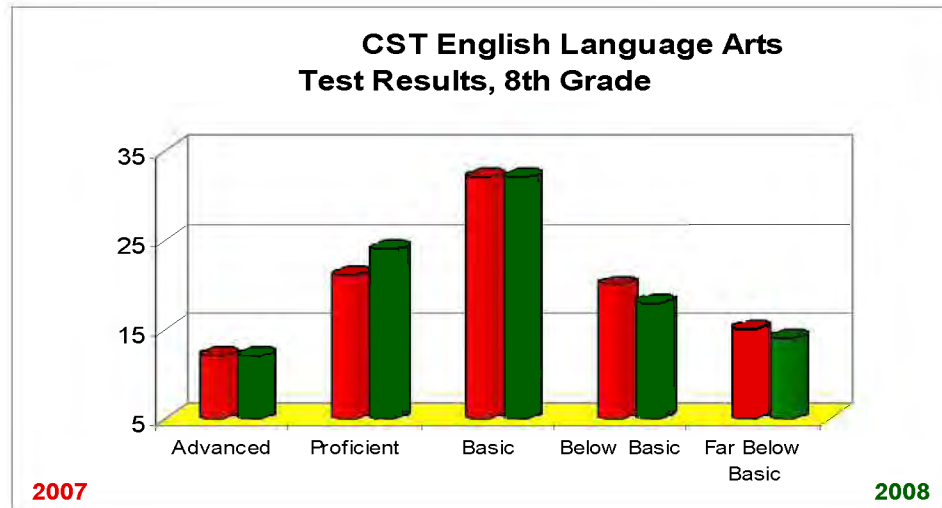
In 2008, 12,613 Kern County students in the fourth grade took the California Standards Test in English Language Arts (CST-ELA). Of these students, 19 percent scored at the *advanced* level and 26 percent at the *proficient* level. The majority of students, 32 percent, placed at the *basic* level; 15 percent scored at the *below basic* level and 8 percent at the *far below basic* level.

Test results improved from those of the previous year in that a greater percentage of students scored at the *advanced* level, whereas a smaller percentage scored at the *below basic* and *far below basic* levels. Likewise, the mean score increased from 339.5 in 2007 to 342.7 in 2008.



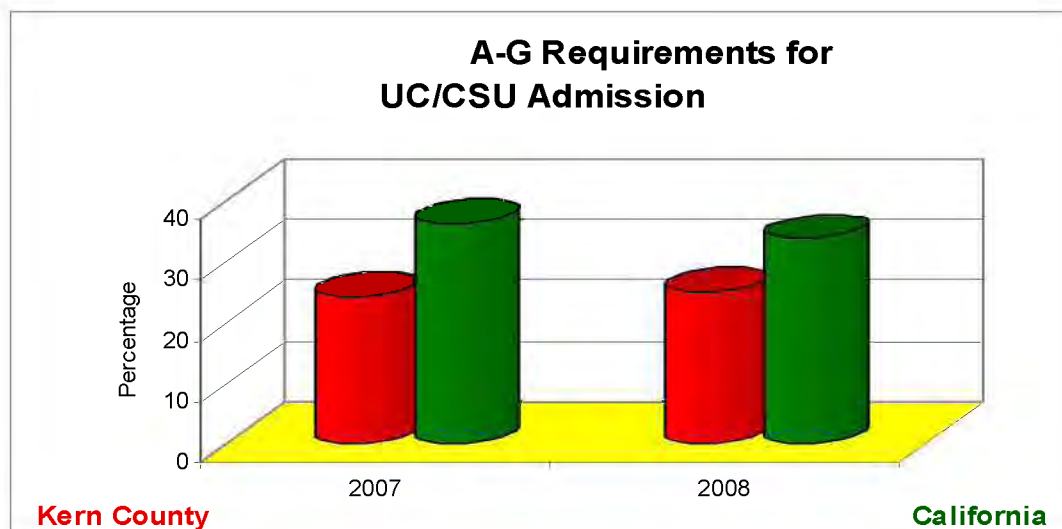
In 2008, 13,447 Kern County students in the eighth grade took the CST-ELA. Of these students, 12 percent scored at the *advanced* level and 24 percent at the *proficient* level. The majority of students, 32 percent, placed at the *basic* level; 18 percent scored at the *below basic* level and 14 percent at the *far below basic* level.

