NORTHERN ILLINOIS UNIVERSITY
Center for
Governmental Studies
Outreach, Engagement, and Information Technologies

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PROMOTING PROSPERITY IN NORTHWEST ILLINOIS

Regional Focus, Regional Results

IN PARTNERSHIP WITH

WHITESIDE COUNTY · nida resourceIL · RFCDC · GREATER STERLING Development Corporation · LEE COUNTY INDUSTRIAL DEVELOPMENT ASSOCIATION · EDA U.S. ECONOMIC DEVELOPMENT ADMINISTRATION

GOALS STRATEGIES AND RECOMMENDATIONS

FIVE-COUNTY WAGE AND BENEFIT REPORT

NORTHWEST ILLINOIS AREA LABOR AVAILABILITY REPORT

PROMOTING PROSPERITY IN NORTHWEST ILLINOIS

Regional Focus, Regional Results

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Acknowledgements

This report represents a year-long collaboration among economic development and business leaders in Carroll, Lee, Ogle, Stephenson, and Whiteside counties to identify potential economic development strategies and projects. The findings are based on personal interviews with business leaders, electronic surveys of businesses regarding compensation issues, and phone interviews of residents about status and availability for employment changes. Considerable attention was paid to workforce characteristics and whether population changes will challenge the ability of employers to hire workers in the future. All of the information collected contributed to understanding the ways in which the region can position itself to start, retain, and attract businesses.

The authors thank the project advisory committee, including John Gvozdjak, Sandy Henrekin, Everett Pannier, Heather Sotelo, Betty Steinert, John Thompson, and Dave Young, who provided insights and kept the project on track. Theresa Wittenauer, Black Hills Regional Council, worked with the project advisory committee throughout the project and will incorporate the findings into the next CEDS update.

Two regional meetings were held with manufacturers and resource providers to identify the current and future skills, training, and education needed to create a competitive workforce. In addition, the meetings identified ways in which providers such as Sauk Valley Community College and Highland Community College could work with the Whiteside Area Career Center, CareerTech, and other regional higher education and training facilities to upgrade the capacity of the workforce in advanced manufacturing. The time and effort spent by businesses and resource providers in these discussions are invaluable and their contributions are appreciated.

Finally, this project was possible only with financial support from the U.S. Economic Development Administration, the Whiteside County Economic Development and Enterprise Zone, and the Northwest Illinois Development Alliance. In addition, many hours of donated time by the business community and others represented local match for the project. This investment was essential to the success of the project.

This report describes a path for the five counties to follow to revitalize the Region. The NIU Center for Governmental Studies team thanks everyone who participated in the overall effort. As always, any comments and/or interpretations in this report belong solely to the authors.

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EXECUTIVE SUMMARY

Five counties in northwest Illinois—Carroll, Lee, Ogle, Stephenson, and Whiteside, referred to as the Region—engaged the Center for Governmental Studies (CGS) at Northern Illinois University (NIU) to explore how local economic, community, and business leaders can better promote business starts as well as expansion, attraction, and retention in the five-county region. This locally driven project is funded by the U.S. Economic Development Administration (EDA) and coordinated by the following:

- Whiteside County Economic Development and Enterprise Zone (serving Whiteside and Carroll counties)
- Northwest Illinois Development Alliance
- Rock Falls Community Development Corporation
- Greater Sterling Development Corporation
- Lee County Industrial Development Association
- Black Hawk Hills Regional Council

CGS helped create a regional advisory committee including an economic development representative from each coordinating organization and business leaders from the Region. The advisory committee held quarterly meetings to discuss the regional needs and the progress of the project.

Northwest Illinois' traditional economic strengths are in agriculture and manufacturing. Despite the recent recession and long-term trends which have reduced employment in these sectors, they still account for approximately 39.0% of regional Gross Domestic Product (GDP) and 19.0% of regional employment. In comparison to other sectors, manufacturing jobs are among the highest paying in the Region, providing substantial support to other sectors of the economy in terms of consumer spending and local tax base. In addition, the Region has a strong competitive advantage in several related agricultural and manufacturing clusters based on a combination of industrial infrastructure and expertise, skilled workers, and access to suppliers and end-user markets.

The Region will face considerable challenges in its efforts to support the economic expansion. These include a below average rate of new business formation, chronic underemployment (as well as unemployment), and a looming demand for skilled workers to replace an expected wave of retiring Baby Boomers. Furthermore, the nature of industry is changing as companies incorporate new and more complex technologies into production processes which require a higher level of worker skill and training than ever before. In light of this situation, more innovative economic development strategies will be necessary to meet these challenges and to promote sustainable growth.

Previous studies of the Region, as well as past Comprehensive Economic Development Strategy (CEDS) documents, were reviewed to determine the additional research needed to build a sound base for development planning. CGS then organized an update of a past regional wage and benefit study and further regional analyses of the labor force by doing the following:

- Conducting personal interviews with 12 business leaders in the Region;
- Helping to organize two regional meetings with more than 75 representatives from manufacturing businesses, Workforce Investment Boards (WIBs), and educational service providers in the Region;
- Surveying residents and businesses regarding regional employment, unemployment, underemployment, and skills gaps;

- Evaluating regional strengths and assets; and
- Identifying new and emerging industry clusters suited for the Region.

Based on the regional analysis and input from business leaders, the advisory committee agreed on a regional vision, five regional goals, regional action strategies, potential regional partners, and recommendations for moving forward. The goals listed below are described in detail in the body of the report along with subsequent strategies and best practices which may be effective in implementing the strategies.

REGIONAL VISION

In the next three years the five-county region will…

- Strongly encourage entrepreneurship with a highly supportive business environment;
- Invest in necessary local infrastructure to support current and future businesses;
- Leverage existing and emerging industrial assets and capabilities; and
- Market regional assets to attract and retain young professionals.

REGIONAL GOALS

Goal I: Develop a competitive and highly productive workforce with up-to-date skills capable of using the latest technology in production processes.

Goal II: Support major existing and emerging growth industries such as transportation and aerospace component manufacturing to become a major Midwestern production/assembly region.

Goal III: Create an entrepreneurial region with a climate which supports new business formation and encourages existing businesses to invest and prosper.

Goal IV: Make better use of local (regional) inputs and specialties to develop a highly profitable agribusiness and food processing region integrated into Midwestern markets.

Goal V: Leverage and market existing regional assets to encourage growth, enhance the quality of life, and maximize the potential of the region.

TOP PRIORITIES FOR REGIONAL PROSPERITY

- Support for manufacturers: Regional goals addressed: I, II, V
- Entrepreneurial and small business development: Regional goals addressed: II, III, V
- Value added agriculture: Regional goals addressed: III, IV, V

SUMMARY

The five counties in northwestern Illinois are in a relatively unique position to participate in the pending economic recovery for several reasons. First, they have access to excellent logistics and transportation infrastructure including rail, highway, and fiber access. Some of the fiber facilities are still under development and construction, but have the potential to position the Region well for new industries.

Second, the five counties are very well positioned to access major regional, national, and global markets because of relative proximity to Chicago, Milwaukee, Madison, Minneapolis-St. Paul, Quad Cities, and St. Louis. The proximity to Chicago, with its global access, is a major strength of the Region.

Third, they are located in an area rich with natural resources for agricultural and food production and relative close proximity to major markets as noted above. Recent changes in preferences for local foods and other opportunities involving agricultural products place the Region in an excellent position to serve new markets rather than shipping unprocessed grain out of the area.

Perhaps the most valuable asset in the Region, however, is the long history of innovation and manufacturing expertise. While some of the past manufacturing operations in the Region have closed or moved away, a significant number of small machine shops and manufacturing operations remain and are positioned to do well in the future with the re-shoring and pending growth of manufacturing. The percentage growth in value added produced by manufacturing in the Region during the past decade surpassed both the U.S. and Illinois. The declines in employment may partly reflect productivity increases.

Not all of the news generated in this project is positive, however. The business starts in the Region are lower than in comparable areas in surrounding states. Population projections indicate a tightening of the job market in the next decade. Employers are experiencing more difficulties in filling positions with applicants who have the skills which are needed to operate the complex machinery used in advanced manufacturing techniques.

A positive outcome from this project is the collaboration of manufacturers, representatives of higher education, and labor market organizations who discussed ways to build a labor force with up-to-date skills and the potential to attract and retain businesses using advanced manufacturing techniques. These businesses will provide quality jobs at relatively high pay, which will be essential to attracting young adults into the workforce in the future. Working with educational institutions at all levels to provide curriculums which offer a future for graduates is also essential.

Discussions have started between businesses and education representatives. The data provided in this report can support decisions which will help the Region to participate effectively in the economic recovery and to prosper during the next decade.

PROJECT OVERVIEW

Assessing and enhancing regional competitiveness is a critical component of economic development since fostering economic growth in a region involves linking regional assets to potential business opportunities. Economic development stakeholders in northwest Illinois (Carroll, Lee, Ogle, Stephenson, and Whiteside counties) initiated a regional collaboration to identify these linkages and opportunities with the goal of a long-term development strategy.

This project, funded by the U.S. Economic Development Administration (EDA) and local economic development agencies, includes a labor force availability analysis for the Region designed to help define the elements necessary to attract and retain area companies and/or launch establishments, leading to increased growth and prosperity in the Region. This analysis has three main components. The first component is a regional wage and benefit study based on data collected from an online survey in April 2012. This was an update and expansion of a wage and benefit study conducted by the Center for Governmental Studies (CGS) at Northern Illinois University (NIU) in January 2009.

The second component is a regional underemployment study conducted by Pathfinders, Inc., completed in July 2012. This project is designed to determine the extent to which labor force cohorts with specific skills are available in the Region and are willing to take jobs at various wage levels.

The third component, and primary objective of the regional report, is an analysis of industry clusters to determine the greatest potential for future growth by identifying business activities which could capitalize on the human, material, and locational assets in the Region. These potential industries are examined further to determine their importance for the Region if they were to locate in or around the area.

During the project, the CGS collaborated with the following organizations:

- Whiteside County Economic Development and Enterprise Zone (serving Whiteside and Carroll counties)
- Northwest Illinois Development Alliance (NIDA)
- Rock Falls Community Development Corporation (RFCDC)
- Greater Sterling Development Corporation
- Lee County Industrial Development Association
- Black Hawk Hills Regional Council
- Greater Rochelle Economic Development Corporation (GREDCO)

METHODOLOGY

The project, especially the industry cluster analysis, was shaped by a set of framing questions designed by the regional partners in consultation with CGS staff. These questions guided the researchers and advisory committee in their goal of designing and implementing regional development strategies. These strategies will help build regional capacity to stimulate entrepreneurship and business expansion based on private and public investments. The project advisory committee met over several months to analyze regional data and to explore regional development options.

FRAMING THE ISSUES

To better understand the potential in the Region from the perspectives of a diverse group of economic development and business leaders representing both their own county and the regional effort, CGS posed several issues to the project advisory committee.

How can the Northwest Illinois Region distinguish itself as a(n)...

- Region with a competitive and highly productive workforce with cutting-edge skills, a dependable work ethic, and educational programs which support using the latest technology in production processes?
- Highly profitable agribusiness and food processing center integrated into Midwestern markets using local (regional) inputs and specialties?
- Major Midwest production and assembly center for advanced manufactured components produced locally?
- Widely recognized source of talent, expertise, and input for the dominant manufacturing clusters in nearby metropolitan centers (Dubuque, Janesville-Beloit, Madison, Peoria, the Quad Cities, and Rockford)?
- Region successfully leveraging the Global III Intermodal Terminal (Rochelle) to retain, expand, and attract targeted manufacturing activities?
- Entrepreneurial region recognized for nurturing successful new businesses?

These questions were designed to elicit responses which could become goals and strategies for the Region. In conjunction with the wage and benefit study, unemployment study, and additional research by CGS and other agencies, these questions shaped the regional action strategies.

MAPPING REGIONAL ASSETS

In the past several decades, the U.S. economy has undergone major changes which affect the ways in which economic development is pursued. In the past, major corporations produced a variety of goods and purchased inputs from established suppliers. These tended to be long-term relationships as shown by the manufacturing experiences in the Sterling-Rock Falls area.

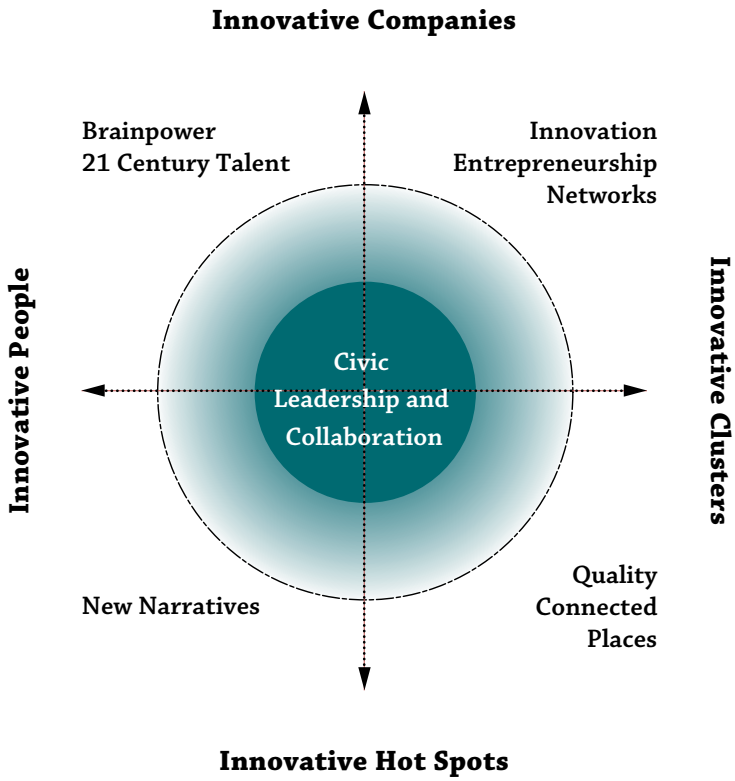
With the advent of the Internet, lower transportation costs, and information technology, the business relationships have relied more on networks of suppliers so that a product now is produced with inputs from numerous suppliers. These networks include many small companies spread over longer distances than in the past. Businesses in off-shore locations with lower wage costs are especially competitive in a network environment with almost instant communication. However, in recent years some difficulties have arisen in maintaining tight quality control, which has led companies to consider bringing some manufacturing jobs back to the U.S.

The "new environment" means that groups pursuing economic development strategies need to analyze the potential of the Region in light of four major characteristics, the approach used in this project. The Strategic Doing literature in recent years, led by Ed Morrison, Purdue Center for Regional Development at Purdue University, has addressed many of these questions and has produced a four-sector illustration (Figure 1). Each of these characteristics is briefly discussed next.

- *21st Century Workforce.* The labor force must have the skills and knowledge to work with the latest technology needed for advanced manufacturing processes and/or other occupations. The rate of technological change has been such that production processes in start-up companies often differ substantially from older operations. Regions which are able to incorporate this training into their educational systems have a decided advantage.

- *Places with High-Quality Connections*. The importance of the global marketplace is such that successful companies must be able to make decisions using high-speed Internet access. Thus, the Region must have access to these high-speed connections at a cost which is affordable. The connectivity goes beyond Internet, however. Creative people need a location where they can congregate and share ideas. Young professionals are interested in living in a modern environment with high-speed access, so regions which have these locations will be more attractive to both businesses and youth. Educational institutions, technology centers, and small business support units are examples of places with this connectivity.
- *Entrepreneurial Environment*. To be competitive in the current environment, a region must work to create opportunities and to provide assistance for entrepreneurship efforts. New ideas must circulate among producers, and entrepreneurs who are interested in starting ventures need guidance and assistance in launching the businesses. Entrepreneurship is high among young adults, so the high-quality connectivity goes hand-in-hand with the entrepreneurial environment. These locations can include schools, universities, hospitals, or other institutions which are engaged in research and technology.
- *Positive Narrative about Region*. Too often, regions which have experienced economic reversals are prone to dwell on negative trends. Changing this narrative to a positive through communicating about available opportunities to potential business investors, young adults, and other key groups in the Region is not easy, but it is essential for the Region to succeed in attracting and retaining businesses as well as launching business ventures. The new narrative must be shared with youth so that they perceive the Region as a place to stay and prosper instead of feeling pressure to leave in search of a better future. Changing the narrative must be a group effort.
- *Civic Leadership and Collaboration*. The four essential innovation characteristics above, must in some way be linked and managed by a leadership group in the Region. This happens with a partnership of public and private agencies which collaborate to link the important assets of the Region and in some way market them to intended audiences. This group includes business leaders, public officials, professional associations, civic groups, and others working toward a common agenda, namely economic prosperity. The composition of the informal group may change over time but must remain credible in order to move the process along and manage the networks. The next section describes many of the assets and resources in the Region by innovation category; however, this list is not exhaustive.

Figure 1: Innovation Asset Map



Source: Ed Morrison, Purdue Center for Regional Development, Purdue University.

Brainpower, 21st Century Talent

- Highland Community College: Industrial manufacturing technology programs, Wind Turbine certification, and AAS programs
- Illinois Manufacturing Extension Center (IMEC)
- Kishwaukee Community College: Illinois Network for Advanced Manufacturing programs
- Morrison Institute of Technology (MIT)
- Northern Illinois University Outreach Programs: AgTech, College of Business, College of Engineering, Center for Governmental Studies
- Sauk Valley Community College: Manufacturing certification and AAS programs
- Whiteside Area Career Center
- Young Professionals Networks
- CareerTec

Innovation, Entrepreneurship Networks

- Blackhawk Hills Entrepreneurs and Inventors Club
- EIGER Lab
- Inventory process and production capabilities of existing business
- Kitchen Incubator programs in Sterling and Freeport
- Regional Manufacturing Technology Academy
- Small Business Development and Entrepreneurial Center

Quality, Connected Places

- Regional airports
- Foreign trade zones
- Global III Intermodal
- Healthcare facilities and services
- High-speed Internet access
- Mainline access to four Class I rail carriers
- Major interstate and highway connections
- Savanna Depot Local Redevelopment Authority (LRA)

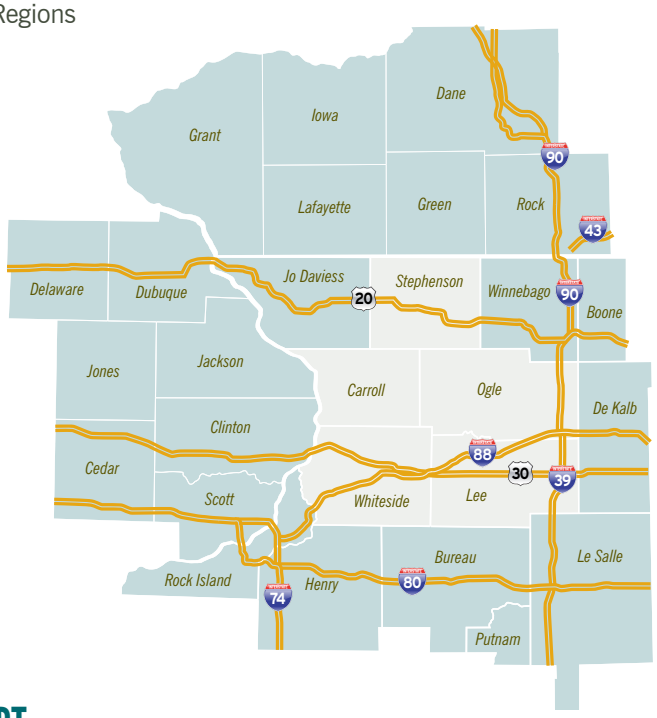
New Narratives

- Blackhawk Hills Regional Council
- Chambers of commerce
- Economic Development organizations
- Regional business participation in Career Days at local middle and high schools
- Regional business engagement with local community colleges to create new training programs or improve existing programs.

GEOGRAPHIC SCOPE

A review of reports, studies, and current comprehensive and economic development plans for the Region was conducted. It was imperative to the project that the strategic goals and actions align with the 2008-2012 Comprehensive Economic Development Strategy (CEDS). In addition to the CEDS, two previous industry cluster studies conducted by Vandewalle & Associates provided a background and broader geographic context to the current analysis since the labor shed for the five-county region extends well beyond its physical boundaries. The Reference Region cited in this report includes 32 counties in Illinois, Iowa, and Wisconsin (Figure 2) and represents an opportunity for the five-county area to strengthen existing economic synergies (as well as create new ones) with the dominant or emerging industries in the larger tri-state region. The leveraging of these relationships forms the basis for the economic development strategies presented here.

Figure 2: Primary (Five-County) and Reference (32-County) Regions



FIVE-COUNTY WAGE AND BENEFIT SURVEY AND REPORT

The compensation questionnaire collected information about the business practices, industry workforce composition, occupational wage ranges, and employee benefit information. The survey was sent via Survey Monkey and completed online.

A total of 295 businesses were invited to complete the survey on wages, benefits, and compensation practices. Between February and April 2012, 103 businesses responded, a return rate of 34.9%. Targeted industries in the survey included Manufacturing, Healthcare and Social Assistance, Agriculture, and Transportation and Warehousing. These industries were selected based on their presence in the Region and the interest of local development agencies in marketing the Region to specific industries. (See Five-County Wage and Benefit Report.)

UNDEREMPLOYMENT SURVEY AND REPORT

Labor availability for hiring decisions includes unemployed workers; however, companies also staff new or expanded operations with individuals who are currently working but may desire better jobs and who seem to possess the skills, education, and experience to qualify for those higher-paying jobs. Those individuals can be considered "underemployed." A study was completed to quantify the extent of both unemployment and underemployment in the five-county northwest Illinois area and a larger 15-county labor shed which included the targeted five counties[1].

[1]This labor shed includes Bureau, Carroll, DeKalb, Henry, Jo Daviess, LaSalle, Lee, Ogle, Rock Island, Stephenson, Whiteside, and Winnebago Counties in Illinois; Clinton and Jackson Counties in Iowa; and Green County in Wisconsin.

Interviews were conducted with individuals throughout the Region. The sample was proportionally stratified by age, household income, and zip code. The purpose of the survey was to determine availability for work with a new employer, desired pay rates, and to collect information on other factors such as age, education, commuting patterns, experience, and skills. A total of 1,022 completed calls (both landline and cell phone) were made during the household survey—51.0% were males and 49.0% were females; 78.0% were employed; 22.0% were currently unemployed.

Interviews were also conducted with senior management and human resource professionals from companies located in the labor shed to develop a profile of current workers in the northwest Illinois region. Approximately 30.0% of the businesses called gave interviews. (See Northwest Illinois Area Labor Availability Report.)

Together, these two surveys and subsequent reports, provide a solid basis for workforce training and development initiatives in the Region. By identifying the skill levels of displaced workers, determining the transferability of skills to new jobs, and assessing underutilized skill sets, the project enables the business community and economic development leaders to assess the current regional business climate and then to transform it into an economy suited for the future.

CLUSTER ANALYSIS

Since the Northwest Illinois Region is mostly rural with a relatively limited industrial base, this analysis tries to identify potential development opportunities by linking businesses in the Region to the dominant industry clusters in nearby metropolitan areas (Dubuque, Janesville-Beloit, Madison, the Quad Cities, Peoria, and Rockford). The industry clusters were selected using traditional economic tools (i.e., location quotients, shift-share, and contribution to Gross Regional Product), but are informed by inputs from regional economic development partners, local business interviews, staffing patterns, and projected workforce supply and demand indicators.

The project began by analyzing cluster data from the EDA sponsored work by the Purdue Center for Regional Development[2] and work underway by Porter[3]. Also considered were the results and recommendations of two previous studies completed by Vandewalle & Associates[4,5]. These studies identified targeted industries for regional groupings which included the five-county area, as well as adjacent metropolitan areas in Illinois, Iowa, and Wisconsin. While the results of these studies yielded valuable insights about potential assets and synergies in a broad geographic context, the studies were mostly focused on the dominant industries in the metropolitan areas. As such, the opportunities for developing greater value chain relationships with the rural areas were not explored in detail.

Industry clusters are geographic concentrations of competing, complementary, or interdependent firms and industries which conduct business with each other and/or have common needs for talent, technology, and infrastructure. The firms included in the cluster may both compete and cooperate. An important characteristic of clusters is that they are centered on firms which sell outside the local, state, or even national market. These exporting firms are driving forces in a regional or state economy because they bring money into the area and support many local industries. It is important to note that a cluster does not represent an industry or a business; instead, it represents the potential of linking industries and businesses that share common elements.

[2] Purdue Center for Regional Development, Purdue University, et. al., *A Practitioner's Guide to Economic Development Tools for Regional Competitiveness in a Knowledge-Based Economy*, October, 2009.
[3] U.S. Cluster Mapping Project led by Professor Michael E. Porter at the Institute for Strategy and Competitiveness, Harvard Business School. (http://mvp.clustermapping.us/)
[4] "50+ County Asset and Opportunity Analysis". *Vandewalle & Associates*, July, 2011.
[5] "Quad Cities Region Global Growth Initiative". *Vandewalle & Associates*, January, 2012.

Although all of the industry clusters have a presence in the five-county region, those with a significant concentration of establishments, employment, or wages were an important consideration in their selection for further research. These concentrations are measured by location quotients (LQ), which are the ratio of the percentage of establishments, employment, or wages in an industry in the Region compared to the U.S. A comparison of the LQ for industry clusters in the five-county region was one criterion for selecting targets for future development efforts. In selecting industry clusters with the greatest development potential, preference was given to those with high employment and wage concentration although factors such shift-share trends, supply chain relationships, and the dominant industries in the surrounding metro areas were also considered.

A dozen industries in the five-county region had concentrations above the national average. Figure 3 highlights the five industry clusters which were ultimately selected as development targets. Several other clusters had a higher LQ, but were not selected because of their presence in only one or two counties (rather than to the entire Region), or they were already a part of existing economic development efforts.

The Transportation Equipment Manufacturing cluster had only a minor presence in the Region, but was selected because of the dominance of Automobile, Truck, Farm, and Construction Machinery Manufacturing industries located in the surrounding metro areas (especially Rockford). There appears to be potential for developing or attracting new businesses in this cluster by building on regional supply chain relationships. In addition, the recent opening of the Nippon-Sharyo railcar manufacturing plant offers similar opportunities not only for supply chain development, but also the chance to attract other railroad equipment manufacturers.

Analyzing industry clusters helps development practitioners and policymakers identify the networks of businesses which create wealth in a local or regional economy. Industry clusters help to do the following:

- Describe how industries in a region compare to each other;
- Identify growth trends through regional location quotient analysis;
- Reveal emerging industries in a region;
- Analyze the mix of clusters in a diverse region which may include rural and urban areas;
- Rethink business expansion strategies;
- Reveal groups of industries which have similar workforce needs;
- Prioritize groups of firms which have growth potential; and
- Create regional identities and improve marketing effectiveness.

Location Quotients (LQ) are commonly used to evaluate local development opportunities and to find businesses especially suited for the region. A LQ is the ratio of the employment percentage represented by a given industry in the county to the percentage that industry represents in the state or a representative area of interest. A ratio greater than one indicates a higher local concentration and a likelihood of exports from the county and ratio less than one may suggest that goods or services are being imported into the Region.

The Transportation and Logistics cluster, with a smaller presence in the Region than several other clusters, was deemed important not only because of its growth trends and potential, but also because it serves as a strategic asset supporting other targeted industry clusters. The continued development of transportation services providers, warehousing, and logistical support services is as valuable for retaining and attracting agricultural and manufacturing businesses as it is for the jobs, capital investment, and tax base that they create.

Figure 3: Location Quotients by Industry Cluster, Five-County Region, 2010

Industry Cluster	Establishment LQ	Employment LQ	Annual Wage LQ
Advanced Materials	1.6	1.7	1.9
Agribusiness, Food Processing & Technology	**3.2**	**2.5**	**3.6**
Apparel and Textiles	0.4	0.4	0.5
Arts, Entertainment, Recreation & Visitor Industries	1.1	0.5	0.4
Biomedical/Biotechnical (Life Sciences)	0.9	1.2	1.2
Business and Financial Services	0.6	0.4	0.5
Chemicals and Chemical Based Products	1.4	1.6	2.0
Defense and Security	0.4	0.4	0.4
Education and Knowledge Creation	1.0	0.5	0.7
Energy (Fossil and Renewable)	0.8	0.9	0.9
Forest and Wood Products	0.9	0.9	1.2
Glass and Ceramics	1.9	1.5	1.7
Information Technology and Telecommunications	0.4	0.9	0.8
Transportation and Logistics	**2.6**	**1.1**	**1.3**
Computer and Electronic Product Manufacturing	1.3	2.2	2.0
Electrical Equipment, Appliance and Component Manufacturing	2.6	7.4	10.3
Fabricated Metal Products Manufacturing	**2.4**	**3.8**	**5.2**
Machinery Manufacturing	**3.5**	**4.0**	**6.5**
Primary Metal Manufacturing	3.0	0.8	1.0
Transportation Equipment Manufacturing	**1.3**	**0.9**	**0.8**
Mining	2.6	1.1	1.7
Printing and Publishing	0.7	1.2	1.2

Sources: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW) and the Purdue Center for Regional Development (cluster definitions), 2012

Shift-Share Analysis

The development potential of the Region's industry clusters was also assessed using shift-share analyses. The technique is based on the assumption that local economic growth is explained by the combined effect of three components: *national share, industry mix,* and *competitive share*. The *national share* component represents growth and/or decline in the study area due to national economic changes. The *industry mix* component represents the change in a given industry in the study area attributable to conditions in the individual industry. This is only to suggest that a specific industry has done well or poorly on a broader level. The third component of employment change, *competitive share*, is what remains after the other two components are subtracted. It approximates the job growth or decline of an industry attributable to local business conditions. Local industry sectors which experienced greater job growth than at the national level have a positive competitive share.

Three of the five targeted industry clusters had positive employment associated with *competitive share* 2007-2010 periods (Figure 4). These trends suggest that the Region has an advantage in terms of market access, cost of inputs, or other factors which could allow further expansions. The Agribusiness, Food Processing, and Technology; Transportation and Logistics; and Transportation Equipment Manufacturing clusters experienced competitive job growth between 2007 and 2010 in spite of the recent recession and in addition to suffering significant losses earlier in the decade.

Figure 4: Competitive Share of Employment Change, Five-County Region, 2007-2010

Industry Cluster	National Share	Industry Mix	Competitive Share	Competitive Share (%)
Agribusiness, Food Processing, and Technology	-214	134	486	7.1%
Transportation and Logistics	-120	-69	259	0.1
Fabricated Metal Products Manufacturing	-188	-361	-647	-0.2
Machinery Manufacturing	-155	-223	-480	-0.2
Transportation Equipment Manufacturing	-34	-100	26	0.0

Sources: IMPLAN; U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW) and the Purdue Center for Regional Development (cluster definitions), 2012.

The two strongest regional clusters, Fabricated Metal Products and Machinery Manufacturing, had employment declines. Interviews with local businesses, which were conducted as part of this project, indicated that companies are being cautious in creating new positions or replacing existing positions because of the uncertainty about the strength of the recovery and the impact of healthcare reform. Instead, most are offering overtime to current employees, outsourcing, or making more use of temps or contract workers, who are counted differently in most private (e.g., Dun & Bradstreet) or government employment statistics.

When compared with National Employment Time Series (NETS) data (cited in the Business Vitality Trends section of this report), most job losses appear to come from the downsizing or closure of larger companies. At the same time, many smaller companies held steady or expanded employment, which contributed to net job increases or mitigated job losses at the larger firms. In the Fabricated Metal Products and Machinery Manufacturing clusters, larger employers accounted for largest shares of total employment.

The competitive share analysis suggests the Region may have less of an advantage in industries which are growing more slowly (or declining more rapidly) than the national average. It is also possible that the recent recession may have exaggerated the results to a degree. Beyond this, a more detailed examination of individual companies is needed to determine why the Region is disadvantaged when compared to other areas and what changes could make the area more competitive.

Description of Targeted Industry Clusters

Since the purpose of the project is to formulate regional strategies, it is important to address the industry analyses from the perspectives of each county and its assets, as well as the entire Region to identify assets and potential that any one county alone would not see as important. Thus, all components of the project and related action strategies are designed to complement each locality's economic development efforts by leveraging limited resources and directing them toward a set of common development objectives to benefit the region. This approach will generate opportunities for the counties to pursue some projects independently and also to collectively pursue other projects as a Region. Based on this information, the committee narrowed the focus of the project to a specific set of clusters and subsectors within those clusters[6].

Agribusiness, Food Processing, and Technology generally refers to increasing the economic value of a commodity through particular production processes. Examples of this include the production of organic fruit and vegetable crops and non-traditional crops or through regionally branded products which increase consumer appeal and willingness to pay a premium over similar but undifferentiated products. It also encompasses the development of processing commodities or alternative fuels, as well as the industries which support agricultural production (including farm machinery, fertilizer, and pesticide manufacturing). While the traditional crop and livestock production has a strong presence in the Region, value added activities are a small (but growing) component of the cluster. Food Processing also has a significant presence, particularly in dairy products (such as cheese), snack foods, and processed meats.

Fabricated Metal Products Manufacturing transforms purchased metals into intermediate or end-use products through forging, stamping, bending, forming, welding, machining, and/or assembly. Because of the special manufacturing processes involved for individual parts, most companies make a limited range of products. Major segments of the Fabricated Metal Products Manufacturing cluster include architectural and structural products; forging and stamping; machining; cutlery, tools, and kitchenware; boilers, tanks, and containers; hardware; springs and wires; coating, plating, and polishing; and valve and pipe manufacturing. The five-county region, as well as the surrounding metro area, has a strong and well-established presence in these industries, and many products or components supply other important industries in the Region such as motor vehicles, aerospace industrial machinery, and appliance manufacturers.

[6] Statistical profiles of each of the targeted clusters are included at the end of the report.

Machinery Manufacturing is comprised of a broad and diverse range of machinery or components which are used in agriculture, mining, construction, or manufacturing. Major products of companies in the five-county region include farm and construction machinery, metalworking and other manufacturing machinery, HVAC and commercial refrigeration equipment, and general-use machinery such as engines and pumps. While some products, such as tractors or heaters, are finished products, others like motors are components used in further production, and some are custom-designed for a specific manufacturing process. Machinery Manufacturing involves producing and assembling components. Companies either make or buy components and various types of mechanical, hydraulic, and electrical control systems. Manufacturing often involves forging, machining, and welding activities which require skilled labor. Products have a high engineering content, and product design usually involves computer-aided design (CAD) systems, which are integrated directly into a computer-aided manufacturing (CAM) process.

Transportation Equipment Manufacturing includes companies which manufacture transportation equipment for commercial and personal use, such as aircraft, automobiles, railroad rolling stock, and water craft. Companies which make parts or components for transportation equipment also are included in the industry. Although this cluster is relatively small in the five-county region, the surrounding metro area, especially Rockford, has a strong concentration of aerospace- and automotive-related industries, and many companies in the Fabricated Metal Products and Machinery Manufacturing clusters are part of the supply chain. The Rockford area also has existing economic development initiatives to further expand the regional supply chain for these industries. These initiatives may potentially benefit the five-county region. In addition, the recent opening of the Nippon-Sharyo railcar production facility presents an opportunity for new or existing companies to become a part of this industry's supply chain.

Transportation and Logistics includes road, rail, and air freight transportation companies, as well as warehousing, parcel couriers, and related logistics services. This cluster has a relatively small, but growing presence in the five-county region, which is driven by transportation access and proximity to the Chicago area and other regional markets. The Region not only benefits from excellent highway and rail access, but also has several large commercial airports, two foreign trade zones, a major UPS air hub (in Rockford), and the Global III Intermodal facility (in Rochelle). The former Savanna Army Depot also has the potential for rail and communications-related development, if necessary infrastructure improvements are made.

REGIONAL OVERVIEW

The future of the Northwest Illinois Region will be determined by its ability to successfully address several demographic and economic transitions; the most significant will be an overall aging of the population during a period of population stagnation or decline. The increasing demands for younger workers to replace older ones as they retire will be crucial in this Region, as well as other areas. In short, competition for a well-trained, highly skilled workforce will be substantial.

The future of northwest Illinois will be determined by its ability to successfully address several demographic and economic transitions; the most significant will be an overall aging of the population during a period of population stagnation or decline.

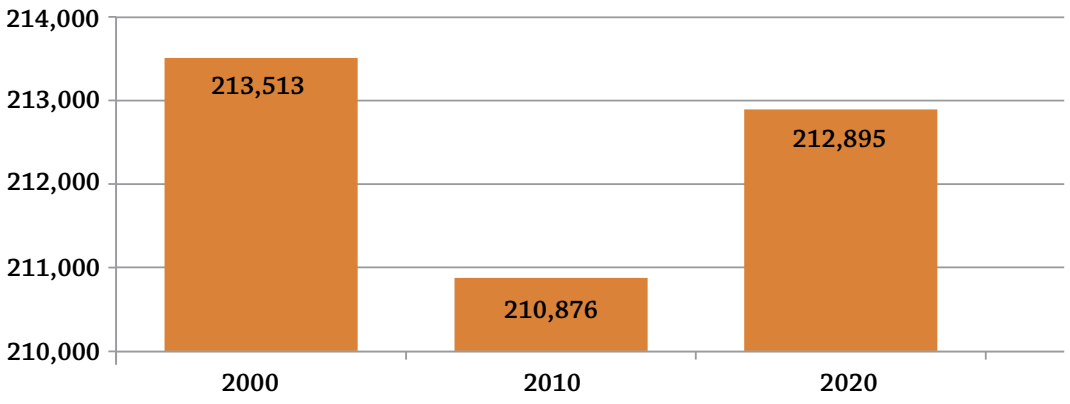
Concurrently, technological advancements in many industries, especially manufacturing, demand a higher level of education and/or training to fill the jobs which will become available. A desired outcome of this collaborative project is that employers and educational institutions in the area can work together to deliver a set of training programs which will meet the needs of industries being recruited into the Region.

To set the stage for more complete analyses of industrial structure and strategies to implement, a discussion of major demographic and economic trends in the region follows. The section includes population trends, employment trends, occupation employment characteristics, educational characteristics, and business vitality trends.

POPULATION TRENDS

Important demographic trends will reshape the workforce over the next several decades and impact the Region's economic competitiveness. The aging of the population combined with the projected slow rate of growth will result in fewer workers and types of workers available and an uncertainty of worker's ability and willingness to participate in the labor force. Between 2000 and 2010, the total population in the five-county region declined by 2,637 persons (1.2%); however, the loss is projected to regain between 2010 and 2020 (Figure 5).

Figure 5: Population Trend 2000-2011, Five-County Region

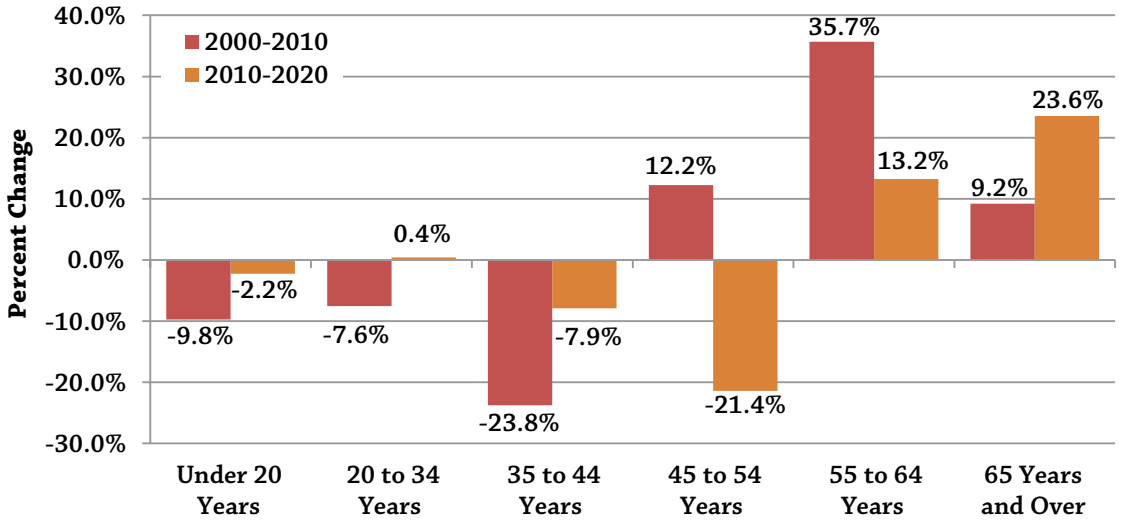


Source: Woods & Poole Economics, Inc., 2012.

Ogle was the only county in the Region with a net gain in population (4.7%) between 2000 and 2010. Population losses in the remaining counties ranged from a modest decline of 2.5% in Stephenson County to a loss of 7.7 % in Carroll County. These declines were especially important among the prime working age groups. The number of persons in the 35 to 44 years of age range fell by 23.8% between 2000 and 2010 and is expected to decline by 7.9% between 2010 and 2020, despite a projected increase in total population. This situation will be compounded by declines in younger age groups whose populations have entered or will enter the labor force in the near future. The number of persons under age 20 and those between 20 and 34 years declined by 9.8% and 7.6%, respectively (Figure 6). These groups are expected to have negligible growth during the current decade.

Although the overall working age population (those between age 20 and 64) increased slightly in the past decade from 56.4% in 2000 to 57.2% in 2010, it is expected to fall to 54.2% by 2020. The share of the population 65 years and older will increase from 15.5% in 2000 to 21.0% in 2020, growing at an average annual rate of 1.7% per year[7].

Figure 6: Population Trends 2000-2020 by Age Group, Five-County Region



Source: Woods & Poole Economics, Inc., 2012.

The aging of the Baby Boom generation will be a major development challenge in the next several decades. This growing number of older workers will exit the workforce and the succeeding generations of workers replacing them will be far lower in number and often lacking the skills and knowledge of those they are replacing. While this transition will be especially difficult in rural areas, the five-county region is unique because its location could potentially attract workers from nearby metro areas while also competing with those same areas to retain its workforce. This insufficient pool of workers may also make it more difficult to retain or attract businesses. Without question, this situation will require greater cooperation and creativity by local officials and businesses to maximize the capabilities and productivity of the current and future workforces in order to maintain the Region's economic competitiveness.

The aging of the Baby Boom generation will be a major development challenge in the next several decades.

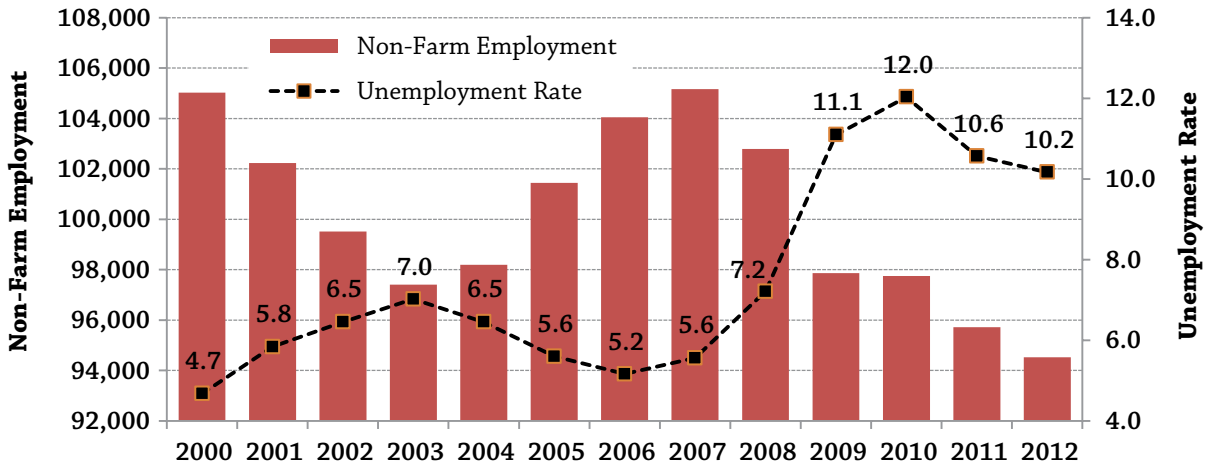
[7] Data source: Woods and Poole Economics, Inc., 2012.

EMPLOYMENT TRENDS

Employment trends in the five-county region have lagged behind the state and U.S. during the past two decades, experiencing greater declines during recessions and growing slower during expansions. However, the proximity of the counties to other employment centers such as Clinton, Dubuque, Rockford, and the Quad Cities has offset some the effects of local job losses.

Non-farm employment in the five-county region declined 10.0% or 10,511 employees between the year 2000 and the first half of 2012[8] (Figure 7). Although the unemployment rate improved overall in 2011 and 2012, it is still higher than the state and national averages. The continued decline in numbers employed also suggests that the recent drop in the unemployment rate may have more to do with the decline in the labor force participation rate[9]. The participation rate refers to the number of people who are either employed or are actively looking for work. Those who are no longer actively searching for work are not included in the participation rate. The decline in participation in the Region mirrors national trends since the onset of the recent recession and is due to long-term shifts related to demographic trends and to the protracted cyclical downturn in the labor market[10]. Increasing labor force participation among unemployed or discouraged workers, as well as continuing to engage retirement-age workers (those 65 and older) will be of critical importance as the supply of younger workers decreases.

Figure 7: Non-Farm Employment and Unemployment Rate Comparison, Five-County Region



Note: Figures for 2012 are the average of the months of January through July.
Source: Illinois Department of Employment Security, 2012.

Local figures are not available, but labor participation figures for the U.S. and Illinois have declined steadily since 2007 and are currently near levels experienced in the recessions of the early 1980s. The findings of the underemployment study and the business interviews conducted for this report show untapped or underutilized human resources which could be fully engaged in order to move the regional economy forward.

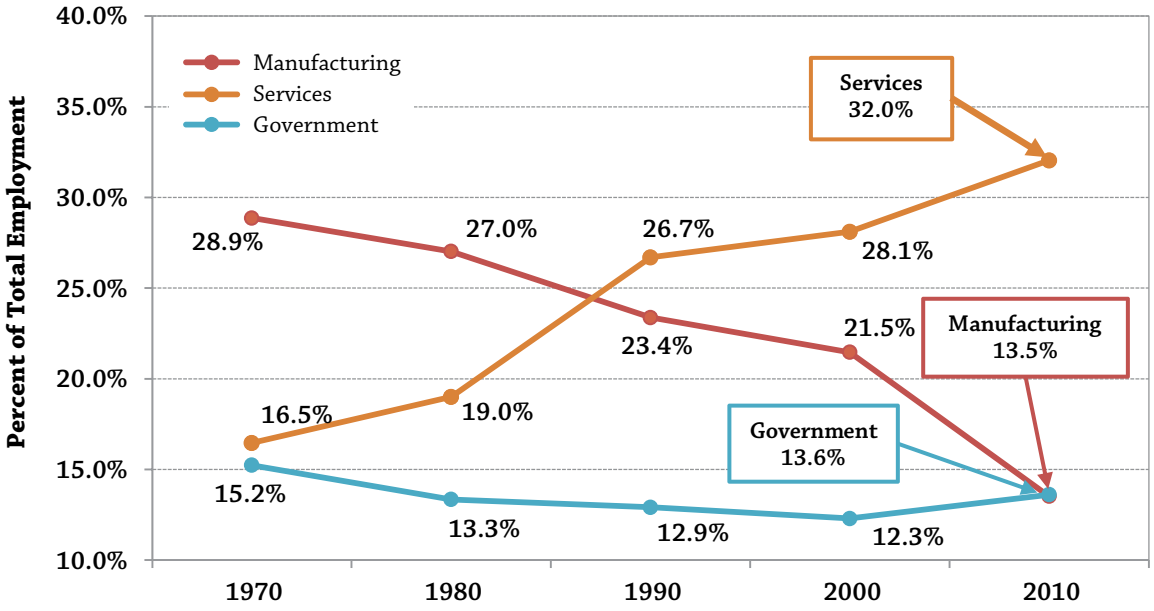
[8] Figures for 2012 are based on the average of the months of January through July.
[9] Labor force participation (LFP) is the ratio of those holding or looking for work to the total working age population. A decline in the LFP can reflect people who are discouraged from looking for work but who would rejoin the labor force if job opportunities improved.
[10] Van Zandweghe, Willem. "Interpreting the Recent Decline in Labor Force Participation". *Economic Review*, Federal Reserve Bank of Kansas City. First Quarter 2012.

Although the five-county region experienced a lower rate of job loss in the recent recession than Illinois as a whole, it has continued to suffer a net loss of employment in the three years following the end of the recession in June 2009[11]. This decline in employment may reflect several factors including retirements of older workers, out-migration of workers, and unemployed workers dropping out of the labor force. It may also reflect an increase in the number of people employed in the five-county region but residing elsewhere. Certainly, the recent recession and the subsequent slow recovery also affected job growth in the Region as businesses faced static or shrinking markets.

INDUSTRY EMPLOYMENT CHARACTERISTICS

The Region's manufacturing sector declined sharply in the past decade, continuing a long-term trend (Figure 8). In 2000, about one in five jobs (21.5%) in the Region was in manufacturing, but by 2010 this sector represented only 13.5% of total employment, about the same share as the government sector. At the same time, the services sector employment grew rapidly during the past decade, but these gains were insufficient to offset the losses in manufacturing. In addition, many jobs in this sector (with the exception of some healthcare and professional or administrative occupations) have below average earnings and slower rates of earnings growth than manufacturing.

Figure 8: Employment by Major Industry Sector, Five-County Region



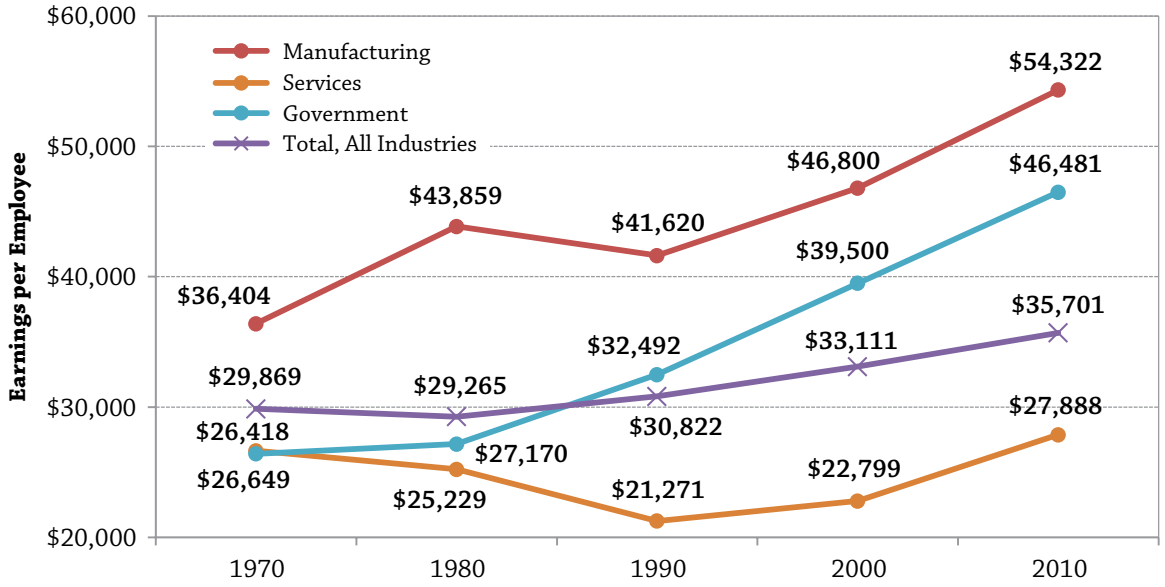
Source: Woods & Poole Economics, Inc., 2012.

The decline in manufacturing reflects, in part, the productivity improvements which have allowed companies to meet or exceed past production levels with fewer employees. However, manufacturing jobs typically pay more, and regional strategies are needed to replace reductions in this employment sector. For example, the average earnings per employee for manufacturing in 2010 were $54,332, more than one and a half times the average for all industries in the Region ($35,701). In addition, manufacturing earnings increased 16.1% between 2000 and 2010 and are projected to increase 16.2% from 2010 to 2020.

[11] The duration of business cycles is determined by the Business Cycle Dating Committee of the National Bureau of Economic Research. The duration of the recent recession was December 2007 through June 2009.

Average employee earnings in the services sector (32.0% of employment in the Region) are well below both the manufacturing sector and the average of all industries, but partly because many jobs in this sector are part-time (Figure 9). Positions in the healthcare sector, such as nursing and professional or administrative occupations, offer more full-time employment opportunities at higher levels of compensation, but are relatively fewer in number than lower skilled positions. Other services sectors such as professional and technical services and the management of companies and enterprises have experienced substantial earnings growth even though they remain small in terms of employment. Continued growth in these occupations may require attracting more college-educated workers.

Figure 9. Earnings per Employee by Major Industry, Five-County Region



Note: Figures are in constant dollars (2005).
Source: Woods & Poole Economics, Inc., 2012.

The public sector may offer opportunities to provide jobs with above-average compensation in the near future if state and local governments can weather the current fiscal conditions. Past employment in this sector has been driven by several state government facilities such as the Illinois Department of Transportation District office and the Dixon Correctional Center. Between 2000 and 2010, public sector employment grew by 2.1% with earnings per employee increasing by 17.6%. Employment and earnings are projected to increase through 2020, but these figures do not take into account the expected 2013 reopening of the Thompson Correctional Facility as a federal prison. This could create as many as 1,100 new jobs with additional economic impacts of more than $122 million in annual operating expenditures, $19 million in labor income, and $61 million in local business sales[12] . The potential growth in these agencies clearly illustrates the importance of government employment and investment in promoting economic expansions in the Region.

[12] Technical memo on the *"Impact of the Thompson Correctional Facility and its Subsequent Use by the Department of Defense (DoD) and the Bureau of Prisons (BoP) as a Federal Facility on Carroll County, Illinois and Surrounding Areas"*. Executive Office of the President, Council of Economic Advisors, Washington, D.C., 2009.

OCCUPATIONAL EMPLOYMENT CHARACTERISTICS

Occupational employment characteristics both influence and are influenced by the industrial makeup of the regional economy, population trends, and education attainment. The skills, aptitudes, and competence of the workforce govern to a large degree the type of industry which can be developed or attracted to a region. The five-county region, as well as the surrounding areas, has a long standing specialization in agriculture and manufacturing which is reflected in the composition of the workforce. Production; Transportation and Material Moving; and Installation Maintenance, and Repair occupations represented 23.0% of all employment in 2008 (Figure 10).

The five-county region, as well as the surrounding areas, has a long standing specialization in agriculture and manufacturing which is reflected in the composition of the workforce.

Figure 10: Occupation Employment by Class, Workforce Investment Board Region#4, 2010-2018*

Occupation Class	2008		2018	
	Number	Percent	Number	Percent
Total, All Occupations	**81,379**	**100.0%**	**84,696**	**100.0%**
Office and Administrative Support	11,256	13.8	11,371	13.4
Production	9,653	11.9	8,806	10.4
Management	7,959	9.8	7,693	9.1
Sales and Related Occupations	7,815	9.6	8,049	9.5
Transportation and Material Moving	6,297	7.7	6,479	7.6
Food Preparation and Serving	5,735	7.0	6,443	7.6
Education, Training and Library	5,154	6.3	5,852	6.9
Construction and Extraction	4,047	5.0	4,188	4.9
Healthcare Practitioners and Technical	3,472	4.3	4,097	4.8
Business and Financial Operations	3,110	3.8	3,385	4.0
Installation, Maintenance, and Repair	2,798	3.4	2,930	3.5
Building, Grounds Cleaning, and Maintenance	2,735	3.4	2,913	3.4
Healthcare Support	2,020	2.5	2,557	3.0
Personal Care and Service	1,929	2.4	2,234	2.6
Protective Service	1,759	2.2	1,861	2.2
Community and Social Services	1,254	1.5	1,430	1.7
Architecture and Engineering	1,116	1.4	1,073	1.3
Computer and Mathematical	956	1.2	967	1.1
Art, Design, Entertainment, Sports, and Media	796	1.0	821	1.0
Farming, Fishing, and Forestry	687	0.8	633	0.7
Life, Physical and Social Science	434	0.5	490	0.6

**Workforce Investment Board (WIB) Region #4 consists of Carroll, JoDaviess, Ogle, Stephenson, and Whiteside counties.*
Source: Illinois Department of Employment Security, 2012.

Although their share of employment is expected to fall to 21.5% by 2018, these occupation classes will continue to play a critically important role in the Region's economic development. The agricultural, manufacturing, and transportation sectors rely heavily upon these occupational skills and, despite anticipated declines the aggregate number of jobs in these sectors over the next decade, the demand for replacement workers will more than offset them. The staffing patterns for the targeted industry clusters identified in this report show that between one-half and three-quarters of the jobs in these clusters are classified as production related (Figure 11).

Figure 11: Industry Cluster Staffing Patterns: Production and Related Occupations

Production and Related Occupations*	Share of Employment
Transportation Equipment Manufacturing	76.1%
Fabricated Metal Products Manufacturing	71.1
Transportation and Logistics	64.1
Machinery Manufacturing	64.1
Agribusiness, Food Processing and Technology	58.9

**Includes the Production; Transportation and Material Moving; and Installation, Maintenance, and Repair Occupation Groups.*
Source: U.S. Bureau of Labor Statistics and the Purdue Center for Regional Development (cluster definitions), 2012.

Although the regional manufacturing sector has declined steadily in the past several decades and is projected to decline further over the next decade, the demand for younger workers to replace retiring Baby Boomers is expected to more than offset these losses. As Figure 12 illustrates, the job openings for Production workers in the WIB Region #4 are expected to be 196 persons per year, almost all of them due to replacement demands. Another closely related occupation group, Transportation and Material Moving, is projected to have 178 openings per year, with 86.0% of those resulting from replacement needs.

Figure 12: Occupation Employment by Class, Workforce Investment Board Region #4, 2008-2018*

Occupation Class	Average Annual Job Openings			Average Annual Change
	New Jobs	Replacement	Total	Percent
Total, All Occupations	**531**	**1,830**	**2,361**	**0.40%**
Office and Administrative Support	46	242	288	0.10
Food Preparation and Serving	71	203	274	1.17
Sales and Related	27	241	268	0.30
Production	**5**	**191**	**196**	**-0.91**
Education, Training and Library	70	123	193	1.28
Transportation and Material Moving	**25**	**153**	**178**	**0.29**
Management	13	123	136	-0.34
Healthcare Practitioners and Technical	63	73	136	1.67
Business and Financial	28	64	92	0.85
Construction and Extraction	16	68	84	0.34
Personal Care and Service	31	47	78	1.48

Occupation Class, continued	Average Annual Job Openings			Average Annual Change
	New Jobs	Replacement	Total	Percent
Total, All Occupations	**531**	**1,830**	**2,361**	**0.40%**
Healthcare Support	54	22	76	2.39
Installation, Maintenance, and Repair	**15**	**55**	**70**	**0.46**
Building and Grounds Cleaning and Maintenance	18	46	64	0.63
Protective Service	10	53	63	0.57
Community and Social Services	18	27	45	1.32
Architecture and Engineering	3	25	28	-0.39
Art, Design, Entertainment, Sports, and Media	4	20	24	0.31
Computer and Mathematical	5	18	23	0.11
Life, Physical and Social Science	6	13	19	1.22
Farming, Fishing, and Forestry	0	18	18	-0.82

**Workforce Investment Board (WIB) Region #4 consists of Carroll, JoDaviess, Ogle, Stephenson, and Whiteside counties.*
Source: Illinois Department of Employment Security, 2012.

This situation will create an increasing competition for employers as the number of younger, skilled workers will be limited, not just within the five-county region, but also in the surrounding metro areas. Based on some of the findings of the 2012 Wage and Benefit Report, the five-county region may be at a competitive disadvantage since the surrounding metro areas offer a greater number and variety of employment opportunities, as well as higher compensation within a reasonable commuting distance. For example, the projected demand for production workers between 2008 and 2018 will be 196 openings per year while the surrounding metro areas are expected to have 2,398 openings per year[13]. Two meetings of regional manufacturers and resource providers held in January and February 2013 confirmed that competition for employees is a major issue for manufacturers in the five-county region. (See Appendix for Major Themes Identified by Regional Manufacturers and Resource Providers.) Given the expected demands for qualified replacement workers, it is essential that employers, educators, and local officials work together to address the worker skill gaps in order to ensure the Region's continued economic competitiveness.

Given the expected demands for qualified replacement workers, it is essential that employers, educators, and local officials work together to address the worker skill gaps in order to ensure the Region's continued economic competitiveness.

