

Nebraska Jobs Coalition Economic Impact Study

A contract report for the Nebraska Jobs Coalition

Executive Summary

Prepared by:

Ron Konecny, Ph.D.

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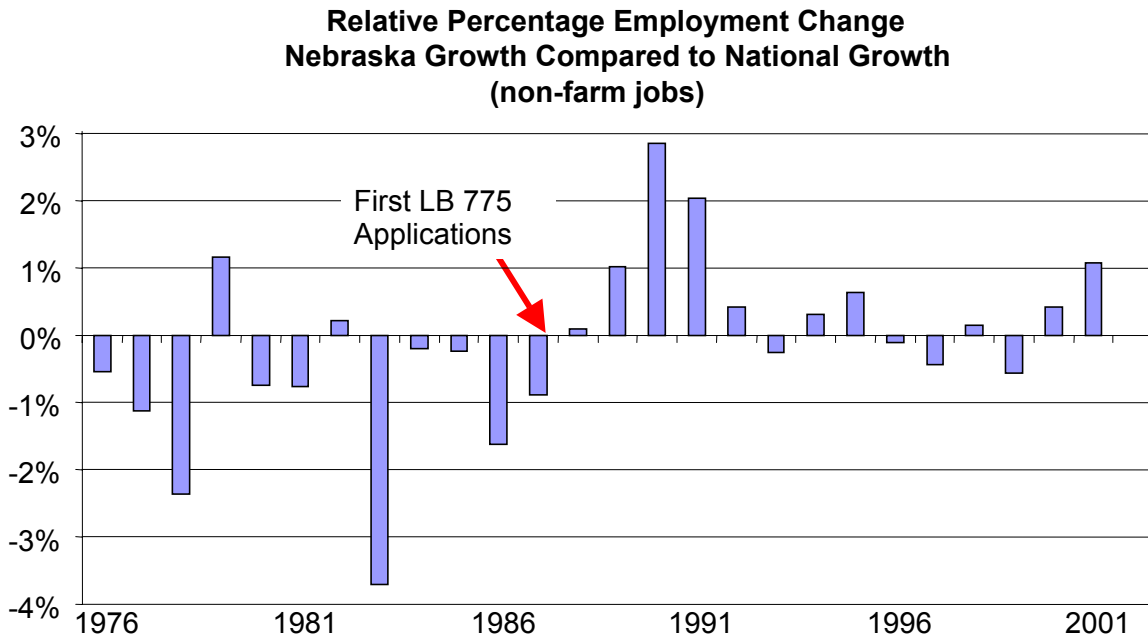
Executive Summary

Purpose of study

All State legislatures now recognize the importance of job creation and retention. Abundant employment opportunities are positively related to the definition of a strong community. Employment opportunities stabilize housing values, reduce crime rate, mitigate pressures for out-migration, and stimulate additional economic activity. Recognizing the importance of employment, Nebraska's Legislature began addressing this issue through the passage of various employment incentive bills beginning in the mid-1980s.

The Nebraska Jobs Coalition funded this study to examine the direct and indirect economic benefits of employment. Through the cooperation of corporations located across Nebraska, information regarding site-specific employment was obtained. Participating companies include: Cabela's Return Center in Oshkosh, Iams in Aurora, Lincoln Plating in Lincoln, D&D Foods in north Omaha, and the Cargill Industrial Complex in Blair. The Cargill Industrial Complex includes: Cargill Sweeteners, Cargill Dow LLC, M&C Sweeteners, PGLA-1, and Midwest Lysine. The Jobs Coalition is interested in identifying and quantifying the multiplier effects associated with each of these enterprises. Hopefully, these results will provide insight into the cumulative benefits stemming from job creation and retention.

The issue of job creation has been an important topic in Nebraska for many years. As the following chart indicates, the State tended to have slower job growth than the national rate throughout the 1970s up to the late 1980s. Each bar represents the difference between the State and National job growth rate on an annual basis. Bars below zero indicate that Nebraska job growth is slower than the national rate, and bars above zero indicate that Nebraska job growth is greater than the national rate.



It is immediately apparent that there was a change in the pattern in the late 1980's. Nebraska has improved its performance relative to the rest of the nation.