Test results improved from the previous year as a greater percentage of students scored at the *advanced* and *proficient* levels, whereas a smaller percentage scored at the *below basic* and *far below basic* levels. Nonetheless, the mean score dropped from 336.0 in 2007 to 328.8 in 2008.



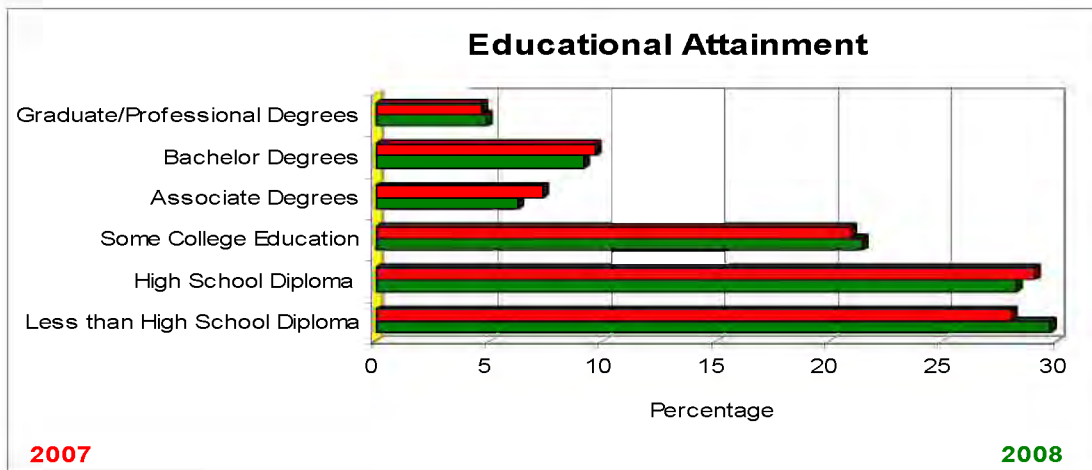
5.4.2 College Preparation

The percentage of public high school graduates completing the “A-G” requirements for admission to University of California and California State University increased from 24.4 in 2006-07 to 25.1 in 2007-08. In contrast, the statewide average declined from 36.4 to 33.9. In spite a noteworthy improvement, Kern County’s college preparation rate was 8.8 percent less than that of the state average.



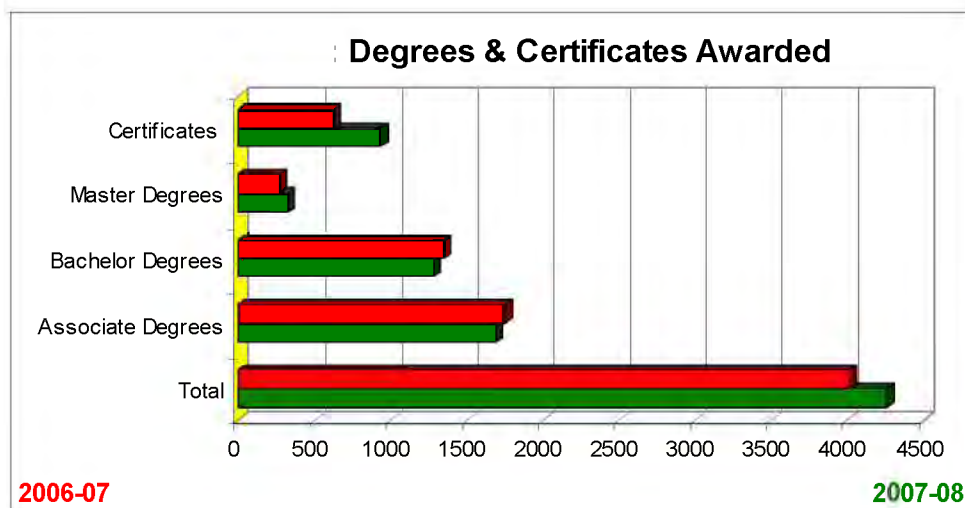
5.4.3 Educational Attainment

In Kern County, 70.2 percent of population 25 years or older have graduated from high school and 29.8 percent had less than a high school diploma. Of those holding high school diplomas, 21.5 percent had some college education with no degrees; 6.3 percent completed associate degrees; 9.2 percent received bachelor degrees; and 4.9 percent held graduate or professional degrees.