[13]Surrounding areas included Illinois WIA Area #3 (Boone and Winnebago counties), Illinois WIA Area #12 (Bureau, LaSalle, Lee and Putnam counties), Illinois WIA Area #13 (Henry, Mercer and Rock Island counties), Wisconsin Southwest Area (Grant, Green, Iowa, Lafayette, Richland and Rock counties), Iowa WIA #1 (Allamakee, Chickasaw, Clayton, Delaware, Dubuque, Fayette, Howard and Winneshiek counties), and Iowa WIA #9 (Clinton, Jackson, Muscatine and Scott counties).

EDUCATIONAL CHARACTERISTICS

Educational attainment often reflects the investment that a state or region has made in developing and attracting human capital. This indicator provides a broad assessment of a region's workforce preparedness and economic potential, which are increasingly recognized as key to the ability of an area to attract and retain industry.

Educational attainment trends in the five-county region have mirrored those of the state and national trend, with the notable exception of college graduates (Figure 13). The share of persons living in the Region with a Bachelor's degree or higher is nearly half of the state or national average and has declined steadily from 1990 to 2010. This presents a challenge to local businesses as they try to compete with other regions to recruit and retain professional, technical, and managerial positions. This creates a conundrum for economic development efforts in the five-county region since growing or attracting white collar employers is difficult because of the low number of college graduates, while attracting or retaining college graduates is equally challenging because of the limited job market.

The share of the population with some college education (but no degree) in the five-county region is roughly equivalent with the state. While this group may have the skills which are appropriate for some front-line production or supervisory occupations, a systematic assessment of the skill and potential of these individuals would be necessary to determine what education or training is needed in order to help them realize their job market potential. Based on the business interviews and focus groups conducted for this project, data indicated that most employers are struggling to find competent workers at all levels because applicants often have significant skills gaps regardless of their educational background.

Although high school completion rates remain a concern[14], the decline in the number of high school graduates is probably more indicative of the growing proportion of high school graduates pursing education or training beyond high school. Unfortunately, information on residents with Associate degrees and technical certifications is not available for the entire time series, but the demographic forecasting firm, EASI Analytics, estimates that 9.2% of residents 25 years of age and older held an Associate or equivalent degree in 2010.

Figure 13: Education Attainment, as a Percent of the Population 25 Years of Age and Older

Attainment Level by Year		Five-County Region		U.S.
High School Graduate or higher	1990	86.2%	86.0%	84.8%
	2000	81.9	81.4	80.4
	2010	76.0	76.2	75.2
Some College (no degree)	1990	23.4	20.7	20.4
	2000	29.9	27.6	21.0
	2010	24.5	25.2	16.8
Bachelor's Degree or higher	1990	16.2	30.1	27.7
	2000	14.1	26.1	24.4
	2010	11.6	21.0	20.3

Source: U.S. Census Bureau, Census of Population and Housing, 1990, 2000, 2010.

[14] "Education and the Economy: Boosting Illinois's Economy by Improving High School Graduation Rates", Alliance for Excellent Education. March, 2011. (http://www.all4ed.org/files/Illinois_seb.pdf)

WORKFORCE COMMUTER TRENDS

Worker commuting patterns can be indicators of the true size and scope of the regional labor markets, and in rural environments they can indicate the degree of economic interdependency with nearby metropolitan areas. The five-county region's ability to pursue industrial development depends in part on the supply and mobility of workers.

Commuting patterns are best described as worker outflow (employed residents in the Region who work outside the area) and worker inflow (workers living in other areas but employed in the Region). The regional labor force consists of those who *live* in the five-county region but are *employed* outside the Region, those who are *employed* in the five-county region but *live* outside the Region, and those who both live and work in the Region. Labor market data for the five-county region indicates a substantial and growing number of workers commute to jobs outside the Region.

In 2010, out of 87,186 workers living in the five-county region, 65,032 actually lived and worked within the Region, resulting in a *net outflow* of 22,154 to jobs in the surrounding areas (Figure 14). The most popular destinations for those commuting to jobs outside the five-county region were Rockford (Winnebago County), the Chicago area (Cook, DeKalb, and DuPage counties), and Clinton County, Iowa. This outflow of employees suggests that the Region may lack the number and variety of job opportunities at competitive rates of compensation.

Figure 14: Inflow and Outflow of Available Workforce, Five-County Region

Five-County Region	2010	2006	2002
Living in the Five-County Region	87,186	89,282	89,440
Living and Employed in the Five-County Region	65,032	67,709	69,377
Net Job Inflow (+) or Outflow (-)	-22,154	-21,573	-20,063

Source: U.S. Census Bureau, Local Employment Dynamics, 2012 .

BUSINESS VITALITY TRENDS

Economic analyses are often based on changes in the number of businesses and jobs which are affected by many factors. This section examines business and employment trends by the size of the business with particular attention to those with fewer than 10 employees. It also considers business starts, closures, and migration and what they may mean for the economic vitality of the Region. Business starts are essential to a vibrant economy even though a majority of small businesses never become large employers[15] .

Between 2000 and 2009, the employment data showed a *decrease* of 10.1% (a net loss of 11,201 jobs) in the five-county region (Figure 15)[16]. This trend is not a positive sign given that much of this decrease occurred during a period of national economic expansion. Resident firms (those owned or managed locally) with fewer than 10 employees were the sole sources of job growth, but that was insufficient to offset the job losses in larger firms. Some of the job growth in smaller firms is possibly due to downsizing by larger firms, outsourcing of work to self-employed contractors, or expansions by smaller firms.

[15] "Norman Walzer and Brian Harger, "The Rural Midwest: How Is It Faring?", Rural Research Report 23 (1). Macomb: Illinois Institute for Rural Affairs. 2012 (http://www.iira.org/pubs/publications/IIRA_RRR_740.pdf)

[16] The National Establishment Time Series (NETS) data presented in this section includes business establishments and employment. It groups establishments into non-commercial and commercial categories, with the latter group further subdivided into those within the Region, and branch sites of multi-units firms or otherwise owned or managed by firms outside of the county. The NETS data are reported by business location or place of employment rather than residence as in the case of the Census. It is possible for employment changes described by the NETS data to differ from those of other sources.

The growth of locally owned small businesses, especially those classified as Self-Employed and Stage 1 (2 to 9 employees) is a positive sign because it suggests that entrepreneurs and small businesses had confidence in the local economy and were willing to hire. It may also suggest that resident firms, especially the smaller businesses, are more resilient in terms of job creation or retention, which underscores the importance of including them in local development strategies.

Figure 15: Employment Changes by Size and Ownership Class, 2000-2009

Five-County Region	2000	2009	Numeric Change	Percent Change
Total	**110,437**	**99,236**	**-11,201**	**-10.1%**
Non-commercial	15,075	14,082	-993	-6.6
Non-resident	24,675	18,963	-5,712	-23.1
Resident	70,687	66,191	-4,496	-6.4
Self-Employed (1)	4,100	5,564	1,464	35.7
Stage 1 (2-9)	20,170	20,540	370	1.8
Stage 2 (10-99)	23,024	21,340	-1,684	-7.3
Stage 3 (100-499)	11,936	9,003	-2,933	-24.6
Stage 4 (500+)	11,457	9,744	-1,713	-15.0

Note: Resident establishments are either stand-alone businesses in the area or businesses with headquarters in the same state. These include non-profit entities such as hospitals and healthcare-related companies.
Source: National Employment Time-Series (NETS) database, 2012.

Important to note are the major employment declines (2,933 employees) which occurred in Stage 3 companies (100-499 employees), with an additional decline of 1,713 employees in Stage 4 (500 and more employees) companies. Losses of this magnitude are difficult to replace with small businesses, so major attraction efforts are necessary. Nevertheless, the importance and vitality of small companies should be an integral part of the Region's economic development strategy.

In terms of business activity, the five-county region gained 2,258 *establishments* (a 17.6% increase) between 2000 and 2009 (Figure 16). As with employment, the primary sources of business growth were resident firms with fewer than 10 employees. Although this increase more than offsets the loss of larger businesses, those losses reported among larger firms had a far greater impact on the regional economy because of the number of jobs lost from their departure. Non-commercial establishments (those engaged in health or social service facilities, public agencies, non-profits, or similar activities) also contributed to regional business growth, showing a net increase of 3.3% (37 establishments). While these are non-profits and sometimes overlooked in terms of economic contributions, they nevertheless are important employers in the Region.

The net increase in the number of resident establishments is especially important because most of them are small (fewer than 10 employees) but they are also responsible for much of the job growth (2,242 jobs) in the Region during the past decade. Small businesses are especially important in rural areas because they often provide services which are essential in retaining or attracting residents. Non-resident establishments reported a decline (-3.8%) and represent a relatively small proportion of business establishments, but they accounted for slightly more than half of the job losses in the Region. An important take away from this finding is the importance of starting and supporting locally owned and managed businesses (resident companies), which requires an environment that encourages business startups and entrepreneurship.

Figure 16: Establishment Changes by Size and Ownership Class, 2000-2009

Five-County Region	2000	2009	Numeric Change	Percent Change
Total	**12,832**	**15,090**	**2,258**	**17.6%**
Non-commercial	1,119	1,156	37	3.3
Non-resident	559	538	-21	-3.8
Resident	11,154	13,396	2,242	20.1
Self-Employed (1)	4,100	5,564	1,464	35.7
Stage 1 (2-9)	5,943	6,823	880	14.8
Stage 2 (10-99)	1,029	944	-85	-8.3
Stage 3 (100-499)	69	54	-15	-21.7
Stage 4 (500+)	13	11	-2	-15.4

Note: Resident establishments are either stand-alone businesses in the area or businesses with headquarters in the same state. These include non-profit entities such as hospitals and healthcare-related companies.
Source: National Employment Time-Series (NETS) database, 2012.

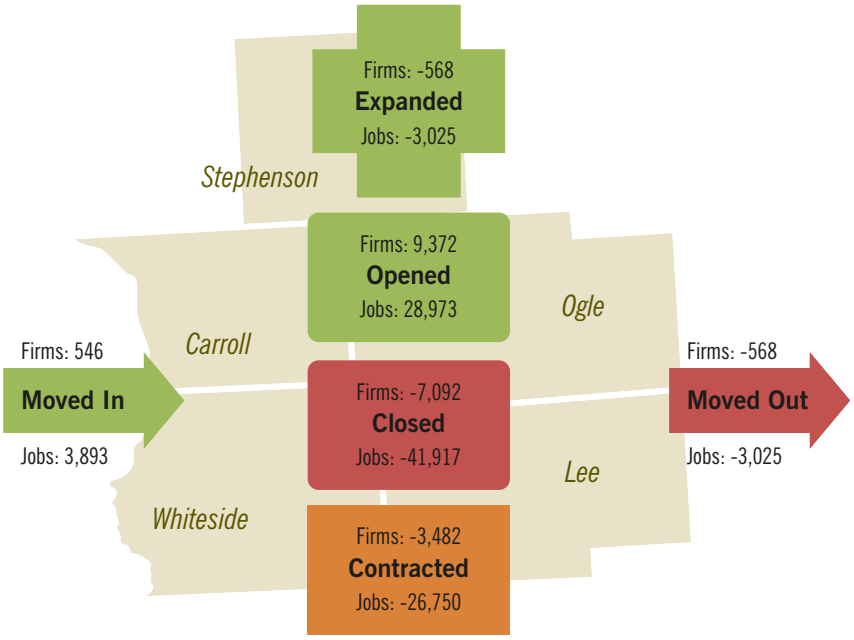
The Region experienced considerable churning between 2000 and 2009 resulting in a net increase in the number of firms but an overall loss of jobs in the Region. Without question, part of the job losses can be attributed to the recession. Although business openings exceeded the number of business closings, they did not translate into job growth. Instead, nearly 13,000 jobs were lost because of business closures over those created by business openings (Figure 17).

Fewer businesses came into the Region than left (546 moving in versus 568 moving out), but the result was a net increase of 868 jobs. Most of this employment came from non-resident businesses and resident Stage 2 firms. This is consistent with other research touting the importance of Stage 2 company expansions[17]. This data suggests that the Region could benefit from an entrepreneurial and supportive business environment.

Jobs created by the expansion of existing firms exceeded by 875 those lost in businesses which contracted. Again, the contribution of these firms to job growth is a positive sign, but was insufficient to offset losses in other businesses. It is also important to note that much of the net job creation from business expansion came from Self-Employed and Stage 1 (2 to 9 employees) firms, further underscoring the contribution of smaller locally based businesses to the Region's economic vitality.

[17] Edward Lowe Foundation. (2012). "The Significance of Second Stage." http://edwardlowe.org/edlowenetwp/wp-content/themes/implementprogram/downloads/infosheets/SecondStage.pdf

Figure 17: Business "Churn" 2000-2009 in the Five-County Region



Source: National Employment Time Series (NETS) database, www.youreconomy.org, 2012.

Another key indicator of local business vitality is new business starts. An examination of business starts in the five-county region not only illustrates their contribution to the economy, but also reveals that the Region lags behind its peers within Illinois and surrounding states (Figure 18). This is troubling since smaller businesses are the primary source of new job growth, and the data reflected a period of economic expansion. Although more recent figures were not available at the local level, current national studies of new business starts have indicated a much lower level of business formation both during and after the recent recession.[18]

Figure 18: Business Starts by Region, 2004-2007

Area Name	Business Starts	Business Start Rate (% 2004 Firms)	Business Starts per 1,000 Population
Five-County Region	342	3.5%	1.61
Illinois Non-Metro Counties	2,947	4.0	1.74
Iowa Non-Metro Counties	3,783	4.6	2.81
Wisconsin Non-Metro Counties	1,605	6.1	3.12

Source: BizMiner, 2010.

Although the data do not offer further insights on the issue of business turnover, conducting further research would be worthwhile in order to determine the reasons why local companies open, close, expand, or migrate in and out of the Region, and also whether the local economic development climate and/or environment has any influence on these events. The five-county region must compete with the other regions across the country, so the local policies, incentives, and support services for start-ups and expansion must be suitable for local needs.

[18] Kane, Tim. "*The Collapse of Startups in Job Creation*." Hudson Institute. September, 2012. http://www.hudson.org/files/publications/Kane--TheCollapseofStartupsinJobCreation0912web.pdf

SITE LOCATION FACTORS

Northwestern Illinois is well situated to attract manufacturing and other industries as reflected by the concentration of manufacturing firms and employment. Nevertheless, industrial location preferences change as new industries start and/or move from using and producing heavy products to focusing more on information technology, services, distribution logistics, or other outputs.

Northwestern Illinois is well situated to attract manufacturing and other industries as reflected by the concentration of manufacturing firms and employment.

Thus, it is important to examine surveys of corporate executives and location consultants regarding the important factors considered in recommending and/or making location decisions. The basic sources for these analyses are the Annual Site Selection Consultants Survey and the Annual Survey of Corporate Executives conducted by *Area Development Magazine*[19]. The latest results reported in 2012 are for surveys conducted in 2011 and are used in this report.

The businesses surveyed by *Area Development Magazine* involved manufacturing firms (nearly half) and distribution and logistics operations (approximately 20.0%) with a substantial number of data center operations, financial services and insurance firms, and healthcare and retail sector businesses. The survey results represent the views of mid-size companies (100 to 499 employees) with approximately half of the survey responses from companies in this size category, which is appropriate for much of northwest Illinois.

The overall responses by corporate executives are not optimistic in terms of business expansions (40.0% plan to expand in the next two years), and the expected job creations will be relatively small (86.0% of the planned expansions will be less than 100 jobs). At the same time, however, the factors considered "very important or important" play to the strengths of the Region.

Specifically, *highway accessibility* ranked highest with 93.8% of the respondents rating it as "very important or important" in location decisions (Figure 19). The importance of highway access indicates that access to major markets is also a high priority. In the 2011 survey of corporate executives, access to major markets showed the highest increase in importance, moving from 17th place in 2010 to 9th in 2011. These results are positive for the northwestern Illinois region, with the possible exception of Carroll County. As noted previously, I-88 connects Sterling-Rock Falls, Dixon, and Rochelle to the Chicago and Quad Cities markets. A four-lane segment of U.S. Highway 20 connects Freeport to Rockford and then Chicago, Madison, and other large markets.

The second most important factor in location decisions was *labor costs* which was rated "very important or important" by 88.4% of the 2011 respondents. It is not only a question of labor costs, however, because *availability of skilled labor* was tied for second place at 88.4%. A review of the findings from the wage and benefit survey conducted in this project showed that wages in the Region were in many cases, if not most, competitive with the U.S. and/or the State of Illinois.

[19] "8th Annual Site Selection consultants Survey Results". 2012. Halcyon Business Publications, downloaded at: http://www.areadevelopment.com/AnnualReports/Winter2012/8th-site-selection-consultants-RE-survey-results-28282888.shtml and "26th Annual Survey of Corporate Executives Results". 2012. Halcyon Business Publications, downloaded at: http://www.areadevelopment.com/AnnualReports/Winter2012/26th-Corporate-Executive-RE-survey-results-287123.shtml.

Figure 19: 2011 Ranking of Site Location Factors

Ranking as "very important or important"	Score
1. Highway accessibility	93.8
2. Labor costs	88.4
3. Availability of skilled labor	88.4
4. Corporate tax rate	86.0
5. Occupancy or construction costs	85.9
6. State and local incentives	85.9
7. Energy availability and costs	84.8
8. Tax exemptions	83.6
9. Proximity to major markets	83.0
10. Low union profile	81.0
11. Inbound/outbound shipping costs	79.2
12. Right-to-work state	77.5
13. Availability of advanced ICT services	76.6
14. Environmental regulations	76.4
15. Available buildings	76.3
16. Available land	73.9
17. Expedited or "fast-track" permitting	72.4
18. Availability of long-term financing	70.0
19. Proximity to suppliers	67.8
20. Availability of unskilled labor	58.9
21. Accessibility to major airport	55.7
22. Raw materials availability	52.8
23. Training programs	50.6
24. Proximity to technical college/training	40.2
25. Railroad service	33.6
26. Waterway or ocean port accessibility	24.5

Source: "26th Annual Survey of Corporate Executives," 2012. Area Development Magazine. Halcyon Business Publications.

During interviews with local employers, they expressed some concern regarding the availability of career-ready labor with specialized skills. To help provide work experiences which make graduates more career ready, efforts are underway to collaborate with the Whiteside Area Career Center, secondary schools, and community colleges. If businesses participate in these programs to improve the labor availability issue, and some have made that commitment already, then the Region could be in a solid position to market itself to prospective businesses.

During interviews with local employers, they expressed some concern regarding the availability of career-ready labor with specialized skills.

The availability of labor with previous experience in various industries was also confirmed in the underemployment survey showing that respondents are willing to change jobs at pay levels competitive with U.S. or state levels. Training programs, which reach out to these residents and help them build the skills to qualify for jobs at higher pay, will benefit the residents, businesses, and the entire Region.

The importance of skilled labor availability, however, also emphasizes the impact that population trends will have on the Region as the Baby Boom generation retires. Strong efforts are needed to encourage young adults to remain in the Region and/or return after they complete higher education. An effective program of entrepreneurship training or support agencies and/or internships could increase this age group's attraction to the Region.

Occupancy and construction costs ranked fifth in importance among location factors with 85.9% reporting them as "very important or important." Comparative business operation costs for the targeted industry clusters are included in this report. They indicate that the five-county region is very competitive with other locations in the Midwest and Northeast, especially with regard to site acquisition, property tax, and outbound shipping costs. Although the five-county region was found to be less competitive with similar locations in the Southeastern states, the Region maintained its advantage over other parts of the U.S. This is due to its central location and proximity to Chicago, which is a primary hub in the ground and air transportation network of the continental U.S.

The importance of quality of life considerations was asked in the 2011 survey but typically rated lower than factors affecting business operations directly. The quality of public schools and crime rates may be more important for companies relocating executives and staff. However, schools also have a direct impact on operations because they strongly affect the qualifications of the labor pool available for business expansions, which might be covered under labor availability.

The list of important location considerations also includes *taxes, incentives, and other factors* but they are farther down the list. These area characteristics can be affected by local policies or actions. Thus, it is important for governments in the Region to examine their competitiveness regarding incentives, tax rates, and other factors affecting the business operating environment. Local public officials working with business leaders can explore opportunities to design or modify programs to improve the business climate in the region.

While much of the Region seems reasonably well positioned in highway access and labor availability, aggressive marketing of the Region *as a region* is equally important. The I-88 Corridor web site (www.i88west.com) offers one opportunity to link the counties in the Region and make current information available in a timely way at reasonably low cost. The website might be reviewed and/or revised using the information generated in this report to appeal more specifically to the targeted industries. The Region could benefit from a review of current city websites to make sure that they have been updated and linked to the regional site. Likewise, the Region will benefit from an aggressive marketing plan to prospective businesses both in the U.S. and overseas.

While much of the Region seems reasonably well positioned in highway access and labor availability, aggressive marketing of the Region is equally important.

INDUSTRY CLUSTER PROFILES

The industry cluster profiles presented in the next section are designed in the form of briefing documents which may be used by the economic development community to advise their clients and constituents on the importance and competitive advantages of these industries in the regional economy. The information can also be excerpted and used in economic development retention and recruiting efforts, highlighting the competitive advantages of the five-county region.

The profiles include general characteristics of the cluster and its constituent sectors, industry trends, and market opportunities. They also identify business opportunities for the five-county region based on gaps in the industry's regional supply chain and provide a snapshot of the workforce requirements and occupational trends for the cluster. Finally, they compare the significant business operating cost factors of the Region with comparable locations in the U.S.

INDUSTRY CLUSTER PROFILE: MACHINERY MANUFACTURING

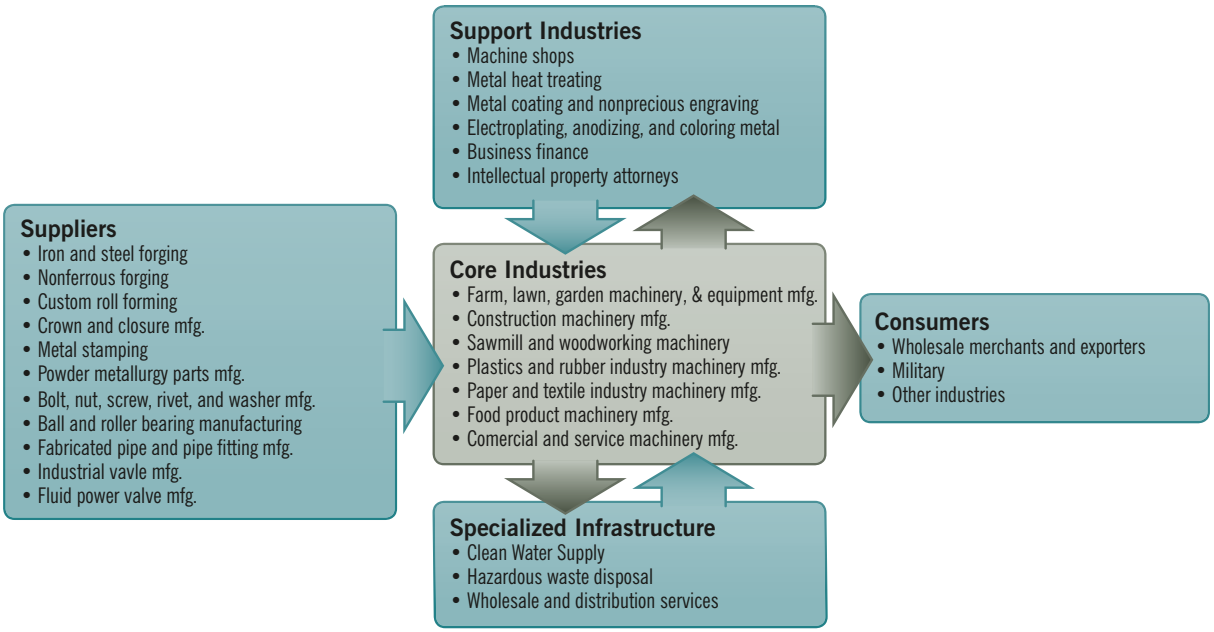
Cluster Summary

The *Machinery Manufacturing* industry cluster is comprised of a broad and diverse range of machinery or components used in agriculture, mining, construction, or manufacturing. Major products of companies in the five-county region include farm and construction machinery, metalworking and other manufacturing machinery, HVAC and commercial refrigeration equipment, and general-use machinery such as engines and pumps. While some products, such as tractors or heaters, are finished products, others like motors are components used in further production, and some are custom-designed for a specific manufacturing process. Machinery Manufacturing involves producing and assembling components including forging, machining, and welding activities which require skilled labor. Products have a high engineering content, and product design usually involves computer-aided design (CAD) systems, which are integrated directly into a computer-aided manufacturing (CAM) process.

Cluster Definition

An industry cluster is a group of similar industries which are closely connected by supply chains and/or similar labor pools located within the same region. The core strength of the Machinery Manufacturing industry cluster comes from the production of tools, structural components, and parts which are either sold as finished products or are incorporated into other manufactured goods. These core industries drive employment and inputs in other industries which supply them (e.g., agricultural, construction, and food processing machinery), as well as those which support the core industries by providing business finance and various industrial services and component manufacturers (Figure 20).

Figure 20: Machinery Manufacturing, Cluster Components



Source: The Purdue Center for Regional Development (cluster definitions), 2012.

Regional Overview

A larger 32-county region (hereafter referred to as the Reference Region) in northwest Illinois, northeast Iowa, and southwest Wisconsin including the five-county region was used to identify clusters for this project. This Reference Region had 757 establishments in 2010 and employed 26,182 people. The majority of businesses in this cluster are small in terms of employment (67.0% of firms have fewer than 10 employees) with the few large employers concentrated in the metropolitan areas (Figure 21).

The cluster also has had a consistently high concentration of employment in the five-county region with location quotients (LQ) of 2.9 in 2001, 3.9 in 2007, and 3.6 in 2010. Most industry subsectors are represented in the five-county region, with five subsectors having a strong presence in the Region based on the concentration of employment. The top five are listed in Figure 22.

Figure 21: Machinery Manufacturing: Firms by Employment Size Class

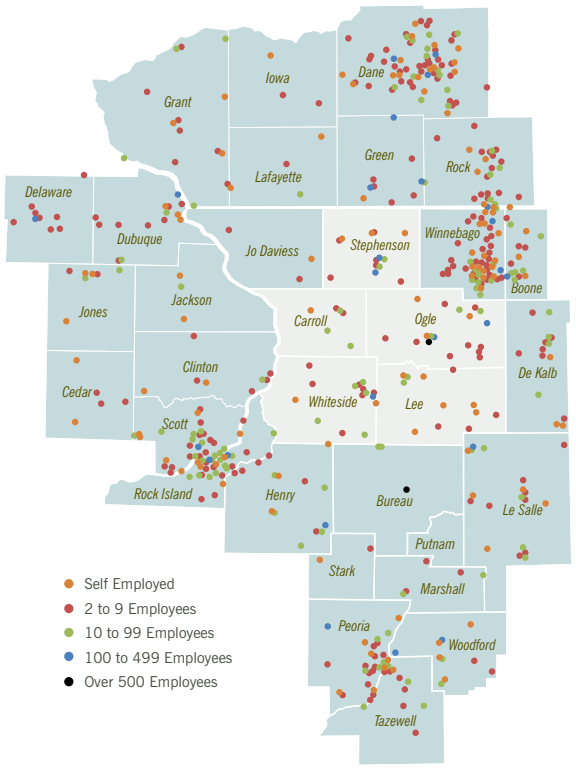


Figure 22: Machinery Manufacturing: Subsectors Based on Employment Concentration

Indicator	Location Quotient (2010)
Mechanical power transmission equipment manufacturing	21.0
Construction machinery manufacturing	18.9
Speed changer, industrial high-speed drive, and gear manufacturing	11.0
Fluid power process machinery manufacturing	8.5
Farm machinery and equipment manufacturing	7.7

Source: IMPLAN, 2010.

Location Quotients (LQ) are used to evaluate local development opportunities and find businesses which are especially suited for the Region. A LQ is the ratio of the employment percentage represented by a given industry in the county to the percentage which that industry represents in the state or a representative area of interest. A ratio greater than one indicates a higher local concentration and a likelihood of exports from the county; a ratio less than one may suggest that goods or services are being imported into the Region.

In 2010, the five-county region had 60 establishments and employed 2,145 people in direct cluster jobs. This cluster has a higher than average concentration of economic activity , as defined by firm and employment LQ, in both the Reference Region and the five-county region, when compared to the nation's economic activity in this cluster overall (Figure 23).

Figure 23: Machinery Manufacturing: Economic Activity Summary

Indicator	Five-County Region	Reference Region (32 Counties)
Number of Firms (2010)	60	757
Percent Change in Number of Firms (2007-2010)	*9.8%*	*-1.9%*
Firm Location Quotient (LQ)	*3.5*	*2.5*
Employment (2010)	2,145	20,796
Percent Change in Employment (2007-2010)	*-22.8%*	*-23.6%*
Employment Location Quotient (LQ)	*4.0*	*4.3*

Sources: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW) and the Purdue Center for Regional Development (cluster definitions), 2012.

Although there are few large employers within the five-county region (only four firms have 100 or more employees), the surrounding metropolitan areas have major national and global companies in this industry cluster (Figure 24). Companies in the Region manufacture parts and components for the agricultural equipment, mining, and construction industries as well as finished products.

Figure 24: Machinery Manufacturing: Major Employers, Five-County Region

Company Name	# of Employees	NAICS Industry Description*	City
Sauer-Danfoss Company	150	Fluid Power Pump and Motor Manufacturing	Freeport
Seaga Manufacturing, Inc.	131	Automatic Vending Machine Manufacturing	Freeport
TNT Steel Industries, Inc.	128	All Other Industrial Machinery Manufacturing	Freeport
IFH Group, Inc.	100	Fluid Power Pump and Motor Manufacturing	Rock Falls
Frantz Manufacturing Company	95	Conveyor and Conveying Equipment Manufacturing	Sterling
Star Forge, Inc.	80	Farm Machinery and Equipment Manufacturing	Freeport
Imeco, Inc.	70	Air-Conditioning and Warm Air Heating Equip. and Commercial and Industrial Refrigeration Equip. Manufacturing	Dixon
Astec Mobile Screens, Inc.	68	Conveyor and Conveying Equipment Manufacturing	Sterling
Sewer Equipment Company of America	35	Other Commercial and Service Industry Machinery Manufacturing	Chadwick
Bonnell Industries, Inc.	35	Construction Machinery Manufacturing	Dixon

**North American Industry Classification System.*
Source: Dun & Bradstreet, Inc., 2012.

Industry Trends[20]

Concentration of Industry Segments: Although the industry in general is fragmented, some segments are highly concentrated. In farm machinery production, the top four manufacturers have nearly 60.0% of the market. Other segments, such as industrial machinery and metalworking machinery, are fragmented.

Globalization of Multiple Sectors: U.S. machinery manufacturers face greater competition in export markets both from makers of sophisticated machinery (Japan and Germany) and from producers of low-cost, low-technology machinery (China and Mexico). The transfer of some U.S. manufacturing capacity to other countries has expanded the international trade in machinery.

More Computer Controls: Industrial applications are the largest consumers of computer chips. New versions of standard machinery feature advanced electronic applications. The greater use of computer components requires manufacturers to develop new engineering skills.

New Factory Designs Require Versatile Machinery: To respond to changing customer demand, more manufacturers prefer machinery which can easily be reconfigured in production work. With metalworking machinery, for example, manufacturers prefer machinery which can easily switch between different types of cutting heads.

[20] Source: Hoovers, Inc., 2013. (www.hoovers.com)

Market Opportunities[21]

Renewed Emphasis on Energy Efficiency: Unstable energy prices have created a need for more efficient industrial machinery. Deere, one of the world's largest industrial machinery manufacturers, has recently expanded its line of fuel efficient six-cylinder tractors. Caterpillar uses lightweight materials such as titanium alloys to increase fuel efficiency for many models.

Improving Design Processes: New machinery design and manufacturing technologies have greatly improved machinery effectiveness and lowered costs. New CAD simulation software can provide a virtual prototype of the product or machine before a physical model is built and reduce costly product design and physical testing. Rapid prototyping, a new type of manufacturing process, is used to make small machinery parts.

Potential Growth in Selected Segments: Some segments of the Machinery Manufacturing industry have grown more rapidly than others. Government incentives could boost HVAC equipment sales, and farm machinery exports have the potential to increase as populations in developing countries grow. Recent technological innovations have increased the demand for the machinery used in extracting oil and gas from shale formations. Manufacturers who are able to operate in multiple niches may have advantages.

Supply Chain

The supply chain analysis provides insight into the value of supply chain inputs, the amount of inputs produced in a region for the industry clusters studied (represented in most cases by an absorption rate), and the stages along the supply chain which stand out as areas of competitive advantage. High absorption represents areas along the Machinery Manufacturing supply chain which allow the Region to capture the most value from a specific stage in the production or delivery of products and services within the supply chain.

Conversely, stages along the supply chain which are underperforming offer opportunities for business attraction and/or entrepreneurship. When reviewing data relating to industry inputs, comparing both the absorption rate and the total value of inputs is important since services or components which maintain a high absorption rate may be of low value to the regional economy. Similarly, certain inputs, regardless of value or absorption, may be of high strategic importance to the Region in its efforts to build a stronger industry cluster.

Supply Chain

An essential component for an industry cluster is the local supply chain. While not all inputs (goods or services) which an industry cluster needs can be produced in the local economy, it is desirable to meet as many of the cluster's needs locally as possible. This analysis reveals the source and amount of purchases among the unique niches within an industry. By identifying the total industry economic outputs and areas where goods and services are purchased from outside the regional economy, one can better determine which areas of the industry supply chains are strongest, as well as those which present the best opportunities for growth within the five-county region.

[21] Source: Hoovers, Inc., 2013. (www.hoovers.com)

The supply chain information provided here indicates the flows of trade which support Machinery Manufacturing-related industries both within the five-county region and outside the Region. The key sectors which may be appropriate targets for expansion are imports (gaps) from outside the Region, but still within the industry cluster. These gaps are then analyzed in terms of regional strengths and potential areas for targeting and support and are placed into a supply chain model in order to determine the stages of the supply chain with the strongest regional presence. To fully develop a Machinery Manufacturing cluster, the Region can make the most progress by focusing on sectors which do not yet have a strong regional presence, but which have significant development potential (Figure 25).

Regional Supply Gap

Difference between Gross and Regional Inputs: a large gap value indicates that a large amount of inputs are imported into the Region, rather than produced within the five-county region.

Regional Inputs

The dollar value of gross inputs which are produced within the Region.

Gross Inputs

Total dollar amount of inputs used by the industry within each sector.

Figure 25: Machinery Manufacturing: Largest Supply Chain Gaps

Industry	Regional Supply Gap	Regional Inputs	Gross Inputs	% Purchased Outside Region
Other engine equipment	-$54,614,232	$319,343	$54,933,575	99.4%
Motor vehicle parts	-$38,664,092	364,104	39,028,196	99.1
Valves and fittings other than plumbing	-$19,486,760	202,006	19,688,766	99.0
Fluid power process machinery	-$16,939,335	265,524	17,204,859	98.5
Motor and generators	-$16,230,766	11,850	16,242,616	99.9
Machine shops	-$8,341,666	17,745	8,359,411	99.8
Speed changers, industrial high-speed drives, and gears	-$8,265,635	111,003	8,376,638	99.0
Relay and industrial controls	-$8,014,944	12,326	8,027,271	99.9

Source: IMPLAN, 2010

For example, the regional Machinery Manufacturing cluster requires $54.9 million in inputs (i.e., the products or services which are required to create a finished product) from the "other engine equipment" industry. However, only $319,000 of the required inputs from this industry are produced within the Region with the balance being purchased from outside the five-county region. This indicates an opportunity for an existing firm or new business to satisfy the regional demand for these products.

Other Engine Equipment (NAICS Sector 33631)

Firms in this industry manufacture internal combustion engines (except automotive gasoline and aircraft). Subsectors include the following:

- Diesel and semi-diesel engines
- Gasoline engines (except aircraft, automotive, truck)
- Natural gas engines
- Governors

The supply chain gap for "machine shops" also presents a unique opportunity for existing business development. In general, machine shops produce a wide variety of parts or components based on customer requirements. Since most machine shops specialize in low-volume, fast-turnaround orders, they are quite versatile and are limited only by their production equipment and the skills and capabilities of their workers. Therefore, a regional initiative aimed at expanding the capabilities of machine shops could help meet the supply chain needs of several key manufacturing sectors.

Workforce Requirements, Supply and Demand

Even as employment in Machinery Manufacturing has declined during the past decades (a trend that is projected to continue) the supply of potential new workers is comparatively low because of demographic trends and the propensity of younger workers to pursue careers outside of manufacturing. More than half of the workers employed in the industry in 2010 were 45 years of age or older, with only 6.6% under the age of 25 (Figure 26).

Figure 26: Machinery Manufacturing: Employment and Wages by Age Group, Five-County Region, 2010

Age Group	Employment (% of Total)	Average Annual Wage
Under 25 Years	6.6%	$23,816
25-44 Years	39.6	42,032
45-64 Years	51.2	51,818
65 Years & Older	2.7	55,826
Total/Average	**100.0%**	**$39,372**

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2011.

Over 60.0% of the employment, as well as over 50.0% of the wages, in the Machinery Manufacturing cluster are concentrated in Production; Installation, Maintenance, and Repair; or Transportation and Material Moving occupations (Figure 27). The production and the related employment classifications account for the largest single share of the jobs in the five-county region. Ensuring that appropriately skilled production workers are available at competitive rates of compensation will be critical to maintaining the Region's Manufacturing sector[22].

Figure 27: Machinery Manufacturing: Staffing Patterns, Five-County Region

Occupational Classification	Share of Employment	Share of Wages	Average Annual Wage
Production	55.7%	44.0%	$36,253
Office and Administrative Support	10.5	8.3	36,227
Architecture and Engineering	8.5	12.1	65,117
Management	5.7	13.9	111,236
Installation, Maintenance, and Repair	4.2	4.0	44,311
Transportation and Material Moving	4.2	2.7	30,352
Business and Financial Operations	3.7	5.0	62,106
Sales and Related Occupations	3.4	5.1	69,258
Computer and Mathematical	1.5	2.3	68,343
Construction and Extraction	1.1	1.1	44,096

Sources: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW) and the Purdue Center for Regional Development (cluster definitions), 2012.

[22] In 2008, Production; Installation, Maintenance, and Repair; and Transportation and Material Moving occupations accounted for 23.0% of all occupational employment in Workforce Investment Board Region #4.

The challenge for employers is the looming demand for replacement workers as older workers retire. According to the Illinois Department of Employment Security, 196 openings for production workers will become available annually between 2008 and 2018, mainly from the demand for replacement workers (Figure 28).

Figure 28: Occupational Employment, Projected Demand by Worker Classification, Workforce Investment Board Region #4, 2008-2018*

Occupational Classification	Employment		Employment Change 2008-2018		Average Annual Job Openings		
	2008	2018	Number	%	Growth	Replacement	Total
Production	9,653	8,806	-847	-8.8	5	191	196
Transportation and Material Moving	6,297	6,479	182	2.9	25	153	178
Management	7,959	7,693	-266	-3.3	13	123	136
Architecture and Engineering	1,116	1,073	-43	-3.9	3	25	28
Installation, Maintenance, and Repair	2,798	2,930	132	4.7	15	55	70

**Workforce Investment Board (WIB) Region #4 consists of Carroll, JoDaviess, Ogle, Stephenson, and Whiteside counties.*
Source: Illinois Department of Employment Security, 2012.

Compensation levels are a concern for local businesses because the surrounding metro areas compete for workers with specific skills or experience[23]. For example, the projected demand for production workers in the metro areas around the five-county region is estimated to be 2,398 openings per year between 2008 and 2018[24]. The estimated average annual wage for production workers is $36,200[25]. While this matches the wages for the five-county region, the surrounding metro areas have the added advantage of a greater number of employers and more job opportunities from which to choose within a reasonable commuting distance. Given the expected intense competition for skilled workers, companies will have to monitor compensation trends in order to recruit and to retain qualified employees.

Business Operating Costs

Annual operating costs are provided solely for comparisons. Only major geographically variable operating costs are included for a series of seven county sites in the U.S. These consist of the five counties in the Region along with two additional counties which have significant concentrations of businesses in the Machinery Manufacturing cluster. One of the two out-of-state counties is located in the Midwest region, and the second is located in an alternative U.S. region. Costs which did not vary significantly with geography, including relocation and start-up expenses, were not considered (Figure 29).

[23] Northern Illinois University, Center for Governmental Studies, "Promoting Regional Prosperity in Northwest Illinois: Wage and Benefit Report", August, 2012, p. 23.
[24] Source: Illinois Department of Employment Security, 2012.
[25] Sources: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW) and the Purdue Center for Regional Development (cluster definitions), 2012.

Figure 29: Machine Manufacturing: Total Geographically Variable Operating Cost Comparison

County Name	Total Annual Operating Costs
Snohomish County, WA	$18,965,960
Racine County, WI	15,678,227
Stephenson County, IL	15,436,093
Ogle County, IL	15,386,337
Whiteside County, IL	15,317,486
Lee County, IL	15,125,935
Carroll County, IL	15,053,989

Source: The Boyd Company, Inc., 2012.

The five-county region was the most competitive with its peers in terms of labor costs and site acquisition and property tax costs. The Region was also more cost-effective in terms of shipping costs versus the comparative counties, highlighting the importance of northwest Illinois' transportation assets and its access to national and global markets.

Costs of Doing Business

Since most businesses operate in a real-time global marketplace, their focus is on maintaining a comparative advantage through sourcing and supplying products profitably. Cost components such as labor, taxes, real estate, and utilities are the key measures which most companies use to decide where to locate or expand their operations.

Operating cost analysis focuses on those key geographically variable cost elements which are considered to be the most pivotal within the corporate site selection process and overall target industry competitiveness.

Key Takeaways

- The Machinery Manufacturing cluster in the Region has a concentration of firms which is 3.5 times the national average, and an employment concentration that is 4.0 times the national average. The Region has maintained these advantages despite the impact of the recent recession and the long-term decline in the number of manufacturing businesses and employment.
- The Machinery Manufacturing cluster is diverse and several subsectors are represented in the five-county region. Some have the potential for further development based on supply chain relationships with other industries in the Region and the surrounding metro areas.
- Opportunities likely exist for companies to develop new supply chain relationships with companies in the nearby metro areas or outside the industries that they already serve, but more research is needed to identify and develop those opportunities.
- The supply chain gap for machine shops presents a unique opportunity for the expansion of existing businesses. A regional initiative aimed at expanding the capabilities of machine shops could benefit the supply chain needs of several key Machinery Manufacturing sectors.
- Small niche manufacturers (such as machine shops) can be supported as part of a strategy to support small businesses and entrepreneurship in the Region.
- Production and related employment accounts for 23.0% of the jobs in the Region. Ensuring that appropriately skilled production workers are available at competitive compensation rates will be critical to maintaining the Region's Machinery Manufacturing cluster.
- The expected wave of retiring Baby Boomers will create most of the demand for new workers, despite static, or even declining, overall employment in the industry. Other manufacturing sectors will experience the same challenges making the competition for workers even more intense.

INDUSTRY CLUSTER PROFILE: FABRICATED METAL PRODUCTS MANUFACTURING

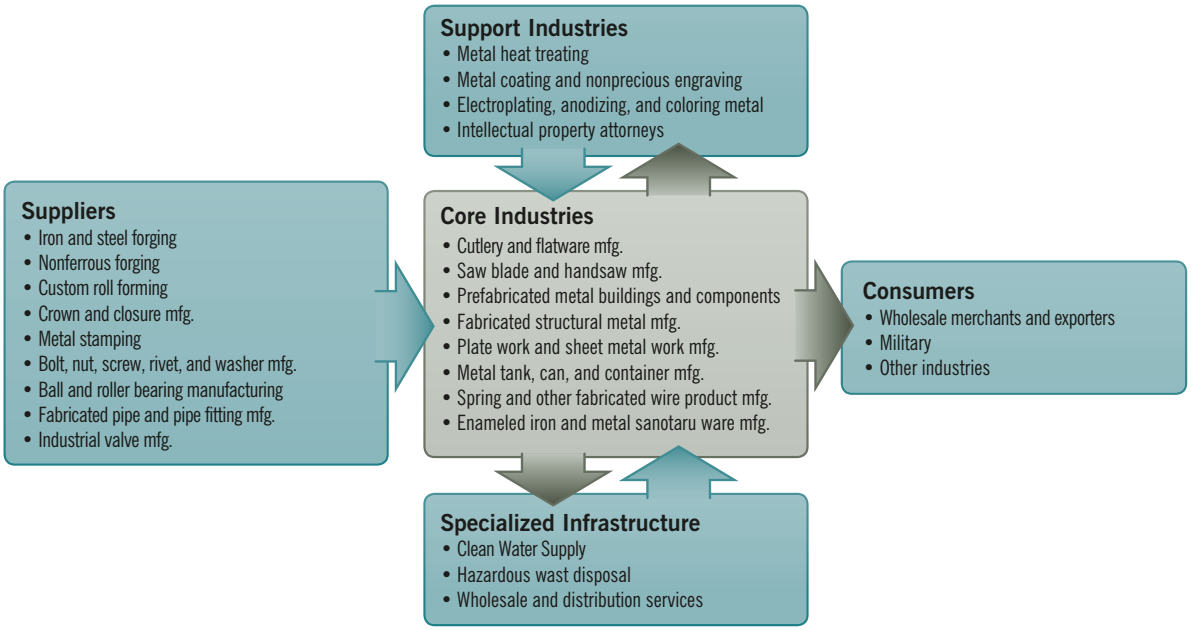
Cluster Summary

The *Fabricated Metal Products* industry cluster transforms purchased metals into intermediate or end-use products through forging, stamping, bending, forming, welding, machining, and/or assembly. Because of the specialized processes involved for individual parts, most companies make a limited range of products. Major segments of the Fabricated Metal Products Manufacturing industry cluster include architectural and structural products; forging and stamping; machining; cutlery, tools, and kitchenware; boilers, tanks, and containers; hardware; springs and wires; coating, plating, and polishing; and valve and pipe manufacturing. The five-county region, as well as the surrounding metro area, has a strong and well-established presence in these industries, and many products or components supply other important industries in the Region, such as motor vehicles, aerospace industrial machinery, and appliance manufacturing.

Cluster Definition

An industry cluster is a group of similar industries which are closely connected by supply chains and/or similar labor pools located within the same region. The core strength of the Fabricated Metal Products industry cluster comes from the production of tools, structural components, and parts which are either sold as finished products or are incorporated into other manufactured goods. These core industries drive employment and inputs in other industries which supply them (e.g., metal forging, forming or stamping, crown, closure, fastener, and valve manufacturing), as well as those which support the core industries by providing business finance and industrial process services (Figure 30).

Figure 30: Fabricated Metal Products Manufacturing, Cluster Components



Source: The Purdue Center for Regional Development (cluster definitions), 2012.

Regional Overview

The Fabricated Metal Products Manufacturing cluster in the Reference Region, a group of 32 counties in northwest Illinois, northeast Iowa, and southwest Wisconsin which includes the five-county region, had 806 establishments in 2010 and employed 20,796 people. The majority of businesses in this cluster are small in terms of employment (63.0% of firms have fewer than 10 employees) with the few large employers concentrated in the metropolitan areas (Figure 31).

The cluster also has had a consistently higher average, but declining, concentration of employment in the five-county region with location quotients (LQ) of 4.7 in 2001, 4.0 in 2007, and 3.8 in 2010. Not all of the industries in the cluster are represented in the five-county region, and some have a weak presence. There are 14 industry subsectors in the cluster which have a strong presence in the Region based on concentration of employment (Figure 32).

Figure 31: Fabricated Metal Products Manufacturing: Firms by Employment Size Category

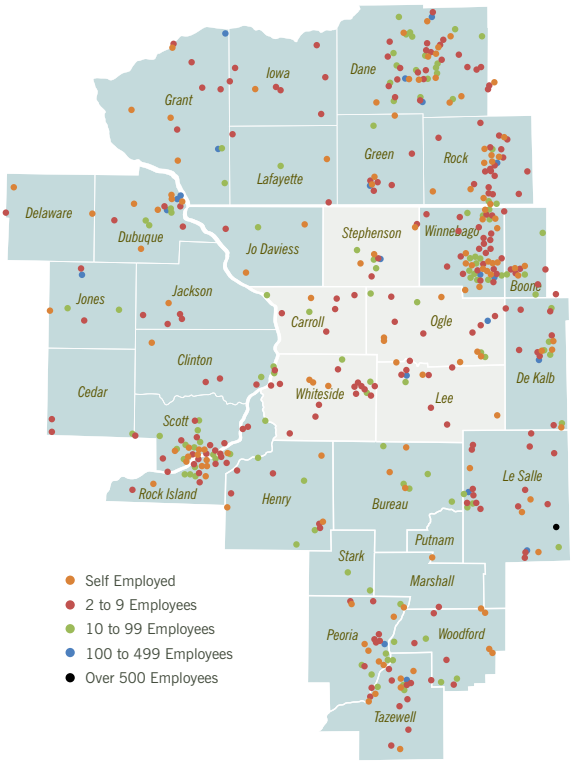


Figure 32: Fabricated Metal Products Manufacturing: Subsectors Based on Employment Concentration

Indicator	Location Quotient (2010)
Crown and closure manufacturing and metal stamping	21.6
Plumbing fixture fitting and trim manufacturing	7.7
All other forging, stamping, and sintering	5.9
Ornamental and architectural metal products manufacturing	5.1
Turned product and screw, nut, and bolt manufacturing	4.8
Ball and roller bearing manufacturing	4.4
Spring and wire product manufacturing	4.1
Metal can, box, and other metal container (light gauge) manufacturing	3.9
Coating, engraving, heat treating, and allied activities	3.9
Other fabricated metal manufacturing	3.8
Valve and fittings other than plumbing manufacturing	3.0
Plate work and fabricated structural product manufacturing	1.7
Nonferrous metal foundries	1.3
Hand tool manufacturing	1.2

Source: IMPLAN, 2010.

In the five-county region, the cluster includes 75 establishments and employed 2,539 people in direct cluster jobs in 2010. This cluster has a higher than average concentration of economic activity, as defined by firm and employment LQ, in both the Reference Region and the five-county region, when compared to the nation's economic activity in this cluster overall (Figure 33).

Figure 33: Fabricated Metal Products Manufacturing: Economic Activity Summary

Indicator	Five-County Region	Reference Region (32 Counties)
Number of Firms (2010)	75	806
Percent Change in Number of Firms (2007-2010)	*5.6*	*-1.9*
Firm Location Quotient (LQ)	*2.4*	*2.0*
Employment (2010)	2,539	20,796
Percent Change in Employment (2007-2010)	*-24.7*	*-23.6*
Employment Location Quotient (LQ)	*3.8*	*1.9*

Sources: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW) and the Purdue Center for Regional Development (cluster definitions), 2012.

Although few large employers are within the five-county region (only seven firms have 100 or more employees), the surrounding metropolitan areas host major national and global companies in this industry cluster (Figure 34). Companies usually manufacture metal parts or components used by customers, such as the automotive, aerospace, industrial machinery, agricultural implement, and construction industries. Some companies produce finished products like building components, tools, and industrial valves.

Location Quotients (LQ) are used to evaluate local development opportunities and find businesses which are especially suited for the Region. A LQ is the ratio of the employment percentage represented by a given industry in the county to the percentage which that industry represents in the state or a representative area of interest. A ratio greater than one indicates a higher local concentration and a likelihood of exports from the county; a ratio less than one may suggest that goods or services are being imported into the Region.

Figure 34: Fabricated Metal Products Manufacturing: Major Employers, Five-County Region

Company Name	# of Employees	NAICS Industry Description*	City
Neisewander Enterprises, Inc. (Raynor Mfg. Company)	1,000	Metal Window and Door Manufacturing	Dixon
Elkay Manufacturing Company	300	Plate Work Manufacturing	Savanna
Metform LLC	190	Iron and Steel Forging	Savanna
Irwin Industrial Tool Company	150	Hand and Edge Tool Manufacturing	Freeport
Swenson Spreader LLC	125	Sheet Metal Work Manufacturing	Lindenwood
Anchor Coupling, Inc.	100	Fluid Power Valve and Hose Fitting Manufacturing	Dixon
Modern Plating Corporation	100	Electroplating, Plating, Polishing, Anodizing, and Coloring	Freeport
Anchor-Harvey Components LLC	97	Nonferrous Forging	Freeport
J T Cullen Company, Inc.	70	Plate Work Manufacturing	Fulton

*North American Industry Classification System.
Source: Dun & Bradstreet, Inc., 2012.

Industry Trends[26]

Varying Demand Cycles: The demand for metal products is affected by varying needs in customer industries. Production of industrial equipment can vary 10.0% to 20.0% in a year. Spending in the aerospace, automotive, and construction sectors is also volatile.

Customers Moving Overseas: Many metal products customers, such as auto companies and appliance manufacturers, have moved their production abroad to take advantage of lower labor costs and to position themselves to sell products to a growing international market, pushing suppliers to move with them or face losing business to foreign manufacturers (especially if they use just-in-time inventory management). However, the recent growth in labor and transportation costs in key foreign production sites, such as China, may blunt this effect and return some manufacturing back to the U.S.

New Powder Metal Applications: Powder metal parts are often cheaper to produce and, in some cases, are lighter or have better performance characteristics than traditional metal parts. The light weight of powder metal parts is especially attractive in automotive applications.

Market Opportunities[27]

New Manufacturing Materials: New metal alloys with desirable physical properties allow manufacturers to upgrade existing products and introduce new ones. Such alloys have been especially useful for products which must operate in extreme conditions, such as inside engines and in cooling applications. However, the use of new materials requires a large prior investment in engineering and testing.

[26] Source: Hoovers, Inc., 2013. (www.hoovers.com)
[27] Source: Hoovers, Inc., 2013. (www.hoovers.com)

Greater Complexity of Final Products: As machinery and other products become more sophisticated in function and design, the parts used to build them typically also become more complicated, requiring more engineering and tighter manufacturing specifications. Manufacturers who can invest in modern fabricating technology can increase market share.

New Production Methods: New rapid prototyping methods produce delicate parts good for sizing and ergonomic studies. Lasers have increasing applications in metal parts manufacturing, such as laser cutters used in sheet metal industries. New fabrication technology for metal parts, like laser-assisted arc welding, can rapidly produce part molds directly from CAD files, thus bypassing the traditional need for tooling. New metal casting technology can reduce the time from initial design to production.

Increased Customer Outsourcing: Equipment manufacturers are increasingly outsourcing the production of parts that they formerly made themselves. Much of the sheet steel and steel plate bought by manufacturers from metal service centers is processed by a fabricator under an outsourcing arrangement before delivery.

Nonmetal Product Line Additions: Many companies are expanding their product line, sometimes adding nonmetal items. Manufacturers of metal windows and doors may also manufacture vinyl and wooden products. Manufacturers of industrial metal valves may also produce plastic versions for certain applications.

Supply Chain

The supply chain analysis provides insight into the value of supply chain inputs, the amount of inputs produced in a region for the industry clusters studied (represented in most cases by an absorption rate), and the stages along the supply chain which stand out as areas of competitive advantage. High absorption represents areas along the Fabricated Metals Products Manufacturing supply chain which allow the Region to capture the most value from a specific stage in the production or delivery of products and services within the supply chain. Several of the clusters are represented by the same supplier types because they have similar supplier needs.

Supply Chain

An essential component for an industry cluster is the local supply chain. While not all inputs (goods or services) which an industry cluster needs can be produced in the local economy, it is desirable to meet as many of the cluster's needs locally as possible. This analysis reveals the source and amount of purchases among the unique niches within an industry. By identifying the total industry economic outputs and areas where goods and services are purchased from outside the regional economy, one may be in a better position to determine which areas of the industry supply chains are strongest, as well as those which present the best opportunities for growth within the five-county region.

Conversely, stages along the supply chain which are underperforming offer opportunities for business attraction and/or entrepreneurship. When reviewing data relating to industry inputs, comparing both the absorption rate and the total value of inputs is important because certain services or components which maintain a high absorption rate may be of low value to the regional economy. Similarly, certain inputs, regardless of value or absorption, may be of high strategic importance to the Region in its efforts to build a stronger industry cluster.

The supply chain information provided indicates the flows of trade which support the Fabricated Metal Products Manufacturing-related cluster both within the five-county region and outside the Region. The key sectors which may be appropriate targets for expansion are imports (gaps) from outside the Region, but still within the industry. These gaps are then analyzed in terms of regional strengths and potential areas for targeting and support and are placed into a supply chain model in order to determine the stages of the supply chain with the strongest regional presence. To fully develop a Fabricated Metals Products Manufacturing cluster, the five-county region can make the most progress by focusing on sectors which do not yet have a strong regional presence, but which have significant development potential (Figure 35).

Regional Supply Gap

Difference between Gross and Regional Inputs: a large gap value indicates that a large amount of inputs are imported into the Region, rather than produced within the five-county region.

Regional Inputs

The dollar value of gross inputs which are produced within the Region.

Gross Inputs

Total dollar amount of inputs used by the industry within each sector.

Figure 35: Fabricated Metal Products Manufacturing: Largest Supply Chain Gaps

Industry	Regional Supply Gap	Regional Inputs	Gross Inputs	% Purchased from Outside the Region
Aluminum products from purchased aluminum	-$15,549,126	$12,038	$15,561,164	99.9%
Machined shops	-$8,666,884	$18,437	$8,685,322	99.8
Steel products from purchased steel	-$7,404,186	$216,558	$7,620,744	97.2
Motor vehicle parts	-$6,788,906	$63,932	$6,852,838	99.1
Coated, engraved, heat treated products	-$5,101,853	$104,318	$5,206,171	98.0
Turned products and screws, nuts, and bolts	-$4,729,290	$160,638	$4,889,928	96.7
Plates and fabricated structural products	-$3,855,082	$117,477	$3,972,559	97.0

Source: IMPLAN, 2010.

For example, the regional Fabricated Metals Products Manufacturing cluster requires $15.5 million in inputs (i.e., the products or services required to create a finished product) from the "aluminum products from purchased aluminum" industry. However, only $12,000 of the required inputs from this industry is produced within the region, with the balance being purchased from outside the five-county region. This indicates that there may be an opportunity for an existing firm or new business to satisfy the regional demand for these products.

The supply chain gap for "machine shops" also presents a unique opportunity for existing business development. In general, machine shops produce a wide variety of parts or components based on customer requirements. Since most specialize in low-volume, fast-turnaround orders, they are quite versatile and are only limited by their production equipment and the skills and capabilities of their workers. Therefore, a regional initiative aimed at expanding the capabilities of machine shops could benefit the supply chain needs of several key manufacturing sectors.

Aluminum products from purchased aluminum (NAICS Sectors 331315, 331316, 331319)

Subsectors include the following:

- Aluminum flat rolled sheet, plate, foil, and welded tube
- Extruded aluminum rod, bar, pipe, tube, and tube blooms or drawing tube
- Nails made in aluminum wire drawing plants
- Wire, bare, or cable made in aluminum wire drawing plants

Workforce Requirements, Supply and Demand

Even as employment in the cluster has declined during the past decades (a trend that is projected to continue) the supply of potential new workers is comparatively low because of demographic trends and the propensity of younger workers to pursue careers outside of manufacturing. Over half of workers employed in the industry in 2010 were 45 year of age or older, with only 5.9% under the age of 25 (Figure 36).

Figure 36: Fabricated Metal Products Manufacturing: Employment by Age Group, Five-County Region, 2010

Age Group	Employment (Percent of Total)	Average Annual Wage
Under 25 Years	5.9%	$16,658
25-44 Years	35.9	41,135
45-64 Years	55.2	53,686
65 Years & Older	2.9	71,042

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2011.

Over two-thirds of the employment, as well as 59.3% of the wages, in the Fabricated Metal Products Manufacturing cluster are concentrated in Production; Installation, Maintenance, and Repair; or Transportation and Material Moving occupations (Figure 37). The production and related employment classification account for the largest single share of the jobs in the Region. Ensuring that appropriately skilled production workers are available at competitive rates of compensation will be critical to maintaining the Region's manufacturing sector[28].

Figure 37: Fabricated Metal Products Manufacturing: Staffing Patterns, Five-County Region

Occupational Classification	Share of Employment	Share of Wages	Average Annual Wage
Production	61.5%	51.3%	$34,348
Office and Administrative Support	10.5	9.0	35,023
Transportation and Material Moving	5.9	4.1	28,851
Management	5.2	13.8	107,876
Architecture and Engineering	3.9	6.1	64,279
Installation, Maintenance, and Repair	3.7	3.9	42,617
Business and Financial Operations	2.8	3.9	59,039
Sales and Related Occupations	2.4	3.8	64,522
Construction and Extraction	2.0	2.1	43,909

Sources: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW) and the Purdue Center for Regional Development (cluster definitions), 2012.