Methodology

To analyze the employment impacts, researchers from Assessment Impact Monitoring Incorporated (AIM) created an input/output model using IMPLAN software. IMPLAN, originally developed by the USDA Forest Service, has been widely used in regional planning and analysis since its introduction in 1979.

This approach is popular in impact studies because it provides a consistent economic framework for analysis at the regional, state, and county level. Because IMPLAN is used by many states, including Nebraska, its use is appropriate for this study. Primary data provided by the firms, combined with the IMPLAN data set allowed the researchers to determine direct, indirect, and induced impacts stemming from the expenditure patterns of the participating companies.

- *Direct effect* refers to the change associated with a change in demand for the good itself. It is the initial impact to the economy, which is exogenous to the model.
- *Indirect effect* refers to the secondary impact caused by changing input needs of directly affected industries (additional input purchases to produce additional output).
- *Induced effect* refers to overall changes in household and business spending due to the additional system-wide employment generated by direct and indirect effects.

The key component of input/output models is the identification of the multiplier effect – the measure of the cumulative change in economic activity resulting from an initial stimulus. Multipliers can relate to expenditures, employment, income or other measures of economic activity. While a variety of multipliers can be calculated, this study uses Type II multipliers and Social Accounting Matrix multipliers (SAM).

- Type II multipliers include direct, indirect, and induced impacts.
- SAM multipliers are similar to Type II, but include adjustments for income that is not normally re-spent immediately within the region, e.g. wages of commuting workers who live outside the region and contributions to retirement programs.

It is important to recognize that the multiplier effect is different for each industry because each has a different input mix and trade pattern. Small economic areas tend to have lower multipliers because spending leaks out of the area quickly.

Firms participating in the study represent diverse product lines, geographic dispersal, and scale of operation. From the eastern part of the State, representative firms include agriculturally based products, industrial manufacturing, and food service. From the central part of the State, a second agriculturally based firm is participating. From the west, industrial manufacturing and the retail service industry are represented

Firms provided site-specific proprietary information. Due to confidentiality concerns inherent in working with data from individual firms, information has been aggregated in generating report results. Results are given as a range, recognizing that a single precise number is somewhat misleading. Data collected, and the subsequent model results, represent a snapshot of the firm's behavior at a particular point in time. Over time, it is not likely that the firms' expenditure patterns will remain fixed hence a range of results is more helpful than a single number.

General Results

In December 2002 the participating firms directly employed 1554. As a consequence of the actions of the spending of these companies, another 3954 to 4125 jobs exist in Nebraska. Direct expenditures in Nebraska of nearly \$300 million by these firms stimulated an additional \$461 million to \$481 million of industry output across the state. Because some of the participating firms are located in metropolitan areas, in addition to the statewide numbers, metro impacts can also be determined.

The direct employment of the participating companies in the Omaha Metropolitan Statistical Area (Cargill and D&D Foods) of 950 supports an additional 1888 jobs in the Omaha MSA. Local indirect and induced industry output increased by \$217 million to \$266 million.

In the Lincoln MSA, Lincoln Plating's direct employment of 308 supports an additional 290 to 354 jobs locally.

Cabela's Return operation in Oshkosh employs about 75 employees (FTE) and stimulates an additional 9 to 12 jobs locally and 26 to 31 jobs statewide.

The Iams Company in Aurora employs 222 individuals. This employment supports an additional 285 to 348 jobs in the Tri-city area and an additional 340 to 416 jobs statewide.

The aggregated impact of the participating firm is presented in the following table. A range is given in recognition of the inherent limitations of any impact study. Totals reflect the ongoing impact for the State level impacts of the five participating firms on an annual basis.

High	Direct	Indirect & Induced	Total
Employment	1,554	4,444	6,153
Labor Income	\$70,700,000	\$139,700,000	\$217,470,000
Output	\$696,000,000	\$518,210,000	\$1,283,810,000

Low	Direct	Indirect & Induced	Total
Employment	1,554	3,636	5,035
Labor Income	\$54,365,000	\$114,300,000	\$177,930,000
Output	\$546,000,000	\$423,990,000	\$1,050,390,000

Different firms have different multipliers because each has a different input mix and trade pattern. In this group of firms, the Cargill Blair Industrial Complex has an employment multiplier of 4.5 to 5.2. There are two components in this employment number: the direct employment by the company and employment supported outside the company by its demand for inputs. Thus, for each employee at Cargill, the firm's expenditures support approximately four jobs in Nebraska outside the plant.

