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Bureau of Business and
Economic Research

Research Report

The Economic Structure of The Northland Works Region, 2009

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For

Northland Regional Economic Development Strategy 2009
Leadership Steering Committee

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Executive Summary

The Labovitz School's Bureau of Business and Economic Research (BBER) was asked to assist the Northland Works Partnership with preliminary economic assessment mapping for a U.S. Department of Labor Regional Innovation Grant (RIG). The planning committee of the Northland Works RIG will use this information to help formulate an economic development strategy for the region. BBER worked closely with the Regional Analyst from the Minnesota Department of Employment and Economic Development to review and present the data.

An overview of the sectoring of the total regional economy is presented. The composite picture of the Industry snapshots of key sectors of the Northland Works region are presented using benchmarks of the economic base. Each sector is first defined and quantified in three economic measures (Value added or "earnings", Output or "sales," and Employment or "jobs"). The description of the industry sector goes on to show the relationship of the key sector to the rest of the region's economy by showing the industry's percent of sales, jobs, and earnings (or gross regional product). The industry is further described using a table that shows the direct requirements for the industry (who the industry buys from). The sector description concludes with a list of jobs dependent on the key industry through indirect and induced employment in the region's economy. Workforce issues are represented in a graph of the historical trend of employment in the industry, as well as actual recent changes, and estimations of trend for the future. Finally, insights from the data are highlighted through economic analyses by location quotient and shift share, which point to opportunities for regional development.

The key Northland Works industry primary sectors selected as most relevant to economic development and reported in this report are 1) Ag, Forestry, Fish & Hunting; 2) Mining; 3) Manufacturing; 4) Information; 5) Professional-Scientific & Tech Services; 6) Health & Social Services; and 7) Accommodation & Food Services. These sectors are each presented to show sector definition, workforce involvement, and analyses which attempt to answer the following questions: How concentrated is this sector in the region? How fast is this sector growing? How much economic impact does this sector have? Is there a possibility for import substitution?

Among the insights from the asset mapping data and analyses are:

- From the analyses presented in this report, regional planners can begin to define what we mean by "green" jobs, the "transportation" sector, and the "energy" sector. Planners can also begin to combine attributes of the sectors (emerging, declining, basic, non-basic) for specific brain-storming about opportunities for development. For instance, a supersector like manufacturing has been shown to contain both declining industries and growing industries. The location quotients for three-digit sectors, as well as other analyses provided in this report, can help

planners examine the regional significance of specific parts of the larger sector. Planners can then draft action steps in relation to the way companies are transforming and realigning in the larger sector.

- The asset mapping of primary sector discussion includes a gap analyses which shows opportunities for import substitution. This "leakage," or outsourcing of suppliers, is a further economic development opportunity.

- The question "How does an important but declining company begin to downscale?" can be studied in the context of its secondary impacts and supply chain linkage, also presented in this report.

- A careful examination of trend data can show if and when a key industry is faltering. For example, planners may ask when are fossil fuels expected to be replaced, and what kind of energy sector re-constitution would be a driver of the regional economy? How can the possible sector replacement be planned as ready, nimble, and dynamic when the opportunity strikes? If not, what's missing?

The data presented in the following report points to these economic development opportunities.

Note: A second, complementary report, "Key Subsector Reports," provided by the Northeast Minnesota Regional Analyst of the Minnesota Department of Employment and Economic Development provides selected additional data and analyses on the Northland Works regional economy. This report contains industry data, occupation data, location quotients, and projections, using the analytical tools and online resources of Economic Modeling Specialists, Inc. (EMSI). This report also provides information from state data sources.

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The Economic Structure of The Northland Works Region, 2009

I. Project Description

Proposal Description

The assets of the proposed Northland Works Regional Innovation Grant (RIG) have been previously mapped in various data collections and displays. However, a distillation of the most significant features of the asset map, with an analysis of industry structure supply and demand for the purposes of economic development, was identified as a needed approach. The UMD Labovitz School's Bureau of Business and Economic Research (BBER) proposed to provide a specialized description of the economic structure of the Northland Works region, which would narrowly focus on significant data-driven features for use by the Northland Works committee of planners.

BBER proposed a short review of the general characteristics of the region, and a sector-specific profile of the region, highlighting facts than might not be obvious, emphasizing the region's economic structure. In the following report (and in presentations preceding this publication) primary industry sectors are presented in a short format. Secondary sectors are covered in a shorter format and also presented as part of the supply chain and secondary impacts of the primary sectors. Workforce