The challenge for employers is the looming demand for replacement workers as older workers retire. The Illinois Department of Employment Security estimates that nearly 200 openings for production workers will become available per year between 2008 and 2018, most of this resulting from the demand for replacement workers (Figure 38).

[28] In 2008, Production; Installation, Maintenance, Repair; or Transportation and Material Moving occupations accounted for 23.0% of all occupational employment in Workforce Investment Board Region #4.

Figure 38: Occupational Employment, Projected Demand by Worker Classification
Workforce Investment Board Region #4, 2008-2018*

Occupational Classification	Employment		Employment Change 2008-2018		Average Annual Job Openings		
	2008	2018	Number	%	Growth	Replacement	Total
Production	9,653	8,806	-847	-8.8	5	191	196
Office and Administrative Support	11,256	11,371	115	1.0	46	242	288
Transportation and Material Moving	6,297	6,479	182	2.9	25	153	178
Management	7,959	7,693	-266	-3.3	13	123	136
Architecture and Engineering	1,116	1,073	-43	-3.9	3	25	28
Installation, Maintenance, and Repair	2,798	2,930	132	4.7	15	55	70
Business and Financial Operations	3,110	3,385	275	8.8	28	64	92
Sales and Related Occupations	7,815	8,049	234	3.0	27	241	268
Construction and Extraction	4,047	4,188	141	3.5	16	68	84

**Workforce Investment Board (WIB) Region #4 consists of Carroll, JoDaviess, Ogle, Stephenson, and Whiteside counties.*
Source: Illinois Department of Employment Security, 2012.

Because of the competition with surrounding metro areas for workers with specific skills or experience, compensation levels are a concern for local businesses[29]. For example, the projected demand for production workers in the metro areas around the five-county region is estimated to be 2,398 openings per year between 2008 and 2018[30]. The estimated average annual wage for production workers is $36,200[31]. While this matches the wages for the five-county region, the surrounding metro areas have the added advantage of a greater number of employers and more job opportunities from which to choose within a reasonable commuting distance. Given the expected intense competition for skilled workers, companies will need to monitor compensation trends in order to recruit and to retain qualified employees.

Business Operating Costs

Annual operating costs are provided solely for comparisons. Only major geographically variable operating costs are included for a series of seven county sites in the U.S. These consist of the five counties in the Region along with two additional counties which have significant concentrations of businesses in the Fabricated Metal Products Manufacturing cluster. One of the two out-of-state counties is located in the Midwest region, and the second is located in an alternative U.S. region. Costs which did not vary significantly with geography, including relocation and start-up expenses, were not considered (Figure 39).

[29] Northern Illinois University, Center for Governmental Studies, "*Promoting Regional Prosperity in Northwest Illinois: Wage and Benefit Report*", August, 2012, p.23.
[30] Source: Illinois Department of Employment Security, 2012.
[31] Sources: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW) and the Purdue Center for Regional Development (cluster definitions), 2012.

Figure 39: Fabricated Metal Products Manufacturing: Total Geographically Variable Operating Cost Comparison

County Name	Total Annual Operating Costs
Medina County, OH	$17,904,627
Whiteside County, IL	17,195,799
Ogle County, IL	17,192,102
Stephenson County, IL	17,094,735
Lee County, IL	16,900,999
Carroll County, IL	16,857,808
Anderson County, SC	15,826,732

Source: The Boyd Company, Inc., 2012.

The five-county region was the most competitive with its peers in terms of shipping costs versus the comparative counties, highlighting the importance of northwest Illinois' transportation assets and its access to national and global markets. The Region was also cost competitive with its peers in the Great Lakes region in terms of labor costs and site acquisition and property tax costs.

Costs of Doing Business

Since most businesses operate in a real-time global marketplace, their focus is on maintaining a comparative advantage through sourcing and supplying products profitably. Cost components such as labor, taxes, real estate, and utilities are the key measures which most companies use to decide where to locate or expand their operations.

Operating cost analysis focuses on those key geographically variable cost elements which are considered to be the most pivotal within the corporate site selection process and overall target industry competitiveness.

Key Takeaways

- The Fabricated Metal Products Manufacturing cluster in the five-county region has a concentration of firms which is 2.4 times the national average, and an employment concentration which is 3.8 times the national average.
- The competitive advantage has declined in the past, possibly due to the effects of the recent recession and a long-term term decline in manufacturing. Intervention with existing companies, as well as with the regional workforce will be necessary to stem this decline.
- The Fabricated Metal Products Manufacturing cluster is diverse. Several subsectors have the potential for further development based on supply chain relationships with other industries in the Region and surrounding metro areas including aluminum and steel components; motor vehicle parts; coated, engraved or heat-treated products; and machine shops.
- Opportunities likely exist for companies to develop new supply chain relationships with companies in nearby metro areas or outside the industries they already serve, but more research is needed to identify and develop those opportunities.
- The supply chain gap for machine shops presents a unique opportunity for the expansion of existing businesses. A regional initiative aimed at expanding the capabilities of machine shops could benefit the supply chain needs of several key manufacturing sectors.
- Small niche manufacturers (such as machine shops) can be supported as part of a strategy to support small business and entrepreneurship in the Region.

INDUSTRY CLUSTER PROFILE: AGRIBUSINESS, FOOD PROCESSING, AND TECHNOLOGY

Cluster Summary

The *Agribusiness, Food Processing and Technology* industry cluster enhances the food production value chain by increasing the economic value of raw commodities as they move through the stages of production to consumers. This report concentrates on two distinct but complementary subsectors that share common inputs--value-added agriculture and food manufacturing.

Value-added agriculture is defined as changes made to primary agriculture products (crops and livestock) that increase the product's value and create new economic activity and jobs. These could include process activities that create value for the product and/or introduce the product to new markets; diversification and/or modification of primary agriculture products; or pre-production modifications that increase yields, quality, and uses.

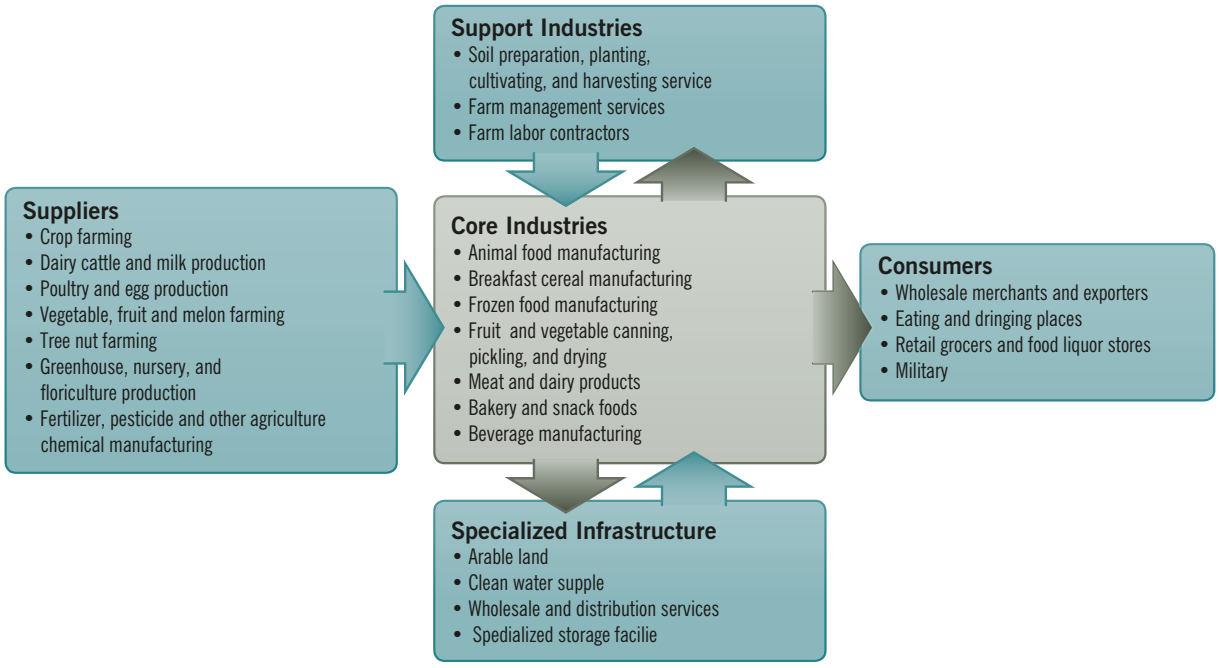
The first component is value added agriculture which may also include the production of innovative crop or livestock based commodities (e.g., organic or heirloom meats or fruits, vegetables, or grains), as well as regionally branded products that increase consumer appeal and willingness to pay a premium over similar but undifferentiated products. Currently, traditional agriculture has a strong presence in the five-county region while innovative value added activities are a small, but growing subsector of the industry.

The second component is food manufacturing or processing agricultural produce including meat, dairy products, fruits and vegetables, milled grains and oilseeds, baked goods, and candy. The Region supports a few large processors and several smaller firms specializing in dairy products (such as cheese), snack foods, and processed meats. Food manufacturing also supports the agricultural sector through the production of livestock feed components.

Cluster Definition

An industry cluster is a group of related industries which are connected by supply chains and/or common labor pools within the same region. The core strength of the Agribusiness, Food Processing, and Technology industry cluster comes from the manufacturing of food from raw produce either sold as finished products or incorporated into other manufactured goods. These core industries drive employment and inputs in other industries which supply them (e.g., crop or livestock production, farm equipment manufacturing, and food processing machinery manufacturing), as well as those which support the core industries by providing business finance and various business services (Figure 40).

Figure 40: Agribusiness, Food Processing and Technology, Cluster Components



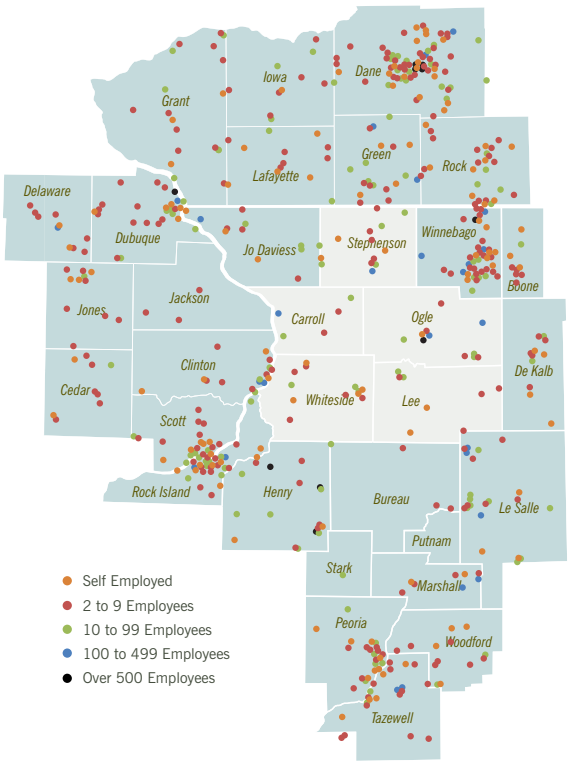
Source: The Purdue Center for Regional Development (cluster definitions), 2012.

Regional Overview

The Agribusiness, Food Processing, and Technology cluster in the Reference Region, a group of 32 counties in northwest Illinois, northeast Iowa, and southwest Wisconsin including the five-county region, had 1,807 establishments in 2010 and employed 42,159 people. The average annual wage in this cluster was $45,086.

The Agribusiness component of this cluster comprised 87.0% of the total business establishments in the Reference Region, but only 38.0% of the total employment. This reflects the capital intensive nature of modern agriculture with extensive investments in machinery and other infrastructure, but with relatively few workers directly employed in farming activities. Agriculture support activities, which include farm machinery and equipment manufacturing and distribution, as well as the production and wholesale distribution of ag chemicals (fertilizer and pesticides), represents approximately 9.0% of total business establishments but 28.0% of total cluster employment.

Figure 41: Food Processing Subsector: Firms by Employment Size Category



The Food Processing component accounts for less than 4.0% of the firms operating in the Reference Region, but has approximately one-third of total cluster employment. The majority of Food Processing firms are small in employment (68.0% of firms have fewer than 10 employees) with the 22 largest companies (those with 100 or more employees) representing about 56.0% of total employment. Food processors are dispersed throughout the Region with many larger firms concentrated near metro areas (Figure 41).

The cluster also has had a consistently high concentration of employment in the five-county region with location quotients (LQ) of 2.6 in 2001, 2.2 in 2007, and 2.5 in 2010. Many industry subsectors are represented in the five-county region. Five subsectors have a strong presence in the Region based on the concentration of employment. The top five are listed in Figure 42.

Location Quotients (LQ) are used to evaluate local development opportunities and find businesses which are especially suited for the Region. A LQ is the ratio of the employment percentage represented by a given industry in the county to the percentage which that industry represents in the state or a representative area of interest. A ratio greater than 1.0 indicates a higher local concentration and a likelihood of exports from the county; a ratio less than 1.0 may suggest that goods or services are imported into the Region.

Figure 42: Agribusiness, Food Processing, and Technology: Subsectors Based on Employment Concentration

Indicator	Location Quotient (2010)
Flavoring syrup and concentrate manufacturing	37.0
Cheese manufacturing	16.0
Grain farming	11.0
Soybean and other oilseed processing	9.8
Farm machinery and equipment manufacturing	7.7

Source: IMPLAN, 2010.

In the five-county region, the cluster had 239 establishments and employed 4,117 people in direct cluster jobs in 2010. The average annual wage for direct cluster jobs is $41,709. This cluster has a higher than average concentration of economic activity, as defined by firm and employment LQ, in both the Reference Region and the five-county region,when compared to the nation's economic activity in this cluster overall (Figure 43).

The Agribusiness component of this cluster comprises 87.0% of the total business establishments in the Region, but only 38.0% of the total employment. This reflects the capital intensive nature of modern agriculture with heavy use of machinery and other infrastructure, but with relatively few workers directly employed in farming activities. Agriculture support activities, which include farm machinery and equipment manufacturing and distribution, as well as the production and wholesale distribution of ag chemicals (fertilizer and pesticides) represents about 9.0% of total business establishments but 28.0% of the total cluster employment.

The Food Processing component accounts for 2.2% of the firms operating in the Region, but has 28.0% of total cluster employment. The majority of food processors are small in employment (half of the firms in the Region have fewer than 10 employees) with the six largest employers (those with 100 or more employees) representing about 69.0% of total employment.

Figure 43: Agribusiness, Food Processing, and Technology: Economic Activity Summary

Indicator	Five-County Region	Reference Region (32 Counties)
Number of Firms (2010)	**239**	**1,807**
Percent Change in Number of Firms (2007-2010)	*8.6*	*2.7*
Firm Location Quotient (LQ)	*3.2*	*1.9*
Employment (2010)	**4,117**	**42,159**
Percent Change in Employment (2007-2010)	*7.1*	*2.5*
Employment Location Quotient (LQ)	*2.5*	*1.6*
Average Annual Wage (2010)	**$41,709**	**$45,086**
Percent Change in Average Annual Wage (2007-2010)	*3.4*	*7.1*

Sources: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW) and the Purdue Center for Regional Development (cluster definitions), 2012.

Although there are few large employers in the industry cluster within the five-county region, most are engaged in Food Processing. The surrounding metropolitan areas also host several major national and global food processors (Hormel, Tyson Foods, and Kraft) and farm machinery and equipment manufacturers (Deere & Company) in this industry cluster (Figure 44).

Figure 44: Agribusiness, Food Processing, and Technology: Major Employers, Five-County Region

Company Name	# of Employees	NAICS Industry Description*	City
Rochelle Foods LLC	600	Processed meats manufacturing	Rochelle
Genwoods Holdco LLC	550	Farm Machinery and Equipment Manufacturing	Oregon
Colony Brands, Inc.	250	Commercial Bakeries	Savanna
Berner Food & Beverage, Inc.	195	Processed Cheese Products Manufacturing	Dakota
C.J. Vitner Company	140	Snack Foods Manufacturing	Freeport
Del Monte Corporation	135	Dog and Cat Food Manufacturing	Rochelle
Louis Berkman Company	102	Farm Machinery and Equipment Manufacturing	Lindenwood
Bay Valley Foods LLC	100	Food Condiments Manufacturing	Dixon

**North American Industry Classification System.*
Source: Dun & Bradstreet, Inc., 2012.

Industry Trends[32]

Volatile Commodity Prices: The price of critical commodity inputs such as corn, soybeans, wheat, dairy, coffee beans, beef, poultry, vegetables, sugars, and oils can change significantly due to farm yields, unpredictable weather patterns, and market reactions to government farm subsidies. Commodity price increases raise raw material and operating costs, which can be difficult to pass on to consumers in higher product prices. Many companies hedge against commodity price increases to limit volatility.

Dependence on Large Customers: Consolidation in the grocery and restaurant industries and the rise of mass food merchandisers such as Costco and Walmart have funneled demand through fewer but larger customers. Local and regional processors may depend on just a few customers for the bulk of their business. Even national processors depend on large national accounts for much of their business.

Highly Competitive Industry: Due to the proliferation of product choices in many food segments, competition in the manufacturing industry is intense. Companies compete over products within their specific industry. For example, seafood processors compete with cheaper proteins like chicken; cereal makers compete with breakfast alternatives which can be easily consumed on-the-go. Food companies vie for shelf space and compete on value and brand reputation. Pressure from competitors and consumers can force manufacturers to lower prices or increase marketing expenditures. Branded items compete with private-label products which are generally sold at lower prices.

Shifting Consumer Tastes: Manufacturers must stay informed about continually changing consumer preferences in the highly competitive food industry. Companies often spend millions of dollars to reformulate products or develop new brands to capitalize on dietary fads (low carb, fat free, sugar free). Dietary trends can quickly become passé or be overtaken by new health concerns, which may conflict with a manufacturer's health claims. Customers often embrace a brand and concept only to abandon it within a few years.

Private-Label Products: The private-label food business has grown rapidly in the past decade, as grocers have found private-label products profitable. Grocers frequently stock just one or two branded products in a food category along with their own private-label product. Private labels have benefited by going upscale with gourmet offerings, blurring the traditional distinction between private-label and branded products. For some foods, the price gap between branded and private-label goods is also shrinking, as branded products struggle to compete with more competitively priced private-label products. Some manufacturers have capitalized on this trend by making both branded and private-label goods, sometimes in the same plant.

Market Opportunities[33]

Healthier Offerings: Many manufacturers are reformulating products to include healthier ingredients or those perceived as healthier by consumers. New offerings are often made with organic wheat flour, cane sugar, rice syrup, and corn starch, for example. Dairy products are one of the fastest growing segments of the organic food industry. Low-sodium, whole wheat, and gluten-free product options have gained in popularity. To attract consumers, manufacturers often advertise the heart-healthy or low-cholesterol benefits of their products.

[32] Source: Hoovers, Inc., 2013. (www.hoovers.com)
[33] Source: Hoovers, Inc., 2013. (www.hoovers.com)

New Packaging: New food packaging often focuses on convenience and eco-friendly designs. Meat processors now cut, package, price, and label fresh meat products for immediate display on supermarket shelves. Manufacturers also sell premeasured meal kits with the necessary ingredients and seasonings included. Resealable and single-serving packages have also become common. Many smaller packages, such as 100-calorie sizes, are designed to help dieting consumers with portion control.

International Expansion: Large U.S. food processors are expanding into international markets. Emerging markets like Latin America and Asia have consumers with rising incomes and growing interest in Western foods. Companies have forged joint ventures with European and Asian food manufacturers intending to take advantage of strong local consumer brands. U.S. manufacturers often tweak ingredients, flavors, and brand messaging to appeal to the culture of a target market.

Supply Chain

The supply chain analysis provides insight into the value of supply chain inputs, the amount of inputs produced in a region for the industry clusters studied (represented in most cases by an absorption rate), and the stages along the supply chain which stand out as areas of competitive advantage. Areas of high absorption represent areas along the Food Processing supply chain which allow the Region to capture the most value from a specific stage in the production or delivery of products and services within the supply chain. This may inform strategy by indicating where along the value chain an investment will have the highest impact on the regional economy and may indicate opportunities for business retention or expansion. Again, several of the industries have similar suppliers because of the similarities in their supply needs.

Supply Chain

An essential component for an industry cluster is the local supply chain. While not all inputs (goods or services) that an industry cluster needs can be produced in the local economy, it is desirable to meet as many of the cluster's needs locally as possible. This analysis reveals the source and amount of purchases among the unique niches within an industry. By identifying the total industry economic outputs and areas where goods and services are purchased from outside the regional economy, one may be in a better position to determine which areas of the industry supply chains are strongest, as well as those that present the best opportunities for growth within the five-county region.

Conversely, stages along the supply chain which are underperforming also offer opportunities for business attraction and/or entrepreneurship. When reviewing data relating to industry inputs, comparing both the absorption rate and the total value of inputs is important because certain services or components which maintain a high absorption rate may be of low value to the regional economy. Similarly, certain inputs, regardless of value or absorption, may be of high strategic importance to the Region in efforts to build a stronger industry cluster.

The supply chain information provided shows the flows of trade which support the Agribusiness, Food Processing, and Technology-related cluster both within the five-county region and from outside the Region. The key sectors that may be appropriate targets for expansion appear as imports (gaps) from outside the Region, but still within the industry cluster (Figure 45). These gaps are then analyzed in terms of regional strengths and potential areas for targeting and support and are placed into a supply chain framework to determine the stages of the supply chain which enjoy the strongest regional presence. In order to fully develop an Agribusiness, Food Processing, and Technology cluster, the five-county region can best achieve progress by focusing on those sectors without a strong regional presence , but which have significant development potential for the Region.

Regional Supply Gap

Difference between Gross and Regional Inputs: a large gap value indicates that a large amount of inputs are imported into the region, rather than produced within the five-county Region.

Regional Inputs

The dollar value of gross inputs which are produced within the Region.

Gross Inputs

Total dollar amount of inputs used by the industry within each sector.

Figure 45: Food Processing Component: Largest Supply Chain Gaps, Five-County Region

Industry	Regional Supply Gap	Regional Inputs	Gross Inputs	% Purchased Outside Region
Oilseeds	-$116,127,493	$11,479,942	$127,607,434	91.0%
Processed animal meat and rendered byproducts (except poultry)	-71,135,787	2,255,589	73,391,376	96.9
Soybean oil, cakes and other oilseed products	-42,532,405	56,966	42,589,371	99.9
Fruit	-25,834,327	1,508,974	27,343,301	94.5
Other basic organic chemicals	-23,741,083	55,781	23,796,864	99.8
Canned, pickled and dried fruits and vegetables	-11,629,367	5,887	11,635,254	99.9
Motor vehicle parts	-13,239,328	124,676	13,364,005	99.1
Other engine equipment	-9,502,151	55,561	9,557,712	99.4
Plastics bottles	-9,363,026	0	9,363,026	100.0

Source: IMPLAN, 2010.

For example, the regional Food Processing component requires $127.6 million in inputs (i.e., the products or services required to create a finished product) from the "oilseeds" production. However, only $11.5 million of this material is produced in the Region with the balance being purchased elsewhere. This suggests an opportunity for an existing firm or new business to satisfy the regional demand for this crop. Another closely related opportunity is "soybean oil, cakes, and other oilseed products." Companies in this sector mill soybeans and other oilseeds (such as cottonseeds, linseeds, peanuts, and sunflower seeds) into oil, cakes, or meal products.

Oilseeds Farming (NAICS Sector 111110, 1111120)

This industry comprises establishments engaged primarily in growing soybeans and/or producing soybean seeds. It also includes the production of fibrous oilseed producing plants and/or producing oilseed seeds, such as sunflower, safflower, flax, rape, canola, and sesame.

Workforce Requirements, Supply and Demand

Even as employment in the cluster has declined during the past decades (a trend that is projected to continue) the supply of potential new workers is comparatively low because of demographic trends and the propensity of younger workers to pursue careers outside of manufacturing. There are significant differences in age and wage profiles of the agribusiness and Food Processing components of the cluster. The Agribusiness component has a high proportion of younger (15.3% are under age 25), as well as older workers (9.4% are age 65 or older) (Figure 46). Wages also vary from the Food Processing sector due in part to a higher number of part-time and seasonal workers employed in agriculture. Also, many of those engaged in Agribusinesses are either self-employed or operate as a business, receiving compensation in the form of business income or profits, rather than from wages.

Figure 46: Agribusiness Component: Employment and Wages by Age Group, Five-County Region

Age Group	Employment (Percent of Total)	Average Annual Wage
Under 25 Years	15.3%	$11,966
25-44 Years	41.3	34,513
45-64 Years	34.0	33,627
65 Years & Older	9.4	18,409

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2011.

The age profile in food processing more closely resembles manufacturing in general, but with below average wages. This may reflect more part-time, seasonal, or contract workers. Over half of the workers in the sector are 45 years of age or older, but only 6.8% are under the age of 25 (Figure 47).

Figure 47: Food Processing Component: Employment and Wages by Age Group, Five-County Region

Age Group	Employment (Percent of Total)	Average Annual Wage
Under 25 Years	6.8%	$19,861
25-44 Years	41.1	42,900
45-64 Years	45.1	51,085
65 Years & Older	7.0	40,966

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2011.

Over 58.0% of the employment and 48.0% of the wages in the cluster are in Production; Installation, Maintenance, and Repair; or Transportation and Material Moving occupations (Figure 48). Production and related employment classifications account for the largest single share of the jobs in the Region. Ensuring that appropriately skilled production workers are available at competitive compensation rates will be critical to maintaining the manufacturing sector in the Region[34].

[34] In 2008, Production, Installation, Maintenance, Repair or Transportation and Material Moving occupations were 23.0% of all occupational employment in Workforce Investment Board Region #4.

Figure 48: Agribusiness, Food Processing, and Technology: Staffing Patterns, Five-County Region

Occupational Classification	Share or Employment	Share of Wages	Average Annual Wage
Production	35.2%	28.0%	$31,329
Transportation and Material Moving	16.9	12.6	29,489
Office and Administrative Support	14.2	11.6	32,350
Sales and Related Occupations	10.7	14.3	52,619
Installation, Maintenance, and Repair	6.8	7.3	42,448
Management	4.5	12.2	107,551
Business and Financial Operations	2.7	4.1	61,024
Farming, Fishing, and Forestry	2.6	1.6	24,326
Architecture and Engineering	2.2	3.7	67,216

Sources: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW) and the Purdue Center for Regional Development (cluster definitions), 2012.

A challenge for employers is the looming demand for replacement workers as older workers retire. The Illinois Department of Employment Security claims that 196 openings for production workers will become available per year between 2008 and 2018, mostly replacement workers (Figure 49).

Figure 49: Occupational Employment, Projected Demand by Worker Classification
Workforce Investment Board Region #4, 2008-2018*

Occupational Classification	Employment		Employment Change 2008-2018		Average Annual Job Openings		
	2008	2018	Number	%	Growth	Replacement	Total
Production	9,653	8,806	-847	-8.8	5	191	196
Transportation and Material Moving	6,297	6,479	182	2.9	25	153	178
Office and Administrative Support	11,256	11,371	115	1.0	46	242	288
Sales and Related Occupations	7,815	8,049	234	3.0	27	241	268
Installation, Maintenance, and Repair	2,798	2,930	132	4.7	15	55	70
Management	7,959	7,693	-266	-3.3	13	123	136
Business and Financial Operations	3,110	3,385	275	8.8	28	64	92
Farming, Fishing, and Forestry	687	633	-54	-7.9	0	18	18
Architecture and Engineering	1,116	1,073	-43	-3.9	3	25	28

**Workforce Investment Board (WIB) Region #4 consists of Carroll, JoDaviess, Ogle, Stephenson, and Whiteside counties.*
Source: Illinois Department of Employment Security, 2012.

Because of the competition with surrounding metro areas for workers with specific skills or experience, compensation levels are a concern for local businesses[35]. For example, the projected demand for production workers in the metro areas around the Region is estimated to be 2,398 openings per year between 2008 and 2018[36]. The estimated average annual wage for production workers is $31,329[37]. Wages are not only lower than the other manufacturing-related sectors in the Region, they are also lower than the surrounding metro areas. This could put local employers at a competitive disadvantage relative to other industries offering comparable jobs at higher wages. Given the intense competition for skilled workers, companies will need to monitor compensation trends in order to recruit and retain qualified employees.

Business Operating Costs

The operating cost analysis focuses on those key geographically variable cost elements which are considered the most pivotal within the corporate site selection process and overall target industry competitiveness. The format of the cost exhibits allows a site selection professional or corporate facility planner to further tailor the cost data, plant specifications, and shipping patterns.

Annual operating costs are projected solely for comparative purposes with only major geographically variable operating costs included for seven county sites in the U.S. These include the five-county region along with two additional counties which have significant concentrations of businesses in the Agribusiness, Food Processing, and Technology cluster. One of the two out-of-state counties is in the Midwest region, and the second is located in an alternative U.S. region. Costs which did not vary significantly with geography, including relocation and start-up expenses, were not considered (Figure 50).

Figure 50: Agribusiness, Food Processing, and Technology: Geographically-Variable Operating Cost Comparison

County Name	Total Annual Operating Costs
Lancaster County, PA	$20,579,638
Butler County, OH	19,464,390
Whiteside County, IL	19,001,860
Ogle County, IL	18,962,010
Stephenson County, IL	18,769,038
Carroll County, IL	18,677,786
Lee County, IL	18,630,286

Source: The Boyd Company, Inc., 2012.

Costs of Doing Business

Since most businesses operate in a real-time global marketplace, their focus is on maintaining a comparative advantage through sourcing and supplying products profitably. Cost components such as labor, taxes, real estate, and utilities are the key measures which most companies use to decide where to locate or expand their operations.

Operating cost analysis focuses on those key geographically variable cost elements which are considered to be the most pivotal within the corporate site selection process and overall target industry competitiveness.

[35] Northern Illinois University, Center for Governmental Studies, "*Promoting Regional Prosperity in Northwest Illinois: Wage and Benefit Report*", August, 2012, p. 23.
[36] Source: Illinois Department of Employment Security, 2012.
[37] Sources: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW) and the Purdue Center for Regional Development (cluster definitions), 2012.

The five-county region was the most competitive with its peers in terms of labor costs and site acquisition and property tax costs. However, the labor cost differential with related industries and the nearby metro areas could be a drawback, given the competition for skilled workers. The Region was also more cost-effective in terms of shipping costs versus the comparative counties. Estimated outbound shipping costs from the five-county region were 3.0% to 23.0% below the comparison areas, highlighting the importance of northwest Illinois' transportation assets and its access to national and global markets.

Key Takeaways

- The Agribusiness, Food Production, and Technology cluster in the five-county region has a concentration of firms which is 3.2 times the national average and an employment concentration 2.5 times the national average. The Reference Region also ranks above in both categories.
- The Region has maintained these advantages despite the impact of the recent recession and the long-term term decline in the number of manufacturing businesses and employment.
- The Agribusiness component of the cluster is relatively specialized in the types of agricultural commodities produced with corn and soybeans being the dominant crops. Livestock operations are primarily involved in the production of beef and dairy cattle, as well as hogs.
- The Food Processing component, specializing in five product groups (food additives, cheese and dairy products, processed meats, snack foods, and livestock feed), has the potential for further development based on their supply chain relationships to other industries in the Region or the surrounding metro areas.
- Opportunities likely exist for grain and livestock producers to work with food processors to develop new value added products or to process more locally grown produce. However, more work will be necessary to identify and develop those opportunities.
- Alternative value-added opportunities, such as organic food production or the conversion of grain, oilseeds, or by-products into fuel from the bio-based materials of products is an emerging opportunity. Further research is required to determine the viability of such opportunities.
- The expected wave of retiring Baby Boomers will create most of the demand for new workers, despite static, or even declining, overall employment in the industry. Since other industries will experience the same challenges, competition for skilled workers will be brisk given the relatively limited number of potential younger workers.

INDUSTRY CLUSTER PROFILE: TRANSPORTATION EQUIPMENT MANUFACTURING

Cluster Summary

The *Transportation Equipment Manufacturing* industry cluster produces equipment for transporting people and goods. Major industries in this cluster have production processes similar to those in other machinery manufacturing establishments: bending, forming, welding, machining, and assembling metal or plastic parts into components and finished products. However, the assembly of components and subassemblies and further assembly into finished vehicles are more common in this cluster than in the Machinery Manufacturing industry cluster.

The five-county region has a relatively small presence in this industry cluster, but is well positioned to take advantage of development opportunities based on the capabilities and expertise of its Machinery and Fabricated Metal Products Manufacturing clusters. In addition, the Rockford metro area has a strong and well-established presence in two important subsectors of the Transportation Equipment Manufacturing cluster: motor vehicle production and aerospace components.

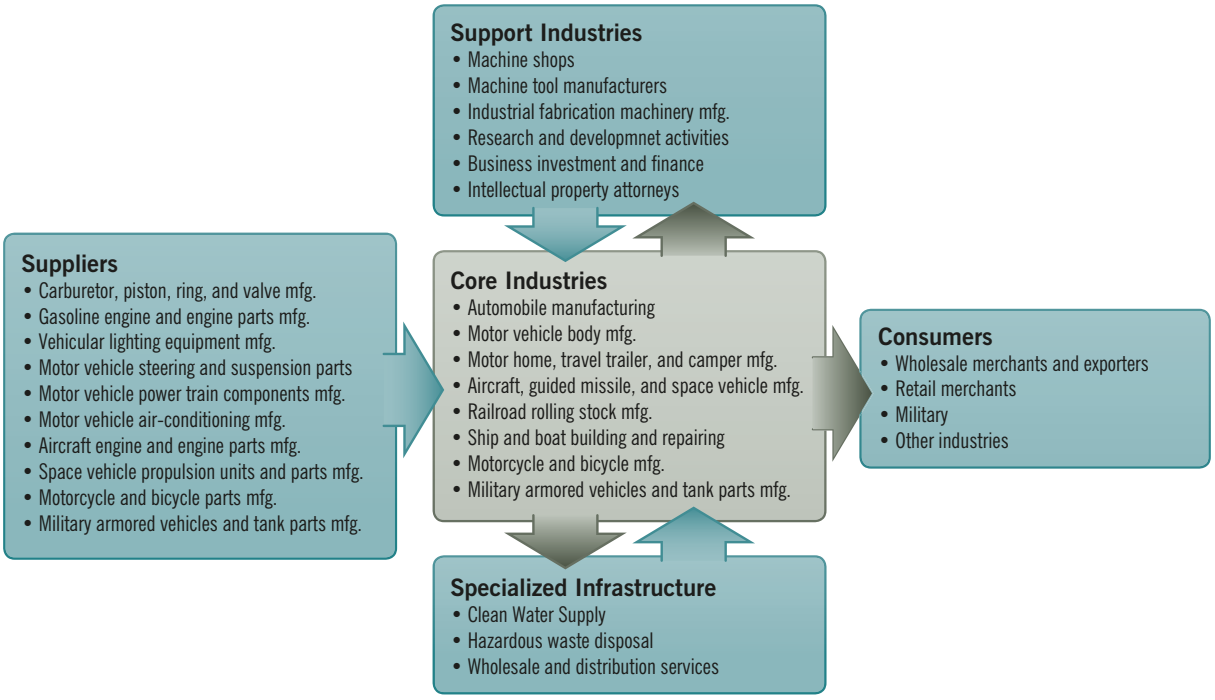
The Rockford metro area's motor vehicle industry has developed around the Chrysler Belvidere Assembly Facility plus Tier I and Tier II suppliers which produce parts and services for the plant and other auto makers. The Rockford area also has five Tier I suppliers to the aerospace industry, including UTC Aerospace Systems and Woodward. In addition, some parts and components produced by this industry are used by farm and construction equipment manufacturers with a strong presence in the five-county region, as well as the Quad Cities and Peoria metro areas.

Based on this concentration of automotive and aerospace related firms and employment, the five-county region is be well-positioned to take advantage of the growth opportunities in these industries.

Cluster Definition

An industry cluster is a group of similar industries which are closely connected by supply chains and/or similar labor pools located within the same region. The core strength of the Transportation Equipment Manufacturing industry cluster comes from the production of tools, structural components, and parts which are either sold as finished products or are incorporated into other manufactured goods. These core industries drive employment and inputs in other industries supplying them (e.g., the final assembly of vehicles for sale or delivery to market), as well as those which provide support through business finance, research and development, or industrial process services (Figure 51).

Figure 51: Transportation Equipment Manufacturing, Cluster Components



Source: The Purdue Center for Regional Development (cluster definitions), 2012.

Regional Overview

The Transportation Equipment Manufacturing cluster in the Reference Region, a group of 32 counties in northwest Illinois, northeast Iowa, and southwest Wisconsin including the five-county region, had 105 establishments in 2010 and employed 9,452. A majority of businesses in this cluster are small in employment (70.0% of firms have fewer than 10 employees), but the five largest employers account for 64.0% of total employment in the cluster (Figure 52).

In the five-county region, the cluster includes nine establishments and employed 611 people in direct cluster jobs in 2010. The cluster also has had a consistently high concentration of employment in the Region with location quotients (LQ) of 2.9 in 2001, 3.9 in 2007, and 3.6 in 2010. Only three industry subsectors had a strong presence in the Region based on concentration of employment (Figure 53).

Figure 52: Transportation Equipment Manufacturing: Firms by Employment Size Category

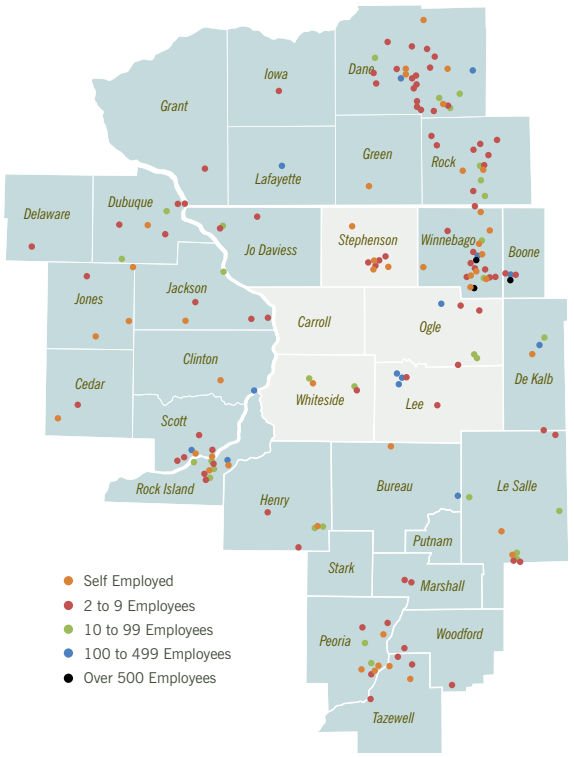


Figure 53: Transportation Equipment Manufacturing: Subsectors Based on Employment Concentration

Indicator	Location Quotient (2010)
Truck trailer manufacturing	4.9
All other transportation equipment manufacturing	3.4
Motor vehicle parts manufacturing	1.3

Note: This does not reflect the Nippon-Sharyo railcar production facility in Rochelle that opened in 2012.
Source: IMPLAN, 2010.

However, the automotive and aerospace industries have a strong presence in the nearby metro areas, especially Rockford. In addition, the recent location of the Nippon-Sharyo railcar manufacturing facility in Rochelle is not reflected in any recent statistics. The development of the railroad equipment manufacturing supply chain is an additional opportunity for the Region, since some parts and components used in the automotive and aerospace industries are similar.

Location Quotients (LQ) are used to evaluate local development opportunities and find businesses which are especially suited for the Region. A LQ is the ratio of the employment percentage represented by a given industry in the county to the percentage which that industry represents in the state or a representative area of interest. A ratio greater than 1.0 indicates a higher local concentration and a likelihood of exports from the county; a ratio less than 1.0 may suggest that goods or services are imported into the Region.

In 2010, this cluster has a higher than average concentration of economic activity, as defined by firm LQ, in both the Reference Region and the five-county region, when compared to the nation's economic activity in this cluster overall (Figure 54). Only five firms have 100 or more employees (Figure 55). However, the surrounding metropolitan areas have major national and global companies as well.

Figure 54: Transportation Equipment Manufacturing: Economic Activity Summary

Indicator	Five-County Region	Reference Region (32 Counties)
Number of Firms (2010)	9	105
Percent Change in Number of Firms (2007-2010)	*-25.0*	*-7.1*
Firm Location Quotient (LQ)	*1.3*	*1.1*
Employment (2010)	611	9,452
Percent Change in Employment (2007-2010)	*-1.3*	*-46.9*
Employment Location Quotient (LQ)	*0.9*	*0.8*

Sources: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW) and the Purdue Center for Regional Development (cluster definitions), 2012; Minnesota IMPLAN Group, 2007, 2010.

Figure 55. Transportation Equipment Manufacturing: Largest Employers, Five-County Region

Company Name	# of Employees	Industry Description	City
Nippon-Sharyo	300	Passenger Railcar Manufacturing	Rochelle
Borgwarner Inc.	250	Carburetor, Piston, Piston Ring, and Valve Manufacturing	Dixon
Johnson Controls, Inc.	200	Motor Vehicle Seating and Interior Trim Manufacturing	Dixon
Austin-Westran LLC	215	Truck Trailer Manufacturing	Byron
Donaldson Company, Inc.	180	Other Motor Vehicle Parts Manufacturing	Dixon

Source: Dun & Bradstreet, Inc., 2012.

Several major agricultural and construction machinery and equipment manufacturers are located in the Quad Cities (Deere) and Peoria (Caterpillar) metro areas. These industries use many of similar parts and components (e.g., engine and power transmission components or instrumentation used in cars, trucks, railroad equipment, and aircraft).

Industry Trends[38]

Aerospace Components

Tighter OEM Control: To make production more efficient, Boeing and other large aircraft OEMs are exercising greater control over their contractors by specifying quality control inspection programs for suppliers, requiring that suppliers buy metals like aluminum and titanium from designated providers and reducing the number of suppliers.

Air Cargo Expansion: Air cargo traffic is growing faster than passenger traffic, causing more passenger airplanes to be converted into freight-carrying aircraft. Both major commercial aircraft manufacturers, Boeing and Airbus, are aggressively seeking to expand their roles in the freighter conversion market, pushing out the once dominant third-party freight conversion companies. The global freighter fleet is expected to increase 150 percent by 2025, according to Airbus.

Direct Pricing: Although many contracts are awarded after competitive bidding, especially for Department of Defense business, some large Original Equipment Manufacturers (OEM) are awarding more contracts based on direct pricing. These contracts are offered to a manufacturer at a specific, nonnegotiable price. The effect is to reduce the number of contractors that OEMs deal with, simplifying the production process.

Offset Manufacturing Agreements: With increasing competition from European aircraft manufacturers like Airbus, U.S. commercial aerospace manufacturers are beginning to see offsets as necessary to compete internationally. Offsets are manufacturing or sales agreements between U.S. aerospace companies and foreign governments which typically involve establishing an overseas production facility. Aircraft part manufacturers either have to link themselves to these offset expansions or slowly lose business to overseas production. China is a main location for offsets with the U.S. aerospace industry.

Composite Materials: More aircraft components are now made from a composite of plastics, fibers, and glue rather than from metal. The aircraft parts industry has concerns that using composites, which offer several important advantages to manufacturers, will be restricted by safety concerns.

Automotive Components

Globalization: To compete globally, auto parts companies are merging and forming partnerships and joint ventures with worldwide auto companies. Partnerships are often created for the mutual exchange of ideas. Large suppliers have expanded operations overseas, wherever U.S. or foreign OEMs assemble cars. To keep or add business, smaller suppliers have followed suit, either by manufacturing abroad or expanding their international distribution system.

More Older Vehicles Operating: The demand for auto parts is increasing due to Americans owning more vehicles and keeping them longer. The average light vehicle on the road is nearly eight years old and requires more maintenance and repairs than newer ones, according to the National Automobile Dealers Association (NADA).

Aftermarket Sales Grow Slowly: Sales of aftermarket replacement parts and products are expected to increase slowly. Used car sales are increasing as the U.S. economy remains tepid and motorists either want to spend less on a vehicle or have difficulty securing new car financing. While better engineering is producing cars which last longer without major overhauls, consumers are shifting to spending more on maintenance to improve fuel efficiency, since they keep their older cars for longer periods.

[38] Source: Hoovers, Inc., 2013. (www.hoovers.com)

R & D Shifts to Suppliers: As big car companies concentrate on styling, marketing, and engines, part suppliers are advancing technology in many car components. Just as anti-lock brakes are now standard on many cars, parts companies believe that the computer-controlled, electronically operated systems they're developing will be popular for transmissions, suspensions, safety systems, and steering.

Railroad Equipment

Sales to Shippers, Leasing Companies: More rolling stock is now leased or owned by shippers than sold directly to railroads. Some leasing companies are managed by the rolling stock manufacturers, and one major leasing company, TTX, is owned by a cooperative of railroads. The share of railroad ownership in freight rolling stock has steadily declined and now stands at about 40 percent, according to the Association of American Railroads.

Corporate Restructuring: The last decade brought corporate restructurings in railroad equipment manufacturing. General Motors sold EMD to a consortium of private investors (which later sold it to Caterpillar), GE Transportation is a result of GE's corporate merging of several divisions, and Trinity sold its European operations. Companies which divest or restructure seek to gain internal efficiencies. Diversification and realignment can help companies reduce the risk inherent in the cyclical rolling stock industry.

Low-Floor Light Rail: Light rail manufacturers are increasingly designing passenger cars with floors that are just over one foot high. Low-floor cars allow regional light rail systems to implement easy-to-access boarding stations. This new design often eliminates the need for steps and helps light rail systems meet federal standards for persons with disabilities.

Market Opportunities[39]

Aerospace Components

Avionics: Electronic sensing, communications, and control systems are becoming more important to the aircraft business, especially the military. Boeing is developing communications systems to allow commercial fliers to access the Internet in flight. The FAA has also begun development of a national NextGen air traffic control system which relies on satellites rather than a ground-based system. Avionics systems can be more profitable than regular aircraft parts, but are more difficult and expensive to develop.

Automotive Parts and Components

Telematics: Integration of automotive telematics, technology which provides in-car access to communication networks, is expected to increase in the near future. Employing computers and wireless communication networks, automotive telematics applications range from vehicle tracking and navigation systems to mobile television and email access. Growing interest in Internet-enabled automotive features could provide growth opportunities for parts and accessory manufacturers.

Green Technologies: Growing concern over climate change and energy dependency in the U.S. has accelerated the development of environmentally friendly and alternative energy technologies. Demand for hybrid, electric, and alternative fuel-powered cars is growing, along with consumer expectations about the use of renewable, non-toxic materials. Some parts suppliers have created environmental initiatives to guide their product development and manufacturing practices.

[39] Source: Hoovers, Inc., 2013. (www.hoovers.com)

Growing Market in China: With growing vehicle and parts sales and the WTO agreement opening the market, China has become a growing target market for motor vehicle parts and products, according to the Motor and Equipment Manufacturers Association (MEMA). Between 2000 and 2010, U.S. exports of auto parts to China increased almost 400.0%.

Railroad Equipment

Acquiring Component and Parts Manufacturers: In recent years, locomotive and railcar companies have acquired or bought stakes in components and parts makers, which can increase access to key parts such as airbrakes, wheelbases, and couplers. Bringing component manufactures into the company can help to control costs. These acquisitions also help shorten the supply chain and may lead to fewer bottlenecks in the production of rolling stock.

Internal Leasing: Railcar manufacturers are finding value in leasing the cars they make. Railcar leases are typically for one to 20 years in length. Internal leasing creates the interesting dilemma of a company's backlog resulting from its own orders.

New Export Markets: Exports to countries such as India, Kazakhstan, South Korea, and Ukraine have risen significantly over the past few years. Although Canada and Mexico continue to represent the bulk of rolling stock exports, nations with growing infrastructure needs have greatly increased demand for U.S. locomotives, railcars, and passenger cars.

Ethanol Demand Drives Increase in Tank Car Production: Freight car manufacturers are seeing a significant increase in demand for 30,000-gallon tank cars. Government incentives for ethanol production have led some manufacturers to switch from grain car to tank car production to meet demand. Some industry insiders believe the demand for ethanol carloads could increase by 30.0% or more.

Supply Chain

The supply chain analysis provides insight into the value of supply chain inputs, the amount of inputs produced in a region for the industry clusters studied (represented in most cases by an absorption rate), and the stages along the supply chain which stand out as areas of competitive advantage. Areas of high absorption are areas in the Transportation Equipment Manufacturing supply chain which allow the Region to capture the most value from a specific stage in the production or delivery of products and services within the supply chain. This tool supports an economic development strategy by indicating where an investment will have the highest impact on the regional economy and may indicate opportunities for business retention or expansion.

Conversely, stages along the supply chain which are underperforming also offer opportunities for business attraction and/or entrepreneurship. When reviewing data relating to industry inputs, comparing both the absorption rate and the total value of inputs is important because certain services or components which maintain a high absorption rate may be of low value to the regional economy. Similarly, certain inputs, regardless of value or absorption, may be of high strategic importance to the Region in efforts to build a stronger industry cluster.

Supply Chain

An essential component for an industry cluster is the local supply chain. While not all inputs (goods or services) that an industry cluster needs can be produced in the local economy, it is desirable to meet as many of the cluster's needs locally as possible. This analysis reveals the source and amount of purchases among the unique niches within an industry. By identifying the total industry economic outputs and areas where goods and services are purchased from outside the regional economy, one may be in a better position to determine which areas of the industry supply chains are strongest, as well as those which present the best opportunities for growth within the five-county region.

The supply chain information in this report presents the flows of trade which support the Transportation Equipment Manufacturing-related cluster both within the five-county region and from outside the Region. Key sectors which may be appropriate targets for expansion appear as imports (gaps) from outside the Region, but still within the industry cluster. These gaps are then analyzed in terms of regional strengths and potential areas for targeting and support and are placed within a supply chain model to determine the stages of the supply chain with the weakest and strongest regional presence. In order to fully develop the Transportation Equipment Manufacturing cluster, the five-county region can make the most progress by focusing on those sectors without a strong regional presence currently, but which have significant development potential (Figure 56).

Regional Supply Gap

Difference between Gross and Regional Inputs: a large gap value indicates that a large amount of inputs are imported into the region, rather than produced within the five-county region.

Regional Inputs

The dollar value of gross inputs which are produced within the Region.

Gross Inputs

Total dollar amount of inputs used by the industry within each sector.

Figure 56: Transportation Equipment Manufacturing: Largest Supply Chain Gaps

Industry	Regional Supply Gap	Regional Inputs	Gross Inputs	% Purchased from Outside the Region
Motor vehicle parts	-$5,217,569	$49,134	$5,266,704	99.1%
Aluminum products from purchased aluminum	-$1,365,102	$1,057	$1,366,159	99.9
Valves and fittings other than plumbing	-$1,070,403	$11,096	$1,081,499	99.0
Fluid power process machinery	-$1,060,583	$16,625	$1,077,208	98.5
Machine shops	-$911,441	$1,939	$913,380	99.8
Paints and coatings	-$811,493	$2	$811,496	100.0
Motor and generators	-$779,389	$569	$779,958	99.9
Semiconductor and related devices	-$649,054	$2	$649,056	100.0
Relay and industrial controls	-$641,560	$987	$642,547	99.8
Plastics packaging materials and unlaminated films and sheets	-$626,284	$1,394	$627,678	99.8

Source: IMPLAN, 2010.

For example, the regional Transportation Equipment Manufacturing cluster requires nearly $5.3 million in inputs (i.e., the products or services required to create a finished product) from the "motor vehicle parts" industry. However, only $49,000 of the required inputs from this industry is produced within the Region, with the balance purchased elsewhere. This finding indicates opportunities for an existing firm or new business to satisfy the regional demand for these products.

The supply chain gap for "machine shops" also presents a unique opportunity for existing business development. In general, machine shops produce a wide variety of parts or components based on customer requirements. Since most specialize in low-volume,

Motor vehicle parts (NAICS Sector 333618)

Firms in this industry manufacture and/or rebuild motor vehicle gasoline engines and engine parts, whether or not for vehicular use. Subsectors include the following:

» Carburetor, Piston, Piston Ring, and Valve Manufacturing Natural gas engines

» Gasoline Engine and Engine Parts Manufacturing

fast-turnaround orders, they are quite versatile and are only limited by their production equipment and the skills and capabilities of their workers. Therefore, a regional initiative aimed at expanding the capabilities of machine shops could help meet the supply chain needs of several key manufacturing sectors.

Workforce Requirements, Supply and Demand

The local skilled workforce for the Transportation Equipment Manufacturing cluster has been an ongoing issue, as it has for all industries. The shortage of skilled workers is largely the result of a wave of retirements from the Baby Boomer generation of workers. Even as industry employment has experienced net declines over the past decades (a trend that is projected to continue) the succeeding generation of potential workers is comparatively small because of recent demographic trends and the propensity of younger workers to pursue careers outside of manufacturing. Because of its relatively small presence in the five-county region, data specific to the Transportation Equipment Manufacturing industry is not available. However, in the manufacturing sector overall, nearly half of workers in 2010 were 45 year of age or older (Figure 57).

Figure 57: Transportation Equipment Manufacturing: Employment by Age Group, Five-County Region, 2010

Age Group	Employment (Percent of Total)
Under 25 Years	13.9%
25-44 Years	38.0
45-64 Years	43.5
65 Years & Older	5.1

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2010.

Over three-fourths of the employment, as well as 70.0% of the wages, in the Transportation Equipment Manufacturing cluster is concentrated in Production; Installation, Maintenance, and Repair; or Transportation and Material Moving occupations (Figure 58).

Figure 58: Transportation Equipment Manufacturing: Staffing Patterns, Five-County Region

Occupational Classification	Share of Employment	Share of Wages	Average Annual Wage
Production	64.5%	58.3%	$39,514
Transportation and Material Moving	5.8	4.9	36,920
Office and Administrative Support	5.8	4.9	36,863
Installation, Maintenance, and Repair	5.8	7.0	52,463
Architecture and Engineering	4.9	7.9	69,787
Management	3.5	8.5	106,642
Business and Financial Operations	2.8	2.9	46,434
Construction and Extraction	1.4	1.8	54,421
Sales and Related Occupations	1.1	1.6	63,264

Sources: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW) and the Purdue Center for Regional Development (cluster definitions), 2012.

The challenge for employers is the looming demand for replacement workers as older workers retire. The Illinois Department of Employment Security estimates that nearly 200 openings for production workers will become available per year between 2008 and 2018, most resulting from the demand for replacement workers (Figure 59).

Figure 59: Occupational Employment, Projected Demand by Worker Classification
Workforce Investment Board Region #4, 2008-2018*

Occupational Classification	Employment		Employment Change 2008-2018		Average Annual Job Openings		
	2008	2018	Number	Percent	Growth	Replacement	Total
Production	9,653	8,806	-847	-8.8	5	191	196
Transportation and Material Moving	6,297	6,479	182	2.9	25	153	178
Office and Administrative Support	11,256	11,371	115	1.0	46	242	288
Installation, Maintenance, and Repair	2,798	2,930	132	4.7	15	55	70
Architecture and Engineering	1,116	1,073	-43	-3.9	3	25	28
Management	7,959	7,693	-266	-3.3	13	123	136
Business and Financial Operations	3,110	3,385	275	8.8	28	64	92
Construction and Extraction	4,047	4,188	141	3.5	16	68	84
Sales and Related Occupations	7,815	8,049	234	3.0	27	241	268

**Workforce Investment Board (WIB) Region #4 consists of Carroll, JoDaviess, Ogle, Stephenson, and Whiteside counties.*
Source: Illinois Department of Employment Security, 2012.

Key Takeaways

- The Transportation Equipment Manufacturing cluster has a small presence in the five-county region, but the automotive and aerospace industries in the Rockford area are major employers.
- A small number of companies in the five-county region produce parts or provide services to these sectors, but there may be potential to develop new or expanded businesses based on existing supply chain relationships with companies in the Rockford area.
- A recent study of the development potential of the aerospace industry found that while business operation costs in Rockford were competitive with their peers in other parts of the U.S., site acquisition and property tax costs were the metro area's primary weaknesses[40]. These results may offer the five-county region a competitive advantage to attract these companies when combined with the expertise available in the Rockford area.
- The recent opening of the Nippon-Sharyo railcar production facility in Rochelle offers the opportunity for new or existing companies to supply parts and components, not only to this company, but to the railroad equipment industry in general.
- Small niche manufacturers can be supported as part of a strategy to support small business and entrepreneurship in the Region. Machine shops are of special interest because they typically do not have a standard product, but rather specialize in a range of fabrication processes or services based on customer needs.
- The expected wave of retiring Baby Boomers represents most of the demand for new workers, despite static, or even declining, overall employment in the industry. Since other manufacturing sectors will experience the same challenges, competition for skilled workers will be brisk given the relatively limited number of potential younger workers.

[40] "Rockford Regional Strategic Diversification Plan: Aerospace and Defense Industry Analysis", Angelou Economics, 2012.

INDUSTRY CLUSTER PROFILE: TRANSPORTATION AND LOGISTICS

Cluster Summary

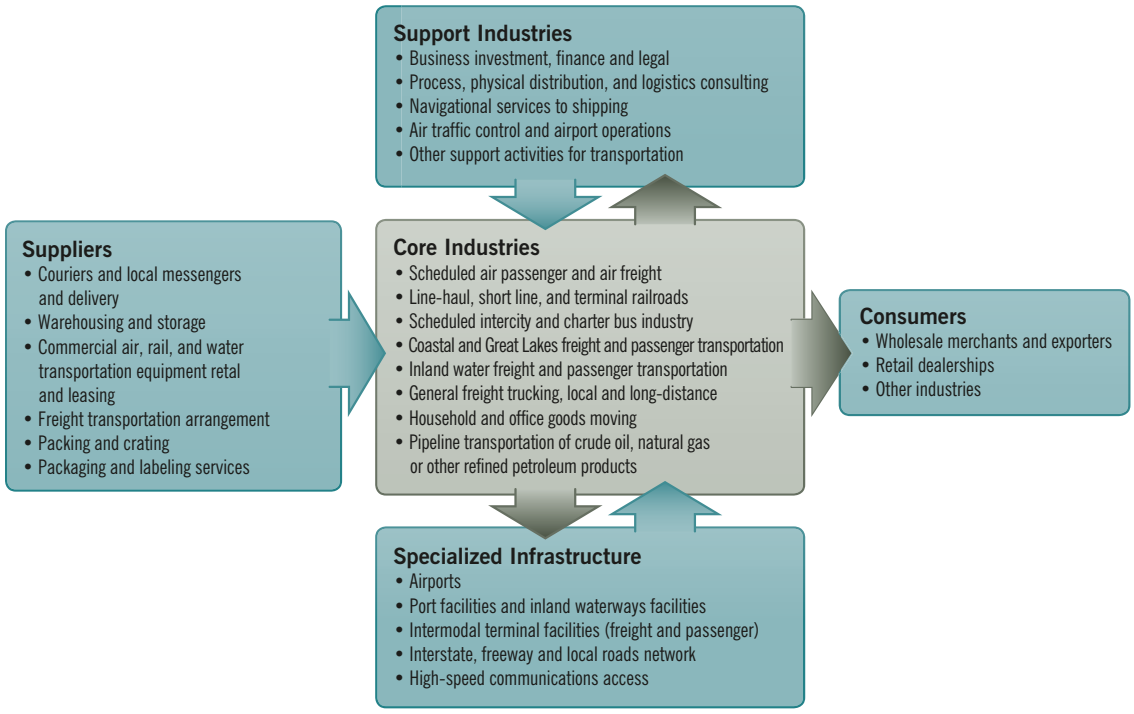
The *Transportation and Logistics* industry cluster encompasses the transportation of passengers and freight, related support services (e.g., freight forwarding and supply chain management), warehousing, and the management transportation infrastructure (e.g., ports and terminal facilities). Providers of air, water, road, and rail transportation and related services are also included in this cluster. The cluster has a relatively small, but growing presence in the five-county region, driven by transportation access and the proximity to the Chicago area and other regional markets.

For this report, the Transportation and Logistics cluster is considered to be a grouping of physical and strategic assets which should be developed and maintained to support other targeted industries. The Region not only benefits from excellent highway and rail access, but also from several large commercial airports, two foreign trade zones, a major UPS air hub (in Rockford), and the Global III rail-truck intermodal facility (in Rochelle). The former Savanna Army Depot also has the potential for rail and communications-related development if necessary infrastructure improvements are made.