This result stems from the nature of the production process occurring at Cargill. Each Cargill employee, surrounded by massive capital investment, requires vast amounts of raw materials. It requires the effort of four other employees in Nebraska to provide these inputs.

D & D Foods, with a very different mix of production inputs than Cargill, has an employment multiplier of 1.36 to 1.45. Labor-intensive companies tend to have a lower employment multiplier than capital-intensive companies.

Trade patterns are greatly affected by the availability of firms in the State or region than can supply the resources needed. Generally, with smaller regions, the lower the local trade and local multiplier result.

The following table of employment multipliers for each participating firm illustrates how different input mix and trade patterns generate different multipliers. One size does not fit all in economic impact measurement.

	Statewide Employment Multipliers	Local Employment Multipliers
Cargill	4.45 to 5.21	3.01 to 3.45
D&D Foods	1.36 to 1.45	1.28 to 1.35
Lincoln Plating	2.19 to 2.44	1.94 to 2.15
The Iams Company	2.53 to 2.87	2.28 to 2.57
Cabela's	1.35 to 1.41	1.12 to 1.16

The stated employment multipliers relate to the firms' ongoing production. Beyond this ongoing production employment there is an additional employment impact related to construction and expansion.

For example, Lincoln Plating's expansion created 205 to 251 jobs related the construction phase. Cargill is somewhat unique among the participating firms in that it has an ongoing construction employment of three hundred workers. Because the company plans to continue this level of expansion, construction at that site was considered permanent. The other firms, which generally have had recent expansions, provided a one-time construction employment impact.

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Assessment Impact Monitoring, Inc.

Nebraska Jobs Coalition Economic Impact Study

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Final Report

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Economic Impact of Employment in Nebraska