5.4.4 Degree Completion

Kern County's institutions of higher education granted 4,257 academic degrees and professional certificates in 2007-08, which were 246 more than the previous year. However, the number of associate degrees awarded decline to 1,695 (39.8 percent of the total) from 1,752 (43.7 percent of the total). Likewise, the number of bachelor degrees awarded dropped to 1,291 (30.3 percent of the total) from 1,352 (33.7 percent of the total). In contrast, the number of master degrees awarded climbed to 333 (7.8 percent of the total) from 280 (7.0 percent of the total). Similarly, the number of pre-baccalaureate certificates (less than 1, 2, and 4 years in length) that local colleges and universities issued jumped to 938 (22.0 percent of the total) from 627 (15.6 percent of the total).



The Quality of Life Index-The Ultimate Measure of Progress

In the field of development economics, economic and social indicators measure the quality of human life. In this study, Dr. Grammy with CSUB analyzed data on economic, social, and environmental indicators to construct a composite index for the quality of life for Kern County.

To measure the quality of life, Dr. Grammy collected data on twenty indicators. The data set is grouped in three categories including seven economic, ten social, and three environmental indicators:

Economic Indicators

- Per Capita Income: Personal income per person in constant dollars
- Economic Growth: Percentage growth rate of total personal income
- Housing Price: Median sales price of all single-family homes in constant dollars
- Taxable Sales: Total taxable transactions in constant dollars
- Labor Force Growth: Percentage growth rate of the labor force
- Nonfarm Employment Growth: Percentage growth rate of nonfarm employment
- Unemployment Rate: Average annual rate of civilian unemployment

Social Indicators

- Class Size: The pupil-to-teacher ratio
- College Preparation: Total score on the Scholastic Aptitude Test
- Family Environment: Percentage of mothers with “some” college education
- Language Proficiency: Enrollments with limited English proficiency per 10,000 students
- Medical Services: Number of physician per 10,000 persons
- Infant Survival: Percentage of live births reaching first birthday
- Drug Use: Number of admissions for drug and alcohol treatment per 10,000 persons
- Public Assistance: Family assistance per capita in constant dollars
- Public Health: Percentage of population eligible for Medical
- Crime Rate: The FBI crime index

Environmental Indicators

- Air quality: Number of days that the ozone level exceeds the federal 8-hour standard
- Public Safety: Expenditures on police and fire protection per capita in constant dollars
- Road condition: Average number of accidents per year divided by the segment length in miles

The Quality of Life Index

The year 2000 is selected as the base-year, when the index value equals 100. For the ensuing years, the base-year value was adjusted by the percentage change relative to 2000. The QLI improved gradually from 107 in 2003 to 110 in 2005. It then descended to 109 in 2006, 106 in 2007, and 102 in 2008. Better quality of life will require greater investment in all aspects of life including high school graduation and college attendance, workforce preparation, job creation and business retention, air quality, transportation infrastructure, and crime prevention, family planning and child development services.



6 Launching Our Future

The Kern County Economic Strategy has been successfully implemented over the last five years. Over the last few months, many community members have been directly involved in shaping the updating the document and making it timely and relevant for the next five years: 2010 through 2015. Recessionary times have given the Strategy even more relevance.

Most importantly, the prior five years of strategy implementation has helped foster a change in the region's stakeholders' mindset, heralding a new era of collaboration that has enabled us to make the first steps towards achieving and sustaining a high performing, continually improving economic foundation.

The purpose of the Strategy Update is to:

- Reinforce Countywide and regional thinking
- Make a commitment to growing our clusters
- Focus efforts on improving our local inputs, and
- Reward collaboration and inclusion.

The ultimate goals of the strategy and corresponding updates are to increase jobs and capital investment, reduce income disparity, and maintain the essential elements of our natural environment. This will enable a sustainable and prosperous future.