Cluster Definition

An industry cluster is a group of similar industries which are closely connected by supply chains and/or common labor pools in the same region. The core strength of the cluster comes from the transportation of people or goods by air, road, rail, or water. These core industries drive employment and inputs in the other industries which supply them, as well as those which support the core industries by providing business finance and various business services (Figure 60).

Figure 60: Transportation and Logistics, Cluster Components



Source: The Purdue Center for Regional Development (cluster definitions), 2012.

Regional Overview

The Transportation and Logistics cluster in the Reference Region, a group of 32 counties in northwest Illinois, northeast Iowa, and southwest Wisconsin including the five-county region, had 2,353 establishments and employed 35,054 people in 2010. The average annual wage in this cluster was $40,524, slightly below the average for all industries.

The passenger and freight transportation component (trucking, railroads, airlines, and barge or other shipping operations) represents 59.7% of the total business establishments in the Reference Region and 54.5% of the total employment. Transportation support activities including facilities operations and transportation brokerage services accounts are 24.0% of total business establishments and 23.0% of total cluster employment. The warehousing and storage services component accounts for 14.7% of the firms operating in the Reference Region and 20.4% of total cluster employment (Figure 61).

The cluster has had a growing concentration of employment in the five-county region with location quotients (LQ) of 0.6 in 2001, 0.9 in 2007, and 1.1 in 2010 with many industry subsectors represented in the five-county region. Four subsectors have a strong presence in the Region as measured by concentration of employment (Figure 62).

Figure 61: Transportation and Logistics: Firms by Employment Size Category

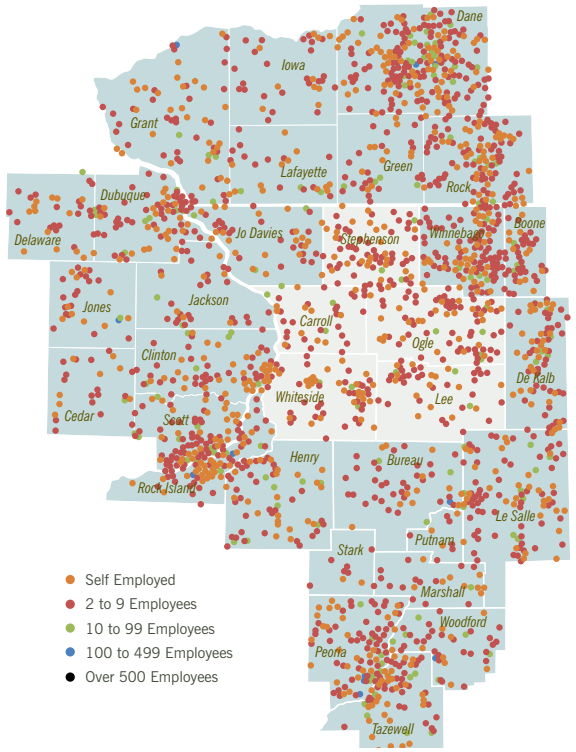


Figure 62: Transportation and Logistics: Subsectors Based on Employment Concentration

Indicator	Location Quotient (2010)
Warehousing and storage	3.6
Transit and ground passenger transportation	1.9
Transport by truck	1.6
Transport by rail	1.4

Source: IMPLAN, 2010.

In the five-county region, the cluster includes 300 establishments and employed 2,298 people in direct cluster jobs in 2010. The average annual wage for direct cluster jobs is $41,559. This cluster has a higher than average concentration of economic activity, as defined by employment and firm LQ, in both the Reference Region and the five-county region, when compared to the nation's economic activity in this cluster (Figure 63).

Location Quotients (LQ) are used to evaluate local development opportunities and find businesses which are especially suited for the Region. A LQ is the ratio of the employment percentage represented by a given industry in the county to the percentage which that industry represents in the state or a representative area of interest. A ratio greater than one indicates a higher local concentration and a likelihood of exports from the county; a ratio less than one may suggest that goods or services are being imported into the Region.

The transportation component of the cluster includes 64.5% of the total business establishments in the five-county region, but only 39.5% of the total employment. Transportation services accounts for 20.7% of the total business establishments but has 19.6% of the total employment in the cluster.

The warehousing and distribution component includes 14.9% of the firms operating in the five-county region, but has 40.9% of total cluster employment. The majority of companies have small employment with 95.0% having fewer than 100 employees, but they represent about one-third of total employment.

Figure 63: Transportation and Logistics: Economic Activity Summary

Indicator	Five-County Region	Reference Region (32 Counties)
Number of Firms (2010)	300	2,353
Percent Change in Number of Firms (2007-2010)	*14.5*	*0.4*
Firm Location Quotient (LQ)	*2.6*	*1.6*
Employment (2010)	2,298	35,054
Percent Change in Employment (2007-2010)	*6.4*	*-8.4*
Employment Location Quotient (LQ)	*1.1*	*1.1*
Average Annual Wage (2010)	$41,559	$40,524
Percent Change in Average Annual Wage (2007-2010)	--	*4.3*

Sources: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW) and the Purdue Center for Regional Development (cluster definitions), 2012.

Although there are few large employers in the industry cluster in the five counties, most engage in warehousing and distribution activities. The surrounding metropolitan areas also contain many large general warehousing companies, corporate distribution centers, and parcel couriers (e.g., Lowes, Nestle, Target, Caterpillar Logistics, and United Parcel Service) (Figure 64).

Figure 64: Transportation and Logistics: Major Employers, Five-County Region

Company Name	# of Employees	Industry Description	City
Walmart Distribution Center	300	Regional Distribution Center	Sterling
Total Logistic Control LLC	200	Refrigerated Warehousing and Storage	Rochelle
Americold Logistics LLC	140	Refrigerated Warehousing and Storage	Rochelle
Dohrn Transfer Company	100	General Freight Trucking - Long-Distance	Rock Falls
Canadian National Railway	75	Rail Transportation	Freeport
First Student, Inc.	54	Charter Bus Industry	Dixon
Sterling Rail Services LLC	33	Support Services for Rail Transportation	Sterling

Source: Dun & Bradstreet, Inc., 2012.

Industry Trends[41]

Decline in Small Carriers, Owner-Operators: Rising fuel costs have led to a decline in small and mid-size trucking companies. Unable to negotiate bulk fuel rates, smaller carriers are more vulnerable to price increases. Owner-operators also have less leverage when collecting fuel surcharges, and some brokers fail to pass the surcharges, which they collected, on to the drivers.

Air Cargo Declining; Stronger Demand for Alternative Transportation: Rising costs have caused many U.S. shippers to migrate from air shipping to other modes of transportation. Fewer flights and the high fuel costs associated with air transport have made ship, rail, and truck transport more competitive options to air transport. Joint ventures between ship and truck carriers have succeeded in improving shipment reliability and shortening delivery times. Advances in information systems and innovations in intermodal transport have caused a resurgence in the use of railroads. Railroads are also one of the most cost-effective, environmentally friendly forms of freight transportation.

Increasing Intermodal Revenue: The transfer of containers from ship to truck or intermodal service is one of the largest revenue-generators for Class I railroads, second only to coal. Containers can now be stacked on railcars due to advances in terminal loading and unloading. Shippers seeking cheaper transportation largely drive demand for intermodal services. Intermodal rail accounts for about 20.0% of Class I railroad revenue, according to the Association of American Railroads (AAR).

Logistics Services: From being a passive provider of storage space, the warehousing industry has evolved to providing logistics services which enable customers to identify, track, and expedite individual items through the supply chain. Many warehouse facilities are considered high throughput distribution (HTD) facilities rather than long-term storage buildings.

Larger Warehouses, Electronically Equipped: To provide sophisticated distribution functions for customers, new warehouses are bigger: 1 million square feet is now a common size. With computer systems now controlling the identification and throughput of individual items, special wiring and outlets are installed in warehouses. In some warehouses, a grid of wires in the floor allows computer-guided forklifts to find stored items.

Specialized Equipment: As more warehousing and logistics companies specialize, they require more customized material handling equipment. More site-specific, comfortable, and safe products are especially in demand.

[41] Source: Hoovers, Inc., 2013. (www.hoovers.com)

Market Opportunities[42]

Conserving Fuel: Carriers and owner-operators can maximize profits by managing fuel consumption. New power management technologies allow a truck cab to be warmed or cooled without the engine idling. New aerodynamic body designs, advanced tire technology, and GPS routing can help truckers reduce fuel costs.

Longer Combination Vehicles (LCV): Trucking companies can increase efficiency and save on labor costs by using longer trucks. Federal regulations limit the size of combination vehicles, trucks with two or three trailers, and states limit their use on certain routes.

Increased Productivity through Information Technology: Large carriers are among the most sophisticated users of transportation technology. Many in-cab systems include basic management and dispatching software. New systems incorporate bar code readers, signature capture, and radio frequency identification (RFID) tagging, allowing drivers to quickly manage the transfer of goods. Experience with computer systems has led some truckers to expand into courier and logistics services for large shippers.

In the rail industry, positive train control (PTC) is a highly advanced integrated system of digital data links, GPS, and on-board computers. PTC represents a paradigm shift for railroad operators as routes can be managed by centralized systems, not conventional track signaling.

Capacity Improvements on Key Routes: Railroads are doubling track on key commodity routes, such as coal, to keep up with increased demand. Doubling track on high-volume routes improves traffic flow and reliability. On lines used by Amtrak and regional commuter railroads, double tracks also improve capacity by allowing freight and passenger trains to quickly maneuver around each other.

Public-Private Partnerships (PPP): Public-private partnerships between railroads and local governments can help railroads address public rail infrastructure improvements. The railroad industry has traditionally been wary of PPPs, but the demand for more rail capacity has made them more receptive to investment help from local governments.

Alternative Fuels: Alternative fuels, such as biodiesel, can substantially reduce carbon emissions in the transportation industry compared to standard fuels. Biodiesel has the highest energy content of any alternative fuel and can be used in trucks or locomotives with minor modifications. However, the cost and efficiency of biodiesel has yet to match that of regular diesel fuel. Switching to biodiesel may make it easier for transportation companies to meet the EPA's requirement to reduce sulfur emissions and may qualify them for alternative fuel tax credits, but may not fully offset higher biodiesel costs.

Outsourcing Warehouse/Distribution Functions: Recognizing the importance of efficient storage and distribution functions, more companies are outsourcing to logistics specialists, known as third-party logistics providers, or 3PLs. In addition to higher efficiency, companies can lower their capital investment and the risk of being stuck with poorly sited facilities. Outside logistics firms are more likely to use public warehousing to meet local distribution needs.

Electronic Record Storage: Some record storage firms are expanding their capabilities from paper documents to electronic records by building computer server farms in secure locations. By providing secure, online storage offsite for customers' critical computer applications, storage companies are gradually transforming their business from paper to electronic storage.

[42] Source: Hoovers, Inc., 2013. (www.hoovers.com)

Supply Chain

This approach examines the value of supply chain inputs, the amount of inputs produced inside the five-county region (represented in most cases by an absorption rate) for the industry clusters studied, and the stages along the supply chain which represent areas of competitive advantage as well as those which present opportunities to attract businesses. Areas of high absorption represent areas along the Transportation and Logistics supply chain which allow the Region to capture the most value from a specific stage in the production or delivery of products and services within the supply chain.

Findings from a supply chain can inform local development strategies by indicating where along the value chain an investment will produce the highest impact on the regional economy and may indicate opportunities for business retention or expansion. Conversely, stages along the supply chain which are underperforming also offer opportunities for business attraction and/or entrepreneurship. When reviewing data relating to industry inputs it is important to compare both the absorption rate and the total value of inputs since certain services or components which maintain a high absorption rate may be of low value to the regional economy. Similarly, certain inputs, regardless of value or absorption, may be of high strategic importance to the Region in efforts to build a stronger industry cluster.

The supply chain information provided presents the flows of trade which support Transportation and Logistics companies both within the five-county region and from outside the Region. The key sectors, which may be appropriate targets for expansion, appear as imports (gaps) from outside the Region, but still within the industry cluster (Figure 65). These gaps are then analyzed in terms of regional strengths and potential areas for targeting and support and are placed into a supply chain analysis to identify stages of the supply chain with the strongest regional presence. In order to fully develop the Transportation and Logistics cluster, the five-county region can make the best progress by focusing on those sectors which do not currently have a strong regional presence, but have significant potential to develop in the Region.

Supply Chain

An essential component for an industry cluster is the local supply chain. While not all inputs (goods or services) that an industry cluster needs can be produced in the local economy, it is desirable to meet as many of the cluster's needs locally as possible. This analysis reveals the source and amount of purchases among the unique niches in an industry. By identifying the total industry economic outputs and areas where goods and services are purchased from outside the regional economy, one may be in a better position to determine which areas of the industry supply chains are strongest, as well as those that present the best opportunities for growth in the five-county region.

Regional Supply Gap

Difference between Gross and Regional Inputs: a large gap value indicates that a large amount of inputs are imported into the Region, rather than produced within the five-county region.

Regional Inputs

The dollar value of gross inputs which are produced within the Region.

Gross Inputs

Total dollar amount of inputs used by the industry within each sector.

Figure 65: Transportation and Logistics: Key Supply Chain Gaps, Five-County Region

Industry	Regional Supply Gap	Regional Inputs	Gross Inputs	% Purchased Outside Region
Motor vehicle parts	-$9,402,335	$88,543	$9,490,877	99.1%
Management of companies and enterprises	-$3,868,325	$368,568	$4,236,893	91.3
Railroad rolling stock	-$1,849,496	$26	$1,849,522	99.9
Plates and fabricated structural products	-$1,467,031	$44,705	$1,511,736	97.0
Other aircraft parts and auxiliary equipment	-$1,145,754	$60	$1,145,814	99.9

Source: IMPLAN, 2010.

For example, the regional Transportation and Logistics cluster requires $9.4 million in inputs (i.e., the products or services required to create a finished product) from the "motor vehicle parts" production. However, only $88,500 is produced in the Region, with the balance purchased from outside the five-county region. This suggests an opportunity for an existing firm or new business to satisfy the regional demand.

Another related opportunity is "other aircraft parts and auxiliary equipment." Companies in this sector manufacture aircraft parts or auxiliary equipment (except engines and aircraft fluid power subassemblies) and/or develop and make prototypes of aircraft parts and auxiliary equipment. Auxiliary equipment can include such items as crop dusting apparatus, armament racks, in-flight refueling equipment, or external fuel tanks. Although the supply chain gaps in these industries are large, we should note that automotive and aerospace companies have a strong presence in the Rockford metro area. It is possible that a portion of these supply chain gaps are filled by companies in the Rockford area.

Motor vehicle parts (NAICS Sector 3363)

This industry comprises establishments primarily engaged in the manufacturing and/or rebuilding motor vehicle parts and accessories.

- Motor Vehicle Gasoline Engine and Engine Parts.
- Motor Vehicle Electrical and Electronic Equipment
- Motor Vehicle Steering and Suspension Components
- Motor Vehicle Transmission and Power Train Parts

Also, there is some anecdotal evidence that motor vehicle parts manufacturers within the five-county region located here because of the larger industry in the Rockford area. Development of these supply chain opportunities is possible if they can be pursued in a cooperative manner between the five-county region and the Rockford area.

Since only 2010 data is available for the supply chain analysis, the impact of the Nippon-Sharyo railcar manufacturing facility in Rochelle is not reflected in the results. The supply chain gap for the railroad rolling stock industry is likely much smaller now than shown in the table but planned expansions in the Nippon-Sharyo plant could benefit the Region substantially.

Workforce Requirements, Supply and Demand

The available workforce for the Transportation and Logistics cluster has been an ongoing issue, just as it has for manufacturing in general. The lack of qualified workers stems from the wave of retirements of the Baby Boom generation of skilled laborers. Although cluster employment has remained mostly stable during the past decade, the next generation of potential workers is relatively small. This is due in part to general demographic trends and the propensity of many younger workers to pursue white collar careers.

The Transportation and Logistics cluster has a somewhat younger age profile (46.0% are age 25 to 44 years), than some manufacturing sectors (Figure 66). Wages are also lower than for comparable age groups in the manufacturing sector. This pattern could reflect a younger, less experienced workforce, a higher number of part-time and seasonal workers employed, or may mean that many jobs require less training and experience than other industries.

Figure 66: Transportation and Logistics: Employment and Wages by Age Group, Five-County Region

Age Group	Employment (Percent of Total)	Average Annual Wage
Under 25 Years	7.7%	$14,269
25-44 Years	46.0	33,893
45-64 Years	41.0	38,525
65 Years & Older	5.2	20,202

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2011.

In total, 56.3% of the employment and 54.7% of the wages in the cluster are concentrated in Transportation and Material Moving occupations (Figure 67). This occupational sector represents the largest single share of the jobs in the five-county region. Ensuring that appropriately skilled workers are available at competitive rates of compensation will be critical to maintaining the manufacturing sector in the Region[43] .

Figure 67: Transportation and Logistics: Staffing Patterns, Five-County Region

Occupational Classification	Share or Employment	Share of Wages	Average Annual Wage
Transportation and Material Moving	56.3%	54.7%	$41,407
Office and Administrative Support	21.7	17.7	34,684
Installation, Maintenance, and Repair	6.1	7.1	49,729
Personal Care and Service	4.7	4.5	40,417
Management	2.6	6.0	97,934
Business and Financial Operations	2.0	2.8	59,604
Production	1.7	1.5	35,877
Sales and Related Occupations	1.5	1.7	50,018

Sources: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW) and the Purdue Center for Regional Development (cluster definitions), 2012.

[43] In 2008, Production, Installation, Maintenance, Repair or Transportation and Material Moving occupations accounted for 23.0% of all occupational employment in Workforce Investment Board Region #4.

The challenge for employers is the looming demand for replacement workers as older workers repair. The Illinois Department of Employment Security estimates that 178 openings for Transportation and Material Moving workers will become available annually between 2008 and 2018, most resulting from the demand for replacement workers (Figure 68).

Figure 68: Occupational Employment, Projected Demand by Worker Classification, Workforce Investment Board Region #4, 2008-2018*

Occupational Classification	Employment		Employment Change 2008-2018		Average Annual Job Openings		
	2008	2018	Number	Percent	Growth	Replacement	Total
Transportation and Material Moving	6,297	6,479	182	2.9	25	153	178
Office and Administrative Support	11,256	11,371	115	1.0	46	242	288
Installation, Maintenance, and Repair	2,798	2,930	132	4.7	15	55	70
Personal Care and Service	1,929	2,234	305	15.8	31	47	78
Management	7,959	7,693	-266	-3.3	13	123	136
Business and Financial Operations	3,110	3,385	275	8.8	28	64	92
Production	9,653	8,806	-847	-8.8	5	191	196
Sales and Related Occupations	7,815	8,049	234	3.0	27	241	268

**Workforce Investment Board (WIB) Region #4 consists of Carroll, JoDaviess, Ogle, Stephenson, and Whiteside counties.*
Source: Illinois Department of Employment Security, 2012.

Because of the competition with surrounding metro areas for workers with specific skills or experience, compensation levels are a concern for local businesses[44]. For example, the projected demand for transportation and material moving workers in the metro areas around the five-county region is estimated to be 2,277 openings per year between 2008 and 2018[45]. The estimated average annual wage for workers in this occupation group is $39,371, slightly below the average for the five-county region itself ($41,407)[46]. While the higher wage can help attract workers to the area, it can also discourage companies from locating or expanding. Given the intense competition for skilled workers, companies will have to monitor compensation trends to recruit and retain qualified employees.

Business Operating Costs

An operating cost analysis focuses on those key geographically variable cost elements which are considered to be the most pivotal within the corporate site selection process and overall target industry competitiveness. The format of the cost comparisons allow a site selection professional or corporate facility planner to further tailor the cost data, plant specifications, and shipping patterns.

Annual operating costs are projected solely for comparative purposes with only major geographically variable operating costs projected for seven county sites in the U.S. including the five counties in the Region along with two additional counties which have significant concentrations of warehousing and storage companies. One of the two out-of-state counties is located in the Midwest region, and the second is located in an alternative U.S. region. Costs which did not vary significantly with geography, including relocation and start-up expenses, were not considered (Figure 69).

[44] Northern Illinois University, Center for Governmental Studies, "*Promoting Regional Prosperity in Northwest Illinois: Wage and Benefit Report*", August, 2012, p.23.
[45] Source: Illinois Department of Employment Security, 2012.
[46] Sources: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW) and the Purdue Center for Regional Development (cluster definitions), 2012.

Figure 69: Warehousing and Storage: Geographically Variable Operating Cost Comparison

County Name	Total Annual Operating Costs
Northampton County, PA	$14,730,294
Stephenson County, IL	12,921,810
Ogle County, IL	12,873,896
Whiteside County, IL	12,866,672
Carroll County, IL	12,753,789
Lee County, IL	12,664,759
Clark County, KY	12,247,060

Source: The Boyd Company, Inc., 2012.

The Region was the most competitive with peers in site acquisition and property tax costs. However, the labor costs were higher than for the peer location in the southeastern U.S. The Region was the most competitive in terms of shipping costs versus its peers. Estimated outbound shipping costs from the five-county region were nearly equal to Clark County, KY, and were 21.0% to 23.0% below Northampton County, PA. This underscores the advantages of northwest Illinois' strategic location and transportation assets, as well as its access to national and global markets.

Costs of Doing Business

Since most businesses operate in a real-time global marketplace, their focus is on maintaining comparative advantage through sourcing and supplying products profitably. Cost components such as labor, taxes, real estate, and utilities are key measures which most companies use to decide where to locate or expand their operations.

Operating cost analysis focuses on those key geographically variable cost elements which are considered to be the most pivotal within the corporate site selection process and the overall target industry competitiveness.

Key Takeaways

- The Transportation and Logistics cluster in the five-county region has a concentration of firms which is 2.6 times the national average and an employment concentration which is 1.1 times the national average. The Reference Region also ranks above the national average in both categories.
- Aligning public infrastructure investments with industry development strategies will be critical to maintaining the Region's competitive advantage in this cluster. There are under-used or underdeveloped assets which if developed could dramatically improve the Region's economy. Examples include the Global III Intermodal facility, the Whiteside Regional Airport, and the former Savanna Army Depot.
- The growth of Transportation and Logistics operations in terms of companies and operations can be leveraged to retain and to attract businesses and jobs in other industry sectors, especially agriculture, wholesale, and manufacturing.
- The Baby Boomers will create most of the demand for new workers, despite static and declining overall employment in the industry. Since other industries will experience the same challenges, competition for skilled workers will increase due to the limited number of potential younger workers.
- The five-county region's strategic location in terms of proximity to major markets and transportation assets, along with competitive tax and site acquisition costs makes it attractive for warehouse and distribution operations.

GOALS, STRATEGIES, AND RECOMMENDATIONS

Based on the regional analysis and business leaders' input the advisory committee agreed on a regional vision, five regional goals, regional action strategies, potential regional partners, and recommendations for moving forward.

Once the goals and strategies had been developed, the advisory committee prioritized the strategies according to ease of implementation and potential impact on the Region. Each strategy was rated on a scale of zero to five, with zero representing the easiest to implement or the least regional impact, and five representing the most difficult to implement or the greatest regional impact. For each strategy, the average difficulty rating was subtracted from the average impact rating. An ideal strategy would have a final score of five--high impact and low difficulty in implementation. The strategies are listed in the order in which they were ranked by the advisory committee within each goal. At the end of this section the strategies are ranked overall, without regard to which goal they fall under.

The next section describes each goal, the context for choosing each goal, recommended strategies ranked in order based on scoring, potential partners, and best practices which may be effective in implementing the strategies.

REGIONAL VISION

In the next three years the five-county region will…

- Strongly encourage entrepreneurship with a highly supportive business environment;
- Invest in necessary local infrastructure to support current and future businesses;
- Leverage existing and emerging industrial assets and capabilities; and
- Market regional assets to attract and retain young professionals.

REGIONAL GOALS

Goal I: Develop a competitive and highly productive workforce with up-to-date skills and capable of using the latest technology in production processes.

Goal II: Support major existing and emerging growth industries such as transportation and aerospace component manufacturing to become a major Midwestern production/assembly region.

Goal III: Create an entrepreneurial region with a climate which supports new business formation and encourages existing businesses to invest and prosper.

Goal IV: Make better use of local (regional) inputs and specialties to develop a highly profitable agribusiness and food processing region integrated into Midwestern markets.

Goal V: Leverage and market existing regional assets to encourage growth, enhance the quality of life, and maximize the potential of the region.

GOAL I: DEVELOP A COMPETITIVE AND HIGHLY PRODUCTIVE WORK FORCE WITH UP-TO-DATE SKILLS AND CAPABLE OF USING THE LATEST TECHNOLOGY IN PRODUCTION PROCESSES.

Context

Competition for skilled workers is projected to be strong both locally and nationally. The Region will be challenged by competition from surrounding metro areas such as Dubuque, Rockford, Quad Cities, and Chicago since they offer more employment opportunities and in some cases higher wages. This issue is critical because of the projected declines in the working-age population and the increased demand for replacement workers from Baby Boomer generation retirements. For example, the projected replacement demand for production workers is 191 annually from 2008 to 2018. The number of production workers needed by companies in the Rockford and Quad Cities metro areas will be several times larger.

The Region will be challenged by competition from surrounding metro areas such as Dubuque, Rockford, Quad Cities, and Chicago since they offer more employment opportunities and in some cases higher wages.

Additional factors must be considered.

- The underemployment study, conducted in this project, identified a substantial number of potential workers who lack the training, skills, or experience to qualify for many jobs available in the Region. The study indicated 2.0% (200) of the underemployed and 6.0% (570) of the unemployed individuals who are actively seeking work in the Region also lack a high school diploma or GED.
- Interviews with area businesses confirmed this situation and also raised concerns about the work ethic, reading, math, and social skills of some applicants.
- Area businesses, especially manufacturers, expect technological changes (e.g., additive manufacturing, robotics) during the next decade which will require workers to have a high degree of competency in product or system design, production, and maintenance skills.
- Attracting and retaining management, professional, and technical talent have been challenging because of the relatively small number of positions available and the competition from surrounding areas.

Consider Dual-Credit Courses to Provide Technical Education for High School Students Entering the Workforce

Lewis and Clark Community College in Madison County, Illinois
http://www.lc.edu/degrees/HSpartnership

According to a report on dual-credit courses in the Illinois Community College System, Lewis and Clark Community College offers the most dual-credit courses in career and technical education in the state. Lewis and Clark College has partnered with 20 local high schools, allowing students to enroll in college-level courses on subjects including information technology, CAD, and welding. Through these courses, high school students gain technical skills which help them transition into the workforce after they graduate. For the students of dual-credit courses through Lewis and Clark Community College, no charge for tuition or books is required.

- Discussions with businesses also indicated that a central location for skills training and other technical assistance from agencies in the Region would make these services easier to access.
- Local employers also indicated that perceptions about career potential and quality of life may play a role in the Region's attractiveness to young professionals who will be needed in the next decade.

Recommended Strategies

1. Form alliances between employers and educational institutions to plan future programs by engaging businesses in mentoring activities connected with educational programs and career centers. Businesses can provide apprenticeships, summer employment programs, and/or other training opportunities for youth. Examine how current course offerings fit with regional priorities and growth industries to identify potential deficiencies.
2. Survey community colleges and training centers in the Region to inventory the courses, workshops, and training offered to secondary school and college students, as well as lifelong learners. Assess the adequacy of these programs to meet current and future needs of employers. Connect graduates of programs with potential employers through Career Fairs and other exchanges.
3. Develop and implement ongoing programs to improve the customer service and social skills of employees in the Region (e.g., Certificate of Employability, CareerTec, WorkKeys) in order to provide high-quality, dependable, and well-trained employees.
4. Work with the WIBs to coordinate and focus existing workforce development programs and funding to meet employers' needs.

Certificate of Employability

Schenectady County Community College, New York, Certificate of Employability
http://www.coeny.com/

Schenectady County Community College surveyed over 100 local employees to identify areas of improvement for the entry-level workforce and then developed a 30-hour training course based on the needs of businesses surveyed. The Certificate of Employment program's curriculum is based on soft skills such as reliability, accepting constructive criticism, respect for coworkers and customers, and adherence to company rules. Employers interested in hiring individuals with a Certificate of Employment have registered with program personnel, providing evidence that employers value the program and consider the certificate when hiring.

Sauk Valley Community College, Illinois, WorkKeys, Pre-Employability Screening
http://www.svcc.edu/news/archive/2008-08-WorkKeys-Testing-Site.html

Sauk Valley Community College is a registered, certified site for the WorkKeys Online testing program, a job skills assessment system for measuring, communicating, and improving the common skills required for workplace success. WorkKeys quantitatively assesses skills in several areas in individuals and in actual jobs, so it can correctly identify individuals with the skills required to be successful in a specific job or career. Using WorkKeys, Sauk can show a potential employer that a job applicant meets the profiled requirements of a job opening. Six specific areas which can be measured through testing include Applied Technology, Applied Mathematics, Business Writing, Locating Information, Reading for Information, and Observation.

5. Systematically evaluate workforce concerns by local businesses and assess their expected employee needs in the next 3-5 years through working with partners such as the Whiteside Area Career Center, CareerTec, Highland Community College, and Sauk Valley Community College. Extend the programs to other businesses as needed. Develop Business Advisory Committees for programs.
6. Generate financial support and resources for entrepreneurial manufacturing and related service firms in these activities.
7. Create and publicize incentives to attract and retain young professionals (e.g., 22-40 years old) by assessing the current attractiveness of the Region using contacts with young professionals, as well as an inventory of area attractions, housing options, and employment availability in growth industries. These incentives could include creating and/or supporting a regional "Young Professionals Organization" or similar groups working with community colleges, YMCAs, sport leagues, etc., to build ties with people in this age category.

Focus Efforts on Attraction and Retention of Young Professionals

City of Charleston, West Virginia

http://dailymail.com/News/201208220104

The manager of Charleston has proposed partnering with local businesses to provide housing incentives for young professionals. The city would build an apartment complex and provided subsidized rent for young employees planning to live in Charleston for at least three years. Rent subsidies would be provided by the employers as part of the employee's salary and employees would pay an amount of rent out of pocket. At the end of three years employees under this program are eligible for a $15,000 loan toward the purchase of a house in Charleston. If the employee stays in the house for three years the loan will be forgiven. Construction of the apartment complex would be funded partially by revenue bonds backed by rent payments.

8. Provide market research, export education, business intelligence, and mentoring to assist 2nd stage companies interested in expansion.
9. Create a Region-wide Manufacturing Technology Innovations Center (MTIC) which works with the regional career centers to provide a forum for continuous networking, exchange of information on best practices, new business technology, and emerging industry needs. Provide these opportunities at several locations, if necessary, considering the distances which must be traveled to obtain services. The Apollo Career Center in Ohio (www.apollocareercenter.com) and Aileron (www.aileron.org) are examples of possible approaches.
10. Provide employer-funded, shared lab space and equipment in the MTIC to stimulate research and development of mutually beneficial technologies which advance regional businesses.
11. Implement dual-credit courses where secondary school students can enroll in technical programs while attending school to improve their transition to the workforce. Deliver training and educational programs online in conjunction with other workforce organizations, community colleges, and other educational training agencies. Create a curriculum pathway to community colleges and four-year institutions.
12. Within the MTIC, design a "Manufacturing Technology Academy" with a curriculum dedicated to upgrading workforce skills (adults and current students) to meet current manufacturers' requirements. Prepare suitable coursework for adults in partnership with regional career centers, community colleges, and other agencies. Include internships with local businesses as part of the curriculum.

Potential Regional Partners

- Superintendent of Sterling Schools and other K-12 officials
- Surgeons of Steel Program
- Whiteside Area Career Center
- Morrison Institute of Technology
- Workforce Investment Board
- Sauk Valley and Highland Community College officials
- Business owners and managers
- Career Tec
- NIU CEET
- Economic development and chamber of commerce officials

GOAL II: SUPPORT MAJOR EXISTING AND EMERGING GROWTH INDUSTRIES SUCH AS TRANSPORTATION AND AEROSPACE COMPONENT MANUFACTURING TO BECOME A MAJOR MIDWESTERN PRODUCTION/ASSEMBLY REGION.

Context

The regional economy has a strong manufacturing tradition which still accounts for approximately 15.0% of the total employment and 25.0% of the regional output. Promoting "advanced manufacturing" will help the Region to become more competitive in the future. Advanced manufacturing involves innovative processes and productive capabilities used by companies and their workers in many industries, so it is important to provide a support base in the Region for training and technical assistance to facilitate advances by manufacturers.

The regional economy has a strong manufacturing tradition which still accounts for approximately 15.0% of the total employment and 25.0% of the regional output. Promoting "advanced manufacturing" will help the Region to become more competitive in the future.

Business focus groups held in the Region identified a need for more communication among businesses regarding the availability of inputs, but also with educational institutions and public agencies regarding programs of assistance and other services. A special concern expressed in the forums was about the difficulties experienced by small businesses in applying for financial incentives or obtaining financing for start-ups or expansions.

The growth of the aerospace industry in Rockford, for example, could offer opportunities for local manufacturers to diversify their customer base while building on traditional expertise and capabilities. In recent years, significant advancements in technology and innovation have occurred within the aerospace industry, and the impact of these advances has been felt in numerous other industries as new applications and spin-offs emerge.

» The advisory committee and local businesses expressed a desire to maintain the Region's competitive advantage in the manufacturing sector given the skills and capabilities of local businesses and the workforce.

» Research on the Region identified several industry clusters which offer significant development opportunities:

- Fabricated Metal Products Manufacturing
- Machinery Manufacturing
- Transportation Equipment Manufacturing

» The aerospace manufacturing niche includes businesses involved at all stages of the value chain for aircraft, space equipment, and other aeronautic production. These industries range from aircraft materials and component manufacturers to specialized electronics producers and large-scale assemblers.

- The Rockford area has five major Tier I aerospace supply companies (e.g., Hamilton-Sundstrand and Woodward), as well as many smaller suppliers and subcontractors.
- The planned expansion of Woodward in Loves Park will offer more opportunities for local suppliers.

» Maintaining and enhancing these competitive advantages will require collaboration, innovation, and the adoption of new technologies within these industries as well as financing opportunities.

Recommended Strategies

1. Inventory the processes and production capabilities of small and medium-size job shops to determine if new supplier-customer relationships could be developed by firms within the Region or nearby. Also use the knowledge gained about these processes and production capabilities as a marketing tool to attract businesses or industries to the Region.
2. Examine the skills and other workforce characteristics needed to produce these types of inputs and to work in the distribution network in the Region.
3. Form a task force of interested business leaders in selected clusters and find ways to move ahead. Possibly use a Strategic Doing approach—what can, should, and will the Region do together to promote regional development and employment? More information and research into opportunities for implementing Green Strategies and using technology to reduce costs should be provided especially to smaller companies.
4. Assess options for increasing the services provided throughout the Region by agencies such as a regional Small Business Development and Entrepreneurship Center which works with currently underserved areas. This agency and other technical assistance

Explore Partnerships with Other Institutions for Vocational Training Courses.

Joint Institute of Engineering and Technology-Aerospace (JIET-A) in Rockford
http://jiet.aero/3299/about_jieta

JIET-A partners with aerospace companies and educational institutions in northern Illinois to provide comprehensive education for students who are interested in careers in the aerospace industry. Students enroll in JIET-A programs through one of several educational institutes of their choice including Rock Valley College and Northern Illinois University. While students take courses in engineering, mathematics, and information technology, they work as interns for companies such as GE Aviation and B/E Aerospace. Students graduate from JIET-A programs with the skills and experience demanded by aerospace companies.

services such as Economic Gardening, Illinois Manufacturing Extension Center, and related programs can be located in the Manufacturing Technology Innovation Center (MTIC). Outreach efforts should be coordinated in the Region to minimize overlap and/or underserved areas. The business forums indicated that current intermediate agencies, such as the SBDC, are underfunded.

5. Explore partnerships with Rock Valley College, MIT, NIU-College of Engineering and Engineering Technology, Sauk Valley Community College, Highland Community College, and other higher education institutions to provide vocational training courses for specific industries.
6. Prepare value chain analyses for industries which regional development practitioners are interested in contacting. Examine these prospective businesses regarding how they can fit into a regional clustering and marketing scheme.
7. Inventory inputs which are purchased outside of the Region by current manufacturers and determine whether sufficient volume and/or capacity exist to produce them locally. Also determine whether existing companies could retool and meet these demands, such as producing in Rochelle the components for the Nippon-Sharyo railcar production facility which are currently imported from overseas. Design a marketing program to attract businesses in the top 3-4 industries best suited for the Region, based on the analyses in this report and previous studies.
8. Design a regional manufacturing network or collaborative of manufacturing and business leaders which meets quarterly to help "change the narrative" about manufacturing, identify new opportunities and markets, and help educational institutions shape programs to meet labor demands by having manufacturing groups participate in internship programs or similar activities. This approach could address the communication issues discussed earlier.
9. Evaluate opportunities to work with EigerLab in Rockford and/or assess ways in which the Manufacturing Technology Academy can link with EigerLab to bring their services to the Region.
10. Evaluate the findings of the cost of operation comparisons for the Region with other competitive sites and incorporate them into decisions about marketing to prospective firms.
11. Use the network formed by the task force to support a ListServ, regional website, or other online communication program to provide information about sharing specialized equipment and/or services. Creating a 'Craig's List' for manufacturing opportunities was mentioned in a business forum. The network could also host a "Manufacturing Fair" to build more awareness in the Region, but also to better inform companies about the inputs available in the Region and to encourage collaborations about pursuing new markets.
12. Using existing research, analyze the aerospace industry potential, needs for labor and other inputs, and related activities where the Region could serve Aerospace cluster participants. Start on-going discussions with personnel in the aerospace cluster industries.
13. Working with the MTIC and MTA, this network could sponsor a periodic assessment of the state of the Region regarding trends and opportunities for future development and expansion. The Carson Manufacturer's Forum, which works with Western Nevada College, could be an example (http://manufacturingcollaborative.com).
14. Capitalize on the expansion of regional aerospace suppliers, such as Woodward and Hamilton Sundstrand in Rockford, to determine what components and technical training for technicians, engineers, and others will be required to operate in the next decade.

Potential Regional Partners

- EIGER Lab
- NIU College of Engineering
- Business owners and managers
- NIU Center for Governmental Studies
- Economic development and chamber of commerce officials
- Rock Valley Community College
- Morrison Institute of Technology
- Rockford Area Aerospace Cluster
- Rockford Area Economic Development Council (RAEDC)
- Workforce Investment Board
- Small Business Development Center

GOAL III: CREATE AN ENTREPRENEURIAL REGION WITH A CLIMATE WHICH SUPPORTS NEW BUSINESS FORMATION AND ENCOURAGES EXISTING BUSINESSES TO INVEST AND PROSPER.

Context

Research on northwestern Illinois and rural areas in general shows that locally owned, small businesses (those with fewer than 10 employees) are a primary source of job creation and are more likely to stay in the area as they expand. Past research (confirmed by interviews with local business owners) also shows that locally owned, small businesses can be lost due to a lack of succession planning and/or a lack of buyers for the businesses. Many such businesses may be at risk for this reason and, if serious efforts are made to prepare young adults for these opportunities, these businesses could be retained and continue under new ownership.

Along with developing and retaining workers coming into the labor force, it is crucial to identify, train, and retain the next generation of entrepreneurs to successfully take over current businesses and create new ones.

Along with developing and retaining workers coming into the labor force, it is crucial to identify, train, and retain the next generation of entrepreneurs to successfully take over current businesses and create new ones. Business starts in the Region lag behind those in adjacent areas. For instance, between 2004 and 2007, rural areas (non-metropolitan) in Iowa had 2.81 business starts per 1,000 population, while rural Wisconsin had 3.12 per 1,000. The average (weighted) for the five counties was 1.61 per 1,000 residents during this period. The comparisons with Iowa and Wisconsin are more relevant than with Illinois because southern Illinois has a substantially different economy than northern Illinois.

Within the Region, Stephenson and Ogle counties were highest, and Carroll County was lowest. Possible explanations include population density, income, and other local characteristics. An important point is that this comparison reinforces comments in the manufacturers' forums saying that technical assistance is needed especially by small establishments, and parts of the Region have limited access, on a regular basis, to small business development support.

- Comparisons of business starts per 10,000 population in the Region with non-metro areas in Iowa and Wisconsin (based on NETS data) show that the Region as a group lags well behind other areas in new establishment formations. A goal for the Region could be to surpass other areas in business formations and substantially reduce business closures.
- Counties in the Region, except Whiteside, have minimal, if any, regular small business support services as noted in the manufacturers' forums.
- The number of jobs lost in the Region between 2000 and 2009 by companies which closed, downsized, or moved out surpassed by 11,000 the number of jobs created in those which opened, expanded, or moved into the area.
- Small businesses often do not have the internal expertise to effectively participate in the state and federal programs available.
- Efforts to encourage or support new business starts or small business growth are fragmented, underfunded, and need better coordination to increase their effectiveness.

Promote Business Starts and Support Entrepreneurs within the Region

Littleton, Colorado-Economic Gardening
http://www.littletongov.org/bia/economicgardening/

The city of Littleton has an economic development strategy based on helping existing local businesses grow, as opposed to traditional methods of small business development or attraction of large companies to an area. The program has three components: information, infrastructure, and connections. Information: The city subscribes to numerous databases for developing marketing lists, competitive intelligence, and industry trends, then shares with business owners so that they may identify new business opportunities. Infrastructure: The city invests not only in its physical infrastructure but also in its knowledge infrastructure by developing business-related courses in partnership with local community colleges. Connections: The city maintains contacts with think tanks, state universities, and CEOs in order to introduce local business owners to new opportunities outside their communities.

Recommended Strategies

1. Work with local educational institutions to make students in grades 8-12 aware of the opportunities which are available in business careers. These efforts could include a business plan competition for juniors and seniors, a scholarship program sponsored by philanthropic organizations in the Region, and other approaches which have been used elsewhere. For example, the Southern Entrepreneurship Program has been used successfully with high school and community college students in Mississippi. The Creating Entrepreneurial Opportunities Program in Effingham, Illinois, and by the Whiteside Area Career Center, are other examples, as is the EIGERLab FastPitch competitions in northern Illinois and southwest Wisconsin.
2. Consider the formation of business led initiatives to encourage youth to consider careers or entrepreneurship opportunities. This approach can be started in partnership with existing organizations such as Kiwanis, Jaycee's, Boys and Girls Clubs, Scouts, 4-H, or Future Farmers of America.

3. Identify best or promising practices which have successfully assisted entrepreneurs in other areas and which could be brought to this Region if needed. For instance, the Midwest Intellectual Property Management Institute (MIPMI) model for assisting businesses in a hands-on approach could be contacted to increase its efforts to retain and create jobs in the Region. MyEntreNet is an online resource for entrepreneurs started at the University of Northern Iowa (UNI), and it has transferable components with potential for the Region.
4. Inventory regional education programs and services including the access to capital which is available to entrepreneurs in the Region and encourage financial institutions to participate in state and federal financing programs. Compare local programs in the Region with other successful efforts elsewhere to determine their viability for implementation in the Region.
5. Survey businesses started in the past two years to identify the services or assistance needed to help them grow and become more profitable.
6. Support the Black Hawk Hills Entrepreneurs and Inventors Network (BHEIN) activities to encourage business starts and expansions. Systematically compare past business starts and closures in the Region with other areas to assess performance and possible needs for adjustments. Hold a focus group of organizations which provide support services and organize meetings with potential entrepreneurs to start a dialogue about assets, barriers, services needed, and opportunities aimed at a regional entrepreneurship development and enhancement plan.
7. Design and support a full-time, staffed, small business entrepreneurship assistance organization, incubators, or other facilities in the Region to promote business starts to provide the levels of services comparable to other regions. This unit could be housed in the Manufacturing Technology Innovations Center (MTIC) to provide coordinated programming with community colleges, NIU, MIT, and other organizations in the Region. An Economic Gardening Program could provide additional services for 2nd Stage manufacturing companies. The Kansas Economic Gardening Network and other regional programs such as in Florida, Missouri, and Oklahoma may be models to consider. Provide easily accessible information for entrepreneurs on a regional website or expand an existing site so that a central location for information is available with links to specific programs.

Assisting Entrepreneurs through Interactive Web Portal

University of Northern Iowa- MyEntre.Net
http://www.myentre.net/AboutUs/ProgramOverview/tabid/237/Default.aspx

The University of Northern Iowa has coordinated an array of services for small businesses through a web portal at MyEntre.Net. The site has a Business Concierge service which refers entrepreneurs to state and local government programs. The program is also staffed by database experts who retrieve requested information regarding potential consumers and competitors as well as mailing lists in the areas that someone is interested in starting or expanding a business. In the past 18 months the Business Concierge service has reached over 600 businesses. Additionally, MyEntre.Net has a searchable database of all the business which are providing services in Iowa, and a classified ads section so that entrepreneurs can easily find the resources they need to start or expand their businesses. MyEntre.Net serves more than 2,000 Iowans annually.

Potential Regional Partners

- Financial Institutions
- NIU Center for Governmental Studies
- Morrison Institute of Technology
- Blackhawk Hills Regional Council (BHRC)
- Blackhawk Hills Entrepreneurs and Inventors Network (BHEIN)
- Business owners and managers
- Economic development and chamber of commerce officials
- Youth organizations such as 4-H, Future Farmers of America, Scouts, and other groups
- Sauk Valley Community College
- Highland Community College

Creating Entrepreneurial Opportunities for Youth (CEO)

Effingham County, Illinois
http://www.effinghamceo.com

CEO is a one-year entrepreneurial training class offered to secondary school students in several school districts in Effingham County, Illinois, and is supported by community leaders and local business owners. CEO students receive comprehensive instructions on running a business from conceptualization to operation. Students learn to frame their business ideas in terms of costs versus benefits, economic opportunity, and competitive advantage. Students also learn marketing and record-keeping skills. Finally, students prepare business plans to present to business leaders and investors. According to a CEO annual report, the organization operates an angel investment fund which offers capital for graduates who implement business plans in the county.

GOAL IV: MAKE BETTER USE OF LOCAL (REGIONAL) INPUTS AND SPECIALTIES TO DEVELOP A HIGHLY PROFITABLE AGRIBUSINESS AND FOOD PROCESSING REGION INTEGRATED INTO MIDWESTERN MARKETS.

Context

The advisory committee and local businesses expressed an interest in developing the Region's potential in terms of new crops (especially organic and specialty foods) and the expansion of value added opportunities by processing more local agricultural products and by-products within the area with a focus on agricultural product manufacturing.

- Work on these issues is already underway, especially in Whiteside and Stephenson counties. Farmers' Markets exist in several cities in the Region. "Buy Local" programs have brought a renewed sense of 'local is better' for both the economy and healthier lifestyles with state and federal funding supporting this effort.

The productivity of the agricultural land and the proximity to local food activities in both Wisconsin and Winnebago County offer viable development opportunities in the five counties.

- The productivity of the agricultural land and the proximity to local food activities in both Wisconsin and Winnebago County offer viable development opportunities in the five counties.

- The Agriculture, Food Production, and Technology cluster has a strong competitive advantage in terms of employment concentration (2.5 times the U.S. average), output (3.4 times the U.S. average), and worker compensation (3.6 times the U.S. average).
- The Region has had experiences with agricultural organizations in the past. Building on initiatives such as the Northwest Illinois Ag Coalition (NIAC) formed in 2003 could be useful. While NIAC dissolved in 2006 due to funding issues, it had several successes including the Twin Cities Market located in Sterling and a local foods program in Freeport. Given the renewed interest in food processing and manufacturing, NIAC may have been ahead of its time and should be reevaluated.
- The Kitchen Incubator of Northwestern Illinois offers a base of operations for people who are interested in processing and marketing local produce. This initiative has up-to-date technology and can be promoted as an Agribusiness industry. Expanding this operation could open new markets for producers in the Region.

Recommended Strategies

1. Apply for funding to determine the feasibility of, and capacity for, processing and distribution activities within the Region, especially in adapting or expanding existing production facilities and using existing resources.
2. Create an association or agency to help brand and market regional food products to major distributors and directly to consumers. Link with similar institutions in Wisconsin, Minnesota, and Iowa to form joint products.
3. Use comparable cost data to evaluate options for the Region and pursue those with the greatest potential for the Region.
4. Identify potential markets in the Midwest for the crops and produce which are best suited for growing in the Region. Programs such as *Illinois MarketMaker* sponsored by the UI-Extension offer opportunities to identify specialty markets for these products in the Chicago area and metropolitan communities. This approach could bring higher prices to growers and build on the excellent logistics in the five counties.
5. Form alliances between growers, producers, and other industry sectors to promote Agribusiness and Food Processing operations such as the Kitchen Incubator of Northwestern Illinois and other units in the Region. Have them visit successful food programs in neighboring states to determine the feasibility of similar programs in the Region.
6. Contact farmers, possibly through county offices of the Illinois Farm Bureau, to determine any missing links in the Region, including organic farmers and poultry processing facilities. An active group of farmers interested in organic crops exists in the area and could be the basis for expanded activities in the Region.
7. Work with higher education institutions to determine the skill sets needed to work in food processing and related industries and make sure the workforce is highly trained.
8. Inventory the existing and planned capacity of the five counties and surrounding areas regarding specialty crops, both growing and processing, as well as animal-ag opportunities such as poultry processing to determine the viability of further processing activities. Previous work in the Fulton area could be a basis for this effort.

Potential Regional Partners

- Organic seed producers and distributors
- County Board representatives
- Blackhawk Hills Entrepreneurs and Inventors Network (BHEIN)
- NIU AgTech Program
- Illinois Farm Bureau
- Local farmers and food processors
- UI-Extension Service
- UW-Extension Service
- Economic development and chamber of commerce officials
- Illinois Department of Commerce and Economic Opportunity
- Illinois Department of Agriculture
- Governor's Rural Affairs Council
- Illinois Downstate Alliance

GOAL V: LEVERAGE AND MARKET EXISTING REGIONAL ASSETS TO ENCOURAGE GROWTH, ENHANCE THE QUALITY OF LIFE, AND MAXIMIZE THE POTENTIAL OF THE REGION.

Context

The advisory committee identified Transportation, Distribution, and Logistics as critical assets in the Region, not only in terms of employment, but as a catalyst for supporting the location and growth of other targeted industries. The Region's strategic location compared with large metropolitan areas and the highway and rail transportation routes in place give it a competitive advantage as a location for transportation dependent industries.

The Region's strategic location compared with large metropolitan areas and the highway and rail transportation routes in place give it a competitive advantage as a location for transportation dependent industries.

Many proposed initiatives in this report will require substantial funding and are beyond the fiscal resources of any one community or county. Securing funding from state and federal agencies on a regional basis will require marketing projects as collaborative efforts, since current agency policies favor regional collaborations.

- The Global III and the Savanna LRA site offer different, but complementary, opportunities for industries which are shipping containerized freight or bulk commodities. However, realizing the full potential of these assets will require additional investments in highways, river access, and utilities.
- Sites for the development of new distribution facilities are available, but information on them is, in many cases, outdated or incomplete making it difficult to market the Region to site selectors or business prospects.
- The recent location and expansion of transportation-related manufacturers (such as Nippon-Sharyo, Woodward, and Chrysler) will create new business opportunities for suppliers of parts, components, or services.
- Black Hawk Hills Regional Council has a Comprehensive Economic Development Strategy (CEDS) document which lists infrastructure projects such as a new industrial park in Mt. Carroll, the expansion of public transportation in Freeport, or airport runway repair in Rochelle. These projects can be explored in more detail in light of the strategies which the Region decides to pursue.

Regional Sites Inventory and Site Selection

Louisiana Economic Development-Certified Sites & Economic Development
http://www.louisianasiteselection.com/led/Buildings-And-Sites.aspx

Partnership of Alabama-Advantage Site
http://edpa.org/bsc/advantagesites.asp

The states of Louisiana and Alabama collect and publish extensive information regarding the characteristics of the land which is available to economic developers. The two states maintain separate databases with similar content. Land owners can apply to have their site officially certified by submitting many pieces of information which are unavailable on the conventional site selection websites such as the Location One Information System (LOIS). In addition to data on zoning, acreage, sale price, distance to highways, and utilities providers, certified sites also submit information on the taxable property value and millage of property taxes; maps of utilities for water, electricity, and sewer; maps of flood plains and soil to determine impediments to construction; permits and zoning ordinances; availability of incentives such as enterprise zones; availability of fiber-optics and DSL; and previous land use. These requirements place additional disclosure responsibilities on land owners, but the information provided is critical to economic developers' location decisions.

Recommended Strategies

1. Work with the Class I and terminal railroads on a three-year plan for designated sites and facilities, rail service needs, and necessary interchange or switching agreements.
2. Work with utilities and other agencies to create a program including incentives where shovel-ready sites can be assembled quickly for prospective businesses. Make sure the regional infrastructure is current on LOIS and is marketed through DCEO avenues. Assess and prioritize infrastructure needs for regional transportation, communication/data storage, and logistics assets.
3. Identify major expansions associated with the Intermodal Terminal in Rochelle and match requirements of businesses with potential suppliers in the Region. Possibly host a supplier's fair for businesses in the Region or a trade mission to work with businesses considering a location near the Global III.

4. Organize a coalition of business and public leaders to make the case for business investment infrastructure needs including an airport utilization study, rail feasibility study, and evaluation of highway needs in the Region. Depending on results of previous strategies, design and market a program building on the use of the Intermodal Terminal, Whiteside County Airport, and other regional assets.
5. Conduct a regional supply chain analysis to identify and attract firms to serve transportation related manufacturers.
6. Conduct a feasibility study of the Whiteside County airport to determine the strategies for the best uses of the current facility, expansion options, logistical opportunities, aesthetics, and others. Include viable programs in the Region CEDS report.
7. Professionally review current business incentive packages and compare them with competitor regions. Determine gaps and review needs or opportunities to expand incentives and support businesses, as mentioned previously.
8. Create a regional inventory of available sites and buildings with detailed information of interest to site selectors and prospective companies. Based on the findings of the inventory, identify additional and specialized sites which may be required to attract targeted industries. Create a site certification program to insure that these sites can be quickly developed for a prospective company. This approach should include obtaining control of the site along with having the necessary zoning, platting, incentives, and infrastructure improvements in place prior to marketing the site. This inventory can be provided on a regional website.
9. Evaluate the options for starting a Foreign Direct Investment program with incentives appropriate to suppliers to the Nippon Sharyo plant.
10. Assess and prioritize infrastructure needs to support business expansions in the Region working within the Black Hawk Hills Regional Council CEDS process. Ask the BHRC to contact state and federal agencies regarding the potential funds available to build or upgrade the facilities as needed to make the Region competitive. Organize local manufacturers and other businesses to actively participate in groups such as the I-88 Corridor and the Tri-State Alliance which promote investment in infrastructure.

Certified Industrial Lands Program

Business Oregon-Certified Industrial Lands
http://www.oregon4biz.com/The-Oregon-Advantage/Sites/Oregon-Certified-Sites/

Business Oregon, a state agency, has built an inventory of industrial sites which are ready for construction. Site owners who are applying for certification must complete a 20-page form detailing the site's geological conditions, compliance with state and local regulations, utilities coverage, and workforce and demographic characteristics of the site's location. Completing the application requires verifying documents from multiple third parties, including the initial letter of support for a development project from the local chief elected official, feedback from the U.S. Army Corp of Engineers regarding the site's location relative to wetlands, and formal letters from utilities detailing the site's current connection and capacity. Certified sites must also apply for recertification every two years to ensure that information is current. This information provides site selectors with sufficient information when searching for sites virtually.

Potential Regional Partners

- County Board representatives
- Whiteside County Airport Board
- Blackhawk Hills Regional Council (BHRC)
- Global III Terminal representative
- Rail, trucking and logistics industry representatives
- Business owners and managers
- NIU Center for Governmental Studies
- Economic development and chamber of commerce officials

Summary and Recommendations

The analyses in this report highlighted various approaches that the Region could take as the economic recovery unfolds over the next several years. The Region, in many ways, is in an enviable position because it has a strong history in manufacturing and innovation, untapped resources, excellent logistics and transportation systems, and close proximity to regional, national, and global markets.

At the same time, the resources in the Region which are available to manage various strategies are insufficient to pursue all of the possible opportunities, so the strategies must be prioritized and additional resources must be found to manage the process.

In a first attempt at prioritizing strategies, the advisory committee identified strategies which would be the easiest and could have the greatest impact in the short- and long-term. The list of priorities for each of the five goals follows.

The advisory committee ranked Goal I as having the highest impact for the amount of time and effort to initiate. Strategies such as evaluating workforce concerns and future needs of businesses, creating a manufacturing technology innovations center and academy, generating financial support and resources for entrepreneurial manufacturing and service firms, providing market research, creating dual-credit courses for secondary school students, working with WIBs on development programs, and publicizing efforts to attract young professionals would all have a positive impact on the Region.

To meet Goal II, forming a manufacturing network, changing the narrative about manufacturing in the Region, inventorying inputs purchased outside the Region which could be made locally, preparing value chain analyses, and assessing options for providing more assistance for small and medium-sizes companies rated highest in terms of impact for time, effort, and funds invested.

For Goal III, focusing on providing more support for entrepreneurship and small business development, examining best practices to support entrepreneurs, and working with local educational institutions to make secondary school students aware of opportunities for successful business careers were viewed as having the greatest impact on the Region per investment.

In Goal IV, working with growers, identifying potential markets, applying for funding to determine the feasibility of adapting and/or expanding existing facilities in the Region, and working with educational institutions to prepare students for careers in the agri-processing and manufacturing industries could bring the highest investment returns for the Region.

Regarding Goal IV, conducting a regional inventory of available sites and buildings, working with utilities on incentives, conducting a feasibility study of the Whiteside County Airport, working with Class I railroads,

and identifying major expansions associated with Global Terminal III were seen as providing high payoffs for the investment of time and effort involved.

This project was designed to suggest potential strategies which could help transform the Region, increase employment and investment, and bring prosperity to the Region. The most important step, however, is taking action. Fortunately, several activities are already underway by the Whiteside Area Career Center, Career Tec, community colleges, and manufacturing businesses to upgrade the skills and capacity of the workforce.

Definitely, to move the five-county region ahead using the strategies recommended in this report will take additional resources. The three broad issues on which to focus include first finding ways to increase access to management and financial information available to start-ups and the second stage companies seeking to expand. The meetings held with manufacturers identified a need for more communication among businesses but also between small businesses and providers who can assist them with expansion plans. Increasing business starts and expansions has to be a high priority.

A second focus should be on helping to retain existing businesses in the Region by improving the quality of the labor force. Efforts are underway for businesses to work with agencies such as the Whiteside Area Career Center, community colleges in the Region, the College of Engineering and Engineering Technology at Northern Illinois University, and other organizations. These activities will not only revitalize existing manufacturers but will also build a reputation for the Region as a place where businesses can start and prosper. Manufacturing in the region should be seen as in transition, rather than in decline.

A third focus should be on the Agribusiness., Food Processing, and Technology cluster, which is active in the Region, and with guidance and assistance could increase substantially to serve the surrounding metropolitan areas . The resources are available, and the logistics-distribution systems are excellent. The Food Processing component has a strong presence in the Region on which to build, and an expansion of this component will involve growers, processors, manufacturers, and distributors. The work force will have to be trained to meet the needs of an expanded Agribusiness, Food Processing, and Technology cluster, but there will be considerable overlaps in the skills sets needed.

The Region has a set of strategies with the potential to bring prosperity. The next step is to implement them in an organized way and assign time lines to each strategy with 30-day, 60-day, 90-day, six month, one year, and/or longer-term horizons.

Top-Ranked Strategies Overall

Rank	Goal, Strategy	Average Difficulty Rating	Average Impact Rating	Impact Minus Difficulty
1	Goal 1, Strategy 10	2.14	4.00	1.86
2	Goal 1, Strategy 8	1.71	3.29	1.57
3	Goal 1, Strategy 7	1.86	3.43	1.57
4	Goal 2, Strategy 8	2.83	4.33	1.50
5	Goal 1, Strategy 11	2.67	4.14	1.48
6	Goal 1, Strategy 1	2.57	3.86	1.29
7	Goal 3, Strategy 7	2.83	4.00	1.17
8	Goal 2, Strategy 13	2.33	3.33	1.00
9	Goal 3, Strategy 3	2.43	3.33	0.90
10	Goal 4, Strategy 8	2.00	2.83	0.83

Concluding Comments

The five counties examined in this report have the potential to move ahead on a variety of fronts. They have excellent transportation access to major regional and national markets. A long history of manufacturing provides a base on which to build and a large number of small businesses in the Region can participate effectively in a networked economy. The Agribusiness, Food Processing, and Technology cluster in the Region provides opportunities to participate in the local foods movement. While the workforce in the future could face some challenges given population trends, the educational and business communities recognize the needed changes and are implementing strategies to make corrections.