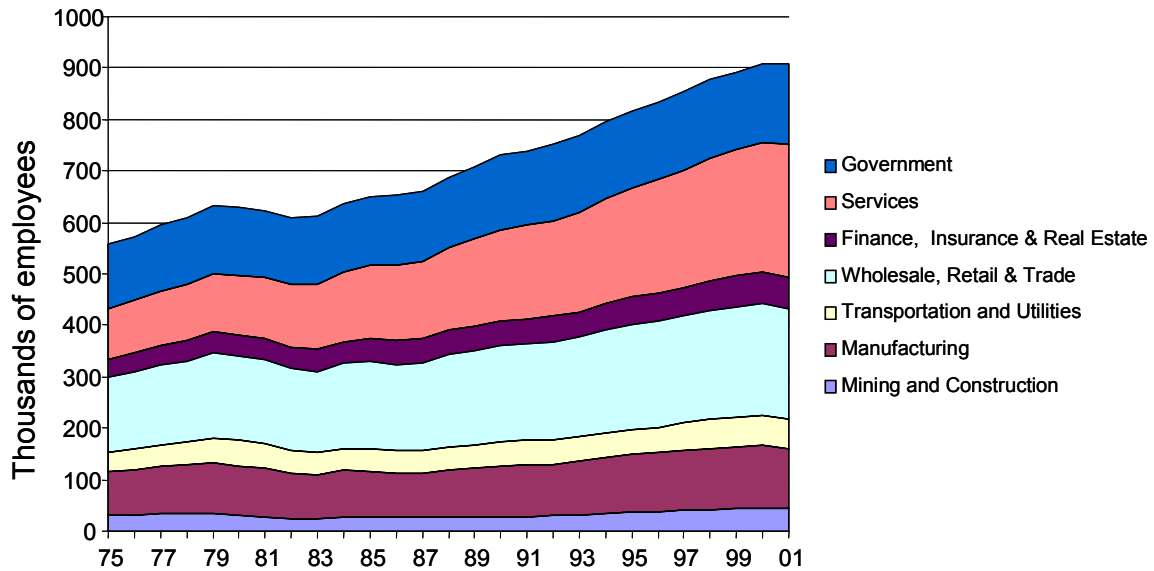
An Input/Output Analysis

The Nebraska Jobs Coalition funded this study to examine the direct and indirect economic benefits of employment. Through the cooperation of corporations located across Nebraska, information regarding site-specific employment was obtained. Participating companies include: Cabela's Return Center in Oshkosh, IAMS in Aurora, Lincoln Plating in Lincoln, D&D Foods in north Omaha, and the Cargill Industrial Complex in Blair. The Cargill Industrial Complex includes: Cargill Sweeteners, Cargill Dow LLC, M&C Sweeteners, PGLA-1, and Midwest Lysine. The Jobs Coalition is interested in identifying and quantifying the multiplier effects associated with each of these enterprises. Hopefully, these results will provide insight into the cumulative benefits stemming from job creation and retention.

The issue of job creation has been an important topic in Nebraska for many years. As the following chart indicates job growth has occurred, but not at a constant rate. The period from 1979 to 1986 was troublesome. As a result of this sluggish period the Unicameral began to pass legislation aimed at job creation and retention. Major bills include:

- LB775 - Employment & Investment Growth Act
- LB1124, LB270 - Employment Expansion & Investment Incentive Act
- LB 936 - Rural Economic Opportunity Act
- LB 620 - Invest Nebraska Act
- LB829 - Quality Jobs Act

Total Nonfarm Employment



While this study does not address issues of causality, there is a noticeable increase in the rate of job creation after the Unicameral begins to pass employment incentive legislation. According to the 2001 Annual Report to the Legislature, more than 100,000 jobs were created through the impact of this legislation.

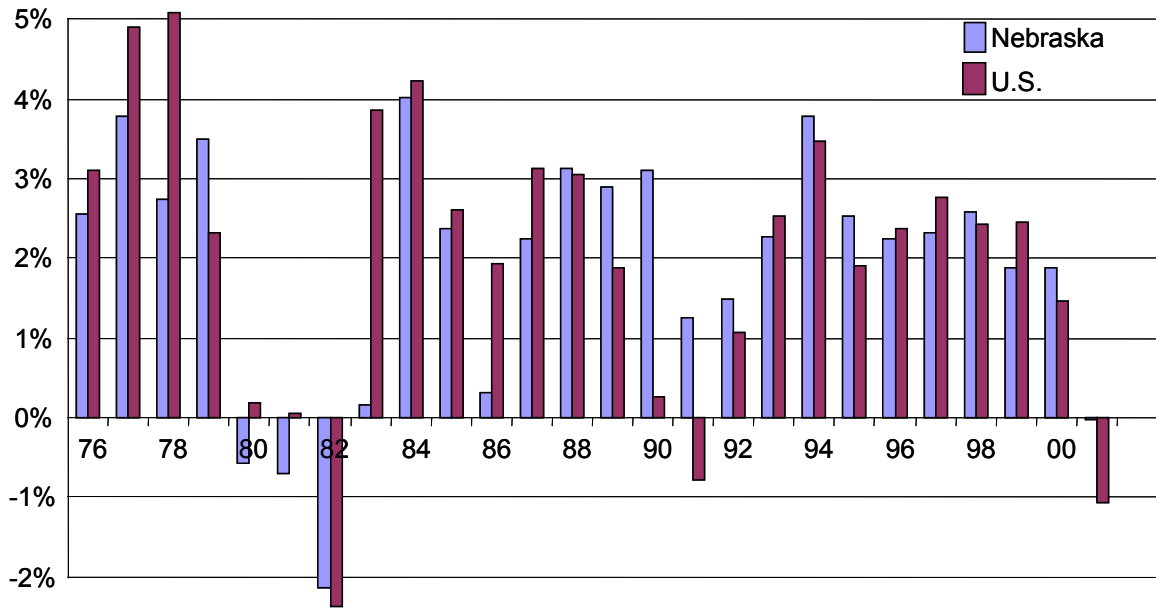
2001 Annual Report to the Legislature

Legislation	Period	Jobs Created
LB775	1988-2001	71,460
LB1124 & LB270	1988-2001	26,543
LB829	1996-2000	4,498
		<u>102,501</u>

LB 936 - As of 2001, there have been no qualified applicants
 LB 620 As of 2001, no company has met the required levels of investment

