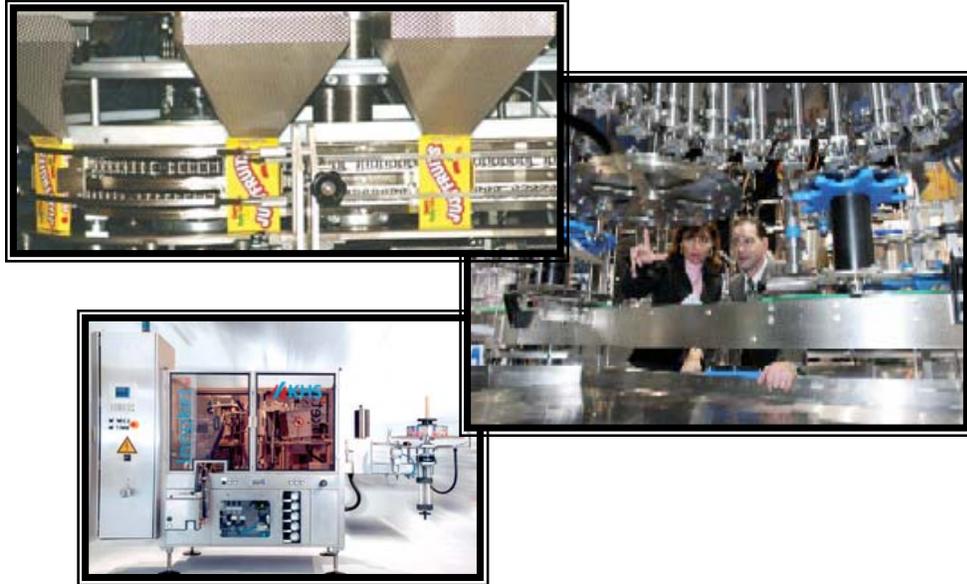


Comprehensive Industry Analysis

Food Processing Industry

Winnebago County, Illinois



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About the Winnebago County Initiative

The *Comprehensive Industry Analysis for the Food Processing Industry in Winnebago County* was commissioned by the County of Winnebago to evaluate the relative strengths and weaknesses of the county's business climate for the food processing industry. The primary goal of this research is to provide the region with tools and information to develop a targeted marketing campaign to attract the food processing industry to the region. It also focuses on identifying and providing recommendations on positioning the region to be competitive in attracting the food processing industry to Winnebago County.

The Comprehensive Industry Analysis and the research provided is just one step the region is taking to bolster business attraction efforts. Resources are being provided for technology that will facilitate the collection and dissemination of available industrial space to site selection consultants and companies. This technology uses satellite imagery and data mapping to inventory available sites and buildings. Another significant movement is toward regionalism. Winnebago County is considering participation in a regional economic coalition that will work collectively to access federal grants and other funding sources for special projects.

Under contract with Winnebago County, the Regional Development Institute at Northern Illinois University has prepared the following analysis and recommendations for the food processing industry in the region. Additional analysis and recommendations will be prepared in 2005 for the plastics manufacturing industry.

Comprehensive Industry Analysis for the Food Processing Industry

The food processing industry analysis for Winnebago County is being conducted in two phases. Phase I includes a national perspective on the industry's background and historical performance along with a review of overall industry trends. Phase I of this analysis will review the economic impacts of industry clusters to regional economic development and industry targets for site selection. Finally, secondary data will be utilized to evaluate the region's existing industry mix in terms of food processing clusters. Recommendations for target industry selection will be provided based on the analysis conducted in Phase I.

Once industries for the food processing industry have been reviewed, evaluated and confirmed by Winnebago County for targets of site selection, Phase II will evaluate strengths and weaknesses of the region relative to the target industries selected. This evaluation will include interviews with food processing companies, an analysis of comparative regions in terms of site selection criteria critical to the food processing industry, and recommendations for building the food processing industry cluster in the region.

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Executive Summary

The food processing industry accounts for 10% of total U.S. manufacturing shipments and is valued at over \$461 billion.¹ Food consumption is relatively stable even through economic downturns making it an attractive industry which can contribute to the economic stability of the region. Even during the most recent recession, growth in the value of food processing industry shipments and total employment continued. Total industry employment in Illinois for 2003 is distributed across subsectors as follows:

	<u>% of Total Employment</u>
Animal food processing	3%
Sugar and confectionary product manufacturing	13%
Meat slaughtering and processing	25%
Dairy product manufacturing	5%
Fruit and vegetable manufacturing	9%
Bakeries and bread product manufacturing	23%
Grain and oilseed	8%
Other food product manufacturing including snack foods	14%

The food processing industry has proven to be relatively stable during economic downturns, due in part to the fact that it is consumer expenditure driven. Another contributing factor to the industry's relative stability is an increase in consumer demand for pre-packaged food products. Even during the most recent recession, the industry continued modest annual growth in value of shipments through 2003.

Annual operating costs are an important evaluation criteria for site selection as well. Operating costs include labor, energy, property, shipping, and land acquisition costs. An evaluation of operating costs between a select group of comparison regions indicates that Winnebago County is a competitive region for food processing. Overall, Winnebago County is the second lowest region in terms of total annual operating costs. Total operating costs in Dubuque County, IA, were -10.2% lower, but other comparative regions were between 3.7% to 13.6% higher than Winnebago County. Winnebago County was second lowest in terms of labor costs but highest in overall energy costs.

Another important site selection criteria for the food processing industry is *location*, both in relation to supply chains and transportation costs. What becomes more significant within northern Illinois are other key site selection factors such as access to highways, labor costs, availability, and quality as well as construction-ready sites and buildings.

¹ U.S. Census Bureau, 2003.

Labor availability and quality continues to be a critical element for all industries. In the food processing industry in general, the quantity and need for highly skilled workers decreases with the integration of technology and automation into processes. Subsequently, labor demands and level of skills needed are impacted.

Winnebago County has many positive attributes for attracting the food processing industry to the region, but also faces some challenges. Capitalizing on the strengths and addressing the weaknesses should be the focus of the region in the future. Regional strengths include location, productivity, value added and overall operating costs. Regional weaknesses include workforce concerns and business climate issues.

Regional Strengths	Regional Weaknesses
<ul style="list-style-type: none">• Location and access• Wastewater treatment• Industry productivity• Industry value added• Low labor stress• Low cost of doing business• Regional focus on addressing manufacturing workforce shortages	<ul style="list-style-type: none">• Transitional manufacturing workforce• Competitive workforce environment• Labor availability in industrial and maintenance mechanics positions• Higher overall wages• Negative business climate• Industrial/residential zoning

In order for Winnebago County to be competitive in business attraction, the region should focus on developing a comprehensive marketing plan that incorporates the results of this analysis into a marketing and promotion piece that can be distributed to companies and site selection consultants. In addition, it is recommended that a business attraction team be assembled to provide leadership, identify targets, build relationships, and manage site selection inquiries. Participation in the I-39 Corridor Association will further assist in site selection activities not only for logistics but also for food processing. Building a more positive business climate for the existing food processing companies will further advance industry attraction efforts. Finally, Winnebago County should continue to provide support and advocacy for initiatives and programs that focus on building the regions workforce, infrastructure and quality of life.

Industry Background and History

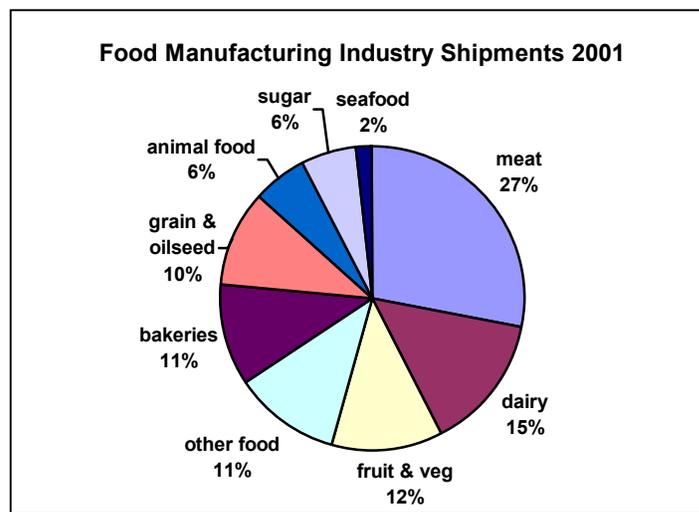
From The U.S. Census Bureau's *2004 Industry Outlook for Processed Foods*

Industry Subsectors

The food processing or food manufacturing industry includes companies that transform livestock and agricultural products into products used for intermediate or final consumption. Processed foods are products in which a raw commodity is transformed into a processed product through the use of materials, labor, equipment, and technology. "Any product that requires some degree of processing is referred to as a processed product regardless of whether the amount of processing is minor, such as canned fruit, or more complex, such as snack foods."² The North American Industrial Classification Systems (NAICS) categorizes the food processing industry into nine subsectors:

- 3111 animal food manufacturing
- 3112 grain and oilseed milling
- 3113 sugar and confectionary product manufacturing
- 3114 fruit and vegetable preserving and specialty food manufacturing
- 3115 dairy product manufacturing
- 3116 meat product manufacturing
- 3117 seafood product preparation and packaging
- 3118 bakeries and tortilla manufacturing
- 3119 other food manufacturing

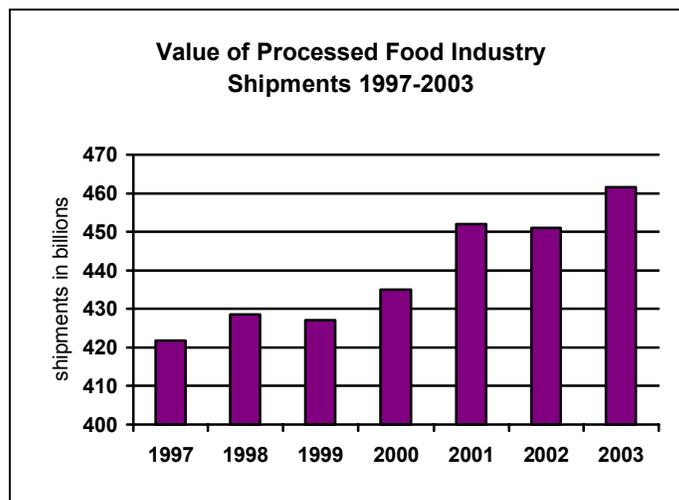
The meat products manufacturing subsector accounts for 27% of total shipments in 2001. The top five food processing subsectors account for over 75% of total industry shipment.



² U.S. Census Bureau. *2004 Industry Outlook for Processed Foods*.

Industry Growth

The food processing industry accounts for 10% of total U.S. manufacturing shipments in 2003, reflecting a trend of continuous relative growth. The value of food processing industry shipments increased from \$421.7 billion in 1997 to \$461.6 billion in 2003. Demand for processed food products is often not significantly impacted by economic downturns than other manufacturing sectors due to the stability of demand for food products. The demand and stability of the market is evidenced in the growth trend during the most recent recession.



Data reflects growth in current dollars, not real dollars and does not account for changes in inflation.
SOURCE: U.S. Census Bureau, 2004 Industry Outlook for Processed Foods.

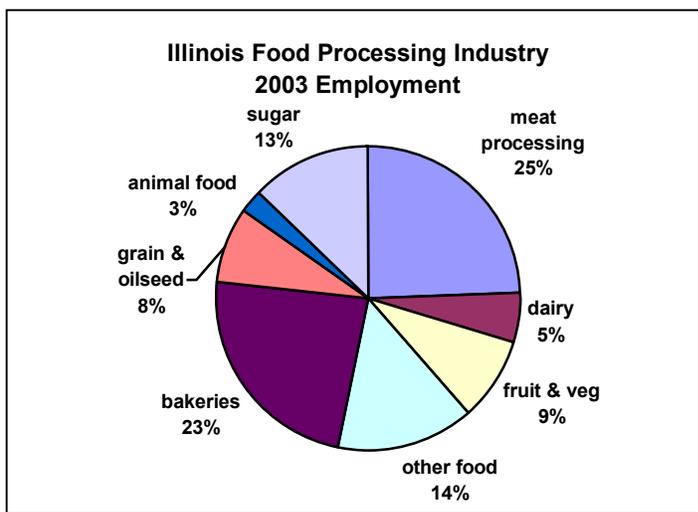
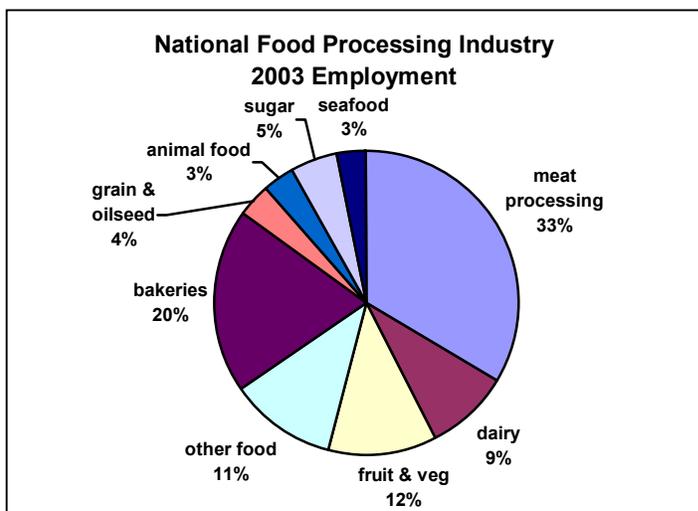
Some of the largest food processing companies in the U.S. in 2003 include:

- Altria – Kraft Foods
- ConAgra
- PepsiCo
- Archer Daniels Midland
- Cargill
- Coca-Cola
- M&M Mars
- Anheuser-Busch
- Tyson Foods
- Dean Foods

Industry Employment

The food processing industry employed more than 1.51 million people in 2003, increasing by just 100,000 over 1990.³ The largest subsector was the meat product manufacturing industry employing 33% of total industry employment in 2003. According to 2003 statistics, Illinois accounted for 5%-10% of national food processing industry employment.