The prosperity in the Region will depend on the actions taken by both community and business leaders. The Region has an action plan with goals and strategies. Business and community leaders are meeting to implement these approaches and if this approach continues, the Region should have a prosperous future.

APPENDIX: MAJOR THEMES IDENTIFIED BY REGIONAL MANUFACTURERS AND RESOURCE PROVIDERS

Promoting Regional Prosperity in Northwest Illinois: Regional Manufacturing Roundtables

Two meetings were held with regional manufacturers, the first one was on January 29, 2013, in Rock Falls, Illinois, and the second meeting was on February 13, 2013, in Freeport, Illinois. Nearly 80 manufacturers and over 50 resource providers attended one or both sessions. After a brief overview of the five-county regional project (which includes Carroll, Lee, Ogle, Whiteside, and Stephenson counties), the attendees were asked to self-select one of four round table discussions on the topics of Finance and Capital, Education and Skills, New Markets, and Technology and Energy-Efficient Strategies for Cost Reduction. Roundtables were held for approximately 40 minutes with a mix of resource providers and business owners sharing their thoughts on each topic. Knowledge keepers and facilitators were used to encourage conversations and keep track of the important ideas and strategies which each group developed.

At the end of both meetings, an overview of each group's discussion was given to the larger group. Combined facilitated notes for all four roundtable groups at each session, Freeport and Rock Falls, were sent to the respective attendees. This allowed them to review what each of the other groups discussed as well as to review their own session. Because this was a regional effort, and many could not attend both meetings, the following brief document expresses the overall themes from both meetings by focus area.

Focus Area: Sources of Finance and Capital Sessions

1. Provide More Technical Assistance on Business Management Issues

   Small and 2nd Stage companies often do not have the internal resources and/or expertise to effectively manage their businesses in order to reach the next stage of production. Some counties in the region have very limited, if any, access to technical assistance on marketing, finance, and other issues. Business owners may have expertise in production methods but not necessarily have the same level of expertise about management issues. Making more expertise available to these businesses could foster growth. This could involve organizing a regional consulting arrangement where several small businesses could share costs.

2. Financing Expansions and Recent Growth

   Small businesses are now experiencing substantial growth in demand which will require purchases of additional capital and equipment. Small business owners are not clear about available programs, effective ways to work with financial institutions, or other issues involved in accessing capital. These issues include the viability of purchasing other businesses, succession planning, and related topics. A central place in the region to make expertise on programs available and better communications with businesses about these programs would help businesses expansions. The office could have a list of professionals who, on a part-time basis, would be willing to contract with businesses for services. Likewise, the financial programs available in the region could be marketed to small businesses either over the web or in other ways which are readily available to small businesses.

3. Create a Peer Group of Manufacturers to Share Common Issues

   A regular meeting of manufacturers in the area (perhaps quarterly) to discuss common issues, concerns, and ways to resolve them could help small and 2nd Stage companies to expand. The network could build capacity among small businesses to find ways to reduce costs and resolve other technical problems faced by many manufacturers in the region. For this type of network to succeed, active leadership by the business community will be required.

4. Market the Region Consistently in an Organized Way

   Form a regional marketing agency, perhaps by subscription, where small businesses could pool resources to market products made in the region. Some marketing could be one-on-one with potential customers while other approaches use mass marketing with several businesses sharing the cost. This agency would be more than a chamber of commerce for the region. It would market specific products to potential customers working with businesses in the region which cannot afford these marketing efforts alone. In a sense, it will build a brand or reputation for the region as a source of specific products. Participating businesses can share the costs of a regional marketing person.

5. Host a Regional Manufacturing Fair or Supplier's Fair

   Small businesses are not always aware of suppliers in the region and/or do not know other businesses with whom they could either buy or sell. Hosting an organized regional manufacturing fair or event to bring companies together could improve communications in the region and promote growth among participating companies. This meeting should be multi-county and perhaps include neighboring counties.

Focus Area: Accessing Education and Developing Skills Sessions

1. Change the Narrative of What Manufacturing Means in the Region

   The major regional theme of the Education and Skills focus groups was *changing the narrative of what manufacturing is in the 21st century*. By reaching out to the younger generation, businesses, community colleges, and other career centers in the region can teach them that *manufacturing can be a career, not just a job*. One-third of all high school students will not earn a four-year degree, and teaching those individuals a work ethic, interview skills, dependability and overall employability training will be key. This changing narrative will involve working with the 8-12 school system through career fairs, job shadowing, career days, and tours of facilities by teachers, counselors, and students to tell the "new narrative" of manufacturing.

2. Reconnect Businesses with Youth and College Students

   As part of changing the narrative of manufacturing, businesses agreed that getting back to community outreach, which has been lacking with cutbacks, and trying to grow their business in hard financial times is crucial. Some ideas included participating in a career day, "A Day in the Life of a Manufacturer," helping high school, college students, and re-entries into the workforce through mock interviews, internships, and/or participating in a Manufacturing Fair could be useful. Students need a connection to the businesses to gain hands-on knowledge through apprenticeships, site visits, and/or company CEOs participating in a class. With the large number of retirements and potential knowledge lost, succession planning by investing in youth is a must.

3. Community Colleges, K-12 Institutions, Career Centers and Regional Businesses Need to Communicate Needs and Available Resources

   For both meetings, many in the groups were not acquainted with one another or the programs available through the resource providers, so a first step will be open communication with all parties. Manufacturers agreed that talking with each other about mutual needs may generate ideas for training, employability standards, and possible business expansions.

4. Address Workforce Dependability and Employability Issues Proactively

   While there is an available workforce, including unemployed and underemployed workers, there seems to be an issue with work ethic, employability, and retention of employees. Utilizing a program such as *WorkKeys* to assess job skills and readiness may be one way to vet potential hires before they even apply. Also, working with organizations such as the Whiteside Area Career Center to identify potential employees will help.

Focus Area: Pursuing New Technology and Green Strategies Sessions

Create an Effective Communication Forum for Manufacturers

The region's manufacturers can benefit from increased access to resources regarding technology and energy efficiency. Resources include information about timely energy/technology related opportunities, practices and trends, sharing technology (in some situations), and even networking with other manufacturers in the region in person or electronically (i.e., via case studies) to stay abreast of the strategies being used by peers. The most appropriate format or vehicle for effective communication would need to be explored. Some manufacturers prefer in-person contact, others prefer in-person contact under certain circumstances (i.e., close proximity to their facility), while still others prefer well-designed, online forums and chat rooms. A communication strategy involving both in-person and online aspects may be desirable. Use of a regional manufacturer's representative(s) who can provide personalized contact with individual manufacturers in an industry and also serve as a conduit between manufacturers might be valuable.

Focus Area: Identifying New Markets Sessions

Establish On-Going Networking Opportunities and Communication Channels Between Companies

One institution must be identified or created to focus on building a network of relationships between and developing the network of resources needed to address the needs of manufacturers in the region. It should provide the following:

- Educational events should also be provided for companies to share how they have successfully handled similar issues they faced. Helping manufacturers identify and access new markets should be one key focus of this institution.
- A cooperative marketing and sales program should be established where one or more sales representatives are shared by manufacturers who are interested in synergistic or similar markets. The sales representatives would identify customer opportunities within and outside the region for participating companies.
- An online forum for the manufacturers in the region would allow companies to share information about their products and markets as well as to request advice and to identify other manufacturers to share equipment, technical capacity, or contacts. The forum host could also post information about service providers, research, procurement opportunities, case studies, how-to workshops, networking events, etc.

NORTHERN ILLINOIS UNIVERSITY
Center for
Governmental Studies
Outreach, Engagement, and Information Technologies

AUGUST 2012

PROMOTING REGIONAL PROSPERITY IN NORTHWEST ILLINOIS

Wage and Benefit Report

IN PARTNERSHIP WITH

LEE COUNTY INDUSTRIAL DEVELOPMENT ASSOCIATION
GREATER STERLING Development Corporation
RFCDC
nida resourcefull northwest illinois development alliance
WHITESIDE COUNTY

GOALS STRATEGIES AND RECOMMENDATIONS
FIVE-COUNTY WAGE AND BENEFIT REPORT
NORTHWEST ILLINOIS AREA LABOR AVAILABILITY REPORT

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EXECUTIVE SUMMARY

The local wage and benefit survey of businesses in Carroll, Lee, Ogle, Stephenson, and Whiteside counties is a component of a larger regional project identifying advantages of the region for promoting business starts, expansions, and retention. The project is funded by the U.S. Economic Development Administration (EDA) along with local economic and community development agencies. Four main industry sectors within the counties were targeted: Manufacturing, Healthcare and Social Assistance, Agriculture, and Transportation and Warehousing. These industries have been major employers in the past and form the basis for a set of business clusters in the region.

Knowing the competitiveness of the region in terms of compensation practices and labor force will help local development practitioners market the region more effectively. Consequently, a companion study examines characteristics of the unemployed and underemployed in the region. These data are then used to more clearly identify opportunities to attract and start businesses in the region.

A total of 295 businesses in the 5-county region were invited to complete the compensation survey with 103 companies participating (34.9% response rate). Manufacturing business participation was highest and aligns with its industry dominance in the region but a cross-section of businesses in other sectors participated also. The compensation survey updates previous work on similar topics and regional business characteristics. While the data are based on electronic survey results voluntarily completed by employees, they provide benchmark information that can inform local decisions.

KEY FINDINGS:

- Most businesses have headquarters in the county where their business is located. The region contains many relatively small businesses with nearly half (46.5%) of regional employment in businesses with 1-49 employees. Large companies (1000+ employees) reported 100-249 full-time salaried positions, while those respondents reporting the least number of full-time salaried employees (1-4) were in businesses with total employment of 1-49. A majority (75.7%) of business respondents reported no labor union participation.

- Cost reduction efforts by businesses in the region affect full-time employees at almost double the frequency of part-time employees. Elimination and/or reduction of travel and increasing automation or adding technology were the two most commonly reported ways to reduce costs. Other cost-saving strategies involved elimination and/or reduction of overtime pay, training/employee development, and shorter work weeks. Cost-saving strategies differ among industry sectors.

- Lack of experience is the main reason cited for positions that were hard to fill (62.5%), with work ethic a close second (43.8%). These responses are not unlike those expressed by employers in other regions as well. In addition, only 4 of 12 (33.3%) of the highest ranking turnover positions can be filled by temporary agencies. More work with educational institutions to redesign training and educational programs will help build the work force.

- Training needs are greatest for soft skills, mainly improved managerial skills. Training opportunities are available fairly equally to both hourly and salaried employees and include attending conferences, seminars, and workshops, external training, and informal on-the-job training. However, elimination or reduction of these opportunities is among the first cost-saving strategies used by businesses.

- Traditional benefits (medical, dental, life insurance) and paid days leave (vacation, sick days, holidays) were reviewed for full- and part-time employees, as well as salaried vs. hourly. Life insurance is often paid in full by employers (71.3%), while 58.0% of respondents cover between 75.0%-100.0% of health insurance costs. Eight or more paid holidays per year are typical for full-time employees, while part-time employees are less likely to receive paid holidays. For both hourly and salaried employees, more vacation is available the longer they are employed with the business.

- Beyond traditionally offered benefit packages, innovative benefits that contribute to the overall compensation package for employees are also offered and include flexible spending accounts, cafeteria plans, flexible scheduling, and company vehicles.

- Annual wage levels were gathered and compared with both state and national average wage levels (which include metro areas). Average wage levels in four occupation categories and several individual occupation titles in the region exceeded 100% of the state and/or national averages, with the Agriculture *occupation category* and healthcare *occupation titles* leading the region. Only the Management *occupation category* is 25.0% or more below the state and/or national averages, with several *occupation titles* in healthcare and engineering below as well. These figures have not been adjusted based on productivity comparisons with other areas, nor do they consider the distribution of employees by seniority and/or years of experience. Both could affect comparisons of the region and state.

- Performance-based (merit reviews) are the most common method across all industries for awarding pay increases (81.7%), while lump-sum bonuses are provided by more 43.0% of businesses. Length of service pay increases are the least likely method to be used (16.9%).

Overall, the region is competitive in terms of labor force characteristics and compensation levels, positioning the region to expand in several business sectors.

2012 WAGE AND BENEFIT REPORT

For Carroll, Lee, Ogle, Stephenson, and Whiteside Counties in Illinois

INTRODUCTION

The local wage and benefit survey of businesses in Carroll, Lee, Ogle, Stephenson, and Whiteside counties is a component of a larger regional project to identify the advantages the region has for promoting business starts, expansions, and retention. Funded by the U.S. Economic Development Administration (EDA) and local economic and community development agencies, the project includes conducting a labor force availability analysis for the region to help define the elements necessary to attract and retain area companies and/or launch new establishments, leading to increased growth and prosperity in the region. By identifying the skill levels of unemployed and underemployed workers, determining transferability of underutilized skills to potential new jobs, and making those results available for business prospecting and recruiting, the project will help local developers stimulate the regional economy.

The ultimate aim of the project is to identify business opportunities suited for the 5-county region and to assist local economic and community development partners in applying a regional approach to development strategies. Outcomes of the project include identifying emerging industries, developing strategies to encourage job growth, and improving the current business climate.

Wage and benefit data collected from the survey in April 2012, coupled with results from an underemployment study conducted by Pathfinders, Inc. completed in July 2012, provide information on workforce readiness initiatives for stakeholders in the region. The wage and benefit study is an update and expansion of a wage and benefit study conducted by the Center for Governmental Studies (CGS) at Northern Illinois University (NIU) in January 2009. The following partners are engaged in the project:

- Whiteside County Enterprise Zone and Economic Development
- Greater Sterling Development Corporation
- Lee County Industrial Development Corporation
- Rock Falls Community Development Corporation
- Northwest Illinois Development Alliance

SURVEY SCOPE AND METHODOLOGY

A survey instrument was designed to collect information about business practices, industry workforce composition, occupational wage ranges and employee benefits for the 5-county region. The survey gathered current wage and benefit information, as well as information on training needs, hiring issues, and high turnover positions. Respondents accessed the survey via Survey Monkey and completed online.

A total of 295 businesses in the region were invited to complete the survey on wages, benefits, and compensation practices. The survey was conducted between February and April 2012 with 103 business responses, a return rate of 34.9% (Appendix A lists responding businesses).

The wage and benefit survey was organized into five sections:

1. **Business Practices.** Basic information was collected about the characteristics of each business in terms of size, industry affiliation, location, and number of employees as well as status in terms of full- vs. part-time and salaried vs. hourly wages.

2. **Occupations and Wages.** Ten occupational groups based upon Standard Occupational Classifications (SOC) were used as they aligned with the four major industry sectors. Wages for these occupations were collected as well.

3. **Workforce Availability.** Positions with high turnover rates, positions difficult to fill, and positions that could be staffed by temporary employees were identified in this portion of the survey.

4. **Training Needs.** The importance of various topic areas for improving skills and work performance were ranked in this section of the survey.

5. **Benefit Information.** Information on traditional benefits, such as health and dental insurance, 401K, paid days leave (PDL) and innovative benefits were collected in this section. Methods of wage increases, training and educational opportunities, and cost-saving strategies were also obtained.

Targeted industries in the survey included Manufacturing, Healthcare and Social Assistance, Agriculture, and Transportation and Warehousing. These industries were selected based on their presence in the region and the interest by local development agencies in marketing the region to specific industries. Brief definitions of the selected industry sectors based on the North American Industry Classification System (NAICS) are as follows:

1. **Manufacturing (NAICS 31-33)**
   Establishments in the Manufacturing sector are described as plants, factories, or mills and characteristically use power-driven machines and materials-handling equipment. The subsectors in the Manufacturing sector generally reflect distinct production processes related to material inputs, production equipment, and employee skills.

2. **Healthcare and Social Assistance (NAICS 62)**
   The Healthcare and Social Assistance sector is comprised of establishments providing healthcare and social assistance for individuals. The sector includes both healthcare and social assistance because it is sometimes difficult to distinguish between the boundaries of these two activities. Many of the industries in the sector are defined based on the educational degree held by the practitioners included in the industry.

3. **Agriculture, Forestry, Fishing and Hunting (NAICS 11)**
   The Agriculture, Forestry, Fishing, and Hunting sector is comprised of establishments primarily engaged in growing crops, raising animals, harvesting timber, and harvesting fish and other animals from a farm, ranch, or their natural habitats. The establishments in this sector are often described as farms, ranches, dairies, greenhouses, nurseries, orchards, or hatcheries. The sector distinguishes two basic activities: agricultural production and agricultural support activities.

4. **Transportation and Warehousing (NAICS 48-49)**
   The Transportation and Warehousing sector includes industries providing transportation of passengers and cargo, warehousing and storage for goods, scenic and sightseeing transportation, and support activities related to modes of transportation. Establishments in these industries use transportation equipment or transportation related facilities as a productive asset. This sector distinguishes three basic types of activities: subsectors for each mode of transportation, a subsector for warehousing and storage, and a subsector for establishments providing support activities for transportation.

Complete definitions for industry sectors can be found in Appendix B.

DATA ANALYSIS

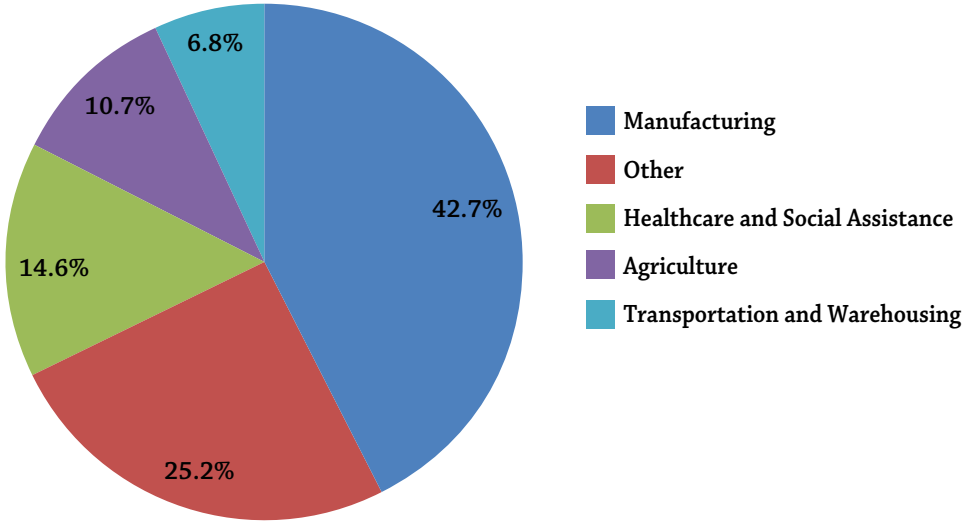
Statistical analysis of results was performed to help draw inferences from the data collected. The T-test determines whether the difference between two averages is significant even after accounting for differences expected due to the standard deviation and sample size. In this report, we use T-tests to measure the difference between averages for the survey sample as a whole and the averages for relevant sub-samples. For example, a T-test could determine if a particular industry is significantly more or less likely than the sample as a whole to require employees to have a degree or certificate.

Similar to the T-test, the Chi-square test is used to measure the statistical significance of variation between two groups. Chi-square is used as a test against the assumption that no significant difference exists between the actual data and the expected data. In this report, we use the Chi-square test to determine when particular industries have practices that differ significantly from the sample as a whole. For example, a Chi-square test could determine whether the mix of business locations for one industry differs significantly from the mix of business locations for all industries surveyed.

BUSINESS PRACTICES

The responses from the major industry sectors in the 5-county region indicate that Manufacturing businesses had the greatest participation rate with 42.7% (Figure 1). This rate supports its status as the highest source of employment in the region, and the largest number of businesses asked to participate (U.S. Census Bureau, County Business Patterns, 2009). The "Other" category represented the second largest participaton rate (25.2%) and included Education, Construction, Utilities, Professional/Scientific, and Administrative/Support/Waste Management.

Figure 1: Respondents by Industry

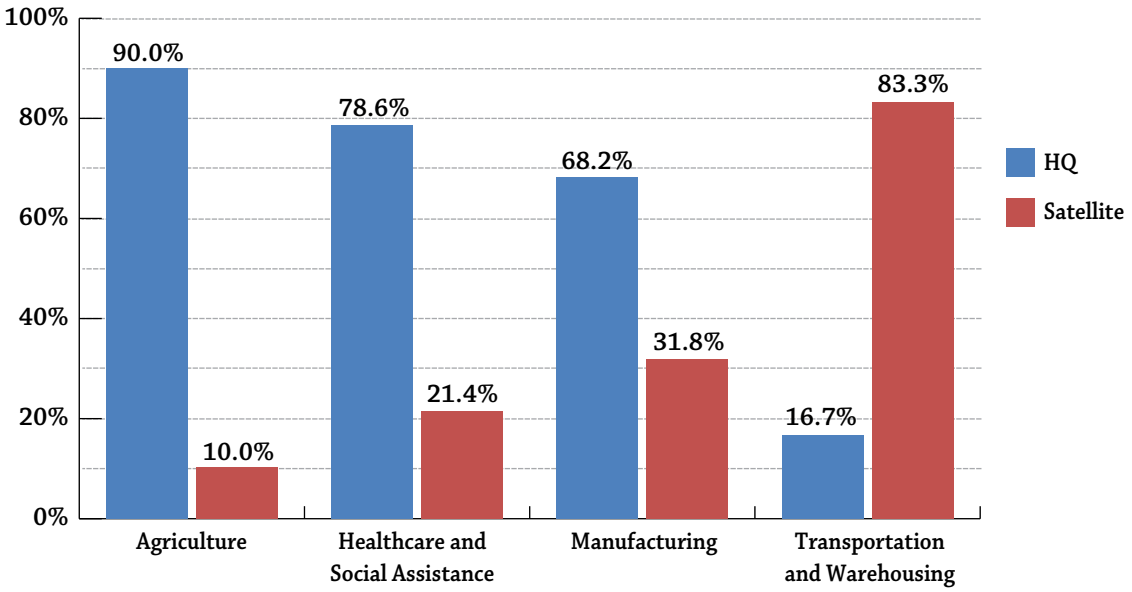


"Other" category includes Education, Construction, Utilities, Professional/Scientific, and Administrative/Support/Waste Management.

LOCATION TYPE BY INDUSTRY

Understanding whether businesses in the region are headquartered in their respective counties can help community and economic developers create better strategies. Over 70% of businesses responded that their headquarters are in the county where their business is located. This is important because it could mean the business is more involved with the community, possibly at both a business and personal level, and that decisions about expansion, employment, and other business practices are made locally. Although businesses in each of the four major industry sectors also had satellite locations within the region, Transportation and Warehousing was mainly a satellite operation (Figure 2). This response was not unexpected since warehousing often involves a network of distribution centers such as those used by Wal-Mart and other retail chains, where decisions about business issues are made outside of the region.

Figure 2: Headquarter and Satellite Operations by Industry Sector



OPERATING LOCATIONS

A majority of businesses (51.8%) responding to the survey have one location within their respective county (Figure 3). Equally important, however, is that nearly one in four responding businesses (24.7%) also reported locations outside of Illinois. This suggests that the companies serve other markets and may offer opportunities for expansion or relocation of other operations to the region. In fact, a total of 16 other states and Canada are represented by businesses responding to the survey.

Somewhat unexpected is the relatively low proportion of businesses with locations in the Chicago/Metro Area (4.7%). Strengthening these linkages may offer development opportunities. Businesses with international locations represented more than 17.0% of respondents and can be advantageous in an increasingly global society.

Figure 3: Business Locations, All Industries

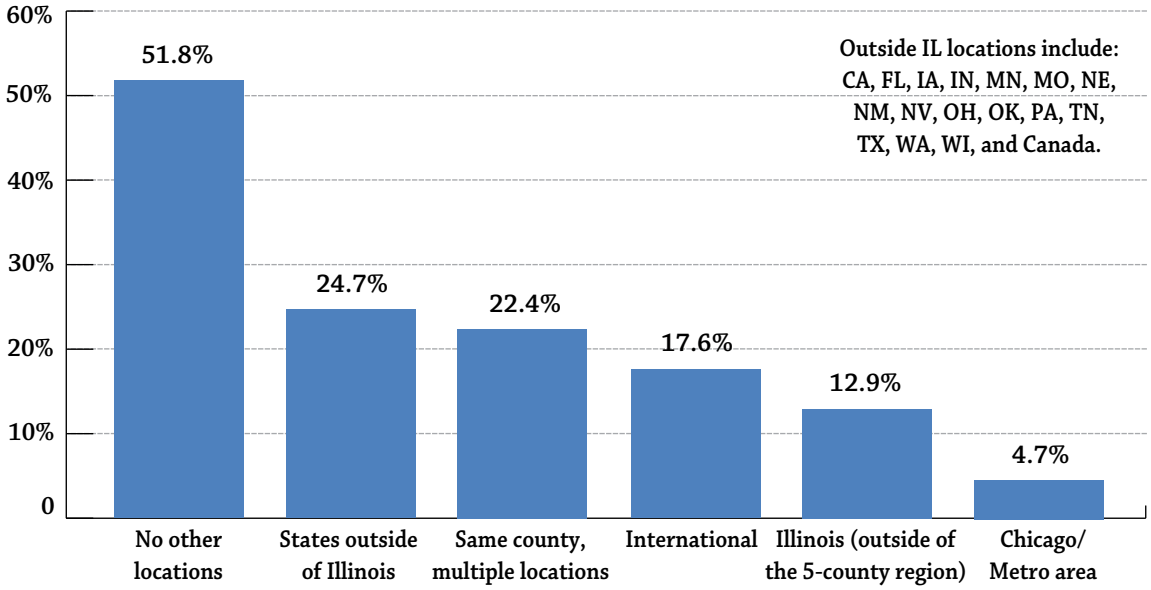
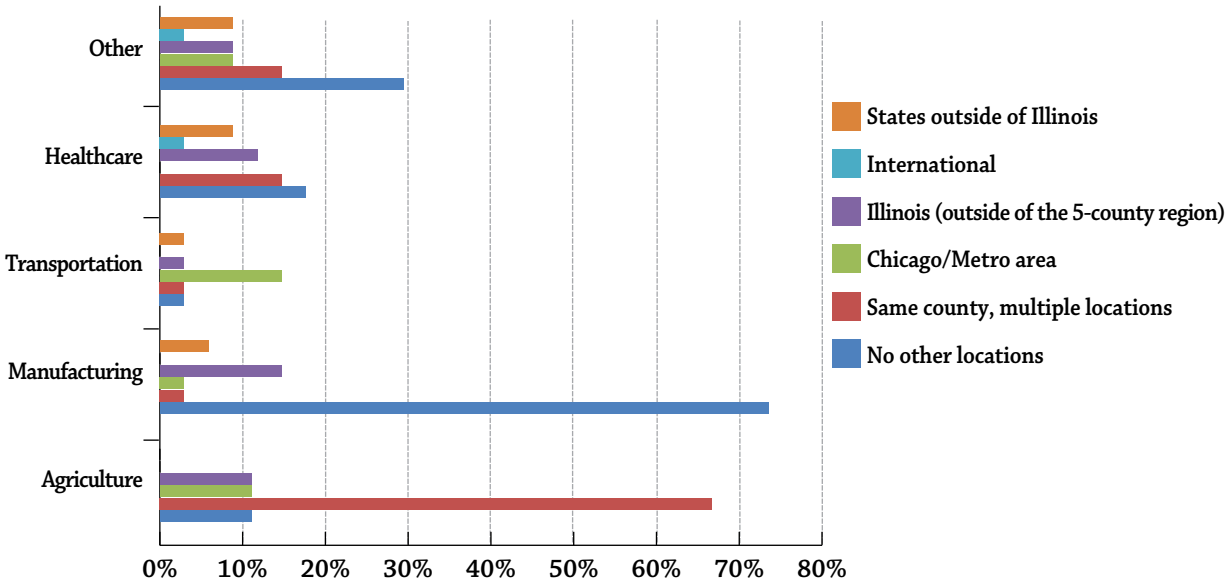


Figure 4: Business Locations by Industry

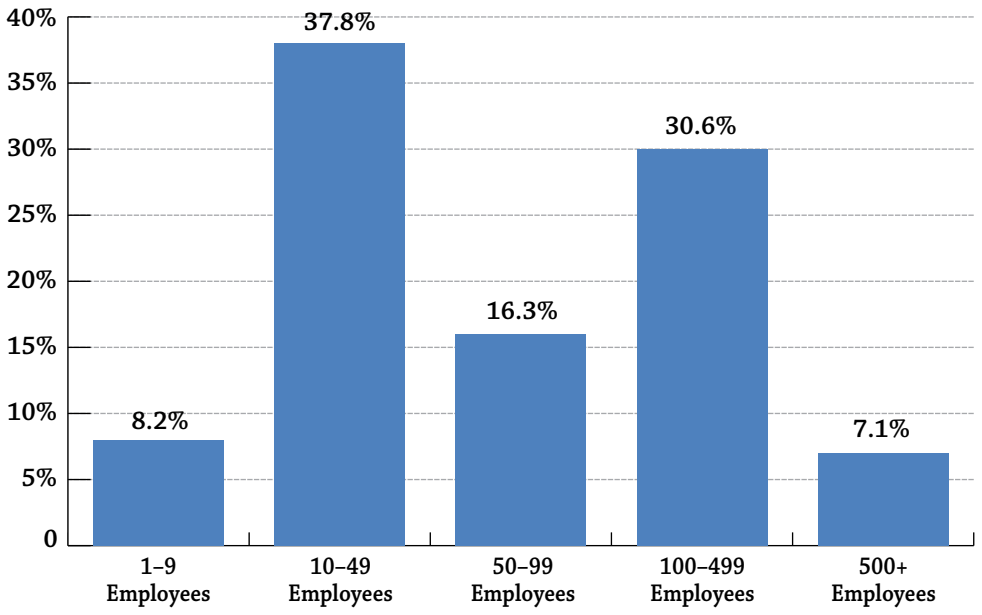


Comparing location patterns for each of the industry sectors provides an indication of core operations. For example, Agricultural businesses operate in multiple locations in the same county while Manufacturing businesses operate predominately from a single location (Figure 4). These differences may reflect organizational structure, such as separate farms owned by the same organization being counted as a separate unit. Transportation businesses reported mainly non-domestic operating locations, again reflecting links with the global economy. The greatest proportion of responses in the "Other" category, mainly Education, indicated only one location in the county or multiple locations in the same county, reflecting more localized operations.

BUSINESS SIZE AND EMPLOYMENT TYPE

The region contains many relatively small businesses with nearly half of respondents (46.0%) indicating 1-49 employees (Figure 5). The largest four companies completing the survey (1000+ employees) reported 100-249 full-time salaried positions. Three of the four also reported 500-999 full-time hourly employees. Those respondents with the least number of full-time salaried employees (1-4) were in businesses with total employment of 1-49. Hospitals and medical centers had the highest number of part-time hourly employees, possibly because they often utilize part-time and contract workers for specialty services and shift work needs.

Figure 5: Business Respondents by Employee Size



As mentioned, the highest percentage of respondents reported total employment between 1 and 49 workers. By industry sector the percentage of businesses in this size category are listed below:

- Agriculture, 54.5%
- Manufacturing, 48.8%
- Transportation and Warehousing, 42.9%
- Healthcare and Social Assistance, 20.0%

Total employment for the "Other" industry category, which includes Education, Construction, Utilities, Professional/Scientific, and Administrative/Support/Waste Management, is equally divided between businesses that have either 1-49 employees or 100-499 employees.

UNIONS

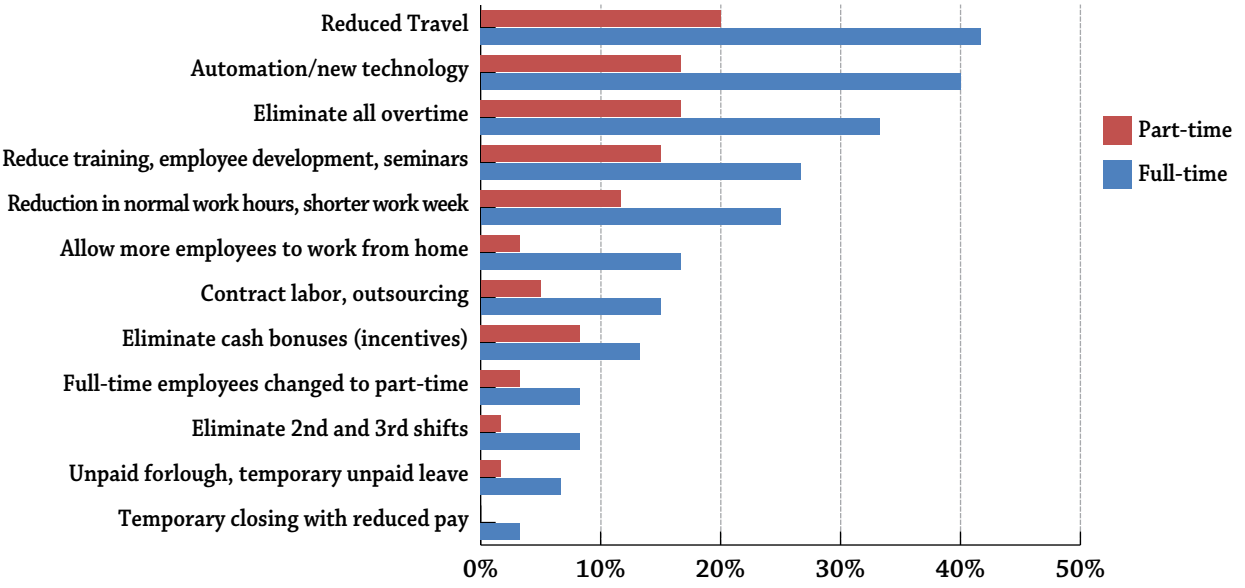
A majority (75.7%) of business respondents reported no labor union participation in their businesses while 24.3% reported unionization. Most labor union participation was in Manufacturing and Transportation and Warehousing. In each of these sectors, 71.0%-100.0% of the employees are union members, reflecting a history of unionized workforces.

COST-SAVING STRATEGIES

The ongoing recession has forced many businesses to adopt cost-saving strategies. Based on the responses in the five counties, most of the cost-saving strategies used by businesses involved efforts to work with full-time employees at almost double the frequency of strategies involving part-time employees (Figure 6). Cost reduction efforts most often involved eliminating and/or reducing expenses for travel (41.7%), overtime pay (33.3%), training/employee development (26.7%), and shorter work weeks (25.0%).

Increasing use of automation or adding new technology was one of the most commonly reported ways to reduce costs (40.0%) even though this strategy requires an up-front expense with expectations of higher productivity in the future. This trend has been common in manufacturing where a smaller labor force now produces more output.

Figure 6: Cost-Saving Strategies



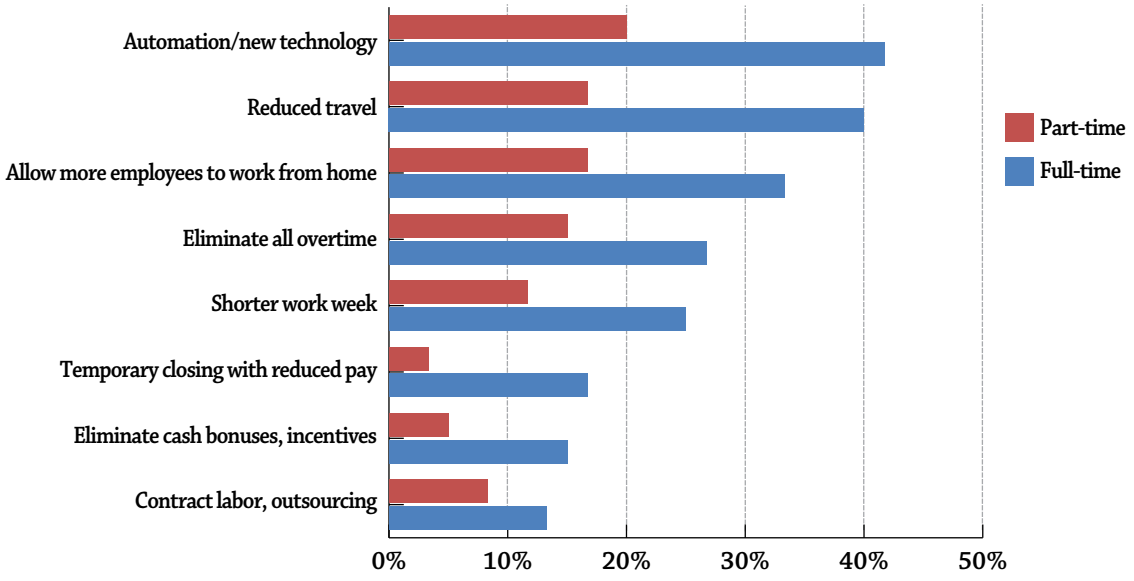
As expected, there are some differences evident in cost-saving strategies pursued by the various industry sectors. The following section discusses these differences.

AGRICULTURE

The most frequently cited strategies for cost-saving were the use of automation/new technology and reduced travel, predominately for full-time employees (Figure 7). Elimination of overtime affected full- and part-time employees equally, while shorter work weeks were implemented for part-time workers. Full-time workers were affected at half the frequency of part-time workers, possibly because part-time worker schedules provide more flexibility in the number of hours available. Work from home was only available for full-time workers.

Unpaid furlough, elimination of 2nd and 3rd shifts, reduction in training, employee development and seminars, or full-time employees changing to part-time were not reported. This sector may not require extended shift work and furloughs are not necessary if adjusting the hours of part-time workers is used as a strategy.

Figure 7: Agriculture Sector Cost-Saving Strategies

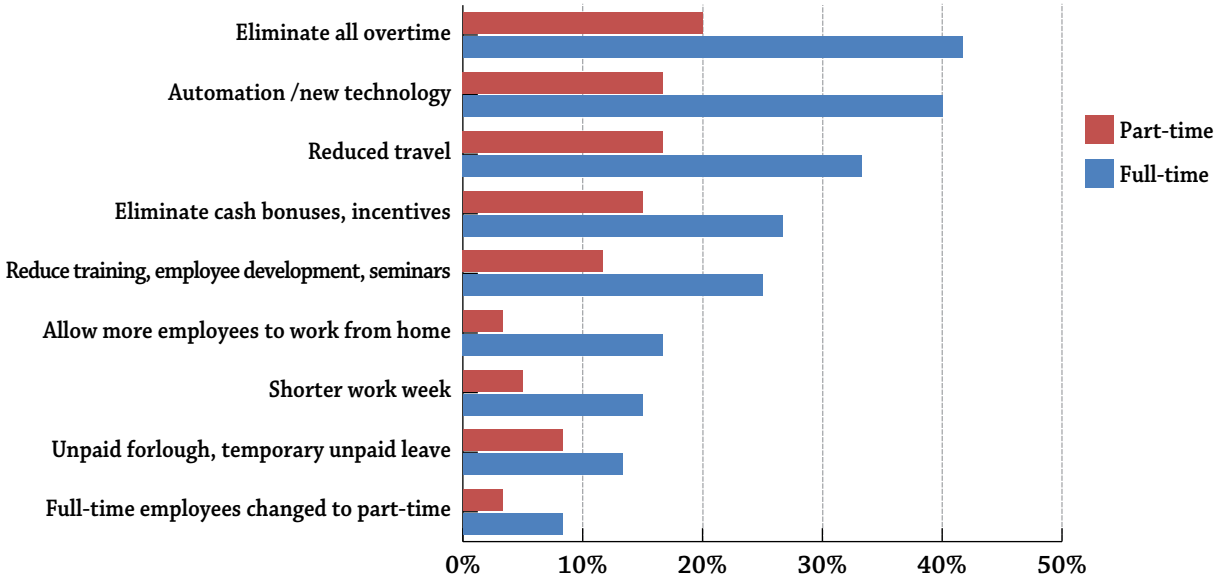


HEALTHCARE AND SOCIAL ASSISTANCE

Several strategies were used to reduce costs in Healthcare and Social Assistance including elimination of overtime and use of automation/new technology, both of which were nearly equal for full- and part-time employees. Reduced travel (Part-time, 20.0%; Full-time, 27.0%), elimination of bonuses, and reduced training/seminars (20.0% respectively) were also used for both full- and part-time employees.

Full-time employees changing to part-time, unpaid furlough, shorter work week, and work from home were indicated by a relatively low proportion of respondents at 13.0% or less (Figure 8). Elimination of 2nd and 3rd shifts, contract/outsourcing, or temporary closing/reduced pay were not implemented. The nature of the service provided by skilled employees in this industry may dictate the need for continuous shifts, and closing temporarily is not implemented in this sector due to the need for continuous access to care and services.

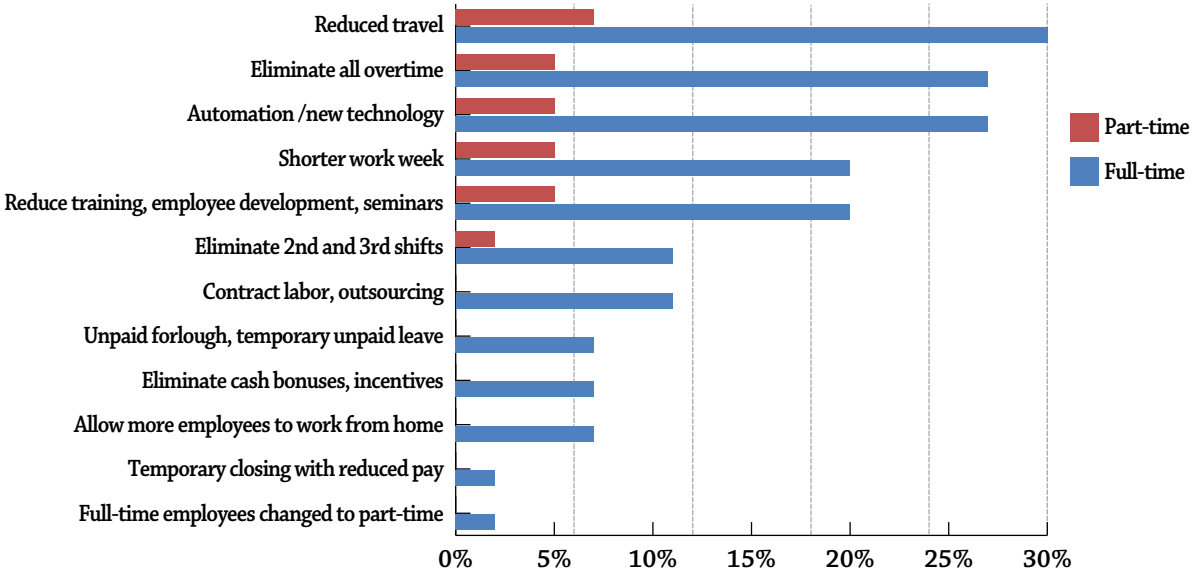
Figure 8: Healthcare and Social Assistance Sector Cost-Saving Strategies



MANUFACTURING

Respondents in the Manufacturing sector used all cost-saving strategies mainly impacting full-time workers. Among the most frequently cited strategies were reduced travel (30.0%), elimination of overtime (27.0%), use of automation/new technology (27.0%), shorter work week (20.0%), and reduced training, employee development, and seminars (20.0%) (Figure 9). The strategies are inter-related as the use of automation and new technology could cause a reduction of overtime and reduced training could lead to reduction of travel.

Figure 9: Manufacturing Sector Cost-Saving Strategies



TRANSPORTATION AND WAREHOUSING

Work from home, contractors/outsourcing, and shorter work weeks were the only cost-saving strategies implemented in this industry sector. These strategies affected only full-time employees in a relatively small proportion (14.0%) of respondents in this sector so a figure is not included.

Only Transportation and Warehousing did not implement any of the top three cost-saving strategies: reduced travel, use of automation/new technology, and elimination of overtime. Not using these strategies is understandable because travel is often essential and overtime may be unavoidable due to such issues as weather conditions or traffic congestion causing unanticipated delays in required travel.

OCCUPATIONS

The Wage Information section identified 10 Standard Occupation Classifications (SOC) in the 5-county region that are prevalent among the targeted industry sectors. In this section, the occupation data are grouped by whether the occupations exist in all four industry sectors and the "other" category (ubiquitous or universal), exist in four of the five categories (common) or are exclusive to one specific industry (unique). Ultimately, ubiquitous and common occupations provide more opportunities for workers to transfer their skills to other locations or sectors.

UBIQUITOUS OCCUPATIONS IN THE REGION

Respondents in all four industry sectors, and the "Other" category, identified 12 ubiquitous occupation titles within 3 SOC categories: Management, Business and Financial, and Office and Administrative Support functions.

The Management occupations include the leadership and operations aspects of the business, such as the following:

- Chief Executive Officer
- Human Resources Manager
- General and Operations Manager
- IT Systems Supervisor/Computer and Information Systems Manager
- Business and Financial Manager
- Managers, All Other

One Business and Financial occupation was reported across all industry sectors: Compliance Officer. Office and Administrative Support occupations reported across all four industry sectors include the following:

- Receptionist
- Executive Secretary and Administrative Assistant
- Customer Service Representative
- General Clerk
- Secretary/Administrative Assistant

The percentage of ubiquitous occupations in each industry varies with the overall number of occupations. For example, Manufacturing had the greatest number of different occupation titles, therefore ubiquitous occupations represent the smallest proportion (17.9%). Conversely, Agriculture has the lowest number of different occupation titles, therefore ubiquitous occupations represent a higher proportion of the labor force in those businesses (42.9%) (Table 1).

Table 1: Ubiquitous, Common, and Unique Occupations in the 5-County Region

INDUSTRY	OCCUPATIONAL TITLES ON SURVEY	% UBIQUITOUS OCCUPATION TITLES	% COMMON OCCUPATION TITLES	% UNIQUE OCCUPATION TITLES
MANUFACTURING	67	17.9%	19.4%	28.4%
HEALTHCARE AND SOCIAL ASSISTANCE	53	22.6	13.2	45.3
TRANSPORTATION AND WAREHOUSING	32	37.5	37.5	0.0
AGRICULTURE	28	42.9	17.9	14.3
OTHER	33	36.4	36.4	3.0

COMMON OCCUPATIONS IN THE REGION

Further analysis of the occupation titles among industry sectors revealed additional, common occupation titles. Common occupations among industry sectors also indicate the potential to transfer skills used/developed in one industry and apply them in another industry. For example, in Transportation and Warehousing, 37.5% of occupations match those in four other industry sectors (including "Other" category) in the region, and 25.0% match occupations in three other industries (Table 1). Common occupation titles are listed below:

- First-Line Supervisor of Office and Administrative Support Worker
- Payroll Clerk
- Stock Clerk and Order Filler
- Computer Operator
- Shipping Receiving and Traffic Clerk
- Helper, Production Worker
- Maintenance Worker, General
- Janitor and Cleaner, Except Maid/Housekeeper
- Truck Driver, Heavy/Tractor-trailer
- Materials Handler
- Industrial Production Manager

Common responsibilities and functions for each of these positions can be adapted to other industries and represent possible transferability of skills and a larger available labor pool.

UNIQUE OCCUPATIONS IN THE REGION

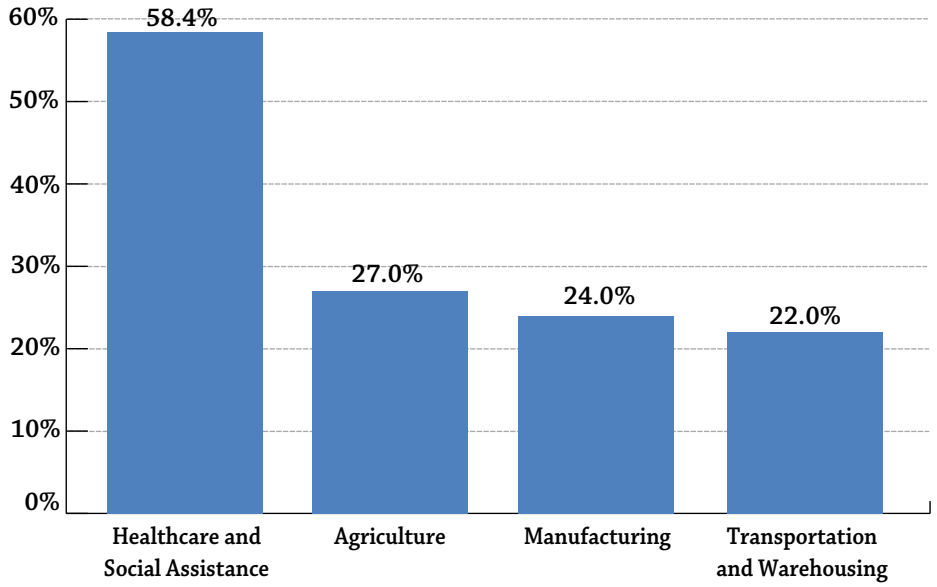
Unique occupations are those reported by only one industry sector and may represent a higher level of specialized training or the need for advanced education. The occupations related to Healthcare and Social Assistance have the highest proportion of unique occupations at 45.3% (Table 1). These include nurses, physicians, and other highly trained individuals. Unique occupations do not offer many transferable skills as the ubiquitous and common occupations, however they do often represent higher paying jobs that the region would like to attract and retain.

EDUCATIONAL ATTAINMENT FOR REGIONAL OCCUPATIONS

Each industry sector is supported by a range of occupations, some of which are unique to that sector while others are found in many sectors. Often, the more an occupation is specialized, the greater need for advanced education, while occupations that require no specialized skills may indicate minimal to no need for formal education. Understanding the educational and training requirements for various occupations reported in the 5-county region is an important aspect to developing a work-ready labor force.

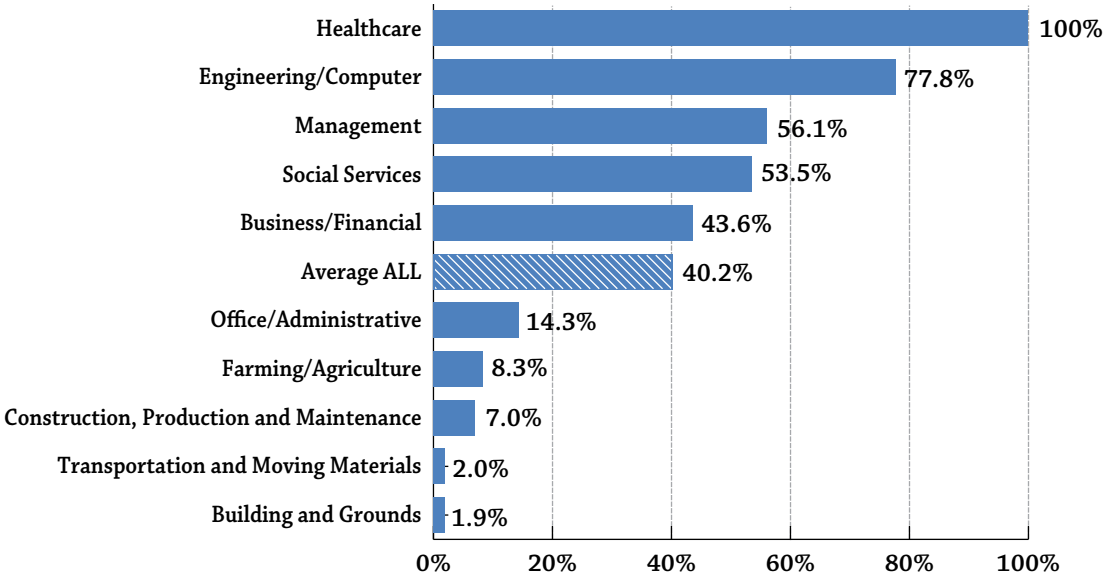
The Healthcare and Social Assistance sector requires a degree or certification for the largest proportion (58.4%) of occupations included in the SOC for Life, Physical and Social Science, Healthcare Practitioners, and Healthcare Support (Figure 10). The Transportation and Warehouse sector includes occupations categories least likely to require degrees or certifications such as Transportation and Material Moving, Building and Grounds, and Construction, Production and Maintenance (22.0%).

Figure 10: Certificate or Degree Required by Industry



The Healthcare and Social Assistance industry sector includes occupations ranging from physician to social worker, with varying degrees of education needed. For this reason, although in the same sector, healthcare and social services are separated into two occupation categories for analysis (Figure 11). Healthcare occupations reported by respondents required a degree 100.0% of the time, while social service occupations needed a certificate or degree nearly half as often (53.5%). Not surprisingly, engineering occupations needed a certificate or degree more than 75.0% of the time. Management (56.1%) and business and financial (43.6%) occupations also required a certificate or degree at a moderate rate. Other occupation categories are significantly less likely to require certification or a degree.

Figure 11: Occupations Requiring Certificate or Degree



REGIONAL WORKFORCE AVAILABILITY AND TRAINING NEEDS

As part of the Workforce Availability and Training needs sections in the survey, respondents were asked about difficulties filling open positions with qualified employees, employee turnover, positions that could be staffed by temporary employees and training needs of the workforce.

DIFFICULTY FILLING OPEN POSITIONS

When asked about positions that are hard to fill, lack of experience was reported as the leading reason across all respondents at 62.5% (Figure 12). In later sections, training needs in the region and training offered by businesses are discussed. Interestingly, apprenticeships, which represent on-the-job training to gain experience often before a job is offered, rank the lowest among all trainings offered. This may be an opportunity to help new or potential employees gain needed work experience.

Figure 12: Reasons for Difficulty Filling Open Positions

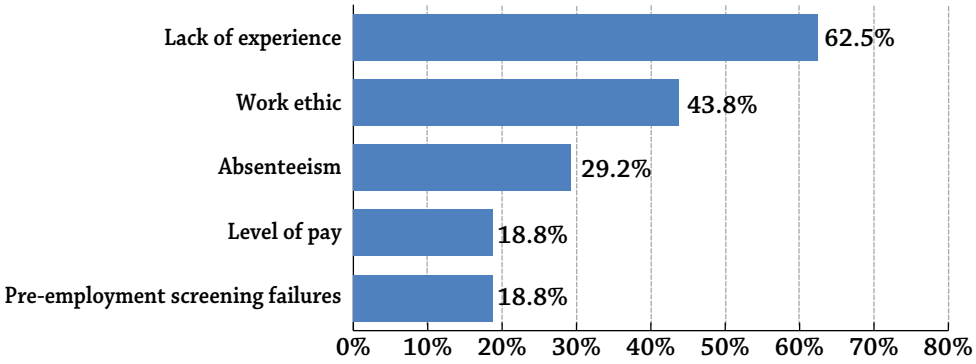
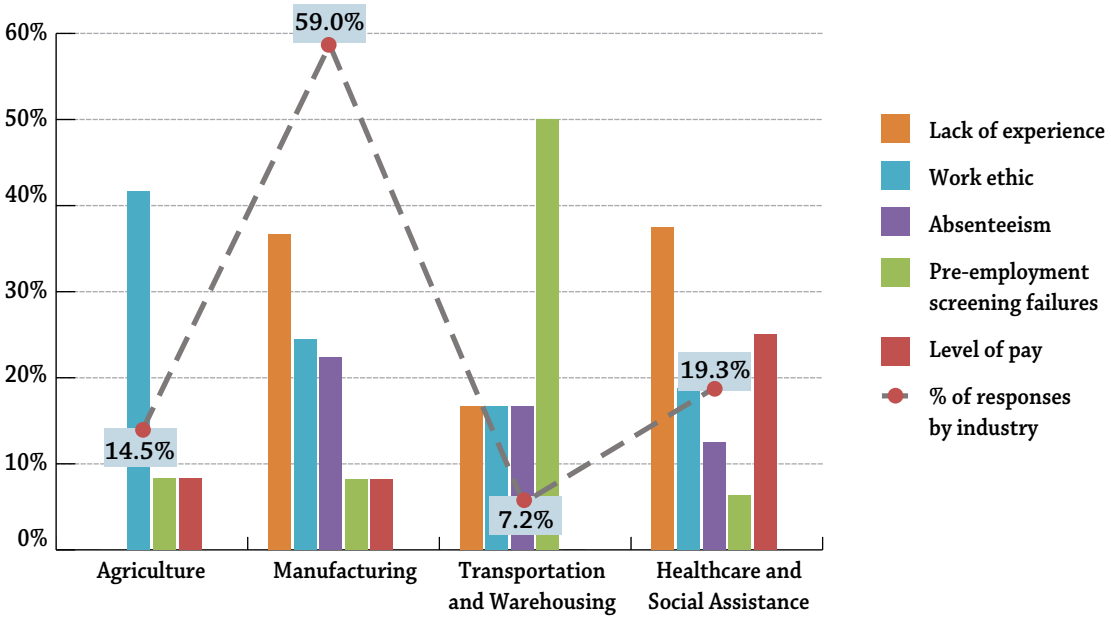


Figure 13: Reasons for Difficulty Filling Open Positions by Industry Sector



In filling open positions, Agriculture is the most affected by a lack of experienced workers, while absenteeism is not an issue. Transportation and Warehousing reported failing pre-employment screening as the predominant reason that open positions cannot be filled, while level of pay had no effect in attracting qualified workers. Level of pay issues were seen in the Healthcare and Social Assistance sector more than any of the other industry sectors surveyed in the region. This issue is understandable given that for several occupation titles in both healthcare and social services, the 5-county region is below the state and/or national average in wages (Appendix C). Pre-employment screening had less impact for Healthcare and Social Assistance positions, possibly because of the screening already associated with receiving a license in nursing and other healthcare positions.

When considering reasons for difficulty in filling positions along with cost-saving strategies, elimination of bonuses, and level of pay may suggest that financial incentives are a factor in attracting qualified employees.

Businesses citing lack of experience or work ethic as reasons for difficulty in filling positions also indicated outsourcing as a cost-saving strategy. One may infer that outsourcing is a stop-gap measure when qualified employees cannot be hired permanently. Using automation/new technology as a cost-saving strategy may be one reason why lack of experience is reported by several business respondents. Qualified employees need to be familiar with new technology to be considered for employment.

Although lack of experience is cited as a difficulty in filling positions, reduction in training and seminars for full-time employees was implemented as a cost-saving strategy. Lacking experienced workers and reducing training/seminars may be at cross purposes, because it is hard to gain experience if opportunities to enhance skills are reduced. Again, these challenges represent opportunities to address hiring and retention issues in the region.

EMPLOYEE TURNOVER

Occupations with the highest turnover in the region are listed in Table 2 along with the median time needed to fill positions and whether temporary agencies can provide labor for the specific occupation. Only four occupations are being filled by temporary agencies.

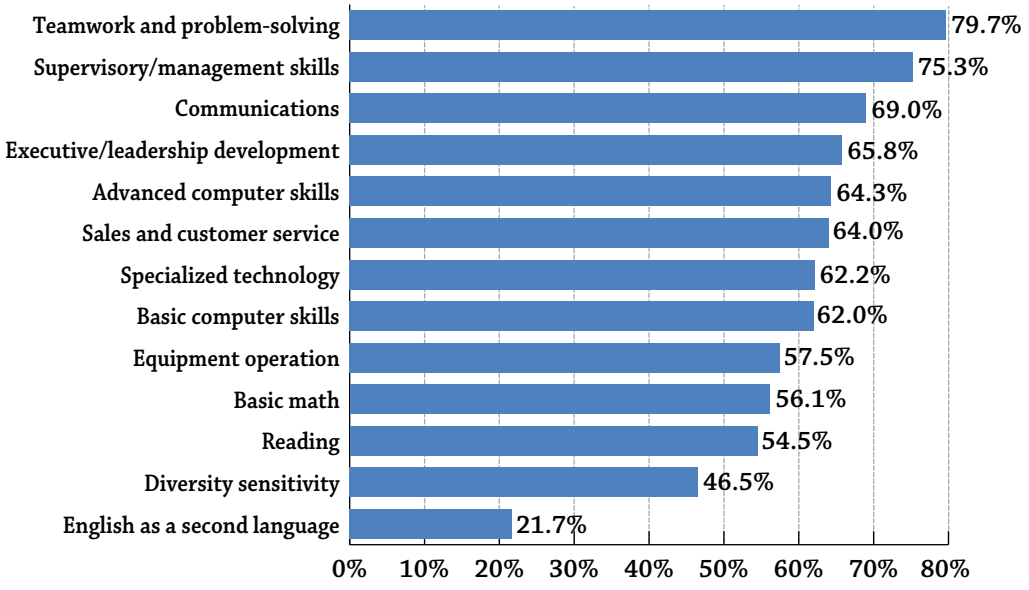
Table 2: Occupations with Highest Turnover Rates

OCCUPATION (HIGHEST TO LOWEST)	TIME TO FILL	TEMP AGENCY USED?
PRODUCTION WORKERS, ALL OTHER	Less than 30 days	Y
CUSTOMER SERVICE REPRESENTATIVE	Less than 30 days	N
NURSING AIDE, ORDERLY/ATTENDANT	Less than 30 days	N
WELDERS CUTTER, SOLDERER, AND BRAZER	Less than 30 days	N
MACHINIST	31-60 days	Y
ASSEMBLERS AND FABRICATORS, ALL OTHER	31-60 days	Y
MANAGERS, ALL OTHER	31-60 days	N
REGISTERED NURSE	61-90 days	N
MAINTENANCE WORKER, GENERAL	61-90 days	N
TRUCK DRIVER, HEAVY/ TRACTOR-TRAILER	61-90 days	N
AGRICULTURAL EQUIPMENT OPERATOR	More than 90 days	N
CNC PROGRAMMER	More than 90 days	Y

TRAINING NEEDS

Soft skills are personal attributes that enhance job performance through the ability to interact effectively with co-workers and customers. These are often the hardest skills to "teach" but lead the list of training needs for business respondents, especially in areas that require improved managerial skills (Figure 14). Training needs ranked as lower priorities, such as reading and math, may be skills that are basic or minimal requirements for employment and can be determined during pre-employment screening activities so they are not seen as issue for employers.