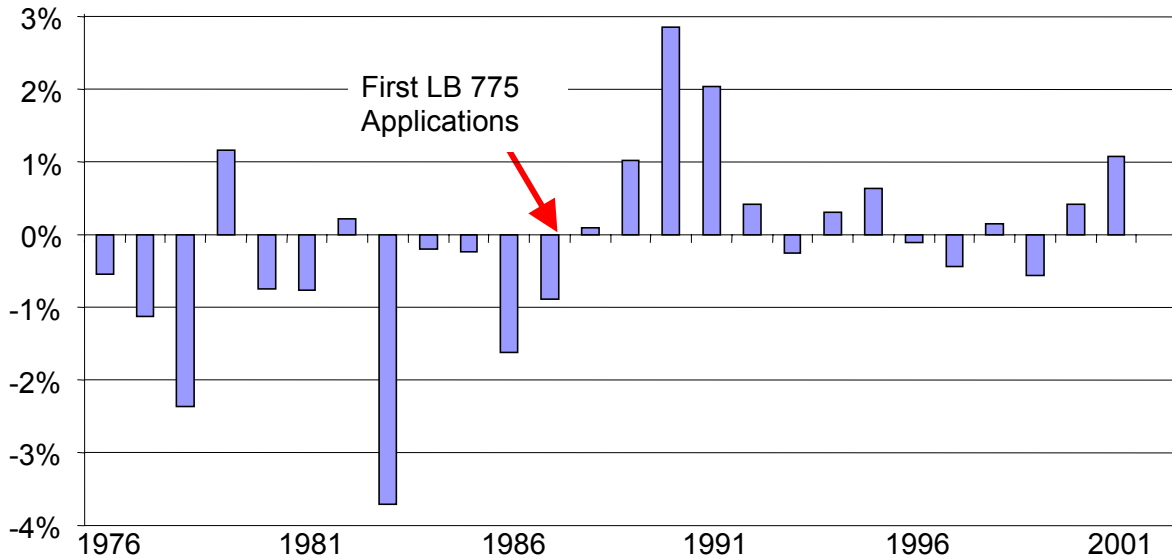
One way to think about Nebraska's employment pattern is to compare the rate of change with the nation.

Change in employment



To get a clearer picture of the Nebraska's relative performance, the information presented on this chart can be adjusted. By subtracting the national growth rate from Nebraska's growth rate a picture of relative performance is created. The State tended to have slower job growth than the national rate throughout the 1970s up to the late 1980s. Bars below zero indicate that Nebraska job growth is slower than the national rate, and bars above zero indicate that Nebraska job growth is greater than the national rate.

**Relative Percentage Employment Change
Nebraska Growth Compared to National Growth
(non-farm jobs)**



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Sectors

Input/output Analysis is based upon the interaction between various sectors of the economy. The State model developed for this study includes a total of 556 individual sectors. Major categories, and number of sectors in each category are given in the following table.

Nebraska Impact Assessment Model

<u>Sectors</u>	<u>Number</u>	<u>Sectors</u>	<u>Number</u>
Agriculture	27	Trade	9
Mining	20	F.I.R.E.	7
Construction	10	Services	47
Manufacturing	375	Government	14
TCPU	34	Other	13

For example, in the Agriculture major category there are 27 more specific sectors including: Dairy Farm Products, Poultry and Eggs, Ranch Fed Cattle, Cattle Feed Lots, Food Grains, Feed Grains, Vegetables, and Forest Products. For a complete listing of sectors see the Technical Report.