Compared to the nation, the Illinois food processing industry has lower total employment in the meat processing industry but significantly higher employment in sugar and confectionary manufacturing. The sugar and confectionary subsector accounts for 5% of total employment nationally but over 13% of Illinois employment in the industry.



³ U.S. Census Bureau, Bureau of Labor Statistics.

Food Processing Industry Trends

Mergers, Acquisitions, and Consolidations

The industry has been active in mergers, acquisitions, and consolidations. In 2003, 415 mergers and acquisitions were recorded by the Food Institute, down from a high of 813 mergers in 1998. Companies in the food processing industry continue to consolidate, but at a slower pace than in the past. “Mergers or consolidations can be in a company’s interest in order to take advantage of more efficient manufacturing plants and close inefficient ones or quickly expand a firm’s product lines by acquiring market share in a mature domestic market.”⁴

Globalization

The food processing industry is active in exporting and foreign direct investment. In 2003, the industry exported \$26.7 billion and imported \$23.7 billion according to U.S. Department of Commerce statistics. Weakening of the U.S. dollar has contributed to growth in exports of food processing industries. Additionally, companies in the industry have expanded production and distribution into foreign markets.

Technology

While employment has remained relatively stable over the past decade, productivity in the food processing industry has increased. These productivity gains have been achieved through process automation and investments in technology. Labor demands are impacted by this increase in automation and technology as the number of employees required in processing and need for highly skilled workers generally decline.

Industry Clusters

Food processing companies are increasingly interested in locating in close proximity to other food processing companies. Clustering of like companies tends to build a larger and more qualified workforce in the region. “The cluster provides not only a community with the right skill set, but an area where suppliers and equipment service companies are located close by.”⁵ These clusters also promote more specialized training programs in regions with high concentrations of food processing companies. In addition to improvements in workforce quality and availability, other benefits include the following⁶:

⁴ U.S. Farm Sector Overview. Economic Research Service of the U.S. Department of Agriculture (USDA), March 31, 2003.

⁵ Fassl, Joyce. *Site Selection Requires a Delicate Balance*. Food Engineering Magazine, June 1, 2002.

⁶ Porter, Michael. *Clusters and the New Economics of Competition*. Harvard Business Review, Boston, Nov/Dec 1998.

- Better access to suppliers
- Access to specialized information
- Linkages between complementary industries
- Access to institutions and public goods
- Better motivation and measurement of performance
- Foundation building for an innovative culture within the industry
- New business attraction and promotion

Use of Existing Structures

Food processing companies are increasingly interested in existing buildings constructed for food processing operations. Site selection experts estimate that as many as 50% of companies are interested in existing structures. The primary benefit of existing structures over green field projects is a reduction in time between selecting a location and being fully operational. “Companies ideally want to occupy a building that has previously been a food plant because it meets specialized building needs such as high sanitary standards and, as needed, access to an adequate water supply.”⁷

Public Perceptions and Receptivity

In 2003, the meat slaughtering and processing subsector had the highest total industry shipments, total employment, and value added nationwide. Despite being the largest subsector in the food processing industry, meat processing companies face a high degree of negativity in terms of site selection. The stigma associated with meat slaughtering, processing and packaging plants creates difficulty in identifying locations for companies. In other cases, an unreceptive community can contribute to plant closing or relocations. Unlike other food processing subsectors, the meat processing industry faces the most significant challenges when it comes to site selection and location.

Recent and Planned Food Processing Facilities

Company	Industry Subsector	Location	Year	
Wegman’s Food Markets	Meat	Chili, NY	2006	New facility
IFP North America Inc.	Fruit processing	Erie, PA	2006	New facility 300,000 sf
Bell and Evans	Poultry processing	Fredericksburg PA	2005	Expansion/renovation
Triumph Foods LLC	Meat	St. Joseph, MO	2005	New facility

⁷ McDonough, Pam. Illinois Department of Commerce and Community Affairs. As printed in *Site Selection Requires a Delicate Balance*. Food Engineering Magazine, June 1, 2002.

Southwest Cheese Company	Dairy	Clovis, NM	2005	New facility
Sanderson Farms	Poultry	Moultrie, GA	2005	New facility
Dakota Turkey Growers	Poultry	Huron, SD	2005	New facility
Ridgefield Farms	Meat	Huron, SD	2005	New facility
Dreyer's Grand Ice Cream	Dairy	Bakersfield, CA	2005	Expansion/renovation
Ruiz Foods Inc.	Entrees	Dinuba, CA	2005	Expansion/renovation
Albuquerque Tortilla Company	Bakery	Albuquerque, NM	2005	New facility 87,000 sf
J.M. Smucker	Entrée	Scottsville, KY	2004	New facility
ConAgra Refrigerated Foods	Meat, poultry	Quincy, MI	2004	New facility
Richelieu Foods Inc.	Entrees	Washington Courthouse, OH	2004	Expansion/renovation
Ralcorp Holdings Inc.	Bakery	Ogden, UT	2004	Expansion/renovation
Kunzler Company, Inc.	Meat	Tyrone, PA	2004	Expansion/renovation
Plumrose USA	Meat	Council Bluffs, IA	2004	Expansion/renovation
Twin Rivers Foods	Meat, poultry	Atkins, AK	2004	Expansion/renovation
Luigino's, Inc.	Entrees	Jackson, OH	2004	Expansion/renovation
Tyson Foods, Inc.	Meat	Storm Lake, IA	2004	Expansion/renovation
Flowers Foods, Inc.	Bakery	McDonough, GA	2004	Expansion/renovation
National Beef Packing Company	Meat	Dodge City, KS	2004	Expansion/renovation
Overhill Farms Inc,	Entrees	Vernon, CA	2003	Expansion/renovation
Ready Pac Produce	Fresh produce	Franklin Park, IL	2003	Expansion/renovation
Bar-S Foods	Meat	Altus, OK	2003	Expansion/renovation
Krispy Kreme Doughnuts, Inc.	Bakery	Effingham, IL	2002	New facility 187,000 sf
Tanimura and Antle	Other food processing	Plymouth, IN		Expansion/renovation 140,000 sf
Hormel Foods	Meat	Albert Lea, MN		New facility
Indiana Packers	Meat	Delphi, IN		Expansion/renovation
Tyson Foods, Inc.		Springdale, AR		Expansion/renovation

Source: various industry associations, articles and publications

Role of Industry Clusters

Industry clusters are defined by Professor Michael Porter of Harvard University as “geographic concentrations of interconnected companies and institutes in a particular field that encompass not just the industry itself, but key components of that industry’s supply chain.”⁸ Industry clusters are not a new phenomenon and can be found throughout the U.S. Common examples include information technology in the Silicon Valley, textiles in the Carolinas, and the California wine industry. Clusters are also evident in retail, tourism, manufacturing, insurance, and finance.

Industry clusters reflect a change in the role of competition away from a focus on the costs of input, cheap labor, and location toward more productive use of inputs which requires continuous improvement and innovation. “The enduring competitive advantages in a global economy lie increasingly in local things – knowledge, relationships, motivation – that distant rivals cannot match.”⁹ An important advantage of clusters rests not only in a more highly specialized workforce, but also in motivation driven by local competitive forces, a community of specialized information, and industry innovation. Clusters can have a significant impact on competition by increasing productivity, driving the pace of innovation, and stimulating the formation of new businesses in a region.

A key assumption in the forgoing analysis is that economic development initiatives targeting business attraction should focus on existing clusters to develop the supply chain and strengthen the geographic concentration. Strengthening the industry clusters will spur new business development. Phase I of the Winnebago County Food Processing Industry analysis evaluates the region’s existing clusters and identifies potential targets for industry attraction not only in terms of food processing but also in the supply chain for the food processing industry.

⁸ Porter, Michael E. *Clusters and the New Economics of Competition*. Harvard Business Review; Boston; Nov/Dec 1998.

⁹ Ibid.

The State of the Food Processing Industry in the Region

Food Processing Establishments

Winnebago County included nearly 7,000 establishments according to 2002 statistics. However, the food processing industry comprises less than 1% of the total number of establishments in Winnebago County representing just 23 companies and 1,557 jobs. *Bakeries and tortilla manufacturing* is the largest food processing subsector in terms of total establishments, representing 39% of food processing companies in the region. The second largest industry subsector is *other food manufacturing* which includes snack foods and represents 34% of total food processing establishments in the region. While Winnebago County has just one *sugar and confectionary product manufacturing* company, it employs 14% of total food processing employment in the county.

Total Establishments 2002 - Winnebago County	
Total Establishments - All Industries - private, non govt *	6994
Food Processing Industry	23
Animal Food Manufacturing	1
Grain and Oilseed Milling	
Sugar and Confectionery Product Manufacturing	1
Fruit and Vegetable Preserving and Specialty Food Manufacturing	
Dairy Product Manufacturing	3
Animal Slaughtering and Processing	1
Seafood Product Preparation and Packaging	1
Bakeries and Tortilla Manufacturing	9
Other Food Manufacturing	7
Source: County Business Patterns, 2002.	

* excludes non-for-profits, self employed, and government

Employment

Total employment within Winnebago County attributable to the food processing industry is lower than total food processing employment in Illinois and the U.S. In the U.S., the food processing industry accounts for 1.4% of total employment. Illinois has a higher overall percent of employment attributable to the food processing industry at 1.6% representing 80,327 jobs statewide. Total employment in Winnebago County includes over 122,000 jobs. Of those jobs, 1.3% or 1,577 jobs are attributable to the food processing industry.

Total Industry Employment 2004						
Description	United States	Percent	Illinois	Percent	Winnebago	Percent
Total Employment*	109,679,054		4,965,958		122,312	
Food Processing Industry	1,503,999	1.37%	80,327	1.62%	1,577	1.29%
Animal Food Manufacturing	51,309	0.05%	3,715	0.07%	2	0.00%
Grain and Oilseed Milling	58,582	0.05%	7,333	0.15%	2	0.00%
Sugar and Confectionery Product Manufacturing	81,405	0.07%	8,898	0.18%	174	0.14%
Fruit and Vegetable Preserving and Specialty Foo	180,483	0.16%	6,841	0.14%	0	0.00%
Dairy Product Manufacturing	137,371	0.13%	8,081	0.16%	403	0.33%
Animal Slaughtering and Processing	504,844	0.46%	17,825	0.36%	49	0.04%
Seafood Product Preparation and Packaging	43,885	0.04%	2,046	0.04%	192	0.16%
Bakeries and Tortilla Manufacturing	290,327	0.26%	18,472	0.37%	330	0.27%
Other Food Manufacturing	155,793	0.14%	7,116	0.14%	425	0.35%

Datasource: Economy.com. County Detailed Employment & Output Forecast Database

* excludes non-for-profits, self employed, and government

Employment Change and Projected Growth

From 1999 to 2004, while total U.S. employment increased by 0.9%, total U.S. food processing employment declined by 3.0%. Illinois experienced an overall decline in total employment of 3.2% and a decline in food processing employment of 4.9%. Winnebago County, however, experienced total employment losses of 7.0% with significant impacts on total food processing employment. Food processing employment from 1999-2004 declined by 14.3%, representing a loss of over 264 jobs in the industry. While this is a significant loss of jobs in the region, it represents an opportunity for the expansion of existing operations or the introduction of new companies into the region. The surplus of unemployed food processing workers can suppress wage growth in primary food processing occupations as well.