Figure 14: Training Needs



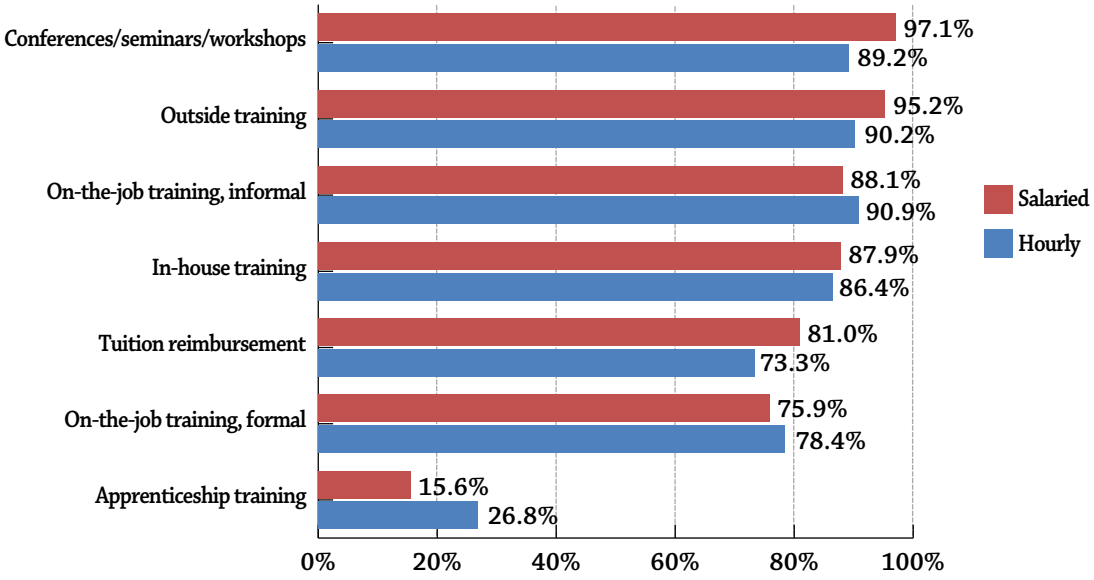
BENEFIT INFORMATION

In general, full-time or part-time and/or salaried or hourly status affect the level of employee benefits offered, and this is the case with the 5-county region. Benefits were examined on several levels, including training and education, health and dental insurance, 401K, paid holidays, and innovative benefits. Overall, Healthcare and Social Assistance has the most consistency in benefits offered to both full- and part-time employees. Data for Manufacturing show minimal benefits for part-time employees; however, most employment in manufacturing businesses is full-time hourly.

TRAINING AND EDUCATION OPPORTUNITIES

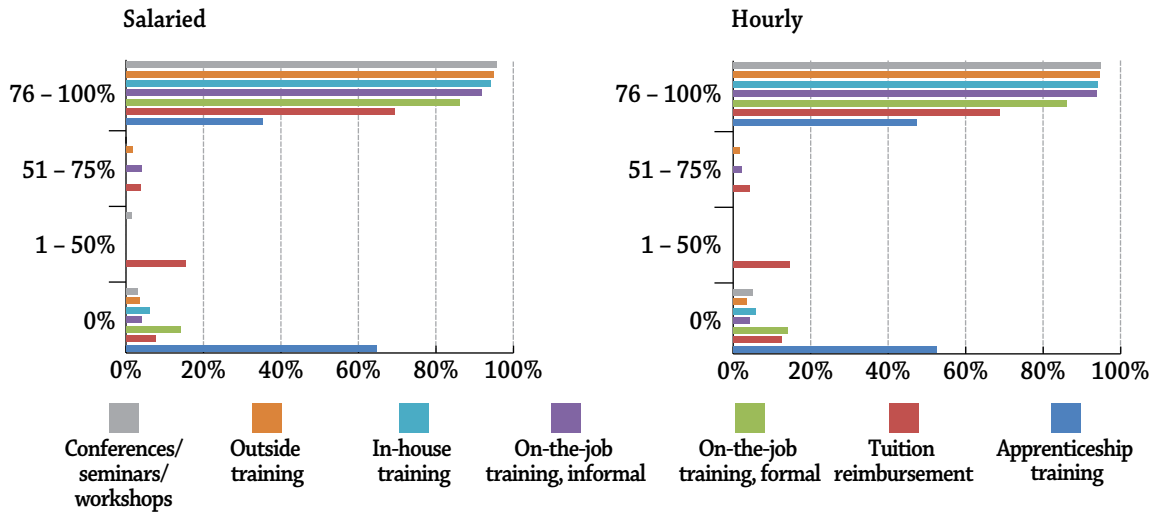
Survey respondents in the region identified several training needs, including soft skills such as problem-solving and hard skills such as computer operations. Several types of training and education opportunities are offered by employers to help address those needs. Hourly vs. salaried employees were provided opportunities fairly equally with conferences, seminars, and workshops, outside training, and informal on-the-job training offered by a majority of respondents (Figure 15). The apprenticeship option was the only noticeably low ranking opportunity. As mentioned above, respondents noted lack of experience as an issue, but seminars, workshops, and training were some of the highest ranked cost-saving strategies. It will be important to recognize the priority of a skilled workforce, and to identify strategies that will be most useful in both the short and long-term to address training needs while maintaining fiscal responsibility.

Figure 15: Training and Educational Opportunities



The willingness of a business to reimburse for training often demonstrates the importance it places on education and retention of employees. The percentage an employer pays or reimburses employees for education and training opportunities, as well as delivery methods, are consistent among hourly and salaried workers. Most businesses reimburse or pay 76.0%-100.0% of education/training expenses, again except for apprenticeships (Figure 16). In-house and on-the-job training appear to offer the most cost-effective education opportunities, both in terms of financial and time commitment, for employer and employee alike.

Figure 16: Education/Training Opportunities Paid by Employer

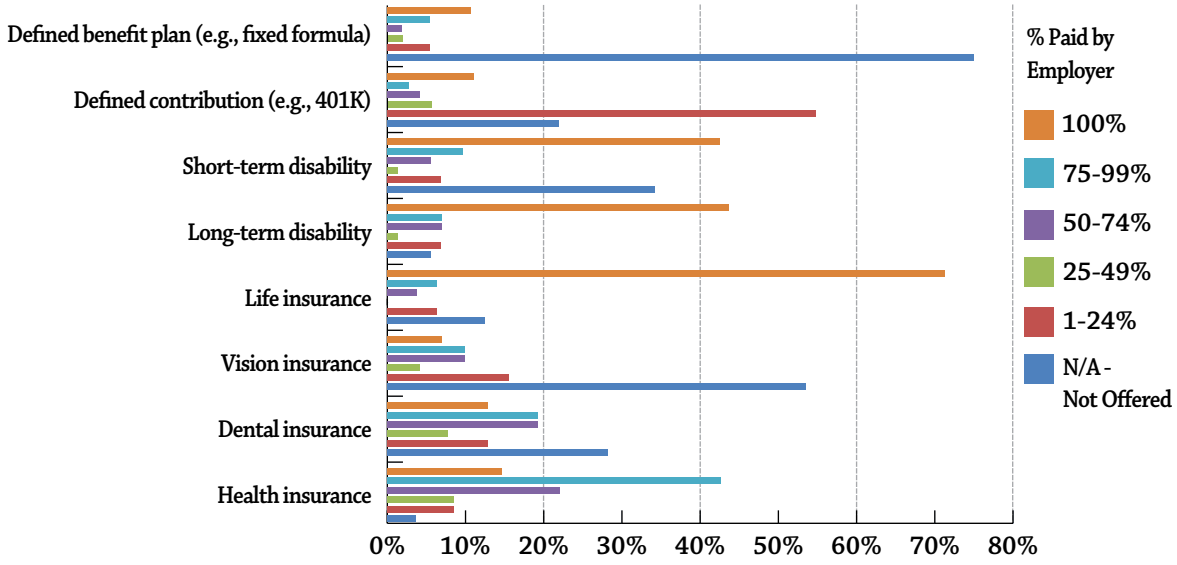


TRADITIONAL BENEFITS

Traditional benefits such as health and dental insurance, 401K, and disability are typically offered to full-time, salaried workers. In the survey, respondents were asked for information on the percentage they paid for each benefit for *salaried employees only*.

Life insurance is one benefit paid frequently in full by employers (71.3%). While health insurance is not paid in full by the employer at a high rate, nearly 58.0% of respondents cover between 75.0%-100.0% of the cost of health insurance (Figure 17). With the rising cost of health insurance, splitting costs between employers and employees is typical in businesses and organizations. Transportation and Warehousing and Agriculture responses were too few to yield statistically significant results.

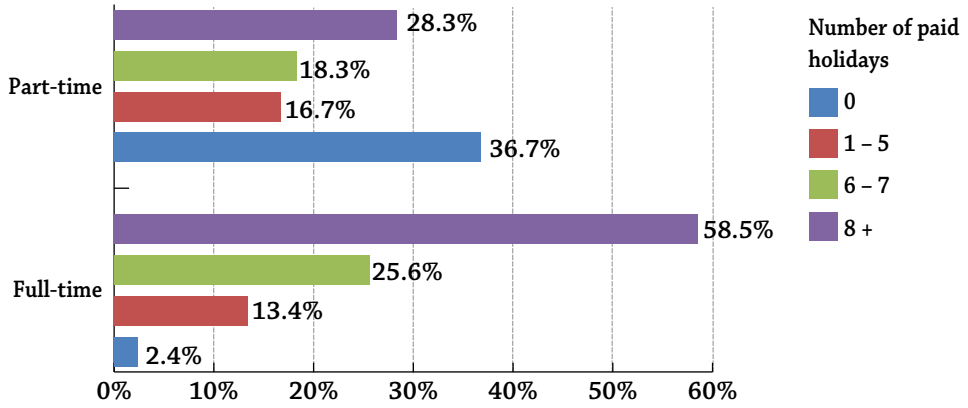
Figure 17: Benefits Offered to Salaried Employees



PAID HOLIDAYS

Paid holidays, sick days, and vacation day accrual are other traditional benefits, although they are often offered to both full- and part-time employees. The survey indicates that only 2.4% of full-time employees do not receive any paid holidays (Figure 18). The majority (58.5%) receive eight or more paid holidays per year. Part-time employees are less likely to have paid holidays, with nearly 37.0% receiving no paid holidays. This may be driven by work schedules and facility holiday closures.

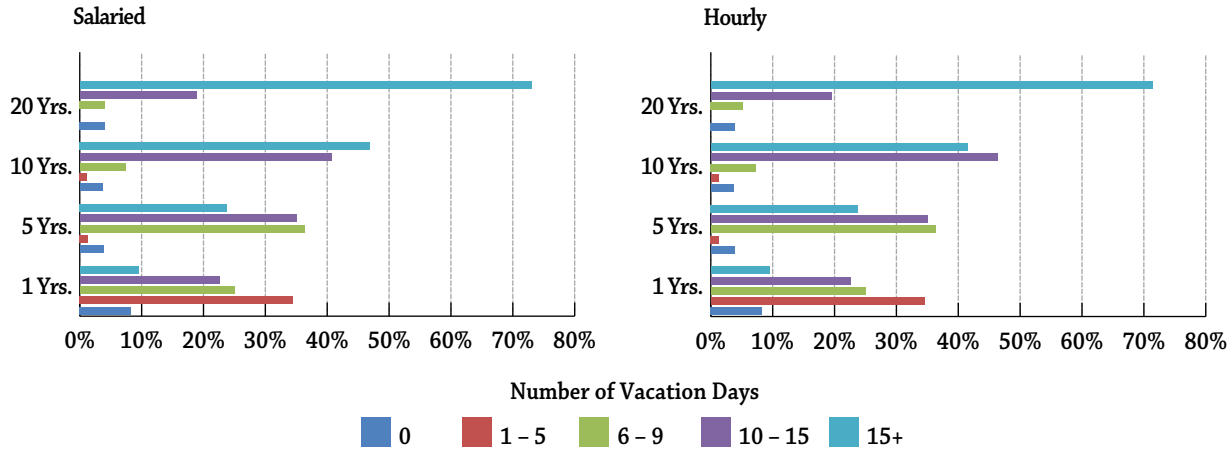
Figure 18: Paid Holidays per Year



VACATION DAYS

As is typical with many employers, the longer someone is employed, the more vacation is received. For both categories, hourly and salaried, employees receive more vacation the longer they are employed with the business. A majority of respondents indicated that a salaried employee with 20 years of service receives 15+ vacation days (73.0%), similarly an hourly employee with 20 years of service receives 15+ vacation days (71.0%). Salaried and hourly employees with only one year of experience are most likely to receive 1-5 days of vacation.

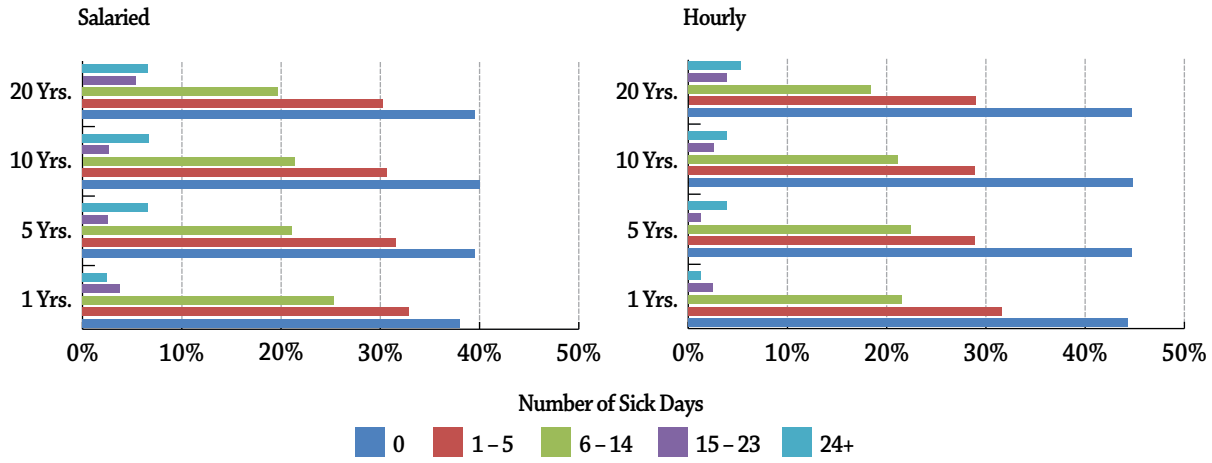
Figure 19: Vacation Days Available Annually Based on Years Employed



SICK DAYS

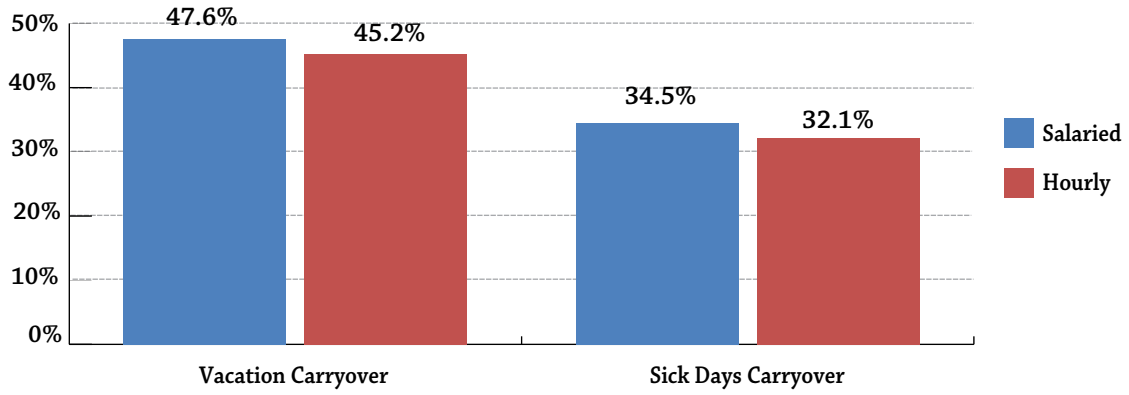
The number of sick days showed little variation regardless of the length of time of service. Approximately 40.0% of salaried and 45.0% of hourly workers have no sick days provided per year. Nearly 30.0% of all employees are provided 1-5 sick days per year (Figure 20).

Figure 20: Sick Days per Year



Vacation carryover is available more often than sick day carryover for both salaried and hourly employees. This benefit is used by less than 50.0% of respondents (Figure 21).

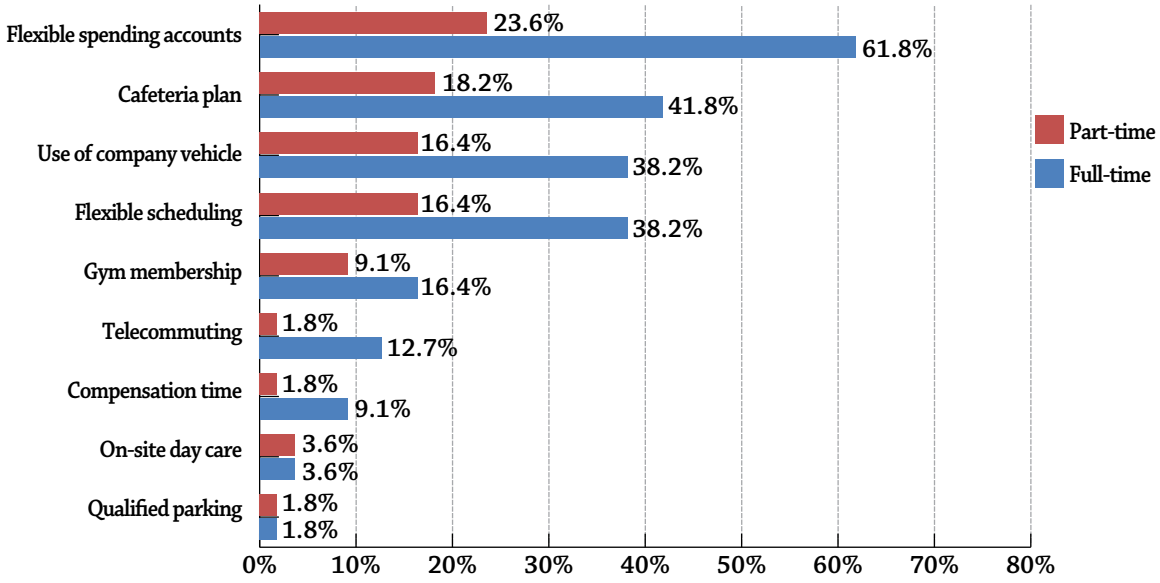
Figure 21: Carryover Vacation and Sick Days Offered



INNOVATIVE BENEFITS

While traditional benefits are the most used by businesses, innovative benefits may enhance the attractiveness of a compensation package for an employee. An innovative benefit is defined as one outside of traditionally offered benefit packages (i.e., health and dental insurance, 401K) but still contributes to the overall compensation package for employees. Flexible spending accounts are most widely implemented (61.8%) as well as cafeteria plans (41.8%), flexible scheduling, and company vehicles (both with 38.2%) (Figure 22). These represent opportunities for businesses, especially those utilizing cost-saving strategies, to offer alternative benefits that may be useful to employees but may not cost as much as traditional benefits. Part-time employees are offered innovative benefits at half the rate of full-time employees.

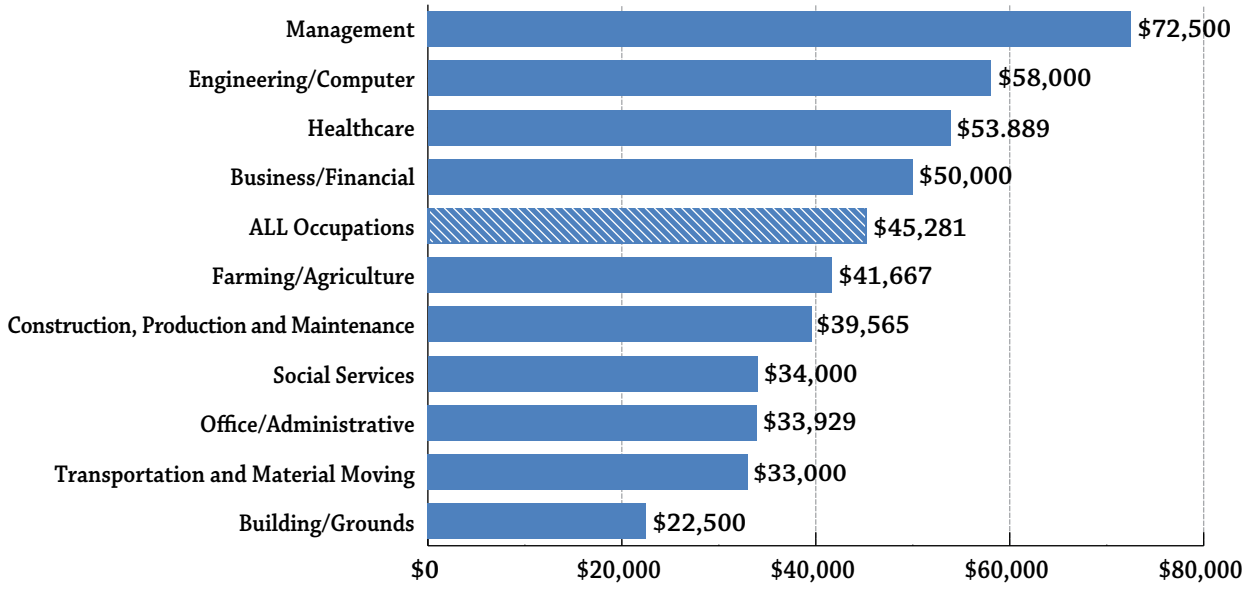
Figure 22: Innovative Benefits



WAGE INFORMATION

One of the greatest expenses for business is payroll, no matter the industry sector. Respondents provided information on wage levels for 10 SOC categories representative of the employees in each major industry sector in the region. Annual wage levels were gathered for each occupation starting at $10,000 up through $200,000 using $10,000 increments. Wage data was compiled for minimum, maximum, and median amounts. Figure 23 displays the *median wage* information for the various SOC categories for employment in the region.

Figure 23: Median Wages for SOC Categories in the 5-County Region



WAGE COMPARISONS

Appendix C provides all wage data and occupation descriptions for the SOC categories by group associated with the major industry sectors in the region. The comparison includes national and state wage data (which include metro areas), along with survey results for minimum, maximum, and median wages paid by business respondents. In the sections below, those occupational categories that are either above or below the state and national averages are discussed.

The experience level and years of service of the workforce and productivity level characteristics of specific industry sectors are not factored into the wage comparison section. Further analyses of this aspect of wage variations between the regional, state, and national levels are needed in order to understand how wage comparisons relate to productivity. The following discussions analyze those occupation categories and titles in the 5-county region that are above or below the state and national average wages.

5-COUNTY OCCUPATIONS ABOVE STATE AND NATIONAL AVERAGE WAGES

In the 5-county region, *average wages* in four occupation categories were above both state and national average wage levels (Table 3). The threshold for determining above average wages was the occupation categories and titles in the 5-county region that exceeded 100.0% of the state and/or national average wages.

Table 3: 5-County Occupation Categories Above State and National Average Wages

OCCUPATION CATEGORY	% ABOVE STATE AVG.	% ABOVE NATIONAL AVG.
FARMING/AGRICULTURE	21.0%	43.0%
TRANSPORTATION AND MATERIAL MOVING	8.0	12.0
CONSTRUCTION, PRODUCTION AND MAINTENANCE	4.0	9.0
BUILDING AND GROUNDS CLEANING AND MAINTENANCE, PROTECTIVE SERVICE	5.0	4.0

In the 5-county region, the remaining SOC categories did not exceed the state and national averages; however, several individual occupation titles reported average wages above state and/or national average wage levels (Table 4). The percentages are relatively small, except for Personal and Home Care Aides and Home Health Aides.

Table 4: 5-County Occupation Titles Above State and National Average Wages

SOC CATEGORY	OCCUPATION TITLE	% ABOVE STATE AVG.	% ABOVE NATIONAL AVG.
OFFICE AND ADMINISTRATIVE OCCUPATIONS	Receptionist and Information Clerk	4.0%	6.0%
	Stock Clerk and Order Filler	4.0	3.0
	Shipping, Receiving, and Traffic Clerk	2.0	3.0
	General Clerk	1.0	4.0
	Customer Service Representative	0.0	6.0
HEALTHCARE OCCUPATIONS	Personal and Home Care Aides	61.0	70.0
	Home Health Aide	30.0	37.0
	Cardiovascular Technologist/Technician	22.0	10.0
	Recreational Therapist	11.0	5.0
	Physician's Assistant	8.0	0.0
	Medical Assistant	2.0	7.0
	Pediatrician	0.0	7.0

5-COUNTY OCCUPATIONS BELOW STATE AND NATIONAL AVERAGE WAGES

While some occupation categories and titles in the 5-county region exceeded the state and/or national wage averages, there were also several below them. This section discusses occupational categories and titles that were 25.0% or more below the state and/or national *average wages*. Only the Management occupation category falls below the state and national averages wage level, with the 5-county region paying 28.0% below the state average wages and 34.0% below the national average wages.

There were several occupation titles below the state and/or national average wages as well. Those occupation titles that paid the most below the state and national averages included IT Systems Supervisor/ Computer and Information Systems Manager, Business and Financial Manager, and Human Resources Manager (Table 5).

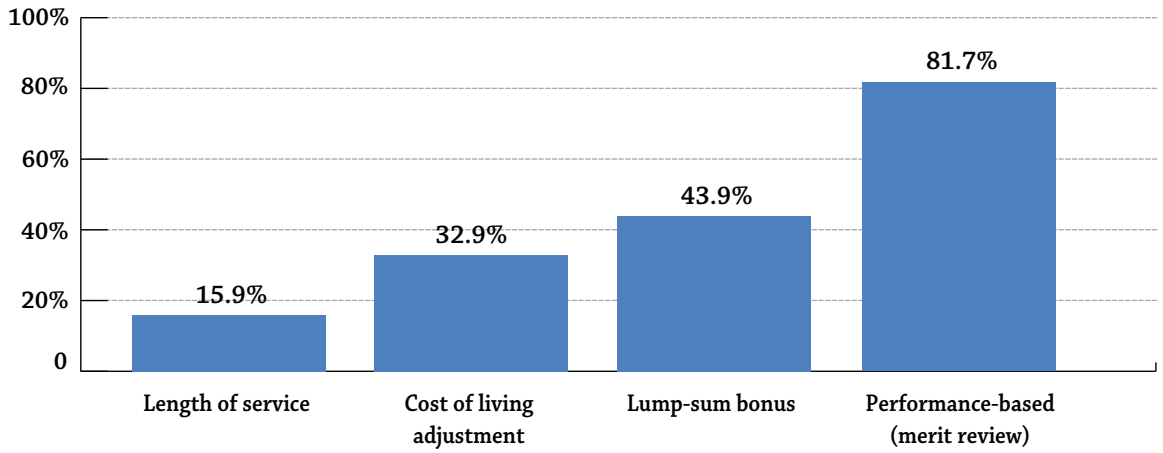
Table 5: 5-County Occupation Titles Below State and National Average Wages

SOC CATEGORY	OCCUPATION TITLE	% BELOW STATE AVG.	% BELOW NATIONAL AVG.
MANAGEMENT	IT Systems Supervisor/Computer and Information Systems Manager	-40.0%	-46.0%
	Business and Financial Manager	-35.0	-38.0
	Human Resource Manager	-33.0	-38.0
	Managers, All Other	-29.0	-35.0
HEALTHCARE OCCUPATIONS	Registered Nurse	-29.0	-31.0
	Radiation Therapist	-23.0	-31.0
ENGINEERING AND COMPUTER	Mechanical Engineer	-29.0	-26.0
	Network and Computer Systems Administrator	-27.0	-27.0
BUSINESS AND FINANCIAL OCCUPATIONS	Market Research Analysts and Marketing Specialist	-30.0	-37.0
	Logisticians	-24.0	-33.0

WAGE AND SALARY INCREASES

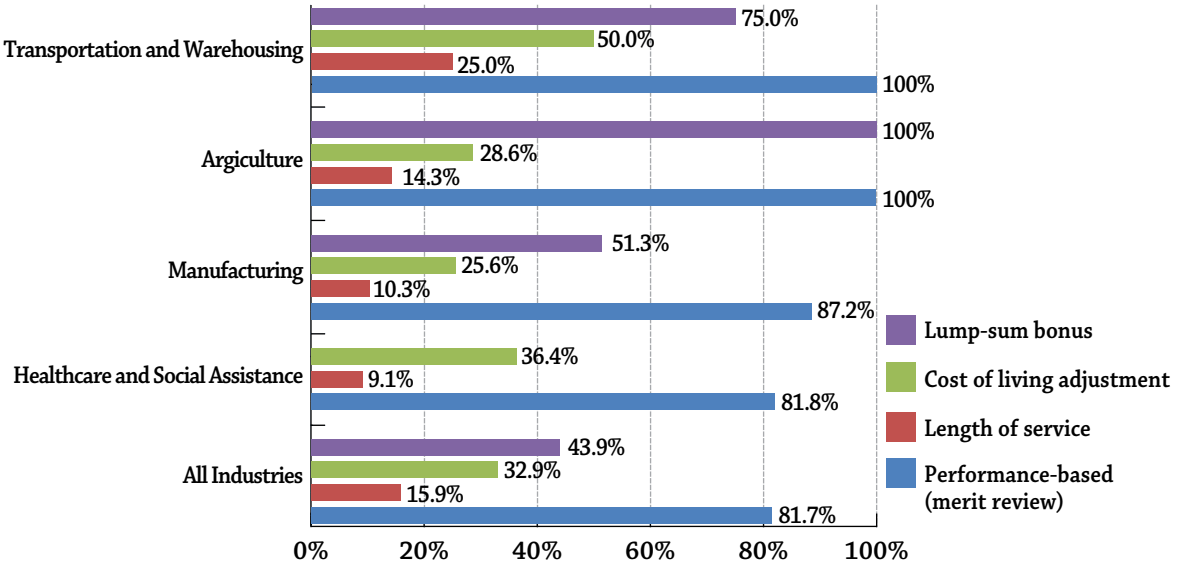
Survey respondents were asked which methods were used for wage/salary increases, and allowed to mark all methods that applied. These included performance-based (merit review), cost of living, length of service, and/or lump-sum bonuses. Performance-based reviews are the most common method across all industries for awarding pay increases (81.7%). Lump-sum bonuses are provided by more than 43.0% of businesses, while length of service pay increases are the least likely method to be used (15.9%) (Figure 24).

Figure 24: Methods for Determining Wage and Salary Increases



Healthcare and Social Assistance do not use lump-sum bonuses, instead they rely heavily (81.8%) on performance-based reviews to determine pay increases. Conversely, Transportation and Warehousing utilize lump-sum bonuses frequently (75.0%). Interestingly, the least used method for determining increases in all categories was length of service, suggesting that longevity alone does not always translate into good performance. For those respondents who selected other, the majority used collective bargaining agreements and bonuses based on overall performance of the company to determine wage and salary increases.

Figure 25: Methods for Wage and Salary Increases by Industry Sector



APPENDIX A: COMPANIES RESPONDING TO WAGE AND BENEFIT SURVEY

Thank you to the following businesses for their participation in the 2011-2012 5-county regional wage and benefit survey.

Adkins Energy
Allied-Locke Industries, Inc.
American Gear, Inc.
Astec Mobile Screens, Inc.
Behr Manufacturing
Beltway Scales
Berner Food and Beverage
Bi-County Special Education Co-Op
Bonnell Industries, Inc.
Boston Leather, Inc.
Brown Construction
Carroll Industrial Mold Products
CGH Medical Center
Champion Chisel Works
Christ Lutheran
City of Rochelle
Coilcraft
Compliance Signs Company
Dana Driveshaft Manufacturing, LLC
Dixon Direct
Donaldson Company, Inc.
East Coloma #12
Eco Grove Wind Farm - Acciona
ELSPEC
Eyelet Products and Engineering Corp.
FHN
Forster Products
Four Star
Frantz Manufacturing Company
Furst McNess
Genco
Generation 4
Halo Branded Solutions, Inc. (Lee Wayne)
High Plains Pork
Hughes Resources, Inc.
Hulsebus-Gehlsen Chiropractic
Hunter Haven Farms
J. T. Cullen Company
James Endress Consulting
Kolb-Lena Cheese, Inc.
KSB Hospital
L and J Industrial Staples
Lanark Ag Center
Mallard Manufacturing Corp.
Manor Court of Freeport
Manpower
Monroe Clinic
Montmorency #145
Morrison #6
Morrison Community Hospital
Morse Group
Newell Rubbermaid - Downtown Campus
Northwest Illinois Construction
Pearl City Elevators Co-Op
Phil's Fresh Eggs
Prophet Gear
Proto Cutter
Provena St. Joseph Campus
Rentech Energy
Riverdale Elementary #14
Rochelle Community Hospital
Rochelle Foods, Inc.
Rock Falls Elementary #13
Rock River Lumber and Grain Company
Rock River Tool and Die
Rock River Valley Self Help Enterprise
Rotary Airlock, LLC
Roys Transfer
Ryder Logistics
Sauer-Danfoss
Sauk Valley Community College
Seaga Manufacturing
Sewer Equipment Company of America
Silgan Containers Corp.
Sinnissippi Centers, Inc.
Skoog Landscape Design

Snak King (bought CJ Vitners)
Spectrum Brands
SPG International
Spherion Staffing Services
Stephenson County Health Dept.
Stephenson Nursing Center
Stephenson Service Company
Sterling #5
Sterling Multi Products
Sterling Steel Company, LLC
SVA Healthcare Services
Team Products, Inc.
The IFH Group, Inc.
Titan Tire
TRAMEC Hill Fastener Corp.
Transworld Plastics
Tri Star Metals
Triple Creek Farms
United Parcel Service
Wagner Printing, Company
Wal-Mart Distribution Center #704
West Carroll #314
Westwood Machine and Tool
Whiteside Area Career Center
Whiteside County Court House
Whiteside County ROE
Woodhaven Association

APPENDIX B: NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS) 5-COUNTY INDUSTRY SECTOR DEFINITIONS

MANUFACTURING (NAICS 31-33)

Definition Source: http://www.census.gov/econ/census02/naics/sector31/31-33.htm

The Manufacturing sector is comprised of establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products. The assembling of component parts of manufactured products is considered manufacturing, except in cases where the activity is appropriately classified in Sector 23, Construction.

Establishments in the Manufacturing sector are often described as plants, factories, or mills and characteristically use power-driven machines and materials-handling equipment. The materials, substances, or components transformed by manufacturing establishments are raw materials that are products of agriculture, forestry, fishing, mining, or quarrying as well as products of other manufacturing establishments. The subsectors in the Manufacturing sector generally reflect distinct production processes related to material inputs, production equipment, and employee skills.

The boundaries of manufacturing and the other sectors of the classification system can be somewhat blurry. The establishments in the manufacturing sector are engaged in the transformation of materials into new products. Their output is a new product. However, the definition of what constitutes a new product can be somewhat subjective.

HEALTHCARE AND SOCIAL ASSISTANCE (NAICS 62)

Definition Source: http://www.census.gov/svsd/www/services/sas/sas_summary/62summary.htm

The Healthcare and Social Assistance sector is comprised of establishments providing healthcare and social assistance for individuals. The sector includes both healthcare and social assistance because it is sometimes difficult to distinguish between the boundaries of these two activities. The industries in this sector are arranged on a continuum starting with those establishments providing medical care exclusively, continuing with those providing healthcare and social assistance, and finally finishing with those providing only social assistance. The services provided by establishments in this sector are delivered by trained professionals. All industries in the sector share this commonality of process, namely, labor inputs of health practitioners or social workers with the requisite expertise. Many of the industries in the sector are defined based on the educational degree held by the practitioners included in the industry.

AGRICULTURE, FORESTRY, FISHING AND HUNTING (NAICS 11)

Definition Source: http://www.census.gov/eos/www/naics/2007NAICS/2007_Definition_File.pdf

The Agriculture, Forestry, Fishing, and Hunting sector is comprised of establishments primarily engaged in growing crops, raising animals, harvesting timber, and harvesting fish and other animals from a farm, ranch, or their natural habitats. The establishments in this sector are often described as farms, ranches, dairies, greenhouses, nurseries, orchards, or hatcheries.

The sector distinguishes two basic activities: agricultural production and agricultural support activities. Agricultural production includes establishments performing the complete farm or ranch operation, such as farm owner-operators, tenant farm operators, and sharecroppers. Agricultural support activities include establishments that perform one or more activities associated with farm operation, such as soil preparation, planting, harvesting, and management, on a contract or fee basis.

TRANSPORTATION AND WAREHOUSING (NAICS 48-49)

Definition Source: http://www.census.gov/svsd/www/services/sas/sas_summary/48summary.htm

The Transportation and Warehousing sector includes industries providing transportation of passengers and cargo, warehousing and storage for goods, scenic and sightseeing transportation, and support activities related to modes of transportation. Establishments in these industries use transportation equipment or transportation related facilities as a productive asset. The type of equipment depends on the mode of transportation. The modes of transportation are air, rail, water, road, and pipeline.

The Transportation and Warehousing sector distinguishes three basic types of activities: subsectors for each mode of transportation, a subsector for warehousing and storage, and a subsector for establishments providing support activities for transportation. In addition, there are subsectors for establishments that provide passenger transportation for scenic and sightseeing purposes, postal services, and courier services.

APPENDIX C: OCCUPATIONAL WAGE DATA AND DESCRIPTIONS

Note: In instances where occupational titles used for 5-county wage and benefit survey did not match exactly to SOC titles, the closest matching titles were used when determining the state and national averages.

Management Wage Data

MANAGEMENT OCCUPATIONS	NAT'L AVG. WAGE	IL AVG. WAGE	5-CTY AVG. WAGE	5-CTY % OF STATE AVG.	5-CTY % OF NAT'L AVG.	5-CTY MIN. WAGE	5-CTY MAX. WAGE	IL MEDIAN WAGE	5-CTY MEDIAN WAGE
BUSINESS AND FINANCIAL MANAGERS	$120,450	$115,230	75,085	65%	62%	$60,000	$88,824	$100,630	$70,000
CHIEF EXECUTIVES	176,550	154,850	114,433	74	65	95,098	134,630	141,400	100,000
GENERAL AND OPERATIONS MANAGERS	114,490	110,870	84,419	76	74	65,319	105,918	92,980	80,000
HUMAN RESOURCE MANAGERS	108,600	101,090	67,600	67	62	54,074	80,345	94,940	60,000
INDUSTRIAL PRODUCTION MANAGERS	96,370	87,710	68,810	78	71	53,200	84,400	81,220	65,000
IT SYSTEMS SUPERVISORS/COMPUTER AND INFORMATION SYSTEMS MANAGERS	125,660	112,790	68,125	60	54	54,000	77,500	106,870	65,000
MANAGERS, ALL OTHER	104,910	95,180	68,000	71	65	49,643	84,828	85,870	60,000
SALES MANAGERS	116,860	105,590	85,278	81	73	67,143	110,952	92,250	80,000
CATEGORY AVERAGE	120,486	110,414	78,969	72	66	62,310	95,925	99,520	72,500

Data Sources: CGS 5-county Wage and Benefit Survey, 2011; State and National averages are from Bureau of Labor and Statistics OES dataset, 2011.

Note: All wage data are annual.

MANAGEMENT OCCUPATION DESCRIPTIONS

CHIEF EXECUTIVES

Determine and formulate policies and provide overall direction of companies or private and public sector organizations within guidelines set up by a board of directors or similar governing body. Plan, direct, or coordinate operational activities at the highest level of management with the help of subordinate executives and staff managers.

GENERAL AND OPERATIONS MANAGER

Plan, direct, or coordinate the operations of public or private sector organizations. Duties and responsibilities include formulating policies, managing daily operations, and planning the use of materials and human resources, but are too diverse and general in nature to be classified in any one functional area of management or administration, such as personnel, purchasing, or administrative services. Excludes First-Line Supervisors.

SALES MANAGERS

Plan, direct, or coordinate the actual distribution or movement of a product or service to the customer. Coordinate sales distribution by establishing sales territories, quotas, and goals and establish training programs for sales representatives. Analyze sales statistics gathered by staff to determine sales potential and inventory requirements and monitor the preferences of customers.

IT SYSTEMS SUPERVISORS/COMPUTER AND INFORMATION SYSTEMS MANAGERS

Plan, direct, or coordinate activities in such fields as electronic data processing, information systems, systems analysis, and computer programming.

HUMAN RESOURCE MANAGERS

Plan, direct, or coordinate human resources activities and staff of an organization. Excludes managers who primarily focus on compensation and benefits and training and development.

BUSINESS AND FINANCIAL MANAGERS

Plan, direct, or coordinate accounting, investing, banking, insurance, securities, and other financial activities of a branch, office, or department of an establishment.

MANAGERS, ALL OTHER

All managers not listed separately.

Business and Financial Operations Wage Data

BUSINESS AND FINANCIAL OCCUPATIONS	NAT'L AVG. WAGE	IL AVG. WAGE	5-CTY AVG. WAGE	5-CTY % OF STATE AVG.	5-CTY % OF NAT'L AVG.	5-CTY MIN. WAGE	5-CTY MAX. WAGE	IL MEDIAN WAGE	5-CTY MEDIAN WAGE
AUDITORS AND ACCOUNTANTS	$70,130	$71,330	$55,500	78%	79%	$39,130	$68,261	$63,740	$50,000
COMPLIANCE OFFICERS, EXCEPT HEALTH/SAFETY	70,130	71,330	62,308	87	89	42,500	85,714	63,480	60,000
LOGISTICIANS	74,860	66,040	50,000	76	67	40,000	60,000	68,910	50,000
MARKET RESEARCH ANALYSTS AND MARKETING SPECIALISTS	67,130	60,510	42,500	70	63	32,000	50,000	54,660	40,000
SALES REPRESENTATIVES	69,870	68,607	63,478	93	91	40,833	83,846	68,070	60,000
WHOLESALE AND RETAIL BUYERS, EXCEPT FARM PRODUCTS	56,810	50,830	43,125	85	76	34,444	52,222	50,280	40,000
CATEGORY AVERAGE	68,155	64,774	52,818	81	77	38,151	66,674	61,523	50,000

Data Sources: CGS 5-county Wage and Benefit Survey, 2011; State and National averages are from Bureau of Labor and Statistics OES dataset, 2011.

Note: All wage data are annual.

BUSINESS AND FINANCIAL OPERATIONS OCCUPATION DESCRIPTIONS

AUDITORS AND ACCOUNTANTS

Examine, analyze, and interpret accounting records to prepare financial statements, give advice, or audit and evaluate statements prepared by others. Install or advise on systems of recording costs or other financial and budgetary data. Excludes Tax Examiners and Collectors and Revenue Agents.

COMPLIANCE OFFICERS, EXCEPT HEALTH/SAFETY

Examine, evaluate, and investigate eligibility for or conformity with laws and regulations governing contract compliance of licenses and permits, and perform other compliance and enforcement inspection and analysis activities not classified elsewhere.

LOGISTICIANS

Analyze and coordinate the logistical functions of a firm or organization. Responsible for the entire life cycle of a product, including acquisition, distribution, internal allocation, delivery, and final disposal of resources.

MARKET RESEARCH ANALYSTS AND MARKETING SPECIALISTS

Research market conditions in local, regional, or national areas, or gather information to determine potential sales of a product or service, or create a marketing campaign. May gather information on competitors, prices, sales, and methods of marketing and distribution.

SALES REPRESENTATIVES, WHOLESALE AND MANUFACTURING, TECHNICAL AND SCIENTIFIC PRODUCTS

Sell goods for wholesalers or manufacturers where technical or scientific knowledge is required in such areas as biology, engineering, chemistry, and electronics, normally obtained from at least two years of post-secondary education. Excludes Sales Engineers.

Engineering Occupation and Computer/Mathematical Occupation Wage Data

ENGINEERING AND COMPUTER OCCUPATIONS	NAT'L AVG. WAGE	IL AVG. WAGE	5-CTY AVG. WAGE	5-CTY % OF STATE AVG.	5-CTY % OF NAT'L AVG.	5-CTY MIN. WAGE	5-CTY MAX. WAGE	IL MEDIAN WAGE	5-CTY MEDIAN WAGE
INDUSTRIAL ENGINEERS	$79,840	$71,700	$69,000	96%	86%	$48,333	$86,667	$69,190	$60,000
MECHANICAL DRAFTERS	52,150	49,230	46,250	94	89	34,444	55,556	47,120	50,000
MECHANICAL ENGINEERS	83,550	87,760	62,083	71	74	48,000	74,667	72,090	60,000
NETWORK AND COMPUTER SYSTEMS ADMINISTRATORS	74,270	73,810	54,167	73	73	43,846	66,154	70,850	55,000
PROGRAMMERS, COMPUTER	76,010	75,620	64,000	85	84	54,000	74,000	69,300	65,000
CATEGORY AVERAGE	73,164	71,624	59,100	84	81	45,725	71,409	65,710	58,000

Data Sources: CGS 5-county Wage and Benefit Survey, 2011; State and National averages are from Bureau of Labor and Statistics OES dataset, 2011.

Note: All wage data are annual.

ENGINEERING AND COMPUTER/MATHEMATICAL OCCUPATION DESCRIPTIONS

BIOMEDICAL ENGINEERS

Apply knowledge of engineering, biology, and biomechanical principles to the design, development, and evaluation of biological and health systems and products, such as artificial organs, prostheses, instrumentation, medical information systems, and heath management and care delivery systems.

INDUSTRIAL ENGINEERS

Industrial engineers find ways to eliminate wastefulness in production processes. They devise efficient ways to use workers, machines, materials, information, and energy to make a product or provide a service.

MECHANICAL DRAFTERS

Prepare detailed working diagrams of machinery and mechanical devices including dimensions, fastening methods, and other engineering information

MECHANICAL ENGINEER

Perform engineering duties in planning and designing tools, engines, machines, and other mechanically functioning equipment. Oversee installation, operation, maintenance, and repair of equipment such as centralized heat, gas, water, and steam systems.

NETWORK AND COMPUTER SYSTEMS ADMINISTRATORS

Install, configure, and support an organization's local area network (LAN), wide area network (WAN), and Internet systems or a segment of a network system. Monitor network to ensure network availability to all system users and may perform necessary maintenance to support network availability. May monitor and test website performance to ensure websites operate correctly and without interruption. May assist in network modeling, analysis, planning, and coordination between network and data communications hardware and software. May supervise computer user support specialists and computer network support specialists. May administer network security measures. Excludes Information Security Analysts, Computer User Support Specialists, and Computer Network Support Specialists.

PROGRAMMERS, COMPUTER

Create, modify, and test the code, forms, and script that allow computer applications to run. Work from specifications drawn up by software developers or other individuals. May assist software developers by analyzing user needs and designing software solutions. May develop and write computer programs to store, locate, and retrieve specific documents, data, and information.

OPERATIONS RESEARCH ANALYSTS

Formulate and apply mathematical modeling and other optimizing methods to develop and interpret information that assists management with decision making, policy formulation, or other managerial functions. May collect and analyze data and develop decision support software, service, or products. May develop and supply optimal time, cost, or logistics networks for program evaluation, review, or implementation.

Life, Physical and Social Science, Healthcare Practitioners, Healthcare Support Occupation Wage Data

HEALTHCARE OCCUPATIONS	NAT'L AVG. WAGE	IL AVG. WAGE	5-CTY AVG. WAGE	5-CTY % OF STATE AVG.	5-CTY % OF NAT'L AVG.	5-CTY MIN. WAGE	5-CTY MAX. WAGE	IL MEDIAN WAGE	5-CTY MEDIAN WAGE
CARDIOVASCULAR TECHNOLOGISTS/TECHNICIANS	$52,160	$47,010	$57,500	122%	110%	$45,000	$70,000	$41,820	$55,000
CHEMISTS	74,780	70,560	60,000	85	80	50,000	70,000	65,210	60,000
HOME HEALTH AIDES	21,820	23,010	30,000	130	137	20,000	40,000	21,080	25,000
LICENSED PRACTICAL NURSES	42,040	41,700	36,071	87	86	25,714	46,429	40,900	30,000
MEDICAL ASSISTANTS	30,170	31,440	32,143	102	107	21,429	42,857	29,200	30,000
NURSING AIDES, ORDERLIES/ATTENDANTS	25,420	24,770	23,571	95	93	16,250	31,250	22,930	20,000
OCCUPATIONAL THERAPIST ASSISTANTS	52,150	49,250	48,333	98	93	40,000	56,667	50,780	50,000
OCCUPATIONAL THERAPISTS	74,970	74,180	63,333	85	84	46,667	80,000	74,120	60,000
PEDIATRICIANS, GENERAL	168,650	182,770	180,000	98	107	160,000	200,000	126,750	180,000
PERSONAL AND HOME CARE AIDES	20,560	21,800	35,000	161	170	30,000	40,000	20,160	35,000
PHYSICAL THERAPIST ASSISTANTS	51,110	47,430	43,750	92	86	32,500	55,000	49,600	45,000
PHYSICAL THERAPISTS	79,830	77,840	73,571	95	92	55,714	91,429	78,570	70,000
PHYSICIAN ASSISTANTS	89,470	76,680	83,000	108	93	68,000	98,000	79,010	85,000
RADIATION THERAPISTS	79,340	71,690	55,000	77	69	40,000	70,000	76,880	55,000
RECREATIONAL THERAPISTS	42,940	40,560	45,000	111	105	40,000	50,000	37,320	45,000
REGISTERED NURSES	69,110	67,190	48,000	71	69	31,875	61,875	33,440	40,000
RESPIRATORY THERAPISTS	56,260	52,690	50,000	95	89	36,667	63,333	53,920	50,000
SURGICAL TECHNOLOGISTS	42,460	41,620	36,250	87	85	27,500	45,000	40,910	35,000
CATEGORY AVERAGE	59,624	57,899	55,585	100	98	43,740	67,324	52,367	53,889

Data Sources: CGS 5-county Wage and Benefit Survey, 2011; State and National averages are from Bureau of Labor and Statistics OES dataset, 2011.

Note: All wage data are annual.

LIFE, PHYSICAL, AND SOCIAL SCIENCE, HEALTHCARE PRACTITIONERS, HEALTHCARE SUPPORT OCCUPATION DESCRIPTIONS

CARDIOVASCULAR TECHNOLOGISTS/TECHNICIANS

Conduct tests on pulmonary or cardiovascular systems of patients for diagnostic purposes. May conduct or assist in electrocardiograms, cardiac catheterizations, pulmonary functions, lung capacity, and similar tests. Includes vascular technologists.

CHEMISTS

Conduct qualitative and quantitative chemical analyses or experiments in laboratories for quality or process control or to develop new products or knowledge. Excludes Geoscientists, Except Hydrologists and Geographers and Biochemists and Biophysicists.

HOME HEALTH AIDES

Provide routine individualized healthcare such as changing bandages and dressing wounds and applying topical medications to the elderly, convalescents, or persons with disabilities at the patient's home or in a care facility. Monitor or report changes in health status. May also provide personal care such as bathing, dressing, and grooming of patient.

LICENSED PRACTICAL NURSES

Care for ill, injured, or convalescing patients or persons with disabilities in hospitals, nursing homes, clinics, private homes, group homes, and similar institutions. May work under the supervision of a registered nurse. Licensing required.

MEDICAL ASSISTANTS

Perform administrative and certain clinical duties under the direction of a physician. Administrative duties may include scheduling appointments, maintaining medical records, billing, and coding information for insurance purposes. Clinical duties may include taking and recording vital signs and medical histories, preparing patients for examination, drawing blood, and administering medications as directed by physician. Excludes Physician Assistants.

NURSING AIDES, ORDERLIES/ATTENDANTS

Transport patients to areas such as operating rooms or x-ray rooms using wheelchairs, stretchers, or moveable beds. May maintain stocks of supplies or clean and transport equipment. Psychiatric orderlies are included in Psychiatric Aides. Excludes Nursing Assistants.

OCCUPATIONAL THERAPIST ASSISTANTS

Assist occupational therapists in providing occupational therapy treatments and procedures. May, in accordance with State laws, assist in development of treatment plans; carry out routine functions, direct activity programs, and document the progress of treatments. Generally requires formal training.

OCCUPATIONAL THERAPISTS

Assess, plan, organize, and participate in rehabilitative programs that help build or restore vocational, homemaking, and daily living skills, as well as general independence, to persons with disabilities or developmental delays.

PEDIATRICIANS, GENERAL

Physicians who diagnose, treat, and help prevent children's diseases and injuries.

PERSONAL AND HOME CARE AIDES

Assist the elderly, convalescents, or persons with disabilities with daily living activities at the person's home or in a care facility. Duties performed at a place of residence may include keeping house (making beds, doing laundry, washing dishes) and preparing meals. May provide assistance at non-residential care facilities. May advise families, the elderly, convalescents, and persons with disabilities regarding such things as nutrition, cleanliness, and household activities.

PHYSICAL THERAPIST ASSISTANTS

Assist physical therapists in providing physical therapy treatments and procedures. May, in accordance with State laws, assist in the development of treatment plans, carry out routine functions, document the progress of treatment, and modify specific treatments in accordance with patient status and within the scope of treatment plans established by a physical therapist. Generally requires formal training.

PHYSICAL THERAPISTS

Assess, plan, organize, and participate in rehabilitative programs that improve mobility, relieve pain, increase strength, and improve or correct disabling conditions resulting from disease or injury.

PHYSICIAN ASSISTANTS

Provide healthcare services typically performed by a physician, under the supervision of a physician. Conduct complete physicals, provide treatment, and counsel patients. May, in some cases, prescribe medication. Must graduate from an accredited educational program for physician assistants. Excludes Emergency Medical Technicians and Paramedics, Medical Assistants, Registered Nurses, Nurse Anesthetists, Nurse Midwives, and Nurse Practitioners.

RADIATION THERAPISTS

Provide radiation therapy to patients as prescribed by a radiologist according to established practices and standards. Duties may include reviewing prescription and diagnosis; acting as liaison with physician and supportive care personnel; preparing equipment, such as immobilization, treatment, and protection devices; and maintaining records, reports, and files. May assist in dosimetry procedures and tumor localization.

RECREATIONAL THERAPISTS

Plan, direct, or coordinate medically-approved recreation programs for patients in hospitals, nursing homes, or other institutions. Activities include sports, trips, dramatics, social activities, and arts and crafts. May assess a patient condition and recommend appropriate recreational activity. Excludes Recreation Workers.

REGISTERED NURSES

Assess patient health problems and needs, develop and implement nursing care plans, and maintain medical records. Administer nursing care to ill, injured, convalescent, or disabled patients. May advise patients on health maintenance and disease prevention or provide case management. Licensing or registration required. Includes Clinical Nurse Specialists. Excludes Nurse Anesthetists, Nurse Midwives, and Nurse Practitioners.

RESPIRATORY THERAPISTS

Assess, treat, and care for patients with breathing disorders. Assume primary responsibility for all respiratory care modalities, including the supervision of respiratory therapy technicians. Initiate and conduct therapeutic procedures; maintain patient records; and select, assemble, check, and operate equipment.

SURGICAL TECHNOLOGISTS

Assist in operations, under the supervision of surgeons, registered nurses, or other surgical personnel. May help set up operating room, prepare and transport patients for surgery, adjust lights and equipment, pass instruments and other supplies to surgeons and surgeon's assistants, hold retractors, cut sutures, and help count sponges, needles, supplies, and instruments.

Community and Social Service Occupation Wage Data

COMMUNITY AND SOCIAL SERVICE OCCUPATIONS	NAT'L AVG. WAGE	IL AVG. WAGE	5-CTY AVG. WAGE	5-CTY % OF STATE AVG.	5-CTY % OF NAT'L AVG.	5-CTY MIN. WAGE	5-CTY MAX. WAGE	IL MEDIAN WAGE	5-CTY MEDIAN WAGE
HEALTHCARE SOCIAL WORKERS	$50,500	$50,340	$43,571	87%	86%	$34,286	$52,857	$49,420	$40,000
MENTAL HEALTH COUNSELORS	42,590	41,530	35,000	84	82	25,000	45,000	35,740	35,000
REHABILITATION COUNSELORS	37,070	35,220	30,000	85	81	20,000	40,000	33,440	30,000
SOCIAL AND HUMAN SERVICE ASSISTANTS	30,710	30,410	30,000	99	98	20,000	40,000	27,110	25,000
SUBSTANCE ABUSE AND BEHAVIORAL DISORDER COUNSELORS	41,030	39,970	40,000	100	97	30,000	50,000	38,060	40,000
CATEGORY AVERAGE	40,380	39,494	35,714	91	89	25,857	45,571	36,754	34,000

Data Sources: CGS 5-county Wage and Benefit Survey, 2011; State and National averages are from Bureau of Labor and Statistics OES dataset, 2011.

Note: All wage data are annual.

COMMUNITY AND SOCIAL SERVICES OCCUPATION DESCRIPTIONS

HEALTHCARE SOCIAL WORKERS

Provide individuals, families, and groups with the psychosocial support needed to cope with chronic, acute, or terminal illnesses. Services include advising family care givers, providing patient education and counseling, and making referrals for other services. May also provide care and case management or interventions designed to promote health, prevent disease, and address barriers to access to healthcare.

MENTAL HEALTH COUNSELORS

Counsel with emphasis on prevention. Work with individuals and groups to promote optimum mental and emotional health. May help individuals deal with issues associated with addictions and substance abuse; family, parenting, and marital problems; stress management; self-esteem; and aging. Excludes Social Workers, Psychiatrists, and Psychologists.

REHABILITATION COUNSELORS

Counsel individuals to maximize the independence and employability of persons coping with personal, social, and vocational difficulties that result from birth defects, illness, disease, accidents, or the stress of daily life. Coordinate activities for residents of care and treatment facilities. Assess client needs and design and implement rehabilitation programs that may include personal and vocational counseling, training, and job placement.

SOCIAL AND HUMAN SERVICE ASSISTANTS

Assist in providing client services in a wide variety of fields, such as psychology, rehabilitation, or social work, including support for families. May assist clients in identifying and obtaining available benefits and social and community services. May assist social workers with developing, organizing, and conducting programs to prevent and resolve problems relevant to substance abuse, human relationships, rehabilitation, or dependent care. Excludes Rehabilitation Counselors, Psychiatric Technicians, Personal Care Aides, and Eligibility Interviewers, Government Programs

SUBSTANCE ABUSE AND BEHAVIORAL DISORDER COUNSELORS

Counsel and advise individuals with alcohol, tobacco, drug, or other problems, such as gambling and eating disorders. May counsel individuals, families, or groups or engage in prevention programs. Excludes Social Workers, Psychologists, and Mental Health Counselors providing these services.