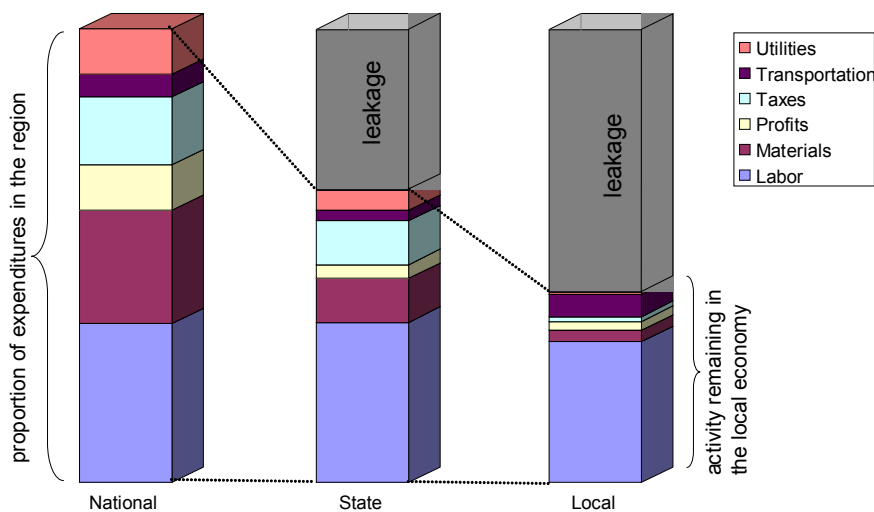
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Impact Assessment Model

Data collected from participating firms was used in state and local IMPLAN models designed specifically to measure the impact of the firms' expenditures. Models track the flow of expenditures through the various sectors. Model results present the indirect and induced effects stemming from the initial expenditures. To protect confidentiality concerns, results do not include the initial direct expenditures for each firm. The IMPLAN model calculates a variety of multipliers. Because each firm has a different expenditure pattern, multiplier impacts differ. For a comprehensive list of state and local multipliers calculated, see the Technical Report.

One way of thinking about Input/Output modeling is illustrated by the following graph. For each dollar spent, a portion stays in the local area and portion leaks out of the area. Thus, in each successive round of spending leakages reduce the subsequent impacts. The smaller the region the larger the leakage out of the area

Regionalization and Trade Effects on State and Local Models



How much spending stays in Nebraska and the MSA?

Site Specific Impact Results

This section of the report provides information regarding the impact of each participating firm. The following results are reflective of the firms' circumstances as of December 2002. Some information has been withheld due to confidentiality agreements.

The firm specific report describes a variety of employment, income, and output at the state and local level. While the increase in employment information is immediately understandable, some of the other components may be less familiar. The increase in labor income refers to additional wages and salaries generated as a result of company expenditures. The construction impact component recognizes the one time impact due to company expansion. The increase in industry output measures the stimulus provided by the company needs for additional resources as supplied by other companies.

HyVee. D&D Foods

Impact Report – Nebraska

- Increase in employment
 - D&D Foods: 119 employees
 - Rest of the state: 43 to 53 employees
 - Construction impact: 48 to 60 employees one time
- Increase in labor income (in addition to D&D Foods)
 - Rest of the state: \$1,200,000 to \$1,400,000
 - Construction impact: \$1,800,000 to 2,200,000 cumulative
- Increase in industry output (in addition to D&D Foods)
 - Rest of the state: \$5,700,000 to \$6,900,000
 - Construction impact: \$4,900,000 to \$6,100,000 cumulative

HyVee. D&D Foods

Impact Report – Omaha MSA

- Increase in employment
 - D&D Foods: 119 employees
 - Rest of the Omaha MSA: 34 to 42 employees
- Increase in labor income (in addition to D&D Foods)
 - Rest of the Omaha MSA: \$1,050,000 to \$1,320,000
- Increase in industry output (in addition to D&D Foods)
 - Rest of the Omaha MSA: \$4,900,000 to \$5,900,000 cumulative



Impact Report – Lincoln MSA

- Increase in employment
 - Lincoln Plating: 308 employees
 - Rest of the Lincoln MSA : 290 to 354 employees
- Increase in labor income (in addition to Lincoln Plating)
 - Rest of the Lincoln MSA : \$8,730,000 to \$10,670,000
- Increase in industry output (in addition to Lincoln Plating)
 - Rest of the Lincoln MSA : \$35,500,000 to \$43,500,000



Impact Report – Nebraska

- Increase in employment
 - Lincoln Plating: 308 employees
 - Rest of the State: 365 to 445 employees
 - Construction impact: 205 to 251 FTE one time
- Increase in labor income (in addition to Lincoln Plating)
 - Rest of the State: \$11,400,000 to \$14,000,000
 - Construction impact: \$67,000,000 to \$ 81,000,000 one time
- Increase in industry output (in addition to Lincoln Plating)
 - Rest of the State: \$40,300,000 to \$ 49,100,000
 - Construction impact: \$19,300,000 to \$23,500,000 one time