Despite overall industry job losses, two food processing subsectors experience growth during the 1999-2004 period. *Other food manufacturing* which includes snack foods increased employment by 65 jobs representing 17.9% change in employment. *Seafood preparation and packaging* also experienced increases in employment of 50 jobs, representing a 35.3% change in employment.

All other food processing subsectors either experienced no change in employment or employment losses. Food processing employment losses were greatest in *sugar and confectionary product manufacturing* both in terms of total job losses, 220 and percent of total employment losses, 55.8%. The *dairy product manufacturing* subsector experienced the second highest loss of employment losing 124 jobs or 24.0% of total food processing employment.

Employment Change 1999 - 2004						
	US	Percent	IL	Percent	Winnebago	Percent
Total Employment *	999,697	0.9%	-166,525	-3.2%	-9,244	-7.0%
Food Processing Industry	-46,409	-3.0%	-4,140	-4.9%	-264	-14.3%
Animal Food Manufacturing	-3,585	-6.5%	-963	-20.6%	-2	-51.5%
Grain and Oilseed Milling	-6,495	-10.0%	-273	-3.6%	-2	-50.7%
Sugar and Confectionery Product Manufacturing	-13,180	-13.9%	-2,133	-19.3%	-220	-55.8%
Fruit and Vegetable Preserving and Specialty Food Manu	-18,689	-9.4%	-145	-2.1%	0	-
Dairy Product Manufacturing	3,996	3.0%	-335	-4.0%	-127	-24.0%
Animal Slaughtering and Processing	-626	-0.1%	440	2.5%	0	1.0%
Seafood Product Preparation and Packaging	-2,446	-5.3%	187	10.1%	50	35.3%
Bakeries and Tortilla Manufacturing	-13,799	-4.5%	-1,098	-5.6%	-27	-7.6%
Other Food Manufacturing	8,415	5.7%	179	2.6%	65	17.9%

Datasource: Economy.com. County Detailed Employment & Output Forecast Database

* excludes non-for-profits, self employed, and government

Location Quotient (LQ)

Given the significant differences in employment growth by industry subsectors, an analysis of relative importance of these subsectors within the region is warranted. The Employment Location Quotient (LQ) is a ratio of the percent of employment in the region accounted for by an industry subsector divided by the comparable percent of employment in the U.S. Thus, the employment LQ measures the relative importance of the industry subsector in the region compared to the nation. In general, LQs over 1.5 indicate the food processing subsector is significantly more dominant in the region than the U.S. as a whole.

Based on the above criteria, Winnebago County includes a slightly lower presence of food processing than the United States. The regional U.S. employment location coefficient (LQ) for food processing in Winnebago County is .94, where 1.0 equals the same distribution nationwide.

Despite the lower employment LQ for the industry as a whole, two food processing industry subsectors have significantly higher location coefficients. *Sugar and confectionary manufacturing* is the largest food processing subsector based on total employment with an employment location coefficient of 1.92. The percent of regional employment accounted for by the subsector is 1.92 times higher than the nation. It should be noted that, according to 2002 statistics, the region has just one company in this subsector with total employment of 174 jobs. However, there are a number of larger *sugar and confectionary manufacturing* companies in the Northern Illinois region that could be targets for expansion or relocation to Winnebago County.

The second food processing subsector with a significantly higher LQ is *dairy product manufacturing* with an LQ of 2.63. This subsector includes four companies employing over 400 in the region. *Seafood product preparation and packaging* as well as *other food manufacturing* both have significantly higher LQs than the U.S., 3.9 and 2.4 respectively.

Many food processing subsectors have little or no representation in Winnebago County including *animal foods, grain and oilseed, fruits and vegetables, and animal slaughtering and processing*.

Winnebago Industry Employment U.S. Location Quotient 2004	
Food Processing Industry	0.940
Animal Food Manufacturing	0.037
Grain and Oilseed Milling	0.027
Sugar and Confectionery Product Manufacturing	1.921
Fruit and Vegetable Preserving and Specialty Food Manufacturing	0.000
Dairy Product Manufacturing	2.632
Animal Slaughtering and Processing	0.087
Seafood Product Preparation and Packaging	3.918
Bakeries and Tortilla Manufacturing	1.020
Other Food Manufacturing	2.447
Datasource: Economy.com. County Detailed Employment & Output Forecast Data	

Productivity

Productivity is a measure of industry output per worker or, as in this analysis, total food processing industry output in Winnebago County divided by total industry employment. Winnebago County's total food processing industry productivity or output per worker is \$354,262. This productivity is lower than Illinois but higher than the U.S. Nevertheless, productivity by industry subsector indicates that three of the subsectors have significantly higher productivity than Illinois or U.S.

Output per worker for *sugar and confectionary manufacturing* is \$103,033 higher in Winnebago County than Illinois and \$101,094 higher than the U.S. This suggests strong productivity in Winnebago County for *sugar and confectionary manufacturing* companies. Productivity for *animal food manufacturing* and *animal slaughtering and processing* in the region is significantly higher than Illinois and the U.S. For industry subsectors present in the region, no subsector with a presence in Winnebago County is significantly lower than Illinois or U.S.

Output Per Worker 2004			
	United States	Illinois	Winnebago
Total - All Industries	\$ 108,381	\$ 117,742	\$ 101,173
Food Processing Industry	\$ 290,249	\$ 367,050	\$ 354,262
Animal Food Manufacturing	\$ 541,526	\$ 533,102	\$ 575,878
Grain and Oilseed Milling	\$ 786,505	\$ 1,030,616	-
Sugar and Confectionery Product Manufacturing	\$ 291,286	\$ 289,347	\$ 392,380
Fruit and Vegetable Preserving and Specialty Food Manufacturing	\$ 276,957	\$ 278,169	-
Dairy Product Manufacturing	\$ 475,580	\$ 487,783	\$ 456,997
Animal Slaughtering and Processing	\$ 230,446	\$ 307,768	\$ 378,766
Seafood Product Preparation and Packaging	\$ 202,131	\$ 209,588	-
Bakeries and Tortilla Manufacturing	\$ 149,145	\$ 179,379	\$ 177,761
Other Food Manufacturing	\$ 355,679	\$ 325,965	\$ 325,042
Datasource: Implan Pro 2002			

Value Added Per Worker

Value Added is a measure of wealth created by businesses in terms of total of employee compensation, rent, interest, and profit paid or earned and is an important indicator of the region's industrial sector strength. It provides a measure of relative productivity as well as relative value of employees. Value Added Per Worker is calculated by dividing the total employment within an industry by the Value Added for that industry.

Value Added for the food processing industry in Winnebago County is significantly higher than Illinois or U.S. While the value added for all industries in Winnebago County is \$54,591, the value added for food processing is \$140,215. Value added for the food processing industry in Winnebago County is also significantly higher than Illinois or the U.S.

Value Added Per Worker 2004			
	United States	Illinois	Winnebago
Total - All Industries	\$ 63,087	\$ 67,655	\$ 54,591
Food Processing Industry	\$ 76,824	\$ 97,957	\$ 140,215
Animal Food Manufacturing	\$ 88,360	\$ 81,400	\$ 114,854
Grain and Oilseed Milling	\$ 119,604	\$ 134,672	-
Sugar and Confectionery Product Manufacturing	\$ 105,848	\$ 143,898	\$ 211,293
Fruit and Vegetable Preserving and Specialty Food Manufacturing	\$ 94,856	\$ 109,581	-
Dairy Product Manufacturing	\$ 92,289	\$ 102,516	\$ 99,216
Animal Slaughtering and Processing	\$ 39,549	\$ 49,515	\$ 60,063
Seafood Product Preparation and Packaging	\$ 36,115	\$ 43,605	-
Bakeries and Tortilla Manufacturing	\$ 72,449	\$ 90,603	\$ 73,468
Other Food Manufacturing	\$ 123,737	\$ 109,920	\$ 117,176
Datasource: Implan Pro 2002			

Compensation Per Worker

Compensation Per Worker is calculated by taking total wages in the industry and dividing by total employment. Using this ratio, Compensation Per Worker for food processing employment is slightly higher in Winnebago County compared to Illinois and U.S. For the food processing industry as a whole, Compensation Per Worker was \$64,741 in 2004, compared to \$51,960 in Illinois and \$41,586 in the U.S.

A review of Compensation Per Worker based on food processing subsectors indicates just one subsector where Winnebago County wages were lower than Illinois or the U.S.

Bakeries and tortilla manufacturing subsector has significantly higher Compensation Per Worker in Winnebago County, \$30,568, than Illinois, \$46,157, and the US, \$36,528.

Employee Compensation Per Worker 2004			
	United States	Illinois	Winnebago
Total - All Industries	\$ 36,544	\$ 40,000	\$ 35,089
Food Processing Industry	\$ 41,586	\$ 51,960	\$ 64,741
Animal Food Manufacturing	\$ 51,963	\$ 52,608	\$ 61,268
Grain and Oilseed Milling	\$ 62,712	\$ 73,420	-
Sugar and Confectionery Product Manufacturing	\$ 45,134	\$ 56,741	\$ 82,516
Fruit and Vegetable Preserving and Specialty Food Manufacturing	\$ 41,179	\$ 49,155	-
Dairy Product Manufacturing	\$ 51,418	\$ 61,030	\$ 77,664
Animal Slaughtering and Processing	\$ 33,141	\$ 39,952	\$ 50,016
Seafood Product Preparation and Packaging	\$ 35,433	\$ 43,209	-
Bakeries and Tortilla Manufacturing	\$ 36,528	\$ 46,157	\$ 30,568
Other Food Manufacturing	\$ 53,637	\$ 56,537	\$ 51,891
Datasource: Implan Pro 2002			

Based on the preceding analysis and industry trends, both the *dairy product* and *sugar and confectionary manufacturing* subsectors are recommended as target industries for Winnebago County economic development efforts. When targeting industries for site selection, it is important to look beyond just the industry itself and evaluate the supply chain in which the industry is nested. Therefore, a detailed analysis of each subsector's supply chain was conducted to identify other potential industries for targeting that could strengthen the food processing industry in the region.

To determine target industries, research was conducted to analyze supply chain relationships for determining industry clusters and interrelationships. Given the diversity of the food processing industry and subsequent site selection criteria, it is important to analyze the industry's subsectors. This was first conducted for all food processing subsectors based on suppliers to and buyers of each subsector.

In terms supplying food processing industry outputs, each subsector is a significant contributor on both sides of the supply chain. Dairy product manufacturers sell to other dairy product manufacturers, 35.8%. Suppliers to dairy product manufacturers include other dairy product manufacturers, 17.2%.¹⁰ This suggests a great deal of interdependence among like industries and is supportive of regional industry clustering.

Buyers and Suppliers to the Food Processing Industry

Buyers of food processing industry products primarily include other food processing companies as well as farming operations. The *sugar and confectionary manufacturing* industry also includes a number of other food processing subsectors including *diary, bakeries and other food processing companies*.

Dairy product manufacturing is a significant supplier to sugar confectionary and fruits and vegetables manufacturing. Bakeries receive much of their input from grain/oil seed and sugar/confectionary manufacturing companies. Beyond raw materials or inputs, converted paper products and plastics manufacturing are suppliers to the food processing industry primarily for labeling, packaging and containers. Overall, wholesale trade and truck transportation companies are significant suppliers to the food processing industry.

Supply Chain Industries Employment, LQ and Wages 2004			
Description	Employment Change 1999 - 2004	Location Quotient	Wages
Sugar and confectionary product manufacturing	-161	1.921	\$ 81,137
Diary product manufacturing	-94	2.632	\$ 85,032
Bakeries and tortilla manufacturing	-22	1.020	\$ 31,722
Converted paper product manufacturing	-9	0.602	\$ 24,250
Plastics product manufacturing	-117	0.436	\$ 29,089
General Freight Trucking	43	1.017	\$ 31,571
Specialized Freight Trucking	11	0.901	\$ 32,338
Datasource: Economy.com. County Detailed Employment & Output Forecast Database			

¹⁰ See Appendix A for Buyers and Suppliers Tables.