Building and Grounds Cleaning and Maintenance, Protective Service Occupation Wage Data

BUILDING AND GROUNDS OCCUPATIONS	NAT'L AVG. WAGE	IL AVG. WAGE	5-CTY AVG. WAGE	5-CTY % OF STATE AVG.	5-CTY % OF NAT'L AVG.	5-CTY MIN. WAGE	5-CTY MAX. WAGE	IL MEDIAN WAGE	5-CTY MEDIAN WAGE
JANITORS AND CLEANERS, EXCEPT MAID/ HOUSEKEEPER	$24,840	$25,930	$25,714	99%	104%	$18,276	$33,448	$23,020	$20,000
SECURITY GUARDS	27,040	25,440	28,000	110	104	20,000	36,000	23,050	25,000
CATEGORY AVERAGE	25,940	25,685	26,857	105	104	19,138	34,724	23,035	22,500

Data Sources: CGS 5-county Wage and Benefit Survey, 2011; State and National averages are from Bureau of Labor and Statistics OES dataset, 2011.

Note: All wage data are annual.

BUILDING AND GROUNDS, CLEANING AND MAINTENANCE, PROTECTIVE SERVICE OCCUPATION DESCRIPTIONS

JANITORS AND CLEANERS, EXCEPT MAID/HOUSEKEEPER

Keep buildings in clean and orderly condition. Perform heavy cleaning duties, such as cleaning floors, shampooing rugs, washing walls and glass, and removing rubbish. Duties may include tending furnace and boiler, performing routine maintenance activities, notifying management of need for repairs, and cleaning snow or debris from sidewalk.

SECURITY GUARDS

Guard, patrol, or monitor premises to prevent theft, violence, or infractions of rules. May operate x-ray and metal detector equipment. Excludes Transportation Security Screeners.

Office and Administrative Support Occupation Wage Data

OFFICE AND ADMINISTRATIVE OCCUPATIONS	NAT'L AVG. WAGE	IL AVG. WAGE	5-CTY AVG. WAGE	5-CTY % OF STATE AVG.	5-CTY % OF NAT'L AVG.	5-CTY MIN. WAGE	5-CTY MAX. WAGE	IL MEDIAN WAGE	5-CTY MEDIAN WAGE
BOOKKEEPING, ACCOUNTING, AND AUDITING CLERKS	$36,120	$36,330	$33,913	93%	94%	$25,789	$42,632	$34,490	$30,000
COMPUTER OPERATORS	39,280	42,860	38,333	89	98	30,000	42,857	42,170	40,000
CUSTOMER SERVICE REPRESENTATIVES	33,120	34,890	35,000	100	106	25,455	44,545	32,700	30,000
DATA ENTRY OPERATOR	29,010	30,940	29,000	94	100	20,000	38,000	27,810	25,000
EXECUTIVE SECRETARIES AND ADMINISTRATIVE ASSISTANTS	48,120	46,680	39,737	85	83	30,000	50,952	43,180	40,000
FIRST-LINE SUPERVISORS OF OFFICE AND ADMINISTRATIVE SUPPORT WORKERS	52,330	53,440	51,071	96	98	35,625	63,125	48,920	50,000
GENERAL CLERK	28,920	29,750	30,000	101	104	22,500	37,500	27,530	30,000
OFFICE AND ADMINISTRATIVE SUPPORT WORKERS, ALL OTHERS	33,420	35,450	32,308	91	97	23,750	40,588	34,210	30,000
PAYROLL CLERK	38,080	39,260	38,974	99	102	31,429	46,364	37,860	40,000
PRODUCTION SCHEDULERS AND EXPEDITERS	44,900	44,990	41,000	91	91	31,667	50,833	42,660	40,000
RECEPTIONISTS AND INFORMATION CLERKS	26,730	27,180	28,333	104	106	20,741	35,769	25,800	30,000
SECRETARIES, ADMINISTRATIVE ASSISTANT	33,020	32,950	28,750	87	87	21,364	35,714	30,460	30,000
SHIPPING RECEIVING AND TRAFFIC CLERKS	30,480	30,760	31,400	102	103	23,200	39,600	29,430	30,000
STOCK CLERKS AND ORDER FILLERS	24,250	24,110	25,000	104	103	21,667	33,333	20,380	30,000
CATEGORY AVERAGE	35,556	36,399	34,487	96	98	25,942	42,987	34,114	33,929

Data Sources: CGS 5-county Wage and Benefit Survey, 2011; State and National averages are from Bureau of Labor and Statistics OES dataset, 2011.

Note: All wage data are annual.

OFFICE AND ADMINISTRATIVE SUPPORT OCCUPATION DESCRIPTIONS

BOOKKEEPING, ACCOUNTING, AND AUDITING CLERKS

Compute, classify, and record numerical data to keep financial records complete. Perform any combination of routine calculating, posting, and verifying duties to obtain primary financial data for use in maintaining accounting records. May also check the accuracy of figures, calculations, and postings pertaining to business transactions recorded by other workers. Excludes Payroll and Timekeeping Clerks.

COMPUTER OPERATORS

Monitor and control electronic computer and peripheral electronic data processing equipment to process business, scientific, engineering, and other data according to operating instructions. Monitor and respond to operating and error messages. May enter commands at a computer terminal and set controls on computer and peripheral devices. Excludes Computer Occupations and Data Entry Keyers.

CUSTOMER SERVICE REPRESENTATIVES

Interact with customers to provide information in response to inquiries about products and services and to handle and resolve complaints. Excludes individuals whose duties are primarily installation, sales, or repair.

DATA ENTRY AND INFORMATION PROCESSING WORKERS
DATA ENTRY OPERATOR

Operate data entry device, such as keyboard or photo composing perforator. Duties may include verifying data and preparing materials for printing. Use word processor, computer or typewriter to type letters, reports, forms, or other material from rough draft, corrected copy, or voice recording. May perform other clerical duties as assigned.

EXECUTIVE SECRETARIES AND ADMIN ASSISTANTS

Provide high-level administrative support by conducting research, preparing statistical reports, handling information requests, and performing clerical functions such as preparing correspondence, receiving visitors, arranging conference calls, and scheduling meetings. May also train and supervise lower-level clerical staff. Excludes Secretaries.

FIRST-LINE SUPERVISORS OF OFFICE AND ADMINISTRATIVE SUPPORT WORKERS

Sell goods for wholesalers or manufacturers to businesses or groups of individuals. Work requires substantial knowledge of items sold.

GENERAL CLERK

Perform duties too varied and diverse to be classified in any specific office clerical occupation, requiring knowledge of office systems and procedures. Clerical duties may be assigned in accordance with the office procedures of individual establishments and may include a combination of answering telephones, bookkeeping, typing or word processing, stenography, office machine operation, and filing.

OFFICE AND ADMIN SUPPORT WORKERS, ALL OTHER

All office and administrative support workers not listed separately.

PAYROLL CLERK

Compile and record employee time and payroll data. May compute employees' time worked, production, and commission. May compute and post wages and deductions, or prepare paychecks. Excludes Bookkeeping, Accounting, and Auditing Clerks.

PRODUCTION SCHEDULERS AND EXPEDITERS

Coordinate and expedite the flow of work and materials within or between departments of an establishment according to production schedule. Duties include reviewing and distributing production, work, and shipment schedules; conferring with department supervisors to determine progress of work and completion dates; and compiling reports on progress of work, inventory levels, costs, and production problems. Excludes Weighers, Measurers, Checkers, and Samplers, Recordkeeping.

RECEPTIONISTS AND INFORMATION CLERKS

Answer inquiries and provide information to the general public, customers, visitors, and other interested parties regarding activities conducted at establishment and location of departments, offices, and employees within the organization. Excludes Switchboard Operators, Including Answering Service.

SECRETARIES, ADMINISTRATIVE ASSISTANT

Perform routine clerical and administrative functions such as drafting correspondence, scheduling appointments, organizing and maintaining paper and electronic files, or providing information to callers. Excludes legal, medical, and executive secretaries.

SHIPPING RECEIVING AND TRAFFIC CLERKS

Verify and maintain records on incoming and outgoing shipments. Prepare items for shipment. Duties include assembling, addressing, stamping, and shipping merchandise or material; receiving, unpacking, verifying and recording incoming merchandise or material; and arranging for the transportation of products. Excludes Stock Clerks and Order Fillers and Weighers, Measurers, Checkers, and Samplers, Recordkeeping.

STOCK CLERKS AND ORDER FILLERS

Receive, store, and issue sales floor merchandise, materials, equipment, and other items from stockroom, warehouse, or storage yard to fill shelves, racks, tables, or customers' orders. May mark prices on merchandise and set up sales displays. Excludes Laborers and Freight, Stock, and Material Movers, Hand, and Shipping, Receiving, and Traffic Clerks.

Agriculture and Farming Occupation Wage Data

FARM OCCUPATIONS	NAT'L AVG. WAGE	IL AVG. WAGE	5-CTY AVG. WAGE	5-CTY % OF STATE AVG.	5-CTY % OF NAT'L AVG.	5-CTY MIN. WAGE	5-CTY MAX. WAGE	IL MEDIAN WAGE	5-CTY MEDIAN WAGE
AGRICULTURAL EQUIPMENT OPERATORS	$26,830	$33,370	$42,500	127%	158%	$32,500	$52,500	$30,030	$40,000
FARM WORKERS/LABORERS	20,020	24,380	32,500	133	162	25,000	40,000	25,320	35,000
FIRST-LINE SUPERVISORS OF FARMING, FISHING, AND FORESTRY WORKERS	45,690	48,410	50,000	103	109	45,000	55,000	50,590	50,000
CATEGORY AVERAGE	30,847	35,387	41,667	121	143	34,167	49,167	35,313	41,667

Data Sources: CGS 5-County Wage and Benefit Survey, 2011; State and National averages are from Bureau of Labor and Statistics OES dataset, 2011.

Note: All wage data are annual.

AGRICULTURE AND FARMING OCCUPATION DESCRIPTIONS

AGRICULTURAL EQUIPMENT OPERATORS

Drive and control farm equipment to till soil and to plant, cultivate, and harvest crops. May perform tasks, such as crop baling or hay bucking. May operate stationary equipment to perform post-harvest tasks, such as husking, shelling, threshing, and ginning.

FARM WORKERS/LABORERS

Manually plant, cultivate, and harvest vegetables, fruits, nuts, horticultural specialties, and field crops. Use hand tools, such as shovels, trowels, hoes, tampers, pruning hooks, shears, and knives. Duties may include tilling soil and applying fertilizers; transplanting, weeding, thinning, or pruning crops; applying pesticides; or cleaning, grading, sorting, packing, and loading harvested products. May construct trellises, repair fences and farm buildings, or participate in irrigation activities. Excludes Graders and Sorters, Agricultural Products and Forest, Conservation, and Logging Workers.

FIRST-LINE SUPERVISORS OF FARMING, FISHING, AND FORESTRY WORKERS

Directly supervise and coordinate the activities of agricultural, forestry, aquacultural, and related workers. Excludes First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers.

Construction, Production, and Maintenance Occupation Wage Data

CONSTRUCTION, PRODUCTION, AND MAINTENANCE OCCUPATIONS	NAT'L AVG. WAGE	IL AVG. WAGE	5-CTY AVG. WAGE	5-CTY % OF STATE AVG.	5-CTY % OF NAT'L AVG.	5-CTY MIN. WAGE	5-CTY MAX. WAGE	IL MEDIAN WAGE	5-CTY MEDIAN WAGE
ASSEMBLERS AND FABRICATORS, ALL OTHER	$29,450	$28,350	$36,667	129%	125%	$25,714	$45,714	$25,710	$35,000
CNC PROGRAMMERS	48,460	41,830	41,667	100	86	31,818	49,167	38,250	40,000
COMPUTER AIDED DESIGN (C.A.D.) OPERATOR	50,160	49,720	45,000	91	90	36,667	53,333	45,690	40,000
DRILLING AND BORING MACHINE TOOL SETTERS, OPERATORS, AND TENDERS, METAL AND PLASTIC	35,410	34,360	28,750	84	81	22,000	36,000	31,770	30,000
ELECTRIC/ELECTRONIC EQUIPMENT ASSEMBLERS	31,290	31,990	45,000	141	144	30,000	60,000	33,890	45,000
ELECTRICIAN	52,910	70,430	55,000	78	104	42,000	63,000	70,510	50,000
FIRST-LINE SUPERVISORS OF CONSTRUCTION TRADES AND EXTRACTION WORKERS	62,910	76,050	72,000	95	114	56,000	88,000	74,290	65,000
FIRST-LINE SUPERVISORS OF MECHANICS, INSTALLERS, AND REPAIRERS	62,190	63,120	60,625	96	97	48,889	71,111	62,600	55,000
FIRST-LINE SUPERVISORS OF PRODUCTION AND OPERATING WORKERS	56,890	59,790	53,333	89	94	39,474	64,737	57,060	50,000
GRINDING, LAPPING, POLISHING, AND BUFFING MACHINE TOOL SETTERS, OPERATORS, AND TENDERS, METAL AND PLASTIC	32,840	35,610	38,750	109	118	25,000	45,000	32,410	35,000
HELPERS--PRODUCTION WORKERS	24,370	24,470	29,167	119	120	20,000	38,333	21,430	30,000
INDUSTRIAL MACHINERY MECHANICS	48,030	50,190	51,429	102	107	40,000	62,857	47,030	50,000
INSPECTOR - PRECISION	36,690	37,590	38,125	101	104	28,750	47,500	33,790	40,000
LATHE AND TURNING MACHINE TOOL SETTERS, OPERATORS, AND TENDERS, METAL AND PLASTIC	37,210	40,300	41,250	102	111	34,000	50,000	37,980	40,000
MACHINIST - MAINTENANCE	41,110	50,230	45,833	91	111	35,000	56,667	49,920	40,000
MACHINISTS	40,520	40,080	45,000	112	111	31,429	54,286	37,400	40,000

CONSTRUCTION, PRODUCTION, AND MAINTENANCE OCCUPATIONS	NAT'L AVG. WAGE	IL AVG. WAGE	5-CTY AVG. WAGE	5-CTY % OF STATE AVG.	5-CTY % OF NAT'L AVG.	5-CTY MIN. WAGE	5-CTY MAX. WAGE	IL MEDIAN WAGE	5-CTY MEDIAN WAGE
MAINTENANCE WORKER - GENERAL	$36,930	$40,780	$41,707	102%	113%	$32,727	$50,000	$38,080	$40,000
MILLING AND PLANING MACHINE SETTERS, OPERATORS, AND TENDERS, METAL AND PLASTIC	37,510	40,730	40,000	98	107	35,000	40,000	38,930	40,000
PACKAGING/FILLING MACH OPERATORS/ TENDERS	27,950	27,670	31,667	114	113	20,000	43,333	23,710	25,000
PRODUCTION WORKERS, ALL OTHER	30,670	31,590	36,471	115	119	23,529	49,412	29,380	30,000
PUNCH PRESS OPERATOR	31,140	31,360	31,667	101	102	23,750	38,750	28,620	30,000
TEAM ASSEMBLERS	29,740	29,770	40,000	134	134	20,000	60,000	26,480	30,000
WELDERS CUTTERS SOLDERERS AND BRAZERS	37,920	37,640	35,417	94	93	25,000	45,385	34,100	30,000
CATEGORY AVERAGE	40,100	42,333	42,805	104	109	31,598	52,721	39,958	39,565

Data Sources: CGS 5-County Wage and Benefit Survey, 2011; State and National averages are from Bureau of Labor and Statistics OES dataset, 2011.

Note: All wage data are annual.

CONSTRUCTION, PRODUCTION, AND MAINTENANCE OCCUPATION DESCRIPTIONS

ASSEMBLERS AND FABRICATORS, ALL OTHER
All assemblers and fabricators not listed separately.

CNC PROGRAMMERS
Develop programs to control machining or processing of metal or plastic parts by automatic machine tools, equipment, or systems.

COMPUTER AIDED DESIGN (C.A.D.) OPERATOR
Operate computer-controlled machines or robots to perform one or more machine functions on metal or plastic work pieces.

DRILLING AND BORING MACHINE TOOL SETTERS, OPERATORS, AND TENDERS, METAL AND PLASTIC
Set up, operate, or tend drilling machines to drill, bore, ream, mill, or countersink metal or plastic work pieces.

ELECTRIC/ELECTRONIC EQUIPMENT ASSEMBLERS
Assemble or modify electrical or electronic equipment, such as computers, test equipment telemetering systems, electric motors, and batteries.

ELECTRICIAN MAINTENANCE
Install, maintain, and repair electrical wiring, equipment, and fixtures. Ensure that work is in accordance with relevant codes. May install or service street lights, intercom systems, or electrical control systems. Excludes Security and Fire Alarm Systems Installers.

FIRST-LINE SUPERVISORS OF CONSTRUCTION TRADES AND EXTRACTION WORKERS
Directly supervise and coordinate activities of construction or extraction workers.

FIRST-LINE SUPERVISORS OF MECHANICS, INSTALLERS, AND REPAIRERS
Directly supervise and coordinate the activities of mechanics, installers, and repairers. Excludes team or work leaders.

FIRST-LINE SUPERVISORS OF PRODUCTION AND OPERATING WORKERS
Directly supervise and coordinate the activities of production and operating workers, such as inspectors, precision workers, machine setters and operators, assemblers, fabricators, and plant and system operators. Excludes team or work leaders.

GRINDING, LAPPING, POLISHING, AND BUFFING MACHINE TOOL SETTERS, OPERATORS, AND TENDERS, METAL AND PLASTIC
Set up, operate, or tend grinding and related tools that remove excess material or burrs from surfaces, sharpen edges or corners, or buff, hone, or polish metal or plastic work pieces.

HELPERS-PRODUCTION WORKERS
Help production workers by performing duties requiring less skill. Duties include supplying or holding materials or tools, and cleaning work area and equipment. Apprentice workers are classified in the appropriate production occupations.

INDUSTRIAL MACHINERY MECHANICS
Repair, install, adjust, or maintain industrial production and processing machinery or refinery and pipeline distribution systems. Excludes Millwrights, Mobile Heavy Equipment Mechanics, Except Engines, and Maintenance Workers, Machinery.

INSPECTOR - PRECISION
Inspect, test, sort, sample, or weigh nonagricultural raw materials or processed, machined, fabricated, or assembled parts or products for defects, wear, and deviations from specifications. May use precision measuring instruments and complex test equipment.

LATHE AND TURNING MACHINE TOOL SETTERS, OPERATORS, AND TENDERS, METAL AND PLASTIC
Set up, operate, or tend lathe and turning machines to turn, bore, thread, form, or face metal or plastic materials, such as wire, rod, or bar stock.

MACHINIST - MAINTENANCE

Lubricate machinery, change parts, or perform other routine machinery maintenance. Excludes Maintenance and Repair Workers, General.

MACHINISTS

Set up and operate a variety of machine tools to produce precision parts and instruments. Includes precision instrument makers who fabricate, modify, or repair mechanical instruments. May also fabricate and modify parts to make or repair machine tools or maintain industrial machines, applying knowledge of mechanics, mathematics, metal properties, layout, and machining procedures.

MAINTENANCE WORKER - GENERAL

Perform work involving the skills of two or more maintenance or craft occupations to keep machines, mechanical equipment, or the structure of an establishment in repair. Duties may involve pipe fitting; boiler making; insulating; welding; machining; carpentry; repairing electrical or mechanical equipment; installing, aligning, and balancing new equipment; and repairing buildings, floors, or stairs. Excludes Maintenance Workers, Machinery.

MILLING AND PLANNING MACHINE SETTERS, OPERATORS, AND TENDERS, METAL AND PLASTIC

Set up, operate, or tend milling or planning machines to mill, plane, shape, groove, or profile metal or plastic work pieces.

PACKAGING/FILLING MACH OPERATORS/TENDERS

Operate or tend machines to prepare industrial or consumer products for storage or shipment. Includes cannery workers who pack food products.

PRODUCTION WORKERS, ALL OTHER

All production workers not listed separately.

PUNCH PRESS OPERATOR

Set up, operate, or tend machines to saw, cut, shear, slit, punch, crimp, notch, bend, or straighten metal or plastic material.

TEAM ASSEMBLERS

Work as part of a team having responsibility for assembling an entire product or component of a product. Team assemblers can perform all tasks conducted by the team in the assembly process and rotate through all or most of them rather than being assigned to a specific task on a permanent basis. May participate in making management decisions affecting the work. Includes team leaders who work as part of the team.

WELDERS CUTTERS SOLDERERS AND BRAZERS

Use hand-welding, flame-cutting, hand soldering, or brazing equipment to weld or join metal components or to fill holes, indentations, or seams of fabricated metal products.

Transportation and Material Moving Occupation Wage Data

TRANSPORTATION AND MATERIAL MOVING OCCUPATIONS	NAT'L AVG. WAGE	IL AVG. WAGE	5-CTY AVG. WAGE	5-CTY % OF STATE AVG.	5-CTY % OF NAT'L AVG.	5-CTY MIN. WAGE	5-CTY MAX. WAGE	IL MEDIAN WAGE	5-CTY MEDIAN WAGE
INDUSTRIAL TRUCK AND TRACTOR OPERATORS/FORKLIFT OPERATORS	$31,840	$31,540	$36,875	117%	116%	$27,778	$43,333	$29,510	$35,000
MATERIAL HANDLERS	26,240	26,250	30,833	117	118	23,333	37,895	23,430	30,000
PACKERS	22,480	22,980	25,000	109	111	20,000	30,000	19,820	25,000
TRUCK DRIVERS, HEAVY/TRACTOR-TRAILER	39,830	43,990	42,500	97	107	30,000	55,000	40,130	40,000
TRUCK DRIVERS, LIGHT/DELIVERY SERVICES	33,120	35,080	35,833	102	108	28,333	43,333	31,280	35,000
CATEGORY AVERAGE	30,702	31,968	34,208	108	112	25,889	41,912	28,834	33,000

Data Sources: CGS 5-County Wage and Benefit Survey, 2011; State and National averages are from Bureau of Labor and Statistics OES dataset, 2011.

Note: All wage data are annual.

TRANSPORTATION AND MATERIAL MOVING OCCUPATION DESCRIPTIONS

INDUSTRIAL TRUCK AND TRACTOR OPERATORS/FORKLIFT OPERATORS

Operate industrial trucks or tractors equipped to move materials around a warehouse, storage yard, factory, construction site, or similar location. Excludes Logging Equipment Operators.

MATERIAL HANDLERS

Manually move freight, stock, or other materials or perform other general labor. Includes all manual laborers not elsewhere classified. Excludes Material Moving Workers who use power equipment. Excludes Construction Laborers and Construction Trades Helpers.

PACKERS

Pack or package by hand a wide variety of products and materials.

TRUCK DRIVERS, HEAVY/TRACTOR-TRAILER

Drive a tractor-trailer combination or a truck with a capacity of at least 26,000 pounds Gross Vehicle Weight (GVW). May be required to unload truck. Requires commercial drivers' license.

TRUCK DRIVERS, LIGHT/DELIVERY SERVICES

Drive a light vehicle, such as a truck or van, with a capacity of less than 26,000 pounds Gross Vehicle Weight (GVW), primarily to deliver or pick up merchandise or to deliver packages. May load and unload vehicle. Excludes Couriers and Messengers and Driver/Sales Workers.

GOALS STRATEGIES AND RECOMMENDATIONS

FIVE-COUNTY WAGE AND BENEFIT REPORT

NORTHWEST ILLINOIS AREA LABOR AVAILABILITY REPORT

AUGUST 2012

PROMOTING REGIONAL PROSPERITY IN NORTHWEST ILLINOIS

WAGE AND BENEFIT REPORT

NORTHERN ILLINOIS UNIVERSITY
Center for
Governmental Studies
Outreach, Engagement, and Information Technologies

THE

5-COUNTY NORTHWEST ILLINOIS

AREA

LABOR AVAILABILITY REPORT

July, 2012

Compiled and Prepared by

THE PATHFINDERS

www.thepathfindersus.com

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INTRODUCTION

The Pathfinders has employed its many years of experience in workforce assessments for corporate site-selection clients and civilian workforce assessments for the Department of Defense in locations that faced military base closures to produce this evaluation of the 5-County Northwest Illinois area workforce. In site-selection projects, the question that most often drives the search is whether the candidate location has the workforce needed for a new or expanding operation. When considering the workforce of a possible location, a prospect basically wants to know:

- Can I find the workers I need in this location?
- Do these workers have any skills and/or experience that pertain to my operation?
- How much will these workers cost?

Consequently, an analysis of an area's workforce became a key component of site searches conducted by The Pathfinders. The report that follows was developed as a tool for economic development officials for use in business recruitment and workforce development efforts. Senior human resources executives from among corporate clients assisted in refining the methodology and report format.

With regard to labor availability, while unemployed workers are a source considered in hiring, companies typically also staff a new operation with individuals who are working but who desire better jobs and who appear to possess the skills, education, and experience to qualify them for those better jobs. **By that definition**, those individuals can be considered "underemployed" and are identified as such in this report.

The Pathfinders was retained by Northern Illinois University to quantify the extent to which both unemployment and underemployment exist in the 5-County Northwest Illinois area. This report also represents the objective and professional view of The Pathfinders with regard to workforce quality, availability, costs, experience and skills that a new or expanding employer can expect in the 5-County Northwest Illinois region.

The information presented in this report has been developed independently of the client, and the client has not influenced the findings.

KEY FINDINGS

- **The 5-County Northwest Illinois area, referred to in this report as the "labor shed", has a household population of approximately 211,100; a civilian labor force of approximately 104,800; and a pool of approximately 9,500 unemployed persons who are actively seeking work.**
- **The results of this survey indicate that a new or expanding employer will be able to attract employees from an additional pool of about 10,000 underemployed workers.**
- **The median current pay rate of the underemployed workers in the labor shed is $13.35 per hour, and their median desired pay rate is $15.13 per hour.**
- **Survey results indicate that the underemployed workers in the labor shed have high levels of experience and skills in distribution/transportation/warehousing and customer service.**
- **Results indicate that underemployed workers are willing to commute an average of 27 miles to a new job, in contrast to their current average commute of 15 miles.**
- **Survey results indicate 2% of the underemployed and 6% of unemployed, actively seeking work individuals in the labor shed have less than a high school degree.**
- **The median desired pay rate of the unemployed workers who are actively seeking work is $12.90 per hour.**
- **In total, the 5-County Northwest Illinois area has approximately 19,500 available workers for new or expanding businesses.**

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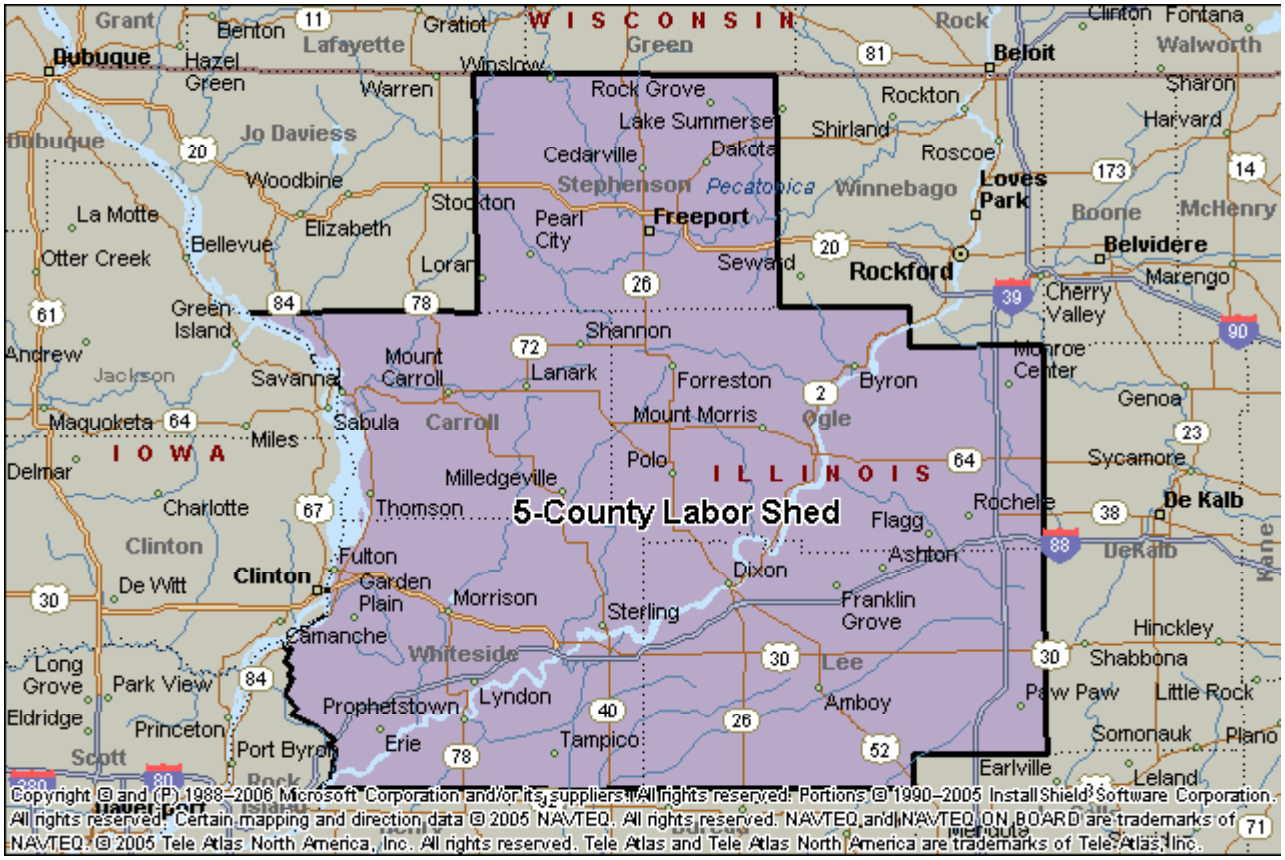
MAP OF THE 5-COUNTY NORTHWEST ILLINOIS LABOR SHED



NUMBER OF AVAILABLE WORKERS

The 5-County Northwest Illinois Area Labor Shed

The 5-County Northwest Illinois area labor shed has a household population of approximately 211,100. The civilian labor force numbers approximately 104,800, and the labor shed contains approximately 9,500 unemployed people who are actively seeking work.

The results of this assessment determined that approximately 10,000 workers can be defined as underemployed: those individuals who are currently working but would take a better job if offered by a new or existing employer and who appear to possess the skills, education, and experience to qualify them to do so. Together with the unemployed, actively seeking work individuals, the 5-County Northwest Illinois area has approximately 19,500 available workers for new or existing employers.

TOTAL AVAILABLE WORKERS	
Number of underemployed workers	**10,000**
Number of unemployed, actively seeking work individuals	**9,500**
Total Number of Workers Available for Employers*	**19,500**

* The reader is cautioned that, while the number of workers identified in the region, as well as their skills, experience, education, and costs, is accurate, all of those individuals may not be acceptable candidates for an employer. Their previous work records, stability, integrity, intelligence, appearance, and other factors are not considered in this report.

ASSESSMENT OF THE UNDEREMPLOYED WORKFORCE

The 5-County Northwest Illinois Area Labor Shed

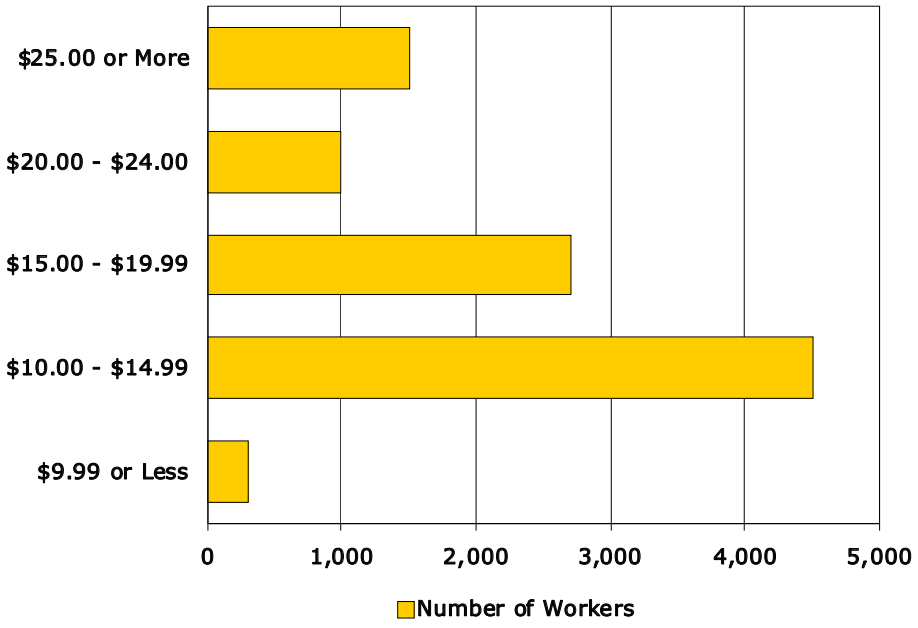
The 10,000 underemployed workers identified in this report might also be termed "upgraders". They desire to move into an upgraded job and appear to possess the skills, education, and experience to enable them to do so. The following charts represent the desired pay rates of the underemployed individuals in the labor shed. Desired wages are shown by specific rates, range and percentiles.

NUMBER OF UNDEREMPLOYED WORKERS AVAILABLE AT SPECIFIC WAGE RATES PER HOUR (rounded)

Desired Pay Rate	Number Available
$9.99 or Less	300
$10.00 - $11.99	1,400
$12.00 - $13.99	2,400
$14.00 - $15.99	2,200
$16.00 - $17.99	500
$18.00 - $19.99	700
$20.00 - $21.99	500
$22.00 - $23.99	200
$24.00 - $25.99	800
$26.00 - $27.99	200
$28.00 - $29.99	200
$30.00 or more	600

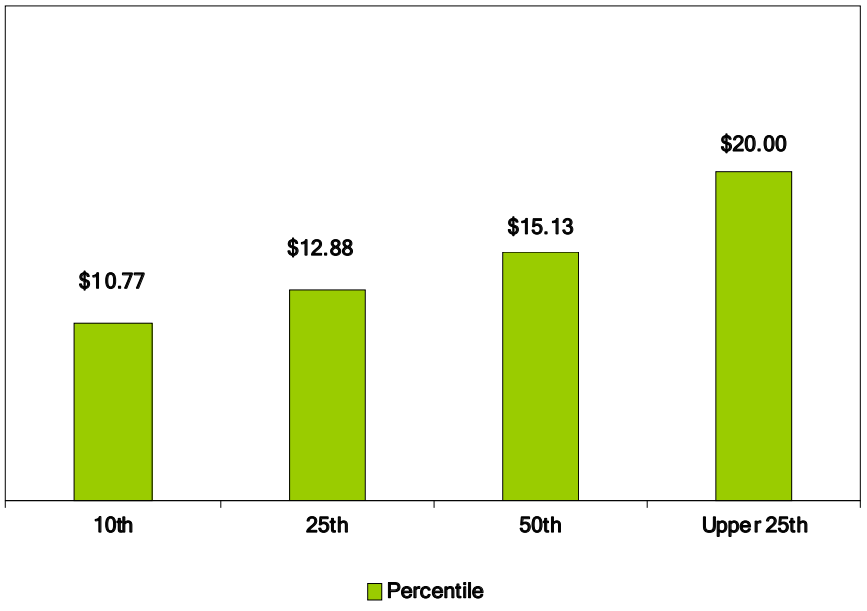
DESIRED WAGE RATES PER HOUR BY RANGE

10,000 Underemployed Workers



DESIRED WAGE RATES PER HOUR BY PERCENTILE

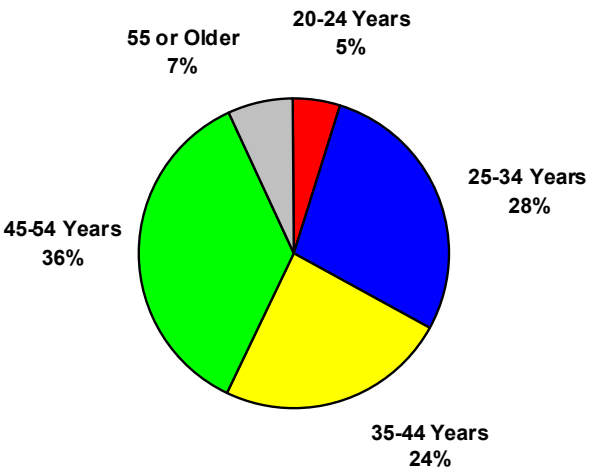
10,000 Underemployed Workers



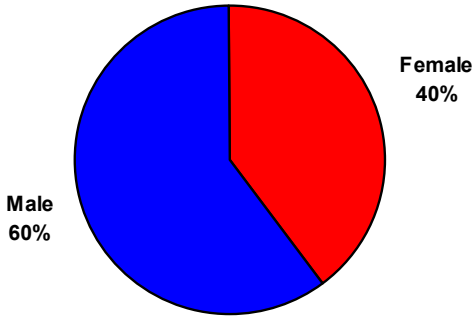
CHARACTERISTICS OF UNDEREMPLOYED WORKERS
The 5-County Northwest Illinois Area Labor Shed
10,000 Underemployed Workers

The following charts provide information on various characteristics of the underemployed workers in the labor shed. **As these data relate solely to those individuals in the labor shed who are underemployed, they will vary from data representative of the population and civilian labor force as a whole.**

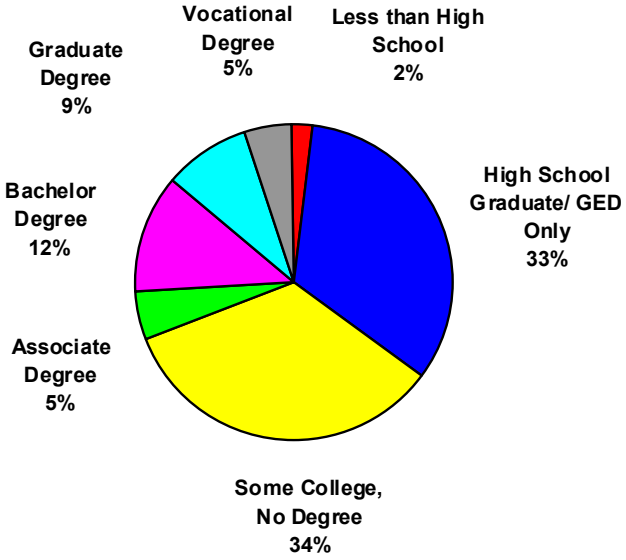
AGE - Average 41 Years



GENDER



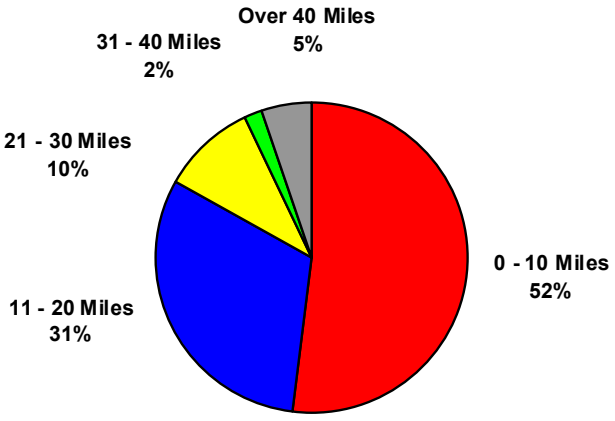
EDUCATION



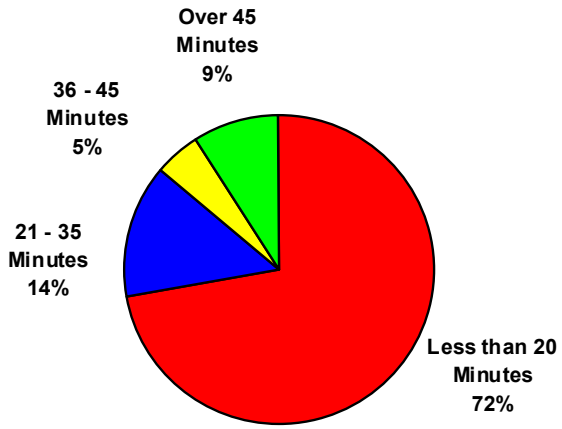
CHARACTERISTICS OF UNDEREMPLOYED WORKERS

10,000 Underemployed Workers

CURRENT COMMUTE DISTANCE



CURRENT COMMUTE TIME



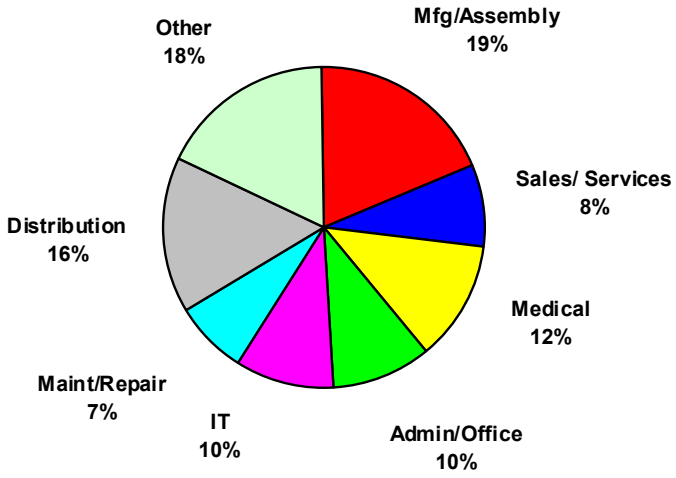
The average commute time of the underemployed workers in the labor shed is 22 minutes, and the average current commute distance is 15 miles.

LENGTH OF TIME IN CURRENT JOB

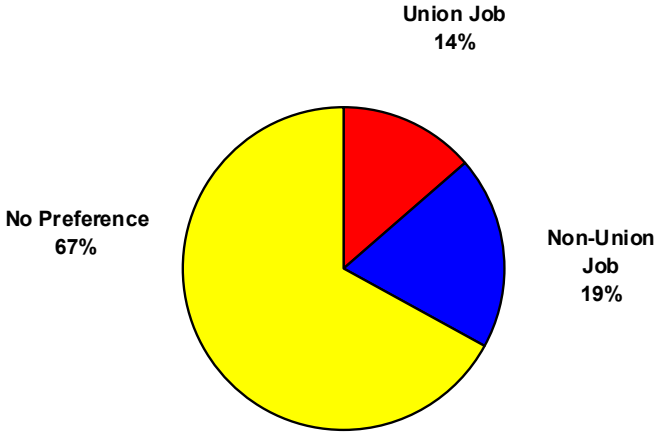
CHARACTERISTICS OF UNDEREMPLOYED WORKERS

10,000 Underemployed Workers

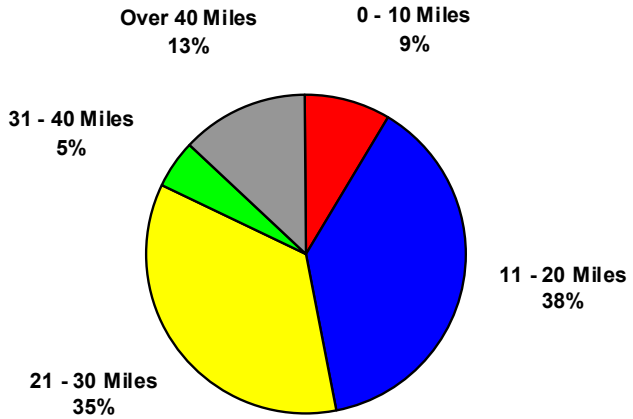
CURRENT AREA OF EMPLOYMENT



UNION PREFERENCE



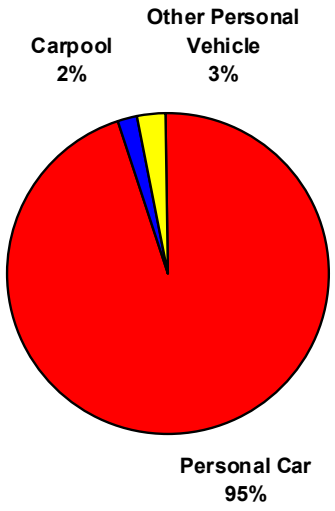
MILES WILLING TO COMMUTE
Average 27 Miles



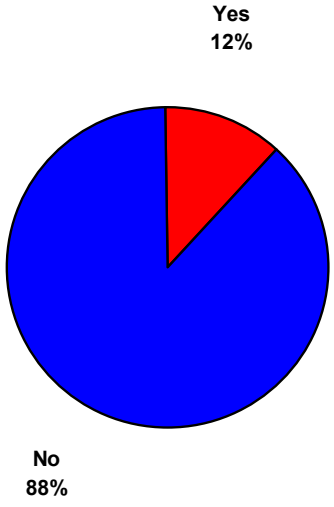
CHARACTERISTICS OF UNDEREMPLOYED WORKERS

10,000 Underemployed Workers

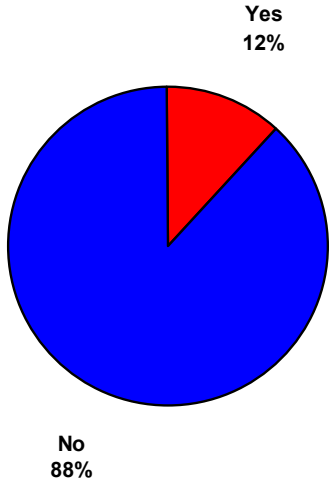
CHIEF MODE OF TRANSPORTATION



SINGLE-PARENT HOUSEHOLD



CHILDREN IN HOUSEHOLD UNDER THE AGE OF 5



EXPERIENCE AND SKILLS – UNDEREMPLOYED WORKERS

10,000 Underemployed Workers

The experience and skills categories used in this report are designed to provide accurate workforce data for employers which fall into one or more of the following four broad groups:

- manufacturing, assembly, fabrication or other industrial operations;
- back office, data processing, call centers, information technology, customer service or sales operations;
- distribution or transportation operations; and,
- biotechnology, pharmaceuticals or medical research operations.

The experience and skills categories are purposefully similar in order to present the most accurate worker availability for operations in one of those four groups and are designed to ensure inclusiveness considering the multitude of tasks and job titles present in most business, government and institutional operations.

The experience chart reports the approximate number of underemployed workers experienced in each category. The chart also gives the percentage of the total number of underemployed experienced in each category and the average number of years of experience in each category. Further, an accompanying chart illustrates the percentage of the total underemployed workers in the labor shed who are experienced in each category and the percent of those who use each category of experience in their current jobs.

Likewise, for the skills categories, the charts illustrate the approximate number of underemployed workers in the labor shed who are skilled in each of the categories, the percent of the total underemployed, and the percent of underemployed workers who use each skills category in their current jobs.

It should be noted that individuals polled normally have experience and skills in multiple categories; therefore, the category number of workers will not total to the number of underemployed, nor will the percentages equal 100%.

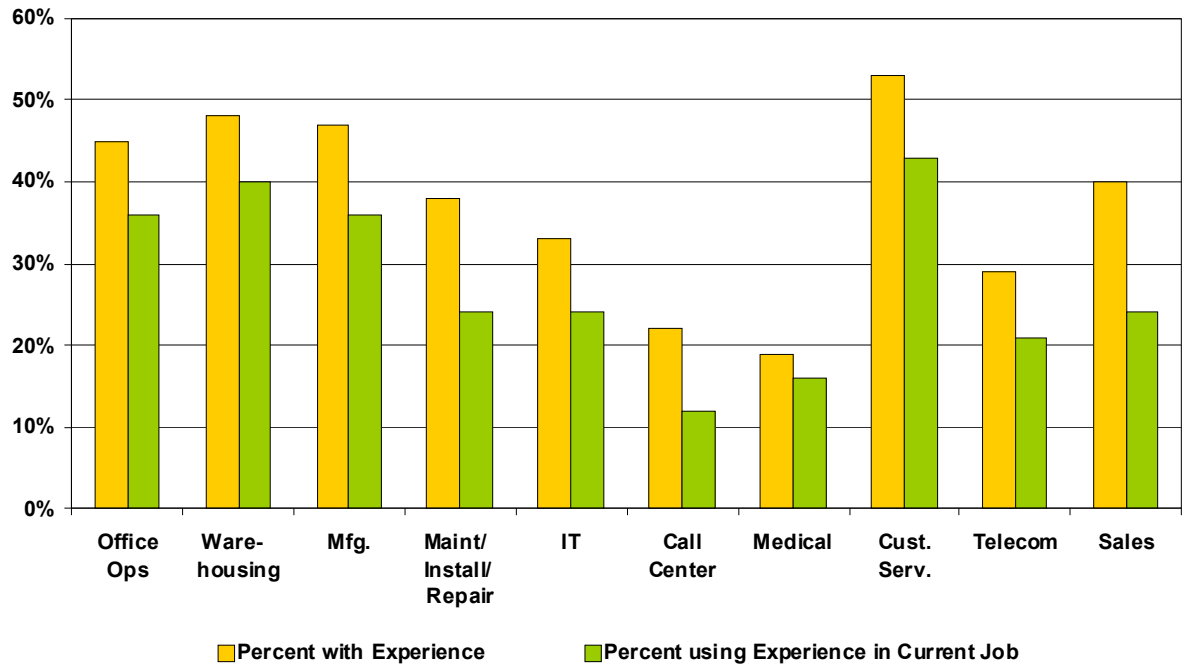
EXPERIENCE OF UNDEREMPLOYED WORKERS

10,000 Underemployed Workers

Experience Category	Number of Workers*	Percentage of Total	Average Years of Experience
Customer Service	5,300	53%	7
Warehouse/Distribution/Transportation	4,800	48%	9
Manufacturing/Assembly/Fabrication	4,700	47%	9
Office Operations	4,500	45%	7
Sales	4,000	40%	6
Maintenance/Installation/Repair	3,800	38%	7
Information Technology	3,300	33%	5
Telecommunications	2,900	29%	6
Call Center	2,200	22%	5
Medical/Health Sciences	1,900	19%	7

* Rounded

EXPERIENCE USED IN CURRENT JOB



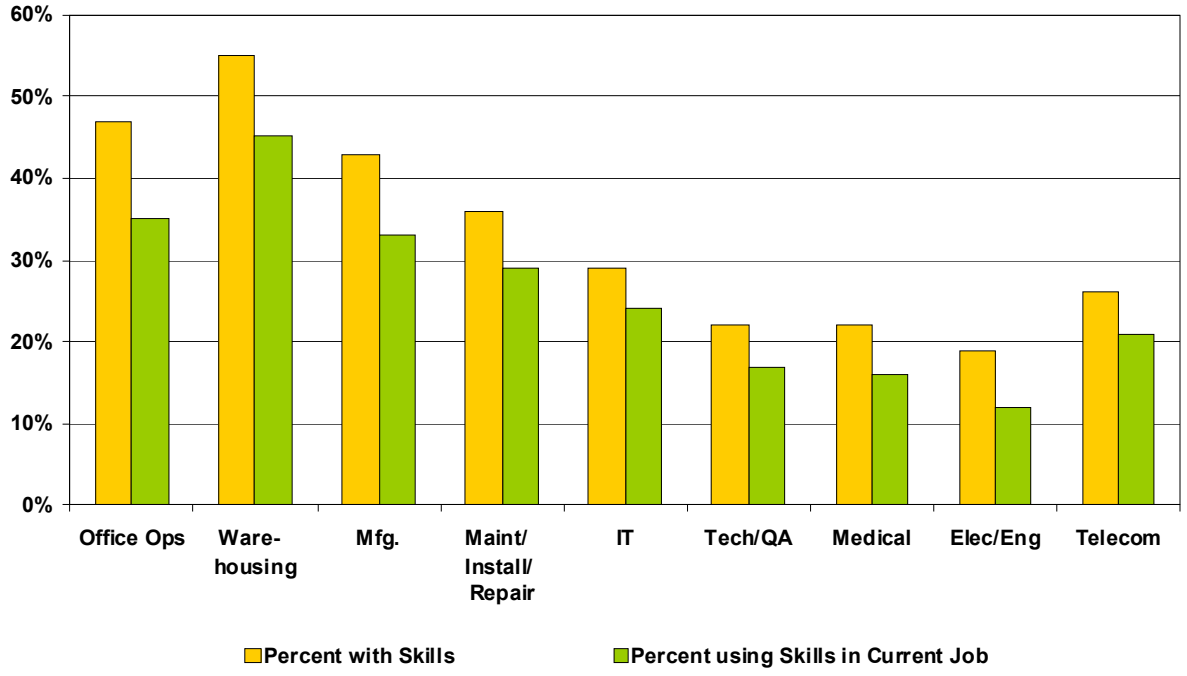
SKILLS OF UNDEREMPLOYED WORKERS

10,000 Underemployed Workers

Skills Category	Number of Workers*	Percentage of Total
Warehouse/Materials Handling	5,500	55%
Office Operations	4,700	47%
Manufacturing/Assembly/Fabrication	4,300	43%
Maintenance/Installation/Repair	3,600	36%
Information Technology	2,900	29%
Telecommunications	2,600	26%
Medical/Health Sciences	2,200	22%
Technician/Quality Assurance	2,200	22%
Electronics/Engineering	1,900	19%

* Rounded

SKILLS USED IN CURRENT JOB



The survey respondents were asked to identify the one category of experience in which they felt they were most experienced and, also, the single skills category in which they believed themselves to be most skilled. The chart below reflects the results of these questions.

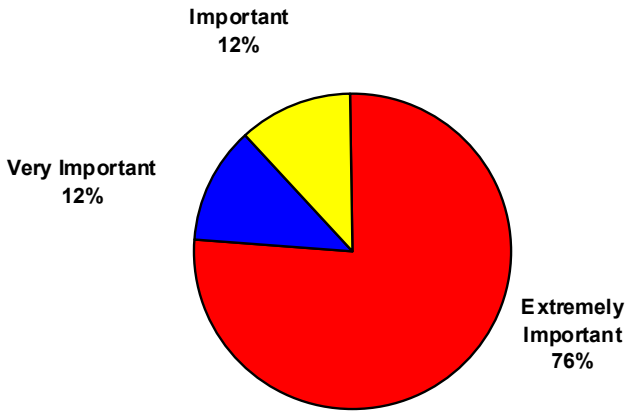
CATEGORY OF MOST EXPERIENCED / MOST SKILLED

Experience Category	Percentage of Respondents	Skills Category	Percentage Of Respondents
Warehouse/Distribution/ Transportation	25%	Warehouse/Distribution/ Transportation	25%
Office Operations	16%	Medical/Health Sciences	17%
Manufacturing/Assembly/ Fabrication	14%	Office Operations	17%
Medical/Health Sciences	12%	Manufacturing/Assembly/ Fabrication	14%
Maintenance/Installation/ Repair	10%	Maintenance/Installation/ Repair	10%
Customer Service	10%	Electronics/Engineering	7%
Telecommunications	5%	Information Technology	7%
Information Technology	3%	Telecommunications	3%
Sales	3%		
Call Center	2%		

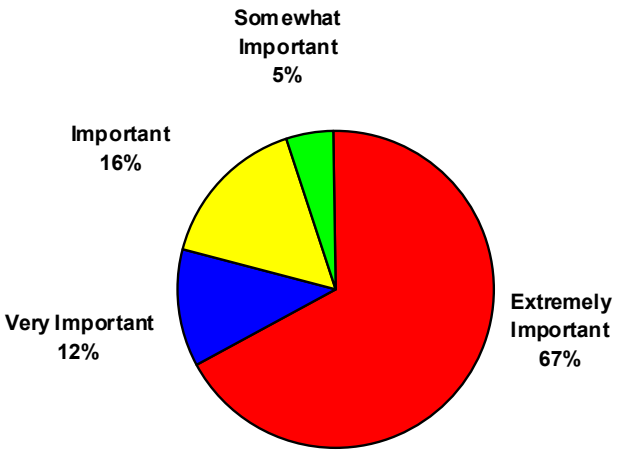
BUSINESS FACTORS AFFECTING JOB DESIRABILITY
10,000 Underemployed Workers

In an effort to identify those business factors most important to the 5-County Northwest Illinois area's underemployed workers relative to consideration of an employer's desirability and a potential job change, the respondents were asked to rate the following job factors from "extremely important" to "not important".

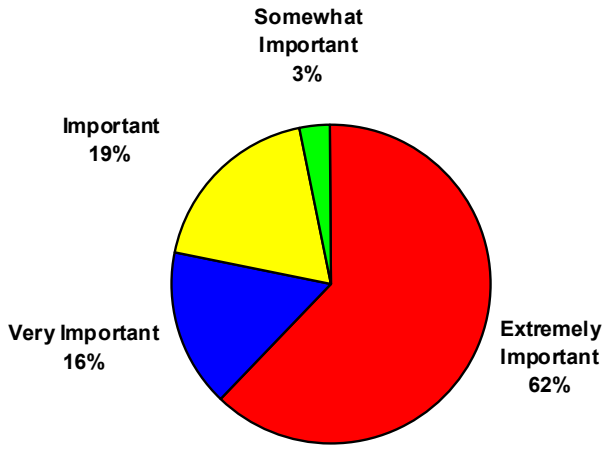
SALARY



INSURANCE BENEFITS



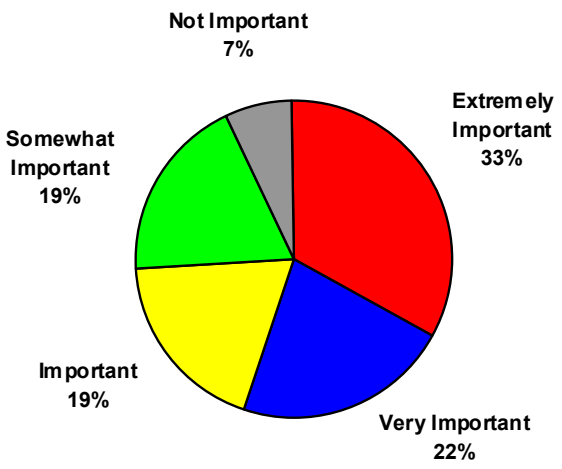
RETIREMENT BENEFITS



BUSINESS FACTORS AFFECTING JOB DESIRABILITY

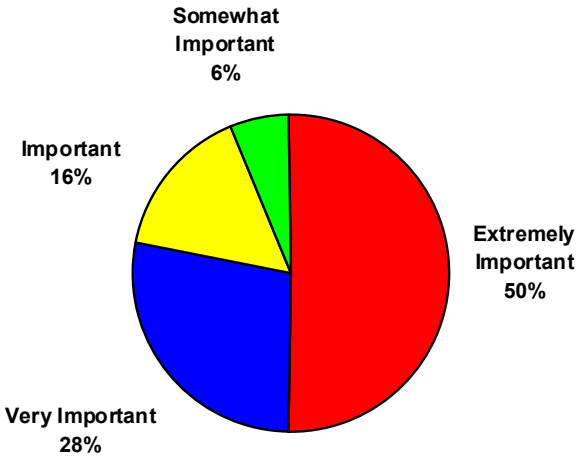
10,000 Underemployed Workers

PHYSICAL WORKING ENVIRONMENT



PAID TRAINING PROGRAMS

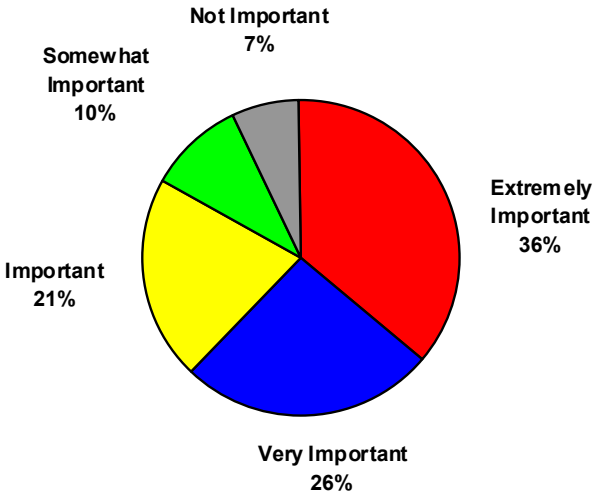
OPPORTUNITY FOR ADVANCEMENT



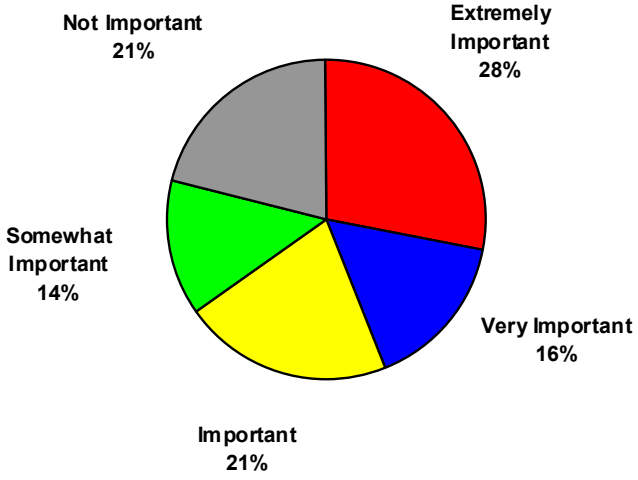
PERSONAL FACTORS AFFECTING JOB DESIRABILITY
10,000 Underemployed Workers

In an effort to identify those personal factors most important to the 5-County Northwest Illinois area's underemployed workers relative to consideration of an employer's desirability and a potential job change, the respondents were asked to rate the following job factors from "extremely important" to "not important".