The Iams Company



Impact Report – Nebraska

- Increase in employment
 - The Iams Company: 222 employees
 - Rest of the State: 340 to 416 employees
- Increase in labor income (in addition to The Iams Company)
 - Rest of the State: \$9,200,000 to \$11,200,000
- Increase in industry output (in addition to The Iams Company)
 - Rest of the State: \$43,300,000 to \$ 52,900,000



The Iams Company



Impact Report: Tri-City area (Adams, Buffalo , Hall, Hamilton Counties)

- Increase in employment
 - The Iams Company: 222 employees
 - Tri-City area: 285 to 348 employees (excludes Iams employment)
- Increase in labor income (in addition to The Iams Company)
 - Tri-City area: \$6,200,000 to \$7,600,000
- Increase in industry output (in addition to The Iams Company)
 - Tri-City area: \$43,300,000 to \$ 52,900,000



Impact Report: Nebraska

- Increase in employment
 - Cabelas Incorporated: 75 employees (FTE)
 - State Level : 26 to 31 employees (in addition to Cabelas)
- Increase in labor income (in addition to Cabelas)
 - State Level : \$730,000 to \$890,000



Impact Report: Local area

- Increase in employment
 - Cabelas Incorporated: 75 employees (FTE)
 - Local area: 9 to 12 employees (in addition to Cabelas)
- Increase in labor income (in addition to Cabelas)
 - Local area: \$150,000 to \$183,000

Cargill Industrial Complex

Impact Report – Nebraska

- Increase in employment
 - Cargill complex operations: 530 employees
 - Cargill construction: 300 employees
 - Rest of the state: 2860 to 3500 employees
- Increase in labor income (in addition to Cargill)
 - Rest of the state: \$89,000,000 to \$120,000,000
- Increase in industry output (in addition to Cargill)
 - Rest of the state: \$335,000,000 to \$402,000,000

Cargill Industrial Complex

Impact Report – Omaha MSA

- Increase in employment
 - Cargill complex operations: 530 employees
 - Cargill construction: 300 employees
 - Rest of the Omaha MSA: 1670 to 2030 employees
- Increase in labor income (in addition to Cargill)
 - Rest of the Omaha MSA: \$59,900,000 to \$73,100,000
- Increase in industry output (in addition to Cargill)
 - Rest of the Omaha MSA: \$212,000,000 to \$260,000,000

General Results

In December 2002 the participating firms directly employed 1554. As a consequence of the actions of the spending of these companies, another 3954 to 4125 jobs exist in Nebraska. Direct expenditures in Nebraska of nearly \$300 million by these firms stimulated an additional \$461 million to \$481 million of industry output across the state. Because some of the participating firms are located in metropolitan areas, in addition to the statewide numbers, metro impacts can also be determined. The direct employment of the participating companies in the Omaha Metropolitan Statistical Area (Cargill and D&D Foods) of 950 supports an additional 1888 jobs in the Omaha MSA. Local indirect and induced industry output increased by \$217 million to \$266 million. In the Lincoln MSA, Lincoln Plating's direct employment of 308 supports an additional 290 to 354 jobs locally. Similar, Cabela's Return operation in Oshkosh employs about 75 employees (FTE) and stimulates an additional 9 to 12 jobs locally and 26 to 31 jobs statewide. The Iams Company in Aurora employs 222 individuals. This employment supports an additional 285 to 348 jobs in the Tri-city area and an additional 340 to 416 jobs statewide.

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	Statewide Employment Multipliers	Local Employment Multipliers
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The stated employment multipliers relate to the firms' ongoing production. Beyond this ongoing production employment there is an additional employment impact related to construction and expansion. For example, Lincoln Plating's expansion created 205 to 251 jobs related the construction phase. Cargill is somewhat unique among the participating firms in that it has an ongoing construction employment of three hundred workers. Because they plan to continue this level of expansion, construction at that site was considered permanent. The other firms, which generally have had recent expansions, provided a one-time construction employment impact.

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Glossary of Economic Impact Terms

Impact analysis estimates the impact of dollars from outside the region ("new dollars") on the region's economy. Impact analysis typically includes only the changes in spending of industries that would otherwise not have located in the area, would have moved from the area, or would not have expanded in the area.