Strengthening the Food Processing Industry in Winnebago County

In order for Winnebago County to develop its food processing industry cluster in the region, efforts should be undertaken to attract not only select subsectors in the industry but also buyers and suppliers in the supply chain. Based on the preceding analysis, the following industries are recommended as targets for business attraction efforts:

Primary

- 3113 Sugar and confectionary product manufacturing
 - 20 Chocolate and confectionary manufacturing from cacao beans
 - 30 Confectionary manufacturing from purchased chocolate
 - 40 Non chocolate confectionary manufacturing
- 3114 Dairy product manufacturing
 - 11 Fluid milk manufacturing
 - 12 Creamery butter manufacturing
 - 13 Cheese manufacturing
 - 14 Dry, condensed, and evaporated dairy product manufacturing
 - 15 Ice cream and frozen dessert manufacturing

Secondary

- 3118 Bakeries and tortilla manufacturing
- 3222 Converted paper product manufacturing
 - 1001 paperboard containers, boxes, corrugated paperboard manufacturing
- 3261 Plastics product manufacturing
 - 28 Plastics containers
- 42 Wholesale trade
- 484 Truck transportation

Phase II of this industry analysis includes a detailed site selection evaluation based on the needs of industries identified along with recommendations to Winnebago County on economic development efforts and target companies.

Site Selection Criteria

Existing regional food processing companies provided a first-hand account of the state of the business climate for the food processing industry in Winnebago County.

Approximately 43% of the region's food processing employers were contacted to gauge their perceptions of the region's business climate and workforce characteristics.

Employers in Winnebago County and southern Wisconsin participated in the interviews conducted in the summer and fall of 2005. Employers were asked to respond to questions focusing on their perceptions of Winnebago County as a place to do business and ratings of the regions strengths and weaknesses based on site selection criteria.

Site selection professionals utilize a wide variety of data and information to analyze various potential locations. Employers were asked to rate Winnebago County based on these key criteria and other significant factors used in site selection activities. Information on labor quality was also collected.

Below is a summary of both the importance of site selection criteria and employer ratings of Winnebago County. While the summary indicates the county has more strengths than weaknesses in terms of important food processing industry criteria, there are areas for improvement such as improved public perceptions and local government and regulatory support. Detailed analysis of these site selection criteria is the focus of the following section of this report.

Location

The most important site selection criteria for the food processing industry is location in terms of proximity, access, and transportation costs. Proximity to supply chain partners is crucial for operations. For the food processing industry, some of the most important supply chain partners are the distribution centers that warehouse and distribute products to markets as well as container manufacturing companies that provide paper and plastic containers for food products.

Another key component of location is access to interstates and other major highway transportation corridors. Of growing importance to food processing industry is proximity to multi-modal transportation infrastructure particularly in the light of rising fuel costs. Location to supply chain partners and access to transportation are both critical for their impact on transportation costs. The farther a company is from both the supply and

demand side of its operations, the higher the transportation costs.¹¹ And since higher transportation costs increase labor costs, the most significant consideration for any company is location.

Workforce Availability and Cost

The second most important site selection criteria for the food processing industry is workforce availability and cost. The availability of an appropriately skilled workforce at a reasonable cost is one of the key site selection criteria. Recent manufacturing closures and layoffs are contributing to increased availability of workers and may have an impact on suppressing regional wages. Nevertheless, employers report that the presence of dominant employers in the region impacts their ability to attract a quality workforce, particularly in machinist and maintenance occupations.

Another aspect of the food processing industry, which is changing the need for a high skilled workforce is automation. Over the past few decades increased technology and automation has reduced the number of workers required to process and package products. However, the increased use of machines to process and package food products results in greater reliance on *industrial mechanics* and *machinery maintenance* occupations. Regional food processing employers report difficulty in finding quality workers in both occupations.

Wastewater Treatment

Another important site selection criteria relatively unique to the food processing industry is wastewater treatment. During the production of food products, waste water run off from both the production process and equipment sanitation requires treatment before it can be returned to public water systems. While many food processing companies operate in-house wastewater treatment systems, the availability of water sources both for waste water treatment and return of sanitized water is very important. The Rock River provides an excellent source for wastewater treatment and return.

¹¹ Transportation costs include fuel, labor and other costs required to moving goods from one location to another. While toll costs are highly visible transportation costs, their overall impact is marginal on total transportation costs.

Access to Air Service

For select operations, access to air service is critical. In addition to close proximity (within 1.5 hours) to Chicago's O'Hare Airport, Winnebago County has its own airport service at the Northwest Chicago land Regional Airport at Rockford (RFD), which is a valuable asset to regional companies. RFD has the distinction of being the nation's 23rd largest air cargo airport. RFD offers many benefits to cargo operations including excellent facilities, a congestion-free airspace, and proximity to a major intermodal transportation hub. In addition, RFD is a U.S. Customs Port of Entry and home to Foreign Trade Zone 176.

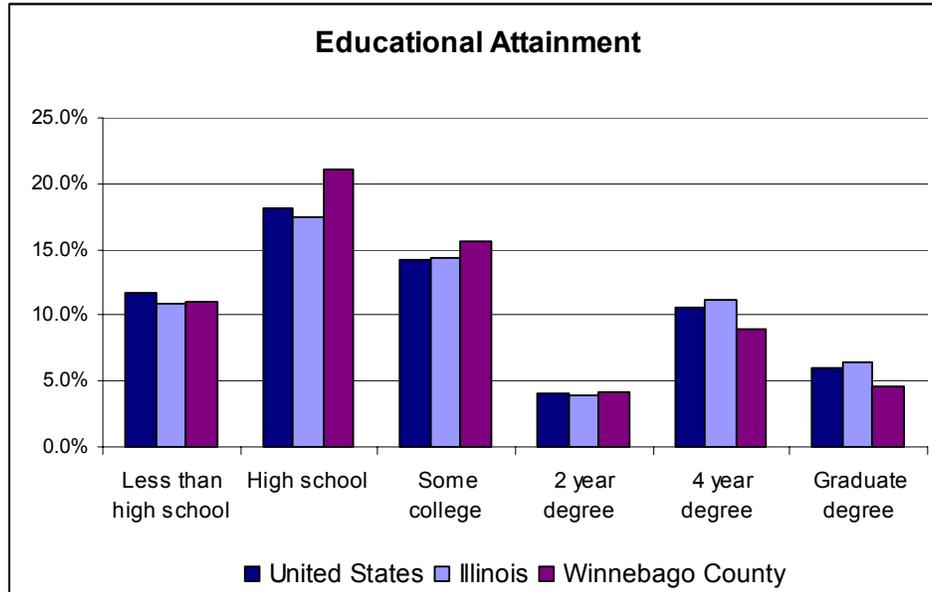
Rockford's UPS Air Hub was constructed at RFD in 1994 as a key component in the global UPS network. RFD is home to the second largest air hub sorting facility in United Parcel Service's system. The Rockford UPS facility serves over 200 countries and territories and sorts an average 130,000 to 170,000 packages nightly. In addition, Airborne Express and BAX Global have smaller facilities at RFD.

Quality of Life

Quality of life is important, not necessarily by itself, but for its impact on labor availability and quality. A region with higher quality of life factors will be better able to attract and maintain a high quality workforce. Key quality of life factors include access to higher education, overall educational attainment, cost of living, and housing affordability.

Access to higher education in a region is important for site selection as it implies a higher quality labor pool with better employment skills and work ethic. The county includes both two-year and four-year degree granting institutions, Rock Valley College and Rockford College respectively. In addition, Northern Illinois University whose main campus is located in nearby DeKalb, also offers a secondary campus at NIU Rockford which provide bachelor's degree completion programs and graduate courses as well as partnerships with other four-year universities that supplement access to four-year degree programs.

In terms of educational attainment, Winnebago County has a lower percent of residents age 25 or older with a four-year or graduate level degree than the state or U.S. A greater percent of the county's population has a high school diploma or some college courses.



Housing affordability is another important component for evaluating potential site locations because of its impact on cost of living and wage requirements. Winnebago County’s median rent is \$434, which is \$109 lower than the state and \$104 lower than the U.S. Median housing value is also significantly lower than Illinois and the U.S. The median housing value in Winnebago County is \$94,690, which is \$36,038 lower than the state and \$20,866 lower than the U.S.

Housing			
	United States	Illinois	Winnebago County
Housing, Median Rent (\$)	\$ 538	\$ 543	\$ 434
Housing, Median Value Owner Households (\$)	\$115,826	\$130,728	\$ 94,690
<i>Source: Easy Analytic Software, Inc. (EASI)</i>			

Labor Market Analysis

Total 2004 employment in Winnebago County included over 122,000 jobs. The food processing industry accounted for 1.3% of total employment or 1,577 jobs. Winnebago County experienced a 7% loss in employment from 1999 to 2004. However, the food processing industry experienced more dramatic job losses. Overall the food processing industry in Winnebago County lost 14.3% of employment. Nevertheless, two food processing subsectors experienced growth during the 1999 to 2004 period. *Other food manufacturing* which includes snack foods increased employment by 65 jobs representing a 17.9% increase in employment. The *seafood preparation and packaging* subsector also experienced an increase in employment of 50 jobs representing a 35.3% change in employment.

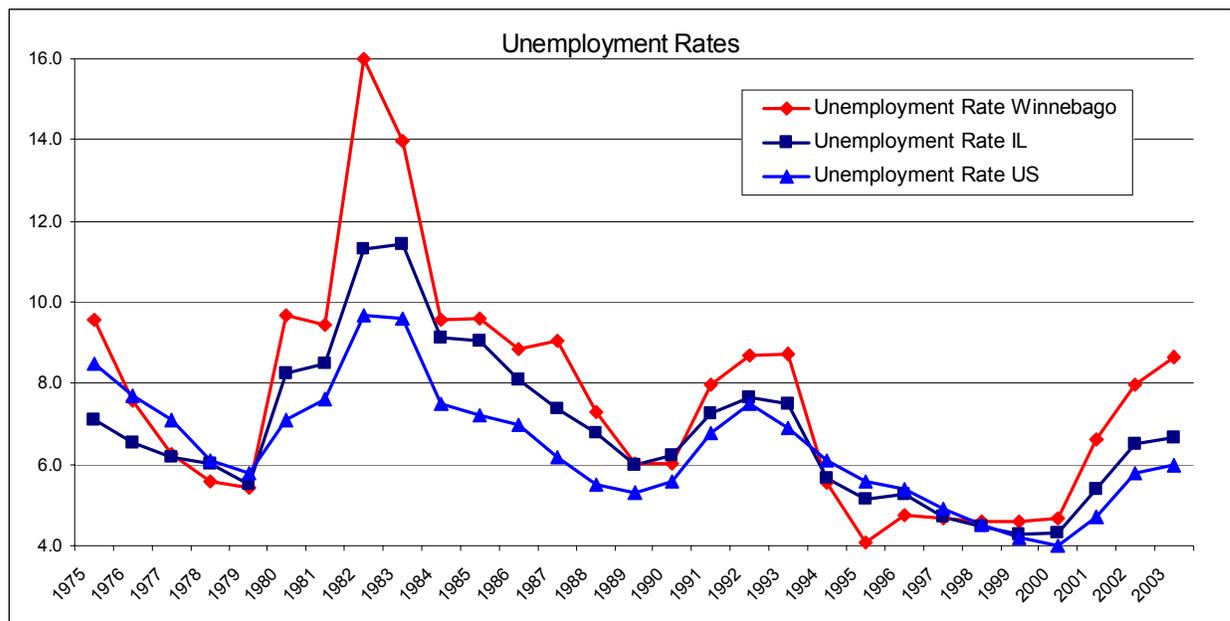
All other food processing subsectors either experienced no change in employment or employment losses. Food processing employment losses were greatest in *sugar and confectionary product manufacturing* both in terms of total job losses, 220 and percent of total employment losses, 55.8%. This represents a layoff of the regions one *sugar and confectionary* manufacturing company who has increased employment to approximately 700 since 2002. The *dairy product manufacturing* subsector experienced the second highest loss of employment losing 124 jobs or 24.0% of total food processing employment.

Total Industry Employment 2004		
Description	Total Employment	Employment Change 1999-2004
Total Employment	122,312	-7.0%
Food Processing Industry	1,577	-14.3%
Animal Food Manufacturing	2	-51.5%
Grain and Oilseed Milling	2	-50.7%
Sugar and Confectionery Product Manufacturing	174	-55.8%
Fruit and Vegetable Preserving and Specialty Foo	0	-
Dairy Product Manufacturing	403	-24.0%
Animal Slaughtering and Processing	49	1.0%
Seafood Product Preparation and Packaging	192	35.3%
Bakeries and Tortilla Manufacturing	330	-7.6%
Other Food Manufacturing	425	17.9%
Datasource: Economy.com. County Detailed Employment & Output Forecast I		

Unemployment Rates

A historical review of unemployment rates in the region shows that during only a few of the past 30 years have Winnebago County's rates been lower than Illinois or the U.S. More recently, Winnebago County's unemployment rates from 1994 to 1996 were actually lower than the state or nation. However, after 1996, unemployment rates in Winnebago County began rising as Illinois and U.S. rates dropped. Unemployment rates in 2003 were at a 10 year high at just under 9%.

A significant contributing factor to the climbing unemployment rates is the continued decline of manufacturing employment in the county. Plant closing, downsizing, and relocations have been driving up the number of displaced workers in the region. In some cases, this displaced workforce accepts employment that does not match with its skills. Underemployed workers include those currently employed in an occupation which is not considered their primary field and those who would be interested in alternative job opportunities that may become available.



* Illinois Department of Employment Security statistics at the county level is currently unavailable due to calculation problems. The anticipated release date for county level unemployment statistics is June 30, 2005.

Workforce Availability and Labor Stress

Interviews with existing food processing employers indicate that, in general, labor availability in the region is good. According to employers, finding workers to fill lower skilled positions such as packagers is relatively easy, but those workers are more difficult to retain. The difficulty in retention of lower skilled positions is not unique to the food processing industry in the region.

Despite relatively high unemployment in recent years and the loss of several manufacturing companies in the region, food processing employers still report workforce availability issues within several occupations. Machine operators and machinery maintenance mechanics are reportedly difficult to find within the existing labor pool. This is due in large part to other more dominant industries such as Chrysler in Belvidere which has recently added new assembly lines. Food processing employers are experiencing competition from these dominant employers, which provide workers with the perception of greater stability and, in many cases, higher wage and benefit packages.

Another key element important in site selection decisions is the extent to which the potential labor market region is experiencing labor stress within a specific industry. A region with an overload of food processing operations is likely to experience significant labor stress for the critical occupations as workers are more likely to transition from one company to another. The decline of manufacturing establishments and employment suggests labor stress should not be problematic for the region. However, the impact of dominant employers on smaller operations will continue to be a challenge.

Occupational Growth

The largest clusters of occupations specific to the food processing industry within the region are *bakers* (210), *butchers/meat cutters* (165) and *food batch makers* (113). These three occupations account for 63% of total employment occupations specific to the food processing industry. Occupations specific to the food processing industry are not expected to increase significantly from job growth in the future, but more from job turnovers or replacements.

Other general manufacturing occupations important to the food processing industry are *machinists and maintenance workers*. *Machinist* occupations are expected to experience 31 average annual job openings from 2000 to 2012. Of those occupations, all are attributable to job turnover or replacements. *Machinery maintenance* positions collectively are expected to experience 49 average annual job openings from 2000 to 2012, of which 33% are from job growth versus job turnover or replacement.

Standard Occupational Classification (SOC) Title	Base Year Employment	Employment Change 2002 - 2012	Average Annual Job Openings Due To		
	2002	Percent	Growth	Replacements	Total Annual
Total, All Occupations	148,623	7.07	1,051	3,500	4,551
Food processing occupations					
Bakers	210	7.82	2	5	7
Butchers and Meat Cutters	165	-2.03	0	4	4
Meat, Poultry and Fish Cutters and Trimmers	79	14.27	1	2	3
Slaughterers and Meat Packers	89	19.00	2	2	4
Food Roast/Bake Machine Operators & Tenders	18	7.50	0	1	1
Food Batchmakers	113	8.07	1	3	4
Food Cooking Machine Operators and Tenders	34	7.67	0	1	1
Food Processing Workers, AO	63	10.85	1	1	2
Other general manufacturing occupations					
Machinists	1,452	-2.36	-3	34	31
Industrial Machinery Mechanics	211	10.56	2	4	6
General Maintenance and Repair Workers	1,365	10.48	14	26	40

Occupational Wages

Wages in Winnebago County for critical occupations to the food processing industry are not significantly different than wages statewide. While *industrial machinery mechanics* are paid 5.3% higher wages in Winnebago County, *maintenance workers* are paid between 1.5% and 12% less than similar positions statewide. The *machinery mechanics and maintenance* cluster is representative of all manufacturing occupations and not the food processing industry exclusively.

Most of the occupations unique to the food processing industry are receiving comparable wages statewide with the exception of *food batch makers*. *Food batch maker* occupations in Winnebago County are receiving wages up to 33% higher than statewide.

Occupational Title	Winnebago County		Illinois	
	Median Wage		Median Wage	
	Hourly	Annual	Hourly	Annual
Industrial Machinery Mechanics	\$20.51	\$42,671	\$19.43	\$40,406
Maintenance and Repair Workers, General	\$15.48	\$32,194	\$17.42	\$36,234
Maintenance Workers, Machinery	\$18.09	\$37,619	\$18.36	\$38,194
First-Line Supervisors/Managers of Production and Operating Workers	\$21.50	\$44,711	\$21.88	\$45,508
Bakers	\$9.38	\$19,510	\$9.96	\$20,717
Butchers and Meat Cutters	\$11.62	\$24,172	\$11.34	\$23,583
Food Batchmakers	\$16.87	\$35,099	\$11.33	\$23,572
Food Cooking Machine Operators and Tenders	\$12.81	\$26,660	\$12.70	\$26,417
Machinists	\$15.70	\$32,659	\$15.82	\$32,896

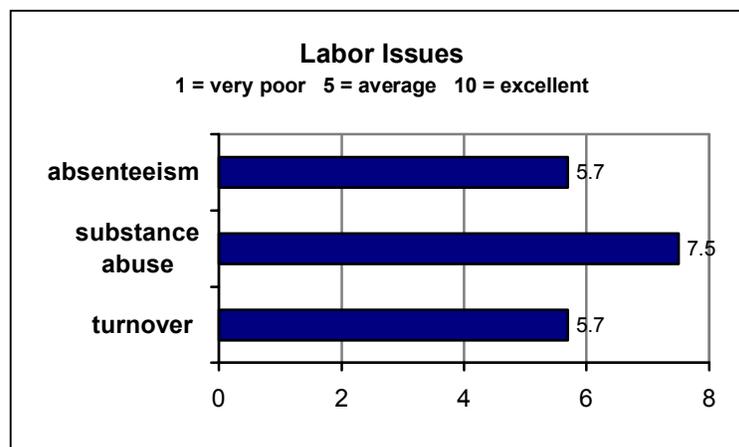
Source: Illinois Department of Employment Security, OES Statistic, 2000

Labor Quality

Employer interviews were conducted to ascertain the quality of the region’s food processing workforce. Labor quality was measured based on two components. The first component of labor quality is labor issues including absenteeism, turnover, and substance abuse. The second component of labor quality includes labor characteristics such as attitudes, trainability, and productivity. Labor issues and characteristics were rated by area employers based on a 1 to 10 point scale (1 = poor; 10 = excellent). In addition to measuring labor quality characteristics, the interviews identified significant labor availability trends for the area.

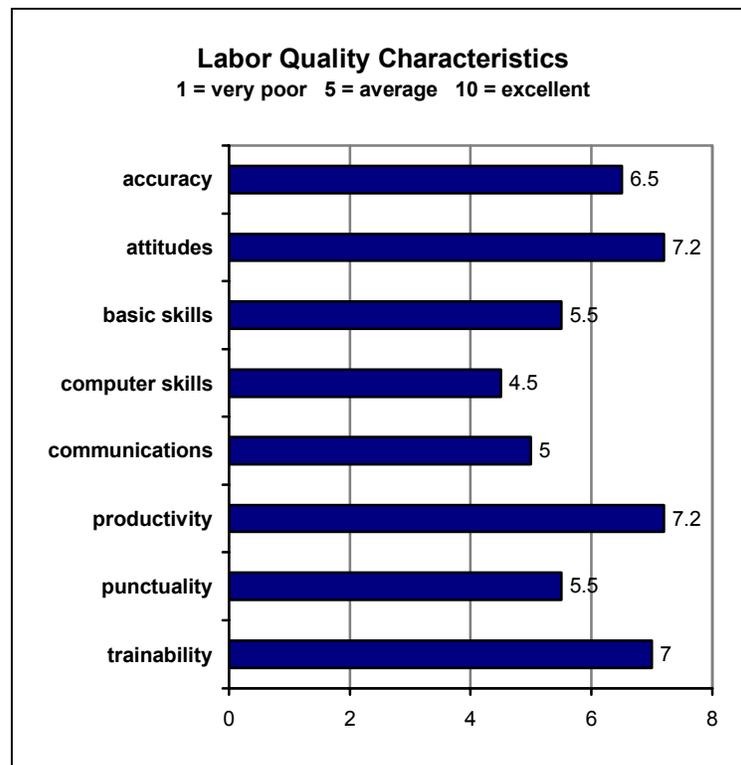
In terms of labor issues, regional employers rated the existing workforce “Above Average” with a minimum score of 5.7. Employers report fewer issues of substance abuse in the workplace but face challenges with absenteeism and turnover. Many employers attribute the higher incident of absenteeism and turnover to an aging and retiring workforce being replaced by younger workers. Turnover is notably more prevalent in lower skilled positions such as packagers. Employers report ease in filling these positions, but difficulty in retaining the workers.

Comparisons with other regional labor market studies conducted in the past several years shows that Winnebago County ratings of labor issues are slightly more pessimistic than in other Illinois regions. Employers report increasing turnover and absenteeism among the workforce. Despite the high unemployment rates and overall job losses in the region during the last few years, the increased competition for jobs in the manufacturing industry in general has not had as positive an impact on the food processing industry as it has in other manufacturing industries in the region.



Source: Winnebago County Food Processing Employer Interviews, 2005

Employers were asked to rate their workforce based on a variety of labor quality characteristics. The workforce was rated “Good” in attitudes, productivity, and trainability. Characteristics rated “Above Average” include accuracy, basic skills, and punctuality. However, employers rated the workforce “Average” in communications and computer skills. Overall labor quality characteristics for the food processing industry were lower than other industries in the region.



Source: Winnebago County Food Processing Employer Interviews, 2005

Other Workforce Issues

A common theme among employers in the region is the aging manufacturing workforce. As the workforce ages, it is being filled with a younger workforce which is perceived to contribute to increases in turnover and absenteeism. Perceptions of regional employers are that the younger workforce does not have the same work ethic as the older workforce. However, the younger workforce is perceived to be more flexible and adaptable as well as have a higher level of computer and technology skills than the older workforce.

Cost of Doing Business

Economic Impact of Food Processing Industry Subsectors

As part of this study, an economic impact analysis was conducted for various subsectors of the food processing industry on the Winnebago County economy. The analysis was completed using the ImplanPro input/output model developed by the Implan Group. The model is unique in that the input/output coefficients are based on county specific patterns.

The analysis was completed based on a food processing facility which employs 300 workers and is based on Winnebago County statistics for 2002. The analysis was completed separately for subsectors with a reportable presence in the region including:

- Fluid milk products
- Non chocolate confectionary foods
- Bakery and bread
- Snack foods
- Animal food processing

The analysis provides annual estimates for each food processing subsector in value added, output, compensation, employment, and sales tax generation for Winnebago County. Direct impacts are those estimates that result from the operation of the 300 person facility. Indirect or induced impacts reflect the secondary effects in the region of the operation of that facility. For example, as a result of the 300 person food processing company, the Winnebago County economy will experience increased economic activity in other industries such as retail, food services, and health services.

Value Added is a measure of wealth created by businesses in terms of total of employee compensation, rent, interest, and profit paid or earned and is an important indicator of the region's industrial sector strength. It provides a measure of relative productivity as well as relative value of employees. For the food processing subsectors identified above, the operation of a facility with 300 employees generates direct value added to the region of \$12.1 to \$63.4 million and indirect Value Added of an additional \$6.9 to \$38.7 million.

Output refers to the total economic value of an industry's product and is a measure of overall productivity. Direct output for a food processing facility with 300 employees produces from \$25 to \$172.3 million in output annually.

Annual direct compensation for a food processing facility ranges from \$6.9 to \$24.8 million and creates from 126 to 690 jobs in other industries in the region. The operation

of a food processing facility will add from \$76,000 to \$480,000 in sales tax revenue to the region annually.

All of the food processing subsectors in Winnebago County generate substantial value added, output, and employee compensation in the region. The *non chocolate confectionary* subsector generates the highest value added while the *animal food processing* subsector generates the highest output, indirect employment, and sales tax. *Fluid milk* and *snack foods* also generate significant compensation, indirect employment and sales tax for the region’s economy. The *bakery and bread* subsector generates the lowest overall value to Winnebago County.

Food Processing Sub Sector	Value Added		Output		Compensation		Employment		Sales Tax
	Direct	Indirect	Direct	Indirect	Direct	Indirect	Direct	Indirect	
	in millions							total jobs	in thousands
fluid milk	30.0	29.5	136.2	57.3	23.5	16.1	300	550	414,000
non chocolate	63.4	28.2	117.8	47.2	24.8	15.3	300	499	379,000
bakery & bread	12.1	6.9	25.0	11.5	6.9	3.7	300	126	76,000
snack foods	41.2	28.3	101.9	47.2	14.0	15.6	300	529	364,000
animal foods	35.1	38.7	172.3	69.7	17.4	21.8	300	690	480,000

Source: Implan Pro 2002

Comparative Regional Analysis

An important objective of this study is to evaluate the cost of doing business for food processing companies in Winnebago County compared to other select regions. Regions were selected for comparison based on comparable locations and proximity to Winnebago County. The comparative regions selected for this analysis include:

Chicago, IL	St. Paul, MN
Dubuque, IA	St. Louis, MO
Kansas City, MO	Milwaukee, WI
Grand Rapids, MI	

A comparison of these regions with Winnebago County was done based on number of food processing companies, location coefficient, employment, and employment change. Finally, a detailed operating cost comparison was conducted for these regions by the Boyd Company, Inc.¹² and includes more detailed comparisons of labor, energy, property, and shipping costs.

¹² The Boyd Company, Inc. is a location consultant specializing in comparative business cost analysis utilizing proprietary operating cost data bank. This study utilized the Boyd Company Inc.’s report *A Comparative Operating Cost Analysis for Confectionary Manufacturing* for some of the comparative regions and contracted with the company for supplemental regions not included in the original report.

Establishments and Location Coefficients

The United States includes over 25,000 food processing establishments according to 2002 statistics. The largest food processing subsector is *bakeries and tortilla products* which accounts for 41% of the industry. The comparison regions vary significantly in terms of both number of establishments and total employment. Winnebago County, Dubuque County, and Grand Rapids are the smallest regions with less than 30 food processing establishments each. Chicago is the largest region with over 600 food processing establishments.

Establishments 2002									
	Winnebago County, IL	Chicago IL	Dubuque County, IA	Grand Rapids, MI	Kansas City, MO	Milwaukee, WI	St. Paul, MN	St. Louis, MO	United States
Total Establishments	6,994	127,337	2,631	15,821	3,036	21,153	13,940	29,974	7,200,770
Food Processing	23	606	9	56	28	102	36	63	25,698
animal foods	1	8	1		5		2		
grain and oilseed		12		3	3	3			832
sugar confectionary	1	47	1	4		15	6	4	1,715
fruits and vegetable		50	1	3	2	4	2	4	1,721
dairy products	3	18	1	4			2	4	
meat products	1	85	3	6	7	13	2	4	3,805
seafood products	1	5		1					754
bakeries and tortilla	9	298	2	25	8	47	16	40	10,534
other food	7	83		10	3	20	6	7	2,857

Source: US Census, County Business Patterns, 2002

Employment Location Coefficient

The Employment Location Quotient (LQ) is a ratio of the percent of employment in the region accounted for by an industry subsector divided by the comparable percent of employment in the U.S. Thus, the employment LQ measures the relative importance of the industry subsector in the region compared to the nation. In general, LQs over 1.5 indicate the food processing subsector is significantly more dominant in the region than the U.S. as a whole.

Kansas City, MO, has an employment LQ of 2.31, which indicates a strong food processing industry cluster. The food processing subsectors with significant presence in Kansas City, MO, include *animal food processing* and *bakeries and tortilla*

manufacturing. St Paul, MN, and St. Louis, MO, both have LQs of less than .54 indicating fewer food processing industries in the region when compared to the U.S.

Other regions, including Winnebago County have LQs nearly 1.0, which indicates an industry mix similar to the U.S. as a whole. Winnebago County's strongest food processing subsector is *sugar and confectionary* product manufacturing with an LQ of 7.87. Chicago, IL, also has a strong *sugar and confectionary* subsector presence with an LQ of 4.42. This indicates a significant *sugar and confectionary* cluster throughout the northern Illinois region which presents an opportunity for further cluster development.

Another predominant subsector in Winnebago County is dairy product manufacturing with an LQ of 2.95. The only other comparison region with a significant presence of dairy product manufacturing is Dubuque County, IA. Given the regions' proximity to the raw materials for dairy product manufacturing, this subsector may also present an opportunity for cluster development in the region.

United States Location Quotient (LQ) 2002								
	Winnebago County, IL	Chicago IL	Dubuque County, IA	Kansas City, MO	Grand Rapids, MI	St. Paul, MN	St. Louis, MO	Milwaukee, WI
Food Processing	0.91	1.26	0.84	2.31	0.92	0.54	0.33	1.18
animal foods	0.27	0.13	1.72	7.03		0.27		
grain and oilseed		1.03		1.64	1.40			1.00
sugar confectionary	7.87	4.42	1.09		0.81	0.94	1.17	1.64
fruits and vegetable		1.10	0.03	0.37	0.17	0.09	0.19	0.45
dairy products	1.92	0.14	2.95		1.12	0.85	0.42	
meat products	0.00	0.78	0.10	2.12	0.48	0.03	0.01	1.52
seafood products	0.05	0.24			0.13			
bakeries and tortilla	0.79	2.01	2.13	5.22	2.28	1.14	0.94	1.31
other food	1.19	1.56		1.99	0.78	1.48	0.18	2.04

Source: US Census. County Business Patterns, 2002.

Total Employment and Employment Change

Employment statistics for 1998 – 2002 were evaluated for all regions to gauge shifts in trends at the industry and subsector levels. All of the comparison regions experienced total employment losses with the exception of Grand Rapids, MI, which increased total employment by 1.3%. While the total employment losses were relatively small, ranging from -.4% to 6.7%, food processing industry employment losses were more significant.

Food processing employment losses were generally between 10% to 20% with the exception of Dubuque County IA, which experienced employment losses in the food processing industry of 71%. While the percent of employment losses is very high, the total number of employment is relatively low. Dubuque food processing employment in 1998 was 1,797, which dropped to 512 in 2002, for a total employment loss of 1,285 jobs. These losses were primarily in *meat processing* and *sugar and confectionary* product manufacturing.

Employment, 2002								
	Winnebago County, IL	Chicago IL	Dubuque County, IA	Kansas City, MO	Grand Rapids, MI	St. Paul, MN	St. Louis, MO	Milwaukee, WI
Total Employment	126,354	2,353,456	47,196	59,201	328,391	299,412	570,586	458,394
Food Processing	1,473	38,175	512	1,755	3,889	2,068	2,442	6,924
animal foods	14	132	34	174		34		
grain and oilseed		1,171		47	223			222
sugar confectionary	718	7,508	37		191	203	482	542
fruits and vegetable		3,662	2	31	78	39	155	290
dairy products	279	385	160		423	292	275	
meat products	2	8,064	21	553	691	34	13	3,078
seafood products	2	197			15			
bakeries and tortilla	257	12,172	258	793	1,925	874	1,383	1,546
other food	201	4,884		157	343	592	134	1,246

Source: US Census. County Business Patterns, 2002.

Employment Change 1998 - 2002								
	Winnebago County, IL	Chicago IL	Dubuque County, IA	Kansas City, MO	Grand Rapids, MI	St. Paul, MN	St. Louis, MO	Milwaukee, WI
Total Employment Change	-4.3%	-3.8%	-0.8%	-6.7%	1.3%	-0.4%	-2.0%	-3.7%
Food Processing	-10.2%	-13.2%	-71.5%	-12.4%	-7.8%	-19.8%	-16.9%	21.7%
animal foods	-70.2%	-59.5%	-5.6%	-21.6%		-44.3%		
grain and oilseed		-10.5%		-25.4%	6.7%			11.0%
sugar confectionary	-2.7%	-2.5%	-39.3%		78.5%	6.3%	92.8%	97.1%
fruits and vegetable		-22.0%		55.0%	-60.0%	30.0%	-14.8%	113.2%
dairy products	-14.2%	-52.5%	-3.0%		1.4%	-8.5%	-14.1%	
meat products		-8.3%	-98.3%	-13.1%	-20.8%	-19.0%	-92.2%	33.2%
seafood products		-9.6%						
bakeries and tortilla	-8.5%	-19.4%	-14.9%	8.3%	0.3%	-37.3%	-20.4%	-6.5%
other food	-19.3%	-2.5%		-37.5%	-31.1%	12.1%	-52.3%	13.4%

Source: US Census. County Business Patterns, 2002.

Operating Cost Comparison

A comparative operating cost analysis was compiled by the Boyd Company Inc. based on the regions selected for this study.¹³ This analysis was based on a 175,000 square foot sugar and confectionary product manufacturing facility employing 300 nonexempt workers and includes all major geographically-variable operating costs except start up and relocation. A detailed table compiled from the two Boyd Company, Inc. reports is included in Appendix C.

A summary analysis was prepared from the Boyd reports based on four primary cost categories: labor, energy, property, and shipping costs. Using Winnebago County and the base cost, the percent differential in cost compared to Winnebago County was calculated. Overall, Winnebago County was the second lowest region in terms of total annual operating costs. Total operating costs for Dubuque County, IA, were -10.2% lower than in Winnebago County. All other regions had higher total operating costs than Winnebago County ranging between 3.7% and 13.6% higher. Winnebago County was second lowest in terms of labor costs but highest in overall energy costs. Winnebago County was in the middle in terms of costs for both property and shipping. The size of the comparison regions in terms of total establishments and total employment does not appear to have a significant impact on operating costs for the food processing industry.

Comparative Operating Cost Differential – Winnebago County is Base Location							
	Chicago, IL	Dubuque County, IA	Grand Rapids, MI	Kansas City, MO	Milwaukee WI	Minneapolis St. Paul, MN	St. Louis, MO
Labor Costs	6.3%	-7.7%	7.3%	17.7%	11.5%	19.7%	19.4%
Energy Costs	-1.8%	-13.5%	-17.6%	-17.7%	-15.6%	-18.0%	-19.0%
Property Costs	3.8%	-18.3%	-21.1%	9.0%	0.0%	-3.4%	-24.8%
Shipping Costs	-0.8%	-16.0%	7.4%	-16.1%	3.3%	9.2%	-0.1%
Total Annual Geographically-Variable Operating Costs	4.3%	-10.2%	3.7%	8.4%	7.3%	13.6%	10.4%

Source: Boyd & Company BizCosts Report

¹³ The Boyd Company, Inc. *Comparative Operating Cost Analysis for Confectionary Manufacturing* plus NIU Addendum, BizCosts, (2005).

Conclusions and Recommendations

The food processing industry has proven to be relatively stable during economic downturns, due in part to the fact that it is consumer expenditure driven. Another contributing factor to the industry's relative stability is an increase in consumer demand for pre-packaged food products. Even during the most recent recession, the industry continued modest annual growth in value of shipments through 2003.

The increased use of technology and automation to further productivity growth in the industry leads to lower demands for labor and level of skills. New investments in food processing plants generally include increases use of technology and automation in processes which decreases both the number of jobs needed and level of worker skills. This, in turn, can lead to lower overall wages. However, the combined effect of technology and automation generates an increase in productivity or output per worker for the industry as a whole.

Winnebago County is inherently well positioned within the broader Midwest region in terms of both access to major markets and transportation infrastructure. However, location alone is not sufficient for successful business attraction efforts. The region must be more proactive in efforts to target and attract business to the county through more comprehensive development activities such as partnerships and relationship development, marketing programs, and advocacy for growing the regions' infrastructure and higher education opportunities.

Over the past decade Winnebago County has developed and improved characteristics that can provide a regional competitiveness for business attraction. These characteristics include the improvement and expansion of the Northwest Chicago land Regional Airport at Rockford, the expansion of the railport hub in nearby Rochelle, the proposed expansion of broadband telecommunications infrastructure through NIUNET and ROCKNET, and further development of higher education opportunities. Yet the region has been experiencing significant losses, not only in employment, but also in business closures and relocations. These events contribute to a higher unemployed and underemployed workforce, which can also be positive in terms of labor availability. Based on the preceding analysis, this section includes recommendations for actions and initiatives that could expand the opportunities for successful attraction of the food processing industry to Winnebago County.

Winnebago County Strengths

- Access to transportation corridors and infrastructure
- Availability and access to waterways for treated wastewater return
- Significantly higher regional productivity in *sugar and confectionary products* and *animal food manufacturing* than Illinois or U.S.
- Significantly higher regional value added for food processing than Illinois or U.S.
- Low labor stress for occupations specific to the food processing industry
- High quality of the workforce in their ability to work independently and responsibly
- Low regional cost of doing business
- Regional focus on workforce shortages in manufacturing, particularly industrial mechanics and machinery maintenance occupations

Winnebago County Weaknesses

- Transitioning to younger manufacturing workforce and its perceived impact on turnover and absenteeism
- Competitive workforce environment driven by dominant larger employers who diminish the ability of food processing companies to attract and retain workers
- Lower availability of machine operators and maintenance mechanics
- Higher overall wages in food processing, but with significantly higher productivity and value added
- Negative business climate including lack of support by local and regional government and perceptions that the industry is undervalued for its impact on the local economy. Lack of responsiveness and cooperation from regulatory agencies, sanitation and sewer, wastewater treatment, utilities, intra-city transportation planning, and other infrastructure support
- Proximity of residential to industrial zoning which leads to conflicts

Recommendation 1: *Select targets for industry attraction.* The food processing industry is relatively diverse and includes markets from animal slaughtering and processing to sugar and confectionary product manufacturing. Therefore it is important to narrow the scope of food processing to two or three primary sub sectors. Both dairy products and sugar and confectionary product manufacturing subsectors are recommended for targeted business attraction efforts. These two subsectors have a presence in the region and the potential for cluster development. Additionally, the subsectors have relatively high productivity, value added, and compensation. The next step is to identify individual companies for business attraction efforts.

There are several approaches to identifying targets for food processing industry attraction to the region. The first approach seeks to identify individual companies that may be interested in locating to the region either by evaluating the subsectors continuing growth and drilling down to company names or by detailed company analysis. The second approach is to work through site selection consultants who specialize in the food processing industry.

The first approach suggested selection of subsectors then company identification. From the preceding analysis, suggestions for subsector targets include sugar and confectionary and dairy product manufacturing. It is also recommended that the region target important supply chain partners to the food processing industry to strengthen existing food processing industries and build regional appeal for new business attraction. Important supply chain partners to the food processing industry include both distribution facilities and paper productions and container manufacturing companies. Nevertheless, the selection of target companies should not exclude other subsectors that have had a presence or may be interested in establishing a presence in the region. Below are some potential targets for industry attraction based on the above criteria.

Ferra Pan Candy Company	Dean Foods
M&M Mars	Muller-Pinehurst
Tootsie Roll	Delmonte Foods
Wrigley	
Nestle	

The second approach for identification of companies involves site selection consultants. Site selection consultants are a rich and valuable source of information both to the location seeking attraction and the companies looking for sites. For this reason, it is recommended that Winnebago County develop relationships with site selection consultants specializing in the issues and requirements of the food processing industry.

These relationships can generate an awareness of companies that will be or are currently evaluating expansion opportunities. They can also be used as a resource for strategies to increase the attractiveness of the region. Site selection consultants are often the driving force behind short lists of alternative locations for companies.

Recommendation 2: *Improve the business climate for the food processing industry.* A common theme surfaced among a majority of the regions' food processing employers included perceptions of negativity by local and regional government toward the industry. Additionally, in the Rockford area, zoning mixes between industrial and residential development can cause friction between business and residents. Both of these issues can lead to negative perceptions regarding the regions' business climate which can have a detrimental impact on regional business attraction efforts. While the perceptions of local food processing companies may not appear to directly impact new business attraction, it can have a significant impact when potential new businesses evaluate the region. Site selection consultants and companies often interview existing employers for feedback on the region being considered.

To improve business climate, a region can provide public relations support for existing industries and advocate the Value Added and impact of the industry on regional economic stability and growth. Support can also be provided for business operations in dealing with regulatory agencies and utility companies. Part of this recommendation includes having Winnebago County take the lead in supporting the existing food processing companies through public awareness and communication with local government and regulatory agencies in an effort to improve the overall business climate.

Recommendation 3: *Involvement in regional initiatives to promote manufacturing occupations.* Over the past few years, a great deal of effort has gone into identifying regional manufacturing workforce shortages. The Critical Skills Shortages Initiative lead by the Boone and Winnebago Workforce Investment Board (WIB) evaluated the region's capacity and availability of critical manufacturing occupations and found significant shortages in machinist, industrial machinery mechanics, and maintenance occupations in the region. The results of this effort included funding for marketing and expanded training to address these workforce shortages. Given the food processing industry's reliance on these occupations, Winnebago County should be supportive of and involved in the efforts of the WIB which include bolstering opportunities in manufacturing and promoting an influx of younger candidates to replace the aging workforce.

Recommendation 4: *Develop a comprehensive marketing plan for industry attraction.*

In order to effectively recruit food processing companies to the region, Winnebago County should develop a comprehensive marketing plan that addresses target audiences, marketing materials, relationship development, and implementation. The marketing plan should include the following key components:

- 1) Environmental Scan
- 2) Competitive Regional Analysis
- 3) Marketing Objectives and Strategy
- 4) Action/Implementation Plan

The environmental scan and competitive regional analysis are the focus of this report and provide the background and information that shape and impact site selection decisions. The next step in this process is to formalize marketing objectives and develop an appropriate marketing strategy. The county should identify not only who they want to target (companies, site selection consultants, real estate developers) but the role of various marketing approaches (direct mail, trade shows, relationship development). The marketing strategy should include identification of the audience, selection and role of media and materials, and area of focus for content. For example, content could emphasize the region's location, available buildings, workforce, and labor productivity. The last component to the marketing plan is the action or implementation plan. This part of the overall plan identifies the activities or tasks that need to be accomplished and who is charged with the activity. A set of goals may accompany the implementation plan with dates, timelines, and interviews.

Recommendation 5: *Develop an industrial building and space inventory database.* The development of an industrial space inventory which will use satellite imagery combined with layers of data to provide a resource to site selection firms and companies is already being planned. While the logistics industry favors green field development, a trend in the food processing industry is toward existing structures. For the food processing industry, development and construction time frames are often prohibitive of new development. Therefore, the database should identify available building and land parcels in the county and include ratings on construction readiness such as availability of power to site, roads, and other infrastructure information. This component of site selection is more important once the company has narrowed its search to specific regions. Those regions that have construction-ready sites or a solid, attainable plan to get sites construction ready will have a competitive advantage over those that do not. Once completed, the inventory database should be used as part of the larger marketing and business attraction program identified in Recommendation 1.

Recommendation 6: *Develop an incentive package and expertise in funding opportunities.* Regardless of the targeted industry, an important element of the region's industry business attraction program is a comprehensive incentive package. Incentive packages are not exclusively focused in areas of tax reductions or abatements. If not already available, the county should develop knowledge of and expertise in the grant programs and other funding sources available at the local, state and federal level that can be leveraged to assist economic development agencies and companies in infrastructure and construction costs. This includes not only identification of grant funding opportunities, but also assistance in completions of grant applications and business agreements.

Winnebago County has many inherent features that make it an attractive location for many types of industries including location, access to markets, and workforce availability and quality. However, in order to be competitive in food processing industry site selection, the region should develop a comprehensive marketing plan that incorporates the results of this analysis into a marketing strategy and plan. Accomplishing these activities will require a team from local/regional government, economic development, and the food processing industry to work together toward providing overall leadership, identifying targets, developing marketing strategy, building relationships, addressing business climate issues, and managing site selection inquiries. To become a player in the site selection arena requires planning, initiative, and regional coordination all of which will be necessary for Winnebago County to successfully attract not only food processing companies but other industries to the region.

Appendix A Buyers and Suppliers

Primary Food Processing Industries

The following analysis utilizes data from the Bureau of Economic Analysis, 1997 Benchmark Input-Output Use Matrix and represent the suppliers to and buyers of the dairy product and sugar and confectionary manufacturing industry. The buyer tables represent what other industries purchase from the food processing subsectors as inputs to their final product. The supplier tables represent the percent of inputs required by other industries to produce the products for the industry analyzed. Collectively these two components represent the supply chain for the dairy product and sugar and confectionary manufacturing subsectors.

Sugar & confectionery product manufacturing - Winnebago County Supply Chain - Buyer Side					
NAICS	Description	Percent	Location Quotient	Employment Growth	Wages
3113//	Sugar & confectionery product manufacturing	44.8%	High	Low	Very High
722///	Food services & drinking places	18.8%	Low	Medium	Low
3118//	Bakeries & tortilla manufacturing	12.5%	Low	Medium	Medium
3119//	Other food manufacturing	5.6%	Very High	Very High	Low
3115//	Dairy product manufacturing	4.6%	Very High	Low	Very High
3112//	Grain & oilseed milling	3.4%	Low	Low	Very High
3114//	Fruit & vegetables preserving & specialty food manufacturing	1.7%	Low	Low	Low
1121//	Cattle ranching and farming	1.1%	Not Present	Not Present	Not Present
3111//	Animal food manufacturing	1.0%	Low	Low	Very High
Datasources: Economy.com. County Detailed Employment & Output Forecast Database. Industry percents based on 1997 Standard Make and Use Tables at the detailed level. Bureau of Economic Analysis.					

Sugar & confectionery product manufacturing - Winnebago County Supply Chain - Supplier Side					
NAICS	Description	Percent	Location Quotient	Employment Growth	Wages
3113//	Sugar & confectionery product manufacturing	22.9%	High	Low	Very High
1119//	Tobacco, Cotton, Sugarcane and sugar beet and All other cr	10.2%	Not Present	Not Present	Not Present
42----	Wholesale trade	6.9%	Low	Low	Medium
3222//	Converted paper product manufacturing	6.2%	Low	Low	Low
484///	Truck transportation	3.3%	Low	Very High	Medium
1113//	Fruit farming	2.8%	Not Present	Not Present	Not Present
3115//	Dairy product manufacturing	2.2%	Very High	Low	Very High
3112//	Grain & oilseed milling	1.7%	Low	Low	Very High
533///	Lessors of other nonfinancial intangible asset	1.4%	Low	Medium	Very High
3119//	Other food manufacturing	1.2%	Very High	Very High	Low
2212//	Natural gas distribution	1.0%	Low	Low	Very High
55----	Management of companies and enterprises		Low	Low	Very High
Datasources: Economy.com. County Detailed Employment & Output Forecast Database. Industry percents based on 1997 Standard Make and Use Tables at the detailed level. Bureau of Economic Analysis.					

Dairy product manufacturing - Winnebago County Supply Chain - Buyer Side					
NAICS	Description	Percent	Location Quotient	Employment Growth	Wages
722///	Food services & drinking places	51.7%	Low	Medium	Low
3115//	Dairy product manufacturing	35.8%	Very High	Low	Very High
3114//	Fruit & vegetables preserving & specialty food manufacturing	2.8%	Low	Low	Low
6244//	Child day care services	2.5%	Low	Very High	Low
3113//	Sugar & confectionery product manufacturing	1.7%	High	Low	Very High
622///	Hospitals	1.6%	Medium	Very High	Medium
3118//	Bakeries & tortilla manufacturing	1.3%	Low	Medium	Medium

Datasources: Economy.com. County Detailed Employment & Output Forecast Database. Industry percents based on 1997 Standard Make and Use Tables at the detailed level. Bureau of Economic Analysis.

Dairy product manufacturing - Winnebago County Supply Chain - Supply Side					
NAICS	Description	Percent	Location Quotient	Employment Growth	Wages
1121//	Cattle ranching and farming	41.1%	Not Present	Not Present	Not Present
3115//	Dairy product manufacturing	17.2%	Very High	Low	Very High
42----	Wholesale trade	5.5%	Low	Low	Medium
3222//	Converted paper product manufacturing	3.3%	Low	Low	Low
55----	Management of companies and enterprises	3.2%	Low	Low	Very High
3261//	Plastics product manufacturing	2.2%	Low	Low	Medium
3119//	Other food manufacturing	1.5%	Very High	Very High	Low
3112//	Grain & oilseed milling	1.2%	Low	Low	Very High
533///	Lessors of other nonfinancial intangible asset	0.9%	Low	Medium	Very High

Datasources: Economy.com. County Detailed Employment & Output Forecast Database. Industry percents based on 1997 Standard Make and Use Tables at the detailed level. Bureau of Economic Analysis.

Key	
Location Quotient	
Low	Less than or equal to 1.05
Medium	Greater than or equal to 1.05 & Less than 1.50
High	Greater than or equal to 1.50 & Less than 2.00
Very High	Greater than or equal to 2.00
Not Present	Industry data not present in region
Wages	
Low	Less the - .5 Standard Deviation from the mean wage
Medium	Between - .5 & + 5 Standard Deviation from the regional mean wage
High	Between +1 and +1.5 Standard Deviations from the regional mean wage
Very High	More then +1.5 Standard Deviations from the regional mean wage
Not Present	Industry data not present in region
Periodic Employment Growth: 1996-2000, 2000-2004, or 1996-2004.	
low	Has not grown in any period.
Medium	Experienced growth in at least one of the three periods.
High	Experienced growth in at least two of the three periods.
Very High	Experienced growth in all three periods.
Not Present	Industry data not present in region

Appendix B Industry Subsectors

311 Food Manufacturing Industry

Industries in the Food Manufacturing subsector transform livestock and agricultural products into products for intermediate or final consumption. The industry groups are distinguished by the raw materials (generally of animal or vegetable origin) processed into food products.

The food products manufactured in these establishments are typically sold to wholesalers or retailers for distribution to consumers, but establishments primarily engaged in retailing bakery and candy products made on the premises not for immediate consumption are included.

Establishments primarily engaged in manufacturing beverages are classified in Subsector 312, Beverage and Tobacco Product Manufacturing.

31111 Animal Food Manufacturing

This industry comprises establishments primarily engaged in manufacturing food and feed for animals from ingredients, such as grains, oilseed mill products, and meat products.

Cross-References. Establishments primarily engaged in--

- Slaughtering animals for feed--are classified in [Industry 31161](#), Animal Slaughtering and Processing; and
- Manufacturing vitamins and minerals for animals--are classified in [Industry 32541](#), Pharmaceutical and Medicine Manufacturing.

3112 Grain and Oilseed Milling

This industry comprises establishments primarily engaged in processing and manufacturing flour, malts, rice, corn, soybeans, starches and vegetable oils.

31121 Flour Milling and Malt Manufacturing

This industry comprises establishments primarily engaged in one or more of the following: (1) milling flour or meal from grains or vegetables; (2) preparing flour mixes or doughs from flour milled in the same establishment; (3) milling, cleaning, and polishing rice; and (4) manufacturing malt from barley, rye, or other grains.

311212 Rice Milling

This U.S. industry comprises establishments primarily engaged in one of the following: (1) milling rice; (2) cleaning and polishing rice; or (3) milling, cleaning, and polishing rice. The establishments in this industry may package the rice they mill with other ingredients.

311213 Malt Manufacturing

This U.S. industry comprises establishments primarily engaged in manufacturing malt from barley, rye, or other grains.

31122 Starch and Vegetable Fats and Oils Manufacturing

This industry comprises establishments primarily engaged in one or more of the following: (1) wet milling corn and vegetables; (2) crushing oilseeds and tree nuts; (3) refining and/or blending vegetable oils; (4) manufacturing shortening and margarine; and (5) blending purchased animal fats with vegetable fats.

311221 Wet Corn Milling

This U.S. industry comprises establishments primarily engaged in wet milling corn and other vegetables (except to make ethyl alcohol). Examples of products made in these establishments are corn sweeteners, such as glucose, dextrose, and fructose; corn oil; and starches (except laundry).

311222 Soybean Processing

This U.S. industry comprises establishments engaged in crushing soybeans. Examples of products produced in these establishments are soybean oil, soybean cake and meal, and soybean protein isolates and concentrates.

311223 Other Oilseed Processing

This U.S. industry comprises establishments engaged in crushing oilseeds (except soybeans) and tree nuts, such as cottonseeds, linseeds, peanuts, and sunflower seeds.

311225 Fats and Oils Refining and Blending

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing shortening and margarine from purchased fats and oils; (2) refining and/or blending vegetable, oilseed, and tree nut oils from purchased oils; and (3) blending purchased animal fats with purchased vegetable fats.

311230 Breakfast Cereal Manufacturing

This industry comprises establishments primarily engaged in manufacturing breakfast cereal foods.

3113 Sugar and Confectionery Product Manufacturing

This industry group comprises (1) establishments that process agricultural inputs, such as sugarcane, beet, and cacao, to give rise to a new product (sugar or chocolate), and (2) those that begin with sugar and chocolate and process these further.

3114 Fruit and Vegetable Preserving and Specialty Food Manufacturing

This industry group includes (1) establishments that freeze food and (2) those that use preservation processes, such as pickling, canning, and dehydrating. Both types begin their production process with inputs of vegetable or animal origin.

3115 Dairy Product Manufacturing

This industry group comprises establishments that manufacture dairy products from raw milk, processed milk, and dairy substitutes.

3116 Animal Slaughtering and Processing

This industry comprises establishments primarily engaged in one or more of the following: (1) slaughtering animals; (2) preparing processed meats and meat byproducts; and (3) rendering and/or refining animal fat, bones, and meat scraps. This industry includes establishments primarily engaged in assembly cutting and packing of meats (i.e., boxed meats) from purchased carcasses.

3117 Seafood Product Preparation and Packaging

This industry comprises establishments primarily engaged in one or more of the following: (1) canning seafood (including soup); (2) smoking, salting, and drying seafood; (3) eviscerating fresh fish by removing heads, fins, scales, bones, and entrails; (4) shucking and packing fresh shellfish; (5) processing marine fats and oils; and (6) freezing seafood. Establishments known as "floating factory ships" that are engaged in the gathering and processing of seafood into canned seafood products are included in this industry.

3118 Bakeries and Tortilla Manufacturing

This industry comprises establishments primarily engaged in manufacturing fresh and frozen bread and other bakery products including tortillas, flour mixes and doughs, dry pasta, cakes, cookies and crackers.

3119 Other Food Manufacturing

This industry group comprises establishments primarily engaged in manufacturing food (except animal food; grain and oilseed milling; sugar and confectionery products; preserved fruit, vegetable, and specialty foods; dairy products; meat products; seafood products; and bakeries and tortillas). The industry group includes industries with different productive processes, such as snack food manufacturing; coffee and tea manufacturing; concentrate, syrup, condiment, and spice manufacturing; and, in general, an entire range of other miscellaneous food product manufacturing.

Source: The official **2002 US NAICS Manual** *North American Industry Classification System--United States, 2002*.

Appendix C

Winnebago County Food Processing Companies

Winnebago County Food Processing Industry (NAICS 3111 - 3119) Dunn & Bradstreet Business Listing

Business Name	City	Industry Type	Employees
Cherry Valley Feed Supplies	Cherry Valley	Prepared feeds, nec	4
Dean Pickle Specialty Pdts Co	Pecatonica	Dry, condensed, evap dairy products	100
Eickmans Processing Co Inc	Seward	Meat packing plants	27
Mc Cleary Inc	South Beloit	Potato chips and similar snacks	129
Dean Foods Company	Rockford	Fluid milk	100
Ole Saltys	Rockford	Potato chips and similar snacks	4
Piemonte Bakery Company Inc	Rockford	Bread, cake, and related products	25
Roma Bakery	Rockford	Food preparations, nec	14
Dean Foods Company	Rockford	Fluid milk	unknown
Mrs Fishers Inc	Rockford	Potato chips and similar snacks	13
Bay State Milling Company	Rockford	Flour and other grain mill products	1
J & J Fish	Rockford	Fresh or frozen packaged fish	5
Penguin Foods	Rockford	Sausages and other prepared meats	18
Adams Gum	Rockford	Chewing gum	902
Holsum Bread	Rockford	Bread, cake, and related products	165
Muller-Pinehurst Dairy Inc	Rockford	Fluid milk	150
Countryside Deer	Rockford	Meat packing plants	4
Interstate Bakerys Corp	Rockford	Bread, cake, and related products	13
Kent Feeds Inc	Rockford	Prepared feeds, nec	12
Phelps Industries LLC	Rockford	Dog and cat food	30
Stella Baking Co	Rockford	Bread, cake, and related products	5
Ej Sanchile Inc	Rockford	Bread, cake, and related products	2
7-Up-The American Bottling Co	Loves Park	Bottled and canned soft drinks	50
Jays Foods Inc	Loves Park	Potato chips and similar snacks	20
Pepsico	Loves Park	Bottled and canned soft drinks	unknown
Th Foods Inc	Loves Park	Cookies and crackers	153
Schwans Home Service Inc	Machesney Park	Frozen specialties, nec	10
Rockford Poultry Inc	Rockford	Frozen fruits and vegetables	13

Appendix D Detailed Regional Comparative Cost Analysis

Comparative Operating Cost Analysis

	Winnebago County	Chicago, IL	Dubuque County, IA	Grand Rapids, MI	Kansas City, MO	Milwaukee, WI	Minneapolis St. Paul, MN	St. Louis, MO
Weighted Average Hourly Earnings	\$15.28	\$16.25	\$14.11	\$16.39	\$17.98	\$17.03	\$18.29	\$18.25
Annual Base Payroll Costs (1)	\$8,727,936	\$9,282,000	\$8,059,632	\$9,361,968	\$10,270,176	\$9,727,536	\$10,447,248	\$10,424,400
Fringe Benefits (2)	\$3,316,616	\$3,527,160	\$3,062,660	\$3,557,548	\$3,902,667	\$3,696,464	\$3,969,954	\$3,961,272
Labor Costs	\$12,044,552	\$12,809,160	\$11,122,292	\$12,919,516	\$14,172,843	\$13,424,000	\$14,417,202	\$14,385,672
Percent Difference - Winnebago County		6.3%	-7.7%	7.3%	17.7%	11.5%	19.7%	19.4%

Electric Power Costs (3)	\$452,556	\$452,556	\$380,147	\$378,300	\$322,908	\$362,904	\$353,016	\$322,464
Natural Gas Costs (4)	\$492,916	\$505,674	\$441,792	\$421,668	\$546,091	\$486,948	\$414,732	\$546,090
Heating and Air Conditioning Costs (5a 5b)	\$403,553	\$366,660	\$344,801	\$311,575	\$241,757	\$289,327	\$338,175	\$223,707
Energy Costs	\$1,349,025	\$1,324,890	\$1,166,740	\$1,111,543	\$1,110,756	\$1,139,179	\$1,105,923	\$1,092,261
Percent Difference - Winnebago County		-1.8%	-13.5%	-17.6%	-17.7%	-15.6%	-18.0%	-19.0%

Construction and Amortization Costs (6)	\$329,685	\$354,500	\$290,690	\$276,510	\$319,617	\$315,505	\$368,680	\$326,140
Industrial Lease Costs (7)	\$686,000	\$700,000	\$539,000	\$525,000	\$787,500	\$700,000	\$612,500	\$437,500
Property Costs	\$1,015,685	\$1,054,500	\$829,690	\$801,510	\$1,107,117	\$1,015,505	\$981,180	\$763,640
Percent Difference - Winnebago County		3.8%	-18.3%	-21.1%	9.0%	0.0%	-3.4%	-24.8%

Shipping Costs (8)	\$3,134,025	\$3,108,202	\$2,634,033	\$3,365,581	\$2,630,757	\$3,237,290	\$3,421,228	\$3,132,166
Percent Difference - Winnebago County		-0.8%	-16.0%	7.4%	-16.1%	3.3%	9.2%	-0.1%

Total Annual Geographically-Variable Operating Costs	\$17,543,287	\$18,296,752	\$15,752,755	\$18,198,150	\$19,021,473	\$18,815,974	\$19,925,533	\$19,373,739
Percent Difference - Winnebago County		4.3%	-10.2%	3.7%	8.4%	7.3%	13.6%	10.4%

FOOTNOTES

- (1) Assumes 1904 hours worked per year per employee based on 12 paid holidays and a two-week vacation for a mature plant
- (2) Based on an estimated 38% of total annual base payroll costs. Costs include all statutory benefits, pay for time not worked, and company sponsored benefits.
- (3) Based on estimated monthly demand of 1,000 kWh and 650,000 kWh monthly consumption. Annual costs reflect comparative industrial electric service rates.
- (4) Based on a monthly use of 5,000 mcf of natural gas. Geographic differentials reflect average prices for industrial use gas for the most recent quarter based on comparative state data. Estimated local and state sales taxes are included.
- (5a) Based on estimated \$1.89 per sq. ft. in the Chicago area and varied by heating degree days and power cost differentials for 175,000 sq. ft. light manufacturing, warehouse, and office space.
- (5b) Based on estimated \$1.03 per sq. ft. in the Chicago area and varied by cooling degree days and power cost differentials. Assumes air conditioning for 35,000 sq. ft. office, technical, and canteen space.
- (6) Reflects construction of a \$5.0 million in tenant improvement projects at a Chicago site with geographic differentials in building costs base on Boyd BizCosts construction index data.
- (7) Based on 175,000 sq. ft. of leasable light manufacturing space. Estimates do not include utilities and maintenance.
- (8) Annual charges reflect truckload lots of 17,600 lbs using private over the road carriers to each market city location. Projected charges based on an estimated \$1.38 per mile which includes cost factors such as labor, fuel, maintenance, insurance, certificates, and operating rights. Ten market region destination locations in the U.S. reflect optimum distribution configuration for serving a national consumer confectionary market.

Source: Boyd & Company BizCosts Report