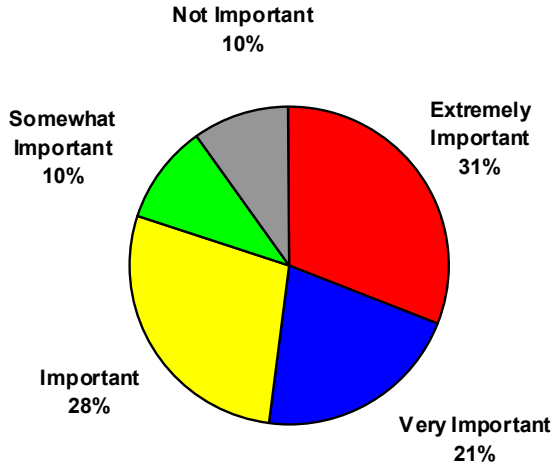
LOCATION



TELECOMMUTING POLICY OF COMPANY



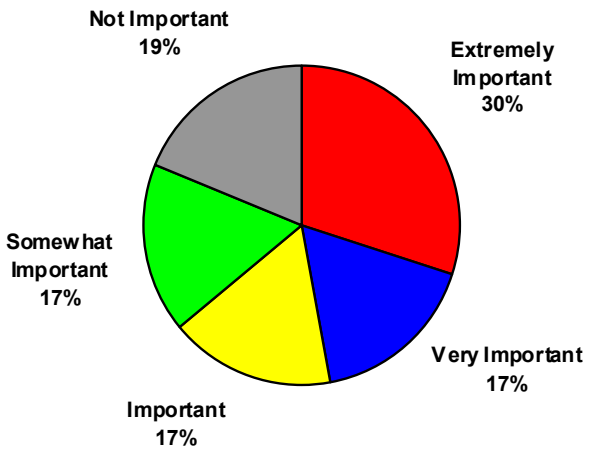
FLEXIBLE WORK SCHEDULE



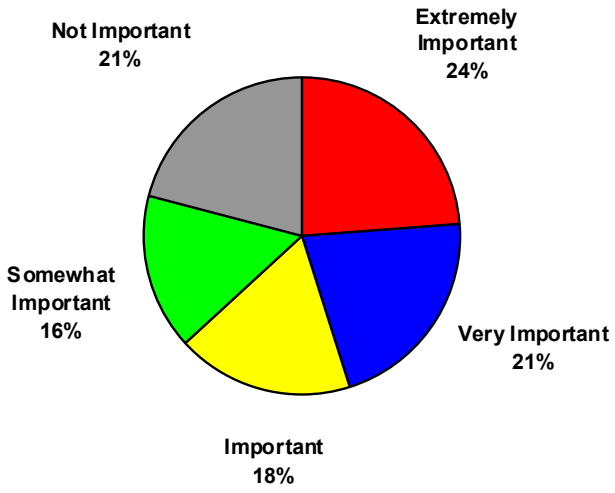
PERSONAL FACTORS AFFECTING JOB DESIRABILITY

10,000 Underemployed Workers

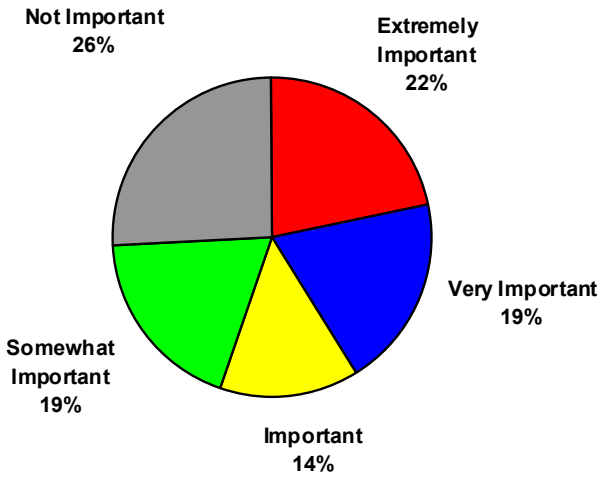
TRANSPORTATION AVAILABILITY / COST



PERSONAL PHYSICAL IMPAIRMENTS



DAY / ELDER CARE AVAILABILITY / COST



INTEREST IN TRAINING COURSES
10,000 Underemployed Workers

A component was added to this survey which was designed to determine possible interest in training courses on the part of the underemployed workers in the Carroll County workforce. In the table that follows, it should be noted that many of the respondents indicated interest in more than one program; therefore, the percent total will not equal 100.

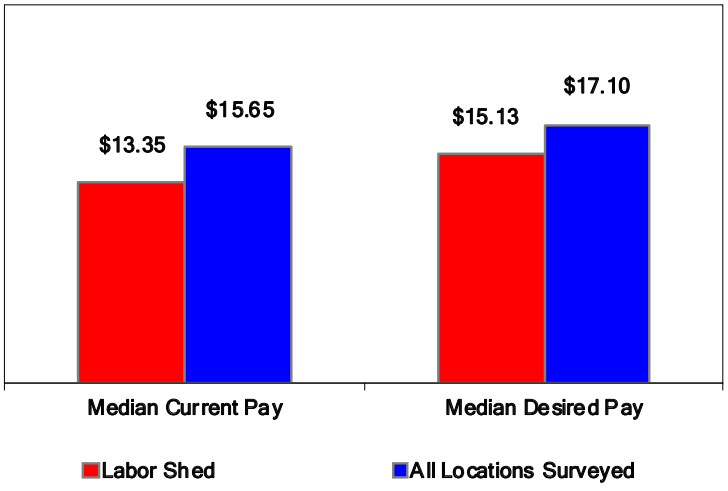
Type of Training Course	Number of Workers (Rounded)	Percentage of Total
Human Resources	4,000	40%
Health Care	4,000	40%
Computer Software Applications	3,600	36%
Computer Programming	3,500	35%
Technical Trades	3,300	33%
Real Estate or Insurance	3,100	31%
Construction Trades	2,900	29%
Computer Maintenance or Repair	2,900	29%
Industrial Machine Operations	2,800	28%
Auto or Maintenance Mechanics	2,400	24%
Commercial Vehicle Operations	2,200	22%
Food Service or Hospitality	1,000	10%
Restaurant or Retail Management	700	7%
GED or Basic Reading, Writing, Arithmetic	700	7%

NATIONAL COMPARISONS OF UNDEREMPLOYED WORKFORCE

This section of the report provides comparisons of the pay rates, experience and skills of the labor shed's underemployed workforce with the underemployed workforces in other areas previously surveyed by The Pathfinders. A prospect company considering the 5-County Northwest Illinois region as a location will judge its workforce on a comparative basis. The comparative data for other locations used in the following charts reflect information accumulated over the past eighteen months. The Pathfinders maintains a continuing database of over 700 surveyed counties and communities and more than 30 million workers. In the charts, the 5-County Northwest Illinois region is referred to as "labor shed".

The chart below illustrates the median current and desired wages of the underemployed workers in the 5-County Northwest Illinois labor shed as compared to those underemployed workers in all locations surveyed by The Pathfinders over the past eighteen months. As indicated, the median current pay of all surveyed, underemployed workers over the past eighteen months is $15.65 per hour, and the median desired pay of these workers is $17.10 per hour. As shown, survey results indicate that the 5-County Northwest Illinois region's underemployed workers have lower pay rates in both median current pay and desired pay than other locations surveyed.

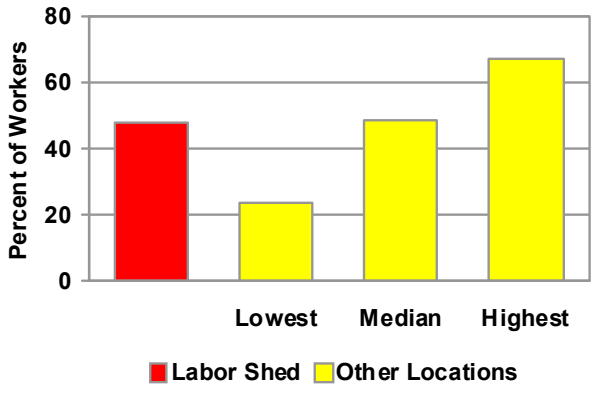
COMPARISON OF MEDIAN CURRENT / DESIRED WAGES (per hour)



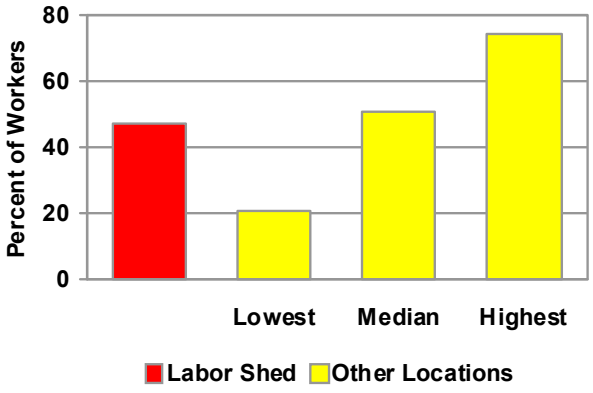
COMPARISON OF EXPERIENCE
UNDEREMPLOYED WORKERS
The 5-County Northwest Illinois Area /
Locations Surveyed Over the Past 18 Months

OFFICE

WAREHOUSE / DISTRIBUTION / TRANSPORTATION



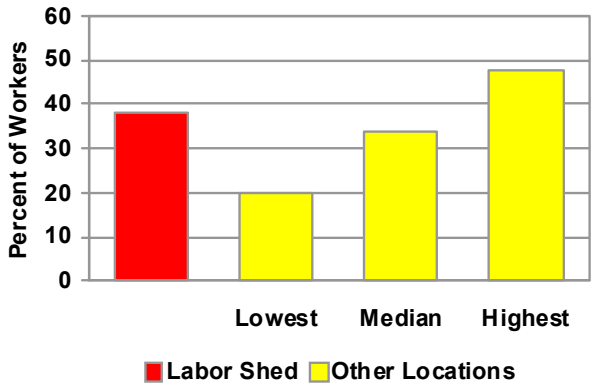
MANUFACTURING / ASSEMBLY / FABRICATION



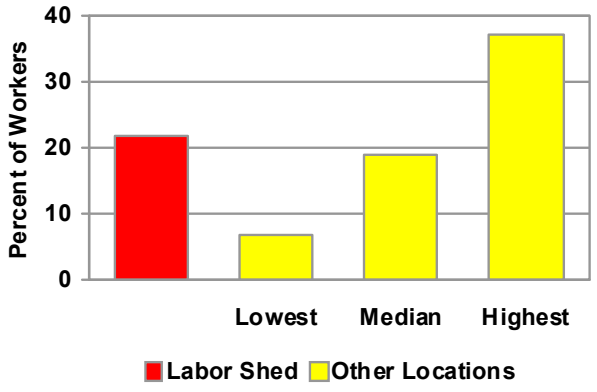
MEDICAL / HEALTH SCIENCES

COMPARISON OF EXPERIENCE
UNDEREMPLOYED WORKERS
The 5-County Northwest Illinois Area /
Locations Surveyed Over the Past 18 Months

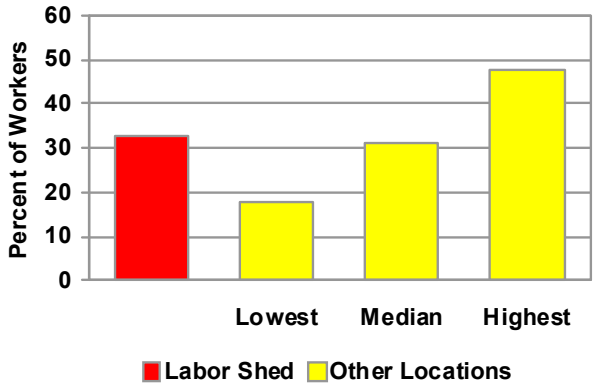
MAINTENANCE / INSTALLATION / REPAIR



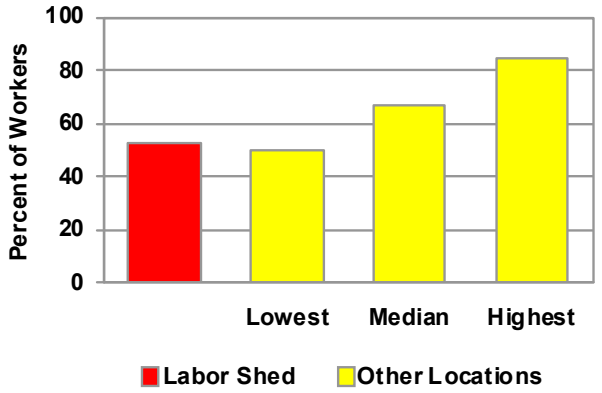
CALL CENTER



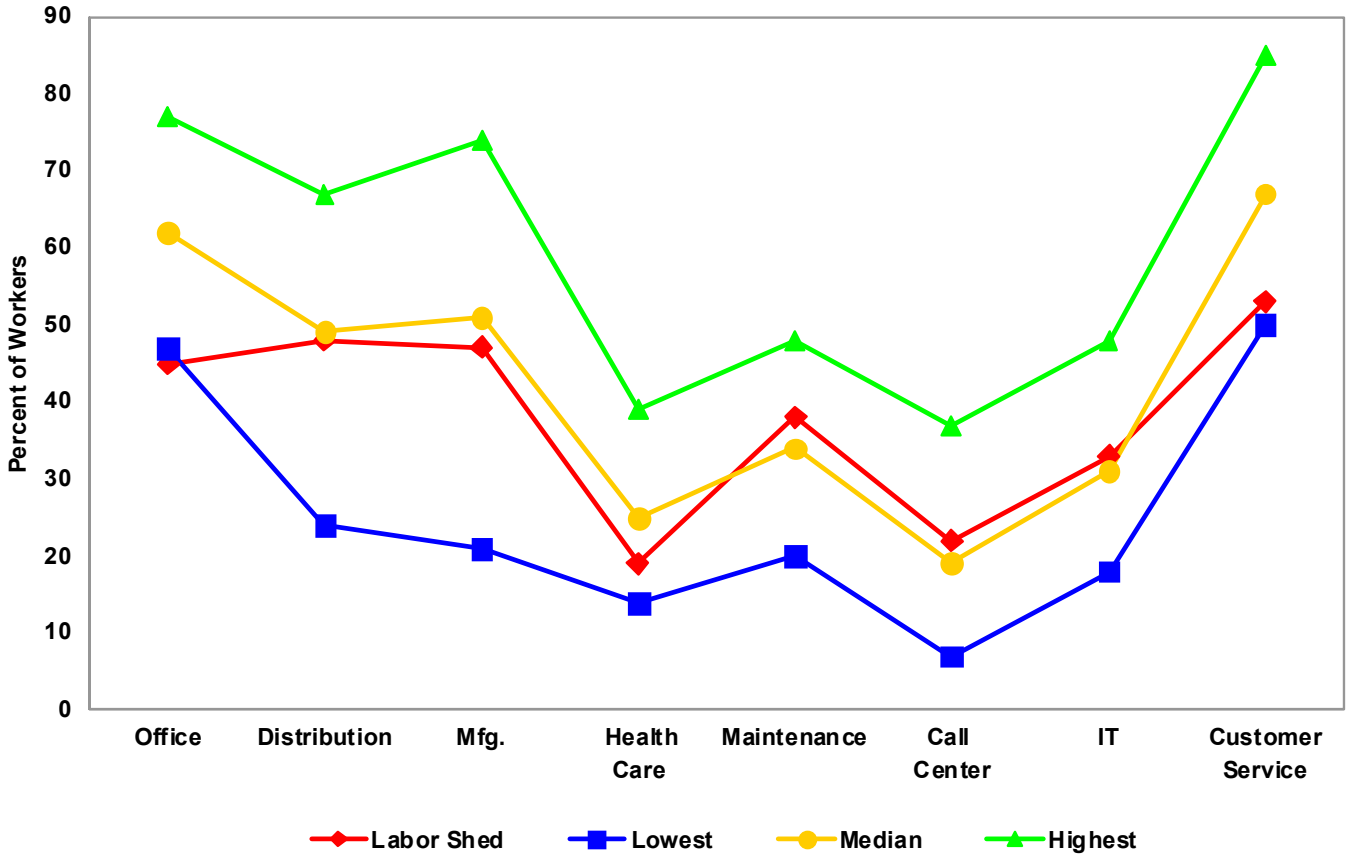
INFORMATION TECHNOLOGY



CUSTOMER SERVICE

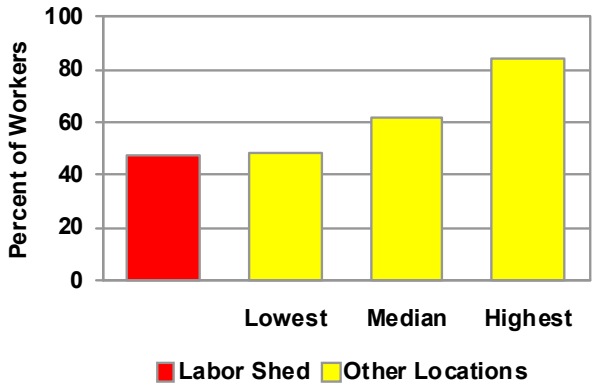


SUMMARY COMPARISON OF EXPERIENCE
UNDEREMPLOYED WORKERS
The 5-County Northwest Illinois Area /
Locations Surveyed Over the Past 18 Months

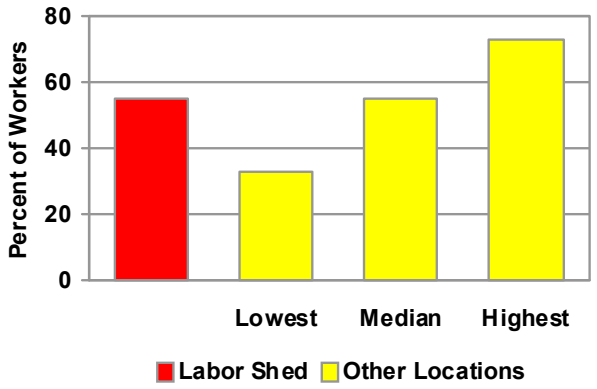


COMPARISON OF SKILLS
UNDEREMPLOYED WORKERS
The 5-County Northwest Illinois Area /
Locations Surveyed Over the Past 18 Months

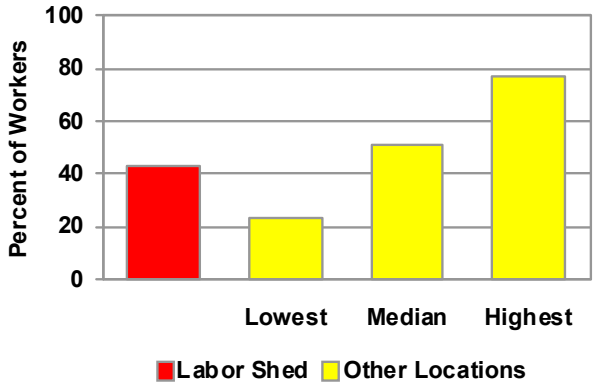
OFFICE



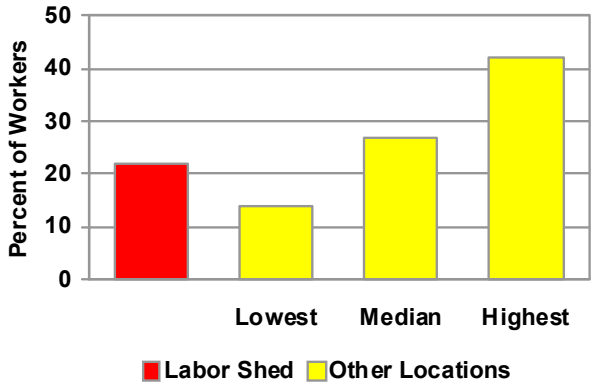
WAREHOUSE / MATERIALS HANDLING



MANUFACTURING / ASSEMBLY / FABRICATION

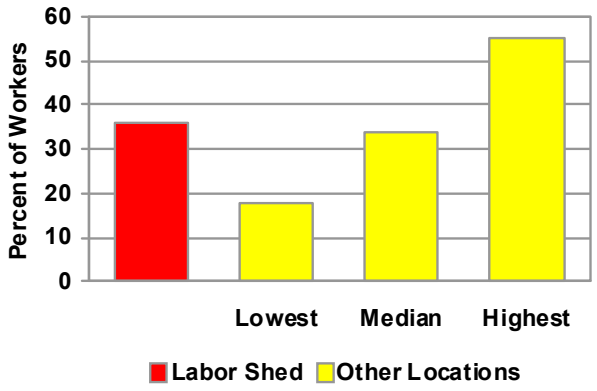


MEDICAL / HEALTH SCIENCES

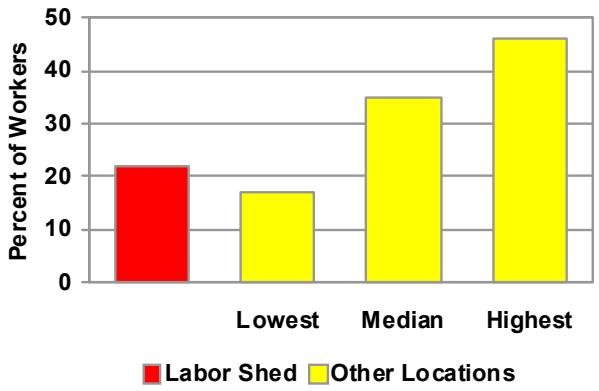


COMPARISON OF SKILLS
UNDEREMPLOYED WORKERS
The 5-County Northwest Illinois Area /
Locations Surveyed Over the Past 18 Months

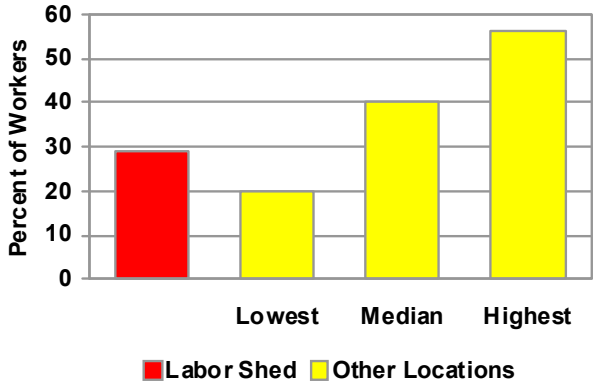
MAINTENANCE / INSTALLATION / REPAIR



TECHNICIAN / QUALITY ASSURANCE

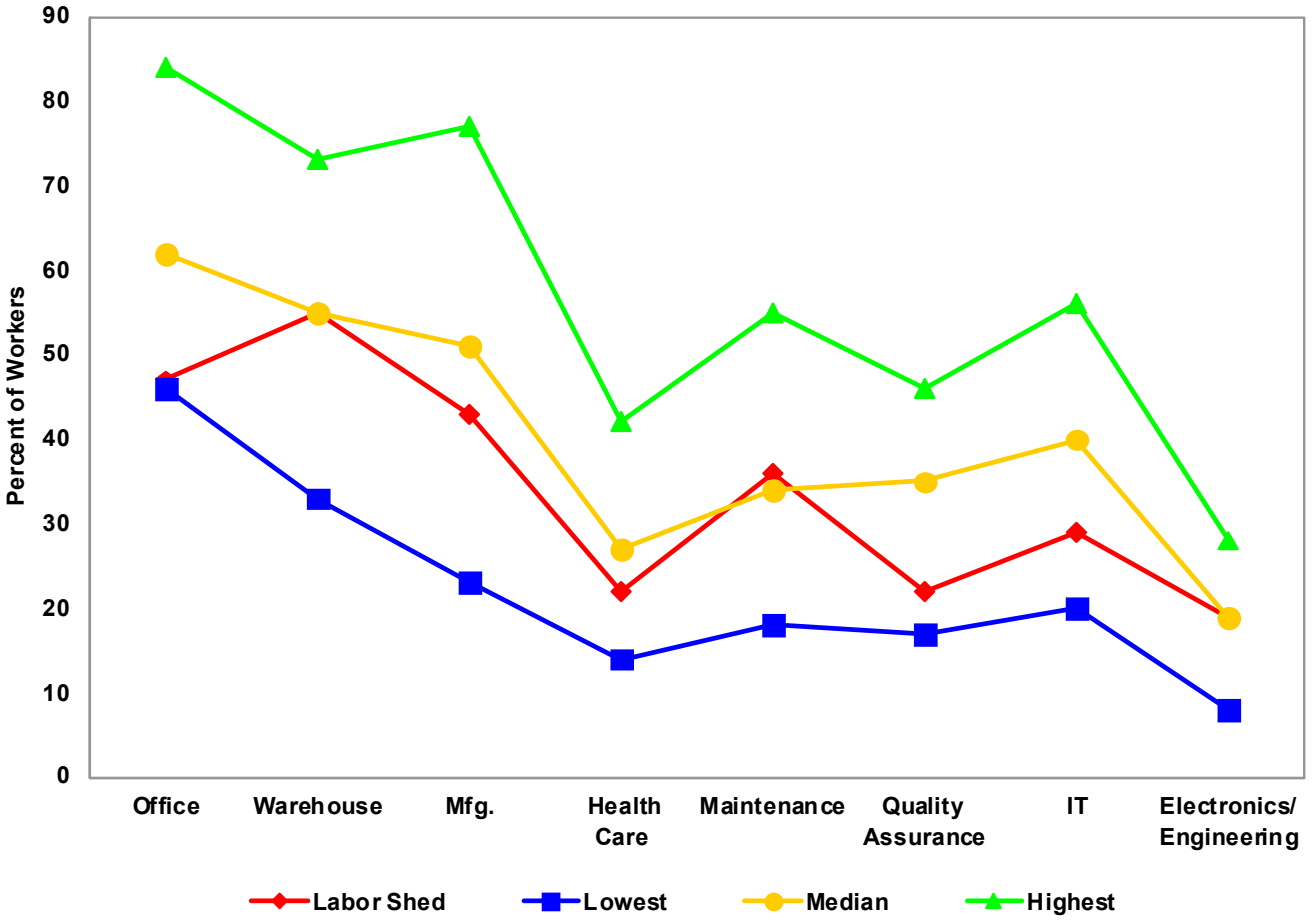


INFORMATION TECHNOLOGY



ELECTRONICS / ENGINEERING

SUMMARY COMPARISON OF SKILLS
UNDEREMPLOYED WORKERS
The 5-County Northwest Illinois Area /
Locations Surveyed Over the Past 18 Months



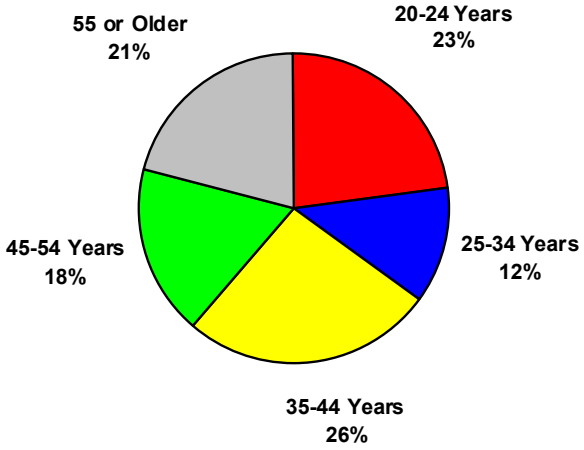
CHARACTERISTICS OF UNEMPLOYED INDIVIDUALS WHO ARE ACTIVELY SEEKING WORK

9,500 Workers

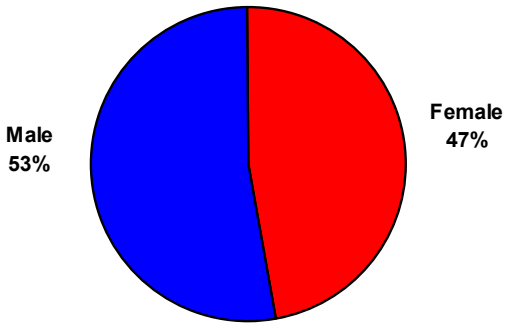
According to survey results, the following charts provide information on those unemployed workers in the labor shed who are actively seeking work. **As these data relate solely to those individuals in the labor shed who are unemployed, they will vary from data representative of the population and civilian labor force as a whole.**

In the 5-County Northwest Illinois labor shed, according to published sources, there are approximately 9,500 individuals who are actively seeking work. Survey results indicate the average age of these individuals is 40 years.

AGE



GENDER

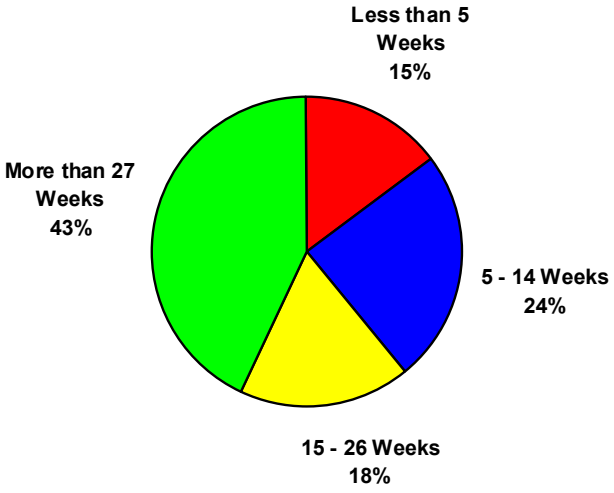


The median desired pay rate of the individuals who are unemployed, actively seeking work is $12.90 per hour. These available workers have been out of the workforce for an average of 23 weeks and are willing to commute an average of 25 miles for a job.

CHARACTERISTICS OF UNEMPLOYED INDIVIDUALS WHO ARE ACTIVELY SEEKING WORK

9,500 Workers

WEEKS OUT OF WORKFORCE
Median 23 Weeks



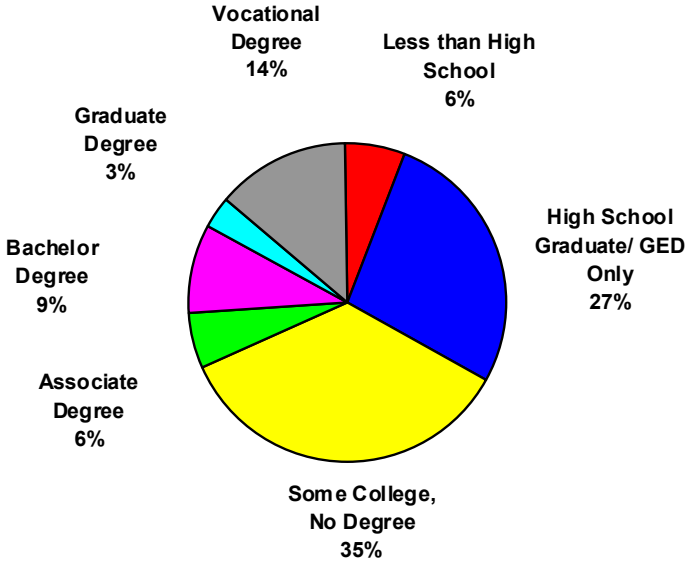
REASON FOR BEING OUT OF WORKFORCE

REASON	Percentage of Respondents
Laid Off / Job Eliminated	29%
Personal Choice / Stay-At-Home	23%
Company Closed / Relocated	18%
No Jobs / Discouraged	15%
Retired or Close to Retirement	6%
Student	3%
Medical/Disability	3%
Other / Not Reported	3%

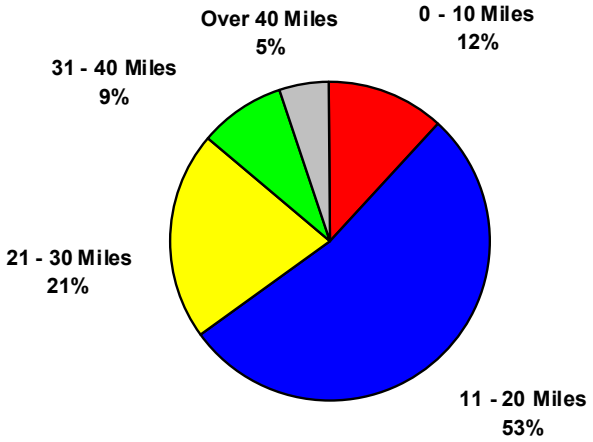
CHARACTERISTICS OF UNEMPLOYED INDIVIDUALS WHO ARE ACTIVELY SEEKING WORK

9,500 Workers

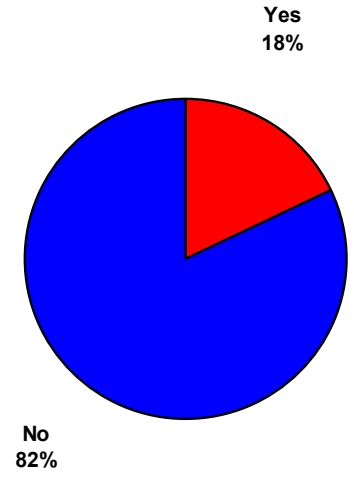
EDUCATION



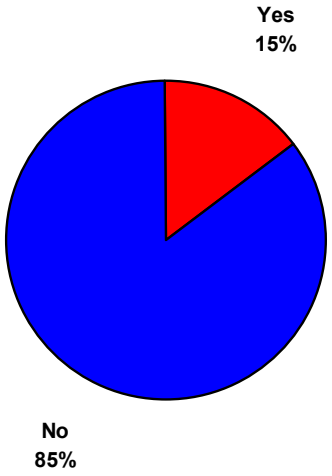
MILES WILLING TO COMMUTE
Average 25 Miles



SINGLE-PARENT HOUSEHOLD



CHILDREN IN HOUSEHOLD UNDER THE AGE OF 5



CHARACTERISTICS OF UNEMPLOYED INDIVIDUALS WHO ARE ACTIVELY SEEKING WORK

9,500 Workers

Experience Category	Number of Individuals*	Percentage of Total	Average Years of Experience
Manufacturing/Assembly/Fabrication	5,000	53%	7
Customer Service	5,000	53%	7
Warehouse/Distribution/Transportation	4,800	50%	6
Office Operations	4,200	44%	8
Maintenance/Installation/Repair	3,600	38%	7
Telecommunications	3,300	35%	5
Information Technology	3,300	35%	4
Medical/Health Sciences	2,800	29%	9
Call Center	2,600	27%	5
Sales	2,000	21%	5

It should be noted that individuals polled normally have experience and/or skills in multiple categories.

Skills Category	Number of Individuals*	Percentage of Total
Warehouse/Materials Handling	5,900	62%
Manufacturing/Assembly/Fabrication	5,000	53%
Office Operations	4,500	47%
Telecommunications	4,200	44%
Information Technology	3,900	41%
Maintenance/Installation/Repair	3,000	32%
Technician/Quality Assurance	3,000	32%
Medical/Health Sciences	2,800	29%
Electronics/Engineering	1,400	15%

*** Rounded**

EMPLOYERS' VIEWS AND RATINGS OF THE THE NORTHWEST ILLINOIS AREA TOTAL WORKFORCE

In developing a profile of existing workers in the Northwest Illinois region, The Pathfinders considered such factors as labor availability, productivity, attitudes, costs, and education. The analysis was based upon interviews conducted with senior management and human resources professionals from companies located in the labor shed.

As determined from the employer interviews, the tables below reflect the top four methods used to recruit hourly and salaried workers in the Northwest Illinois region and the percent of employers utilizing each method. Employers may use multiple recruitment methods.

RECRUITMENT METHODS

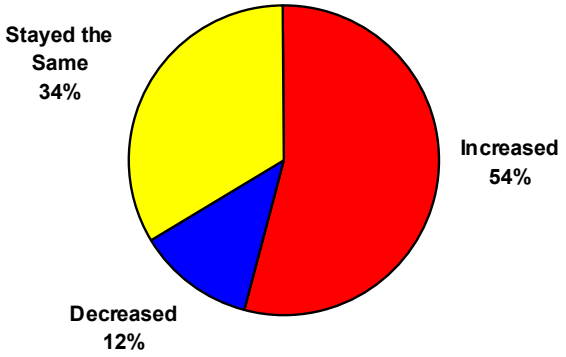
Recruiting Methods – Hourly Workers	% of Employers
Newspaper Ads	41%
Word of Mouth	34%
Internet	31%
Staffing/Temp Agency	24%

Recruiting Methods – Salaried Workers	% of Employers
Internet	34%
Newspaper Ads	34%
Word of Mouth	31%
Recruiters	21%

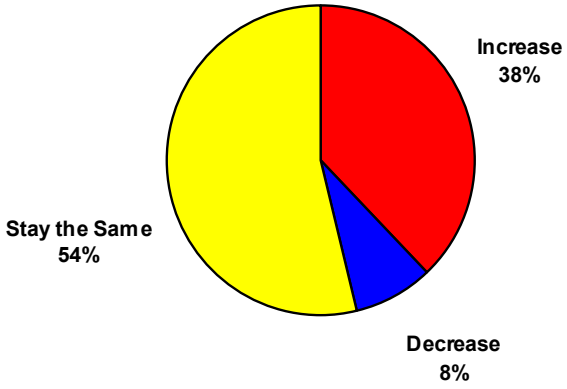
EMPLOYERS' VIEWS AND RATINGS OF THE THE NORTHWEST ILLINOIS AREA TOTAL WORKFORCE

The employers who were interviewed were asked whether or not their company's employment figures had increased, decreased or stayed the same over the past twelve months and also to make hiring projections for the next twelve months.

NUMBER OF EMPLOYEES
Past 12 Months

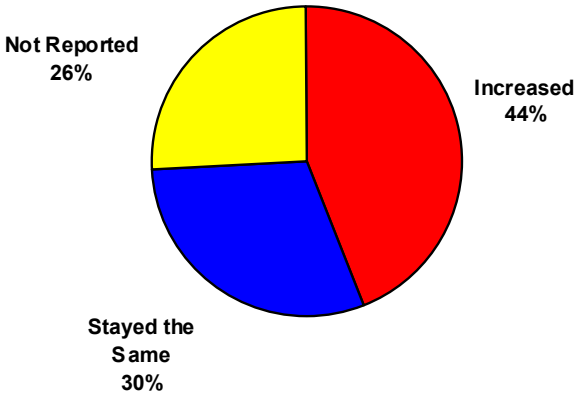


NUMBER OF EMPLOYEES
Next 12 Months



The employers were asked to report if, over the past two years, their state unemployment tax rate had increased, decreased or stayed the same.

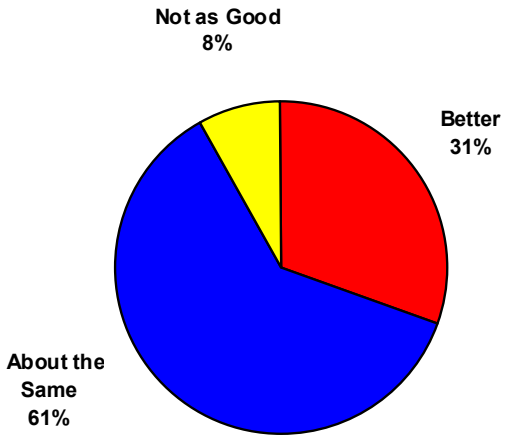
STATE UNEMPLOYMENT TAX RATE
Past Two Years



EMPLOYERS' VIEWS AND RATINGS OF THE THE NORTHWEST ILLINOIS AREA TOTAL WORKFORCE

59% of the employers interviewed stated their companies had operations in other regions of the United States. Of these employers, those familiar with the workforces in those other locations reported their Northwest Illinois area operations were comparable to or better than the other regions in terms of profitability and production.

WORKFORCE COMPARISON WITH OTHER LOCATIONS



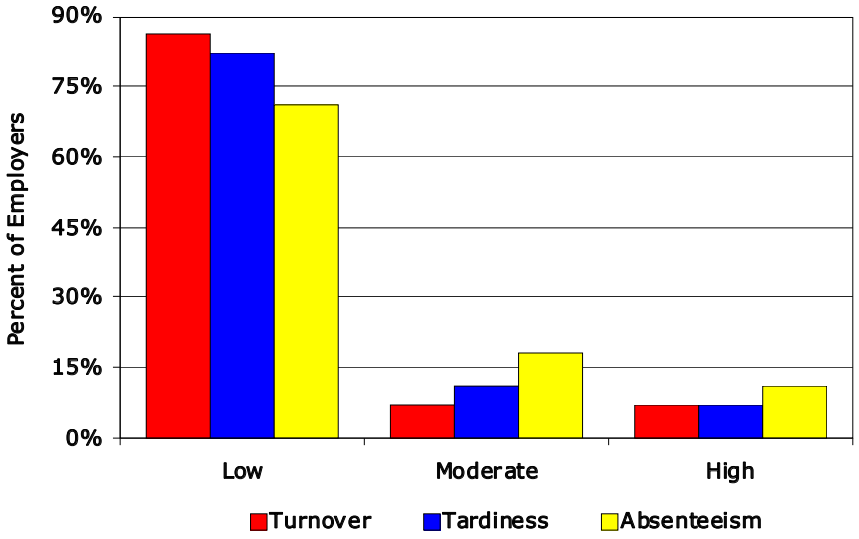
Based upon the experience of The Pathfinders in evaluating labor forces in numerous locations, a definite correlation between productivity, absenteeism, tardiness, turnover, and substance abuse appears to exist. That correlation goes beyond the fact that an absent worker is obviously unproductive. Rather, those factors are indicative of an employee's attitude toward the job.

The employers surveyed in this study were asked to rate turnover, tardiness and absenteeism among their workers as "Low", "Moderate" or "High". Further, they were surveyed as to their substance abuse testing practices and asked to rate substance abuse among the area workforce.

The charts on the following pages illustrate the percent of employers' ratings for these and other factors, including educational facilities, worker productivity and reliability, teamwork and basic skills.

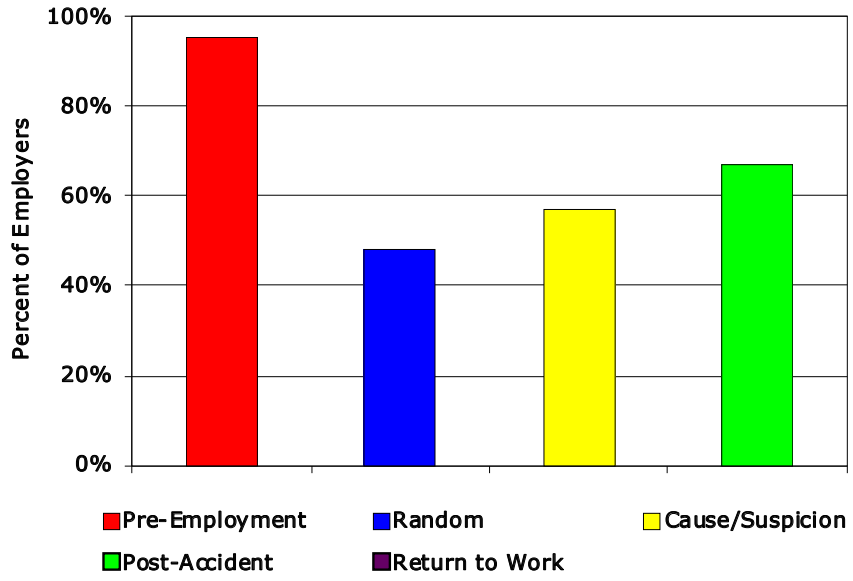
EMPLOYERS' VIEWS AND RATINGS OF THE THE NORTHWEST ILLINOIS AREA TOTAL WORKFORCE

TURNOVER / TARDINESS / ABSENTEEISM



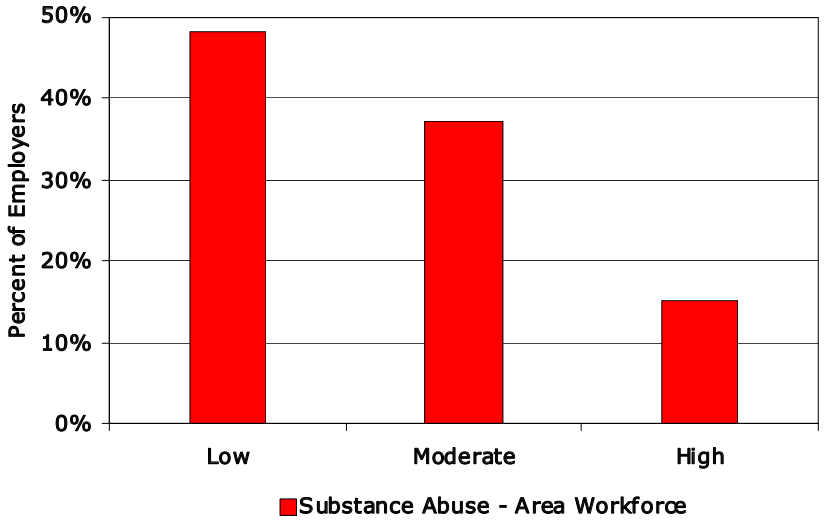
In the Northwest Illinois labor shed, 72% of the employers interviewed stated their companies tested for substance abuse, using one or more of the following practices:

SUBSTANCE ABUSE TESTING PRACTICES



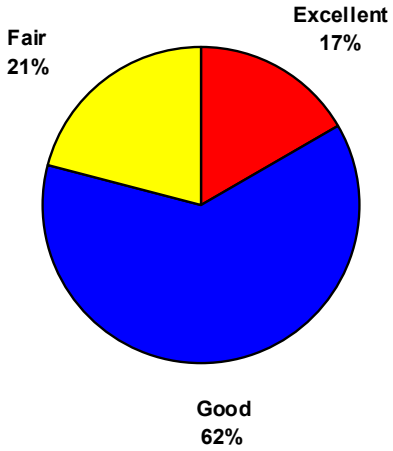
EMPLOYERS' VIEWS AND RATINGS OF THE THE NORTHWEST ILLINOIS AREA TOTAL WORKFORCE

SUBSTANCE ABUSE RATING – AREA WORKFORCE

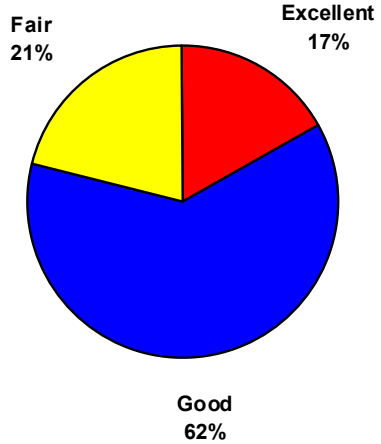


Further, 79% of the employers surveyed completed criminal background checks on potential employees, and 69% checked for valid drivers' licenses.

WORKER PRODUCTIVITY

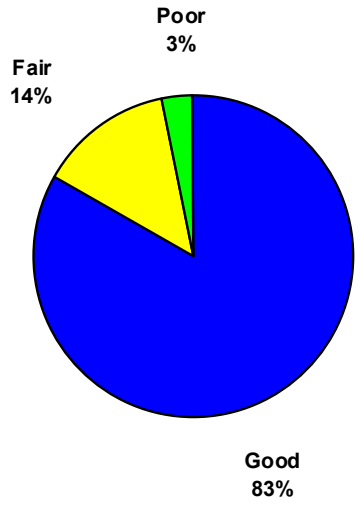


WORKER RELIABILITY

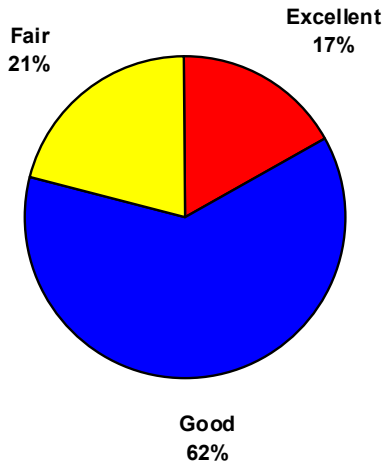


EMPLOYERS' VIEWS AND RATINGS OF THE THE NORTHWEST ILLINOIS AREA TOTAL WORKFORCE

WORKER ATTITUDES

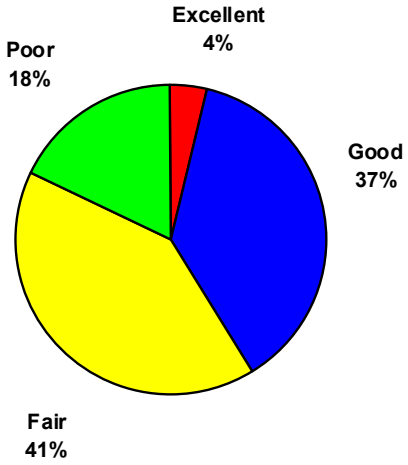


TEAMWORK SKILLS

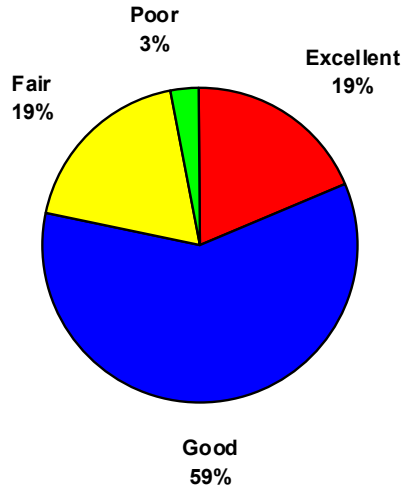


The educational competencies of employees are additional factors used to evaluate an area's labor force. In the Northwest Illinois area, 41% of the employers interviewed rated the local public schools as "Excellent" or "Good", and 78% rated the local community colleges and technical schools as "Excellent" or "Good". Ratings for basic skills and other factors are also shown.

LOCAL PUBLIC SCHOOLS

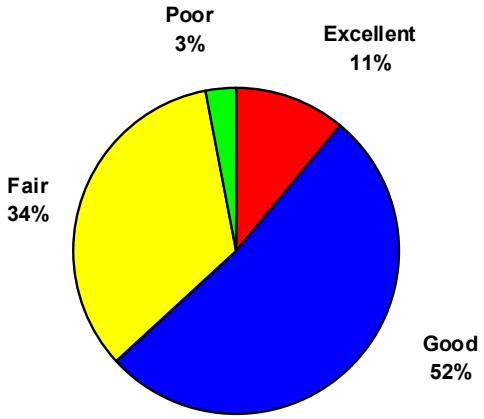


LOCAL COMMUNITY COLLEGES AND TECH SCHOOLS



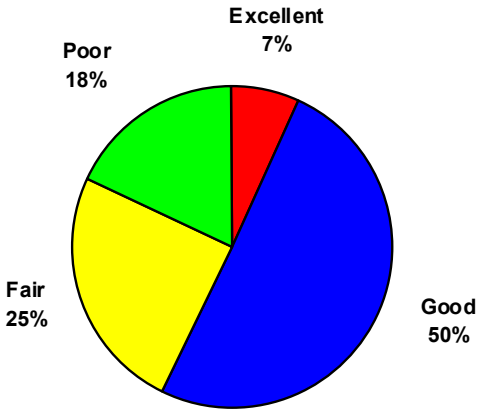
EMPLOYERS' VIEWS AND RATINGS OF THE
THE NORTHWEST ILLINOIS AREA TOTAL WORKFORCE

READING SKLLS



WRITING SKLLS

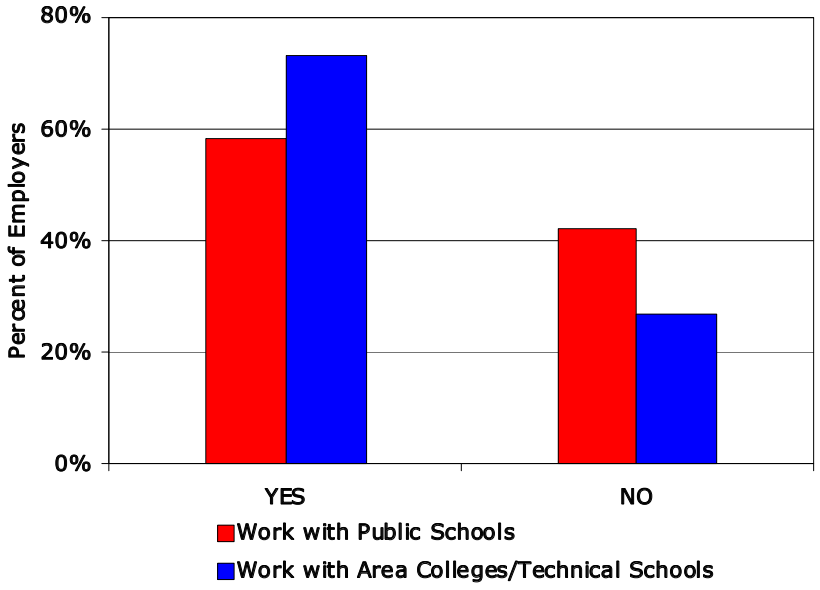
COMPUTER SKILLS



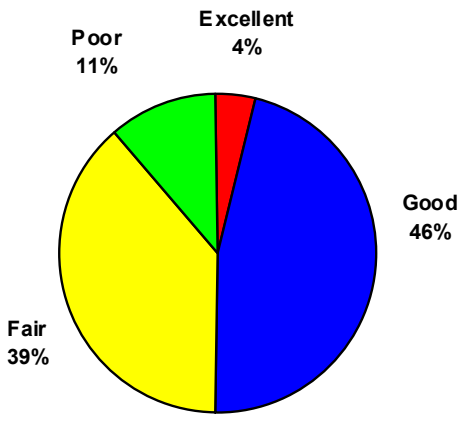
MATH SKILLS

EMPLOYERS' VIEWS AND RATINGS OF THE THE NORTHWEST ILLINOIS AREA TOTAL WORKFORCE

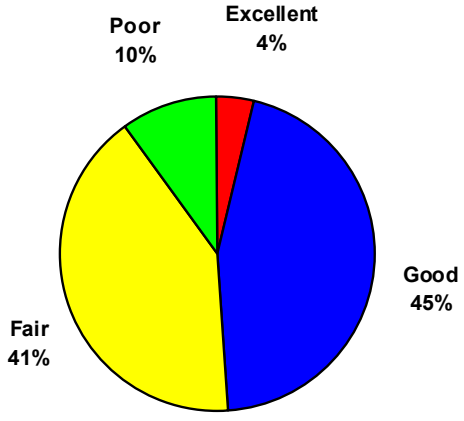
Additionally, many of the employers interviewed stated their companies worked with the area educational institutions in terms of apprenticeships, internships or other training programs.



WORKER ENTRY LEVEL SKILLS

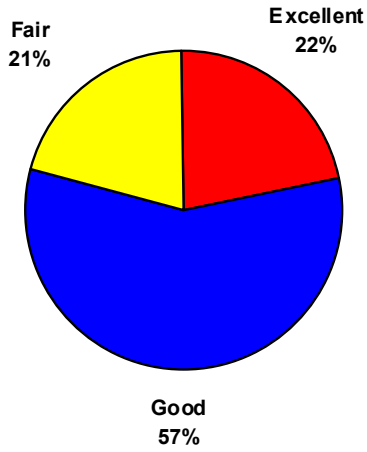


JOB READINESS SKILLS



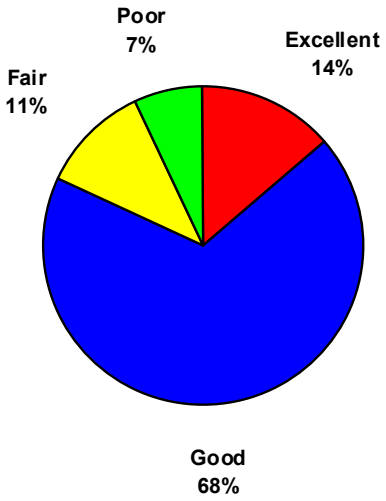
EMPLOYERS' VIEWS AND RATINGS OF THE THE NORTHWEST ILLINOIS AREA TOTAL WORKFORCE

WORKER TRAINABILITY

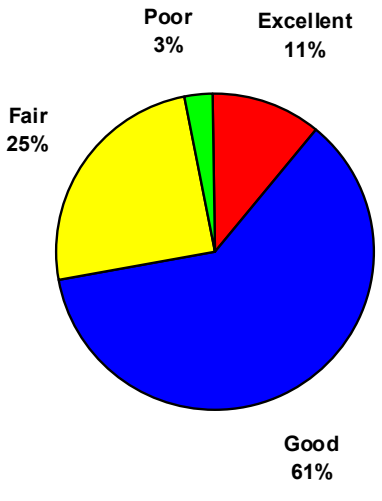


Further, the employers who were interviewed gave the following ratings to the area's business climate in terms of such factors as support and communication and also rated the area's overall quality of life. In addition, the employers offered their opinions on the availability of labor in the area.

AREA BUSINESS CLIMATE

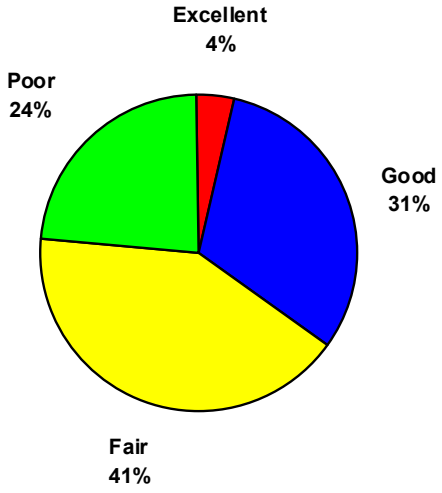


AREA QUALITY OF LIFE

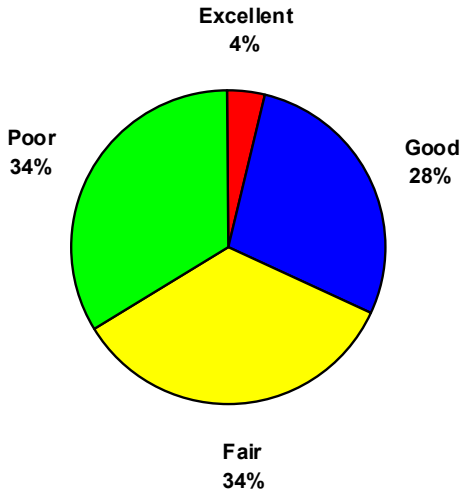


EMPLOYERS' VIEWS AND RATINGS OF THE THE NORTHWEST ILLINOIS AREA TOTAL WORKFORCE

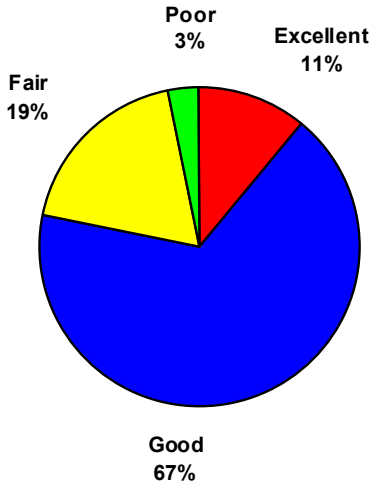
SKILLED WORKERS AVAILABILITY



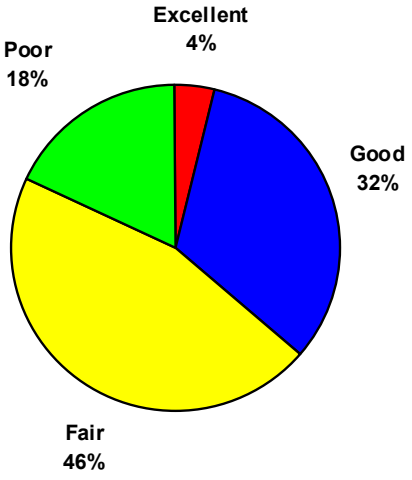
TECHNICAL WORKERS AVAILABILITY



UNSKILLED WORKERS AVAILABILITY



PROFESSIONAL WORKERS AVAILABILITY



GOALS STRATEGIES AND RECOMMENDATIONS

FIVE-COUNTY WAGE AND BENEFIT REPORT

NORTHWEST ILLINOIS AREA LABOR AVAILABILITY REPORT

APRIL 2013

PROMOTING PROSPERITY IN NORTHWEST ILLINOIS

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