Significance analysis estimates the importance or significance of an industry or activity to a region and usually includes spending by both local residents and visitors from outside the region.

Input-output (I-O) model. An input-output model is a representation of the flows of economic activity between sectors within a region. The model captures what each business or sector must purchase from every other sector in order to produce a dollar's worth of goods or services. Using such a model, flows of economic activity associated with any change in spending may be traced either forwards (e.g., spending generates employee wages, which induces further spending) or backwards (e.g., visitor purchases of meals leads restaurants to purchase additional inputs -- groceries, utilities, etc.). Multipliers for a region may be derived from an input-output model of the region's economy.

IMPLAN is a micro-computer-based, input-output modeling system. With IMPLAN, one can estimate I-O models of up to 528 sectors for any region consisting of one or more counties. IMPLAN includes procedures for generating multipliers and estimating impacts by applying final demand changes to the model. The current version of IMPLAN is IMPLAN Pro 2.0.

Final Demand is the term for sales to final consumers (households or government). Sales between industries are termed intermediate sales. Economic impact analysis generally estimates the regional economic impacts of final demand changes. Spending is one type of final demand. In this study, expenditures of the industries under investigation were treated as final demand.

Direct effects are the changes in economic activity during the first round of spending. This involves the impacts on the industries themselves.

Secondary effects are the changes in economic activity from subsequent rounds of spending dollars. There are two types of secondary effects:

- **Indirect effects** are the changes in sales, income, or employment within the region in backward-linked industries supplying goods and services to businesses. For example, the increased sales in linen supply firms resulting from more motel sales are an indirect effect of spending.
- **Induced effects** are the increased sales within the region from household spending of the income earned in supporting industries. Employees spend the income they earn on housing, utilities, groceries, and other consumer goods and services. This generates sales, income, and employment throughout the region's economy.

Total effects are the sum of direct, indirect, and induced effects.

Multipliers capture the size of the secondary effects in a given region, generally as a ratio of the total change in economic activity in the region relative to the direct change. Multipliers may be expressed as ratios of sales, income or employment, or as ratios of total income or employment changes relative to direct sales. Multipliers express the degree of interdependency between sectors in a region's economy and therefore vary considerably across regions and sectors.

- Type I multipliers include only direct and indirect effects.
- Type II multipliers also include induced effects.
- Type SAM multipliers used by IMPLAN adjust the Type II multipliers for income that is not normally re-spent immediately within the region, e.g. wages of commuting workers who live outside the region and contributions to retirement programs.
- A sector-specific multiplier gives total changes throughout the economy associated with a unit change in sales in a given sector.

Capture rate is the percentage of spending that accrues to the region's economy as direct sales or final demand. For imported goods bought at retail establishments, typically only the retail (and possibly wholesale) margins will accrue to the local economy.

Leakage rate is the opposite of the capture rate. Leakage rate plus capture rate equals one. For every dollars spent in the economy, the proportion of that dollar that leaves the region under area under investigation is the leakage rate.

Purchaser prices are the prices paid by the final consumer of a good or service.

Producer prices are the prices of goods at the factory or production point. For manufactured goods the purchaser price = producer price + retail margin + wholesale margin + transportation margin. For services, the producer and purchaser prices are equivalent. The retail, wholesale and transportation margins are the portions of the purchaser price accruing to the retailer, wholesaler, and shipper, respectively. Only the retail margins of many goods purchased by households accrue to the local region, as the wholesaler, shipper, and manufacturer often lie outside the local area.

Measures of economic activity:

Sales or output is the dollar volume of a good or service produced or sold

Final Demand = sales to final consumers

Intermediate sales = sales to other industrial sectors

Income is the money earned within the region from production and sales. Total income includes: **Personal income** - wage and salary income, including income of sole proprietor's profits and rents

Jobs or employment is a measure of the number of jobs required to produce a given volume of sales/production. Jobs are usually not expressed as full time equivalents, but include part time and seasonal positions.

Value Added is the sum of total income and indirect business taxes. Value added is the most commonly used measure of the contribution of a region to the national economy, as it avoids double counting of intermediate sales and captures only the “value added” by the region to final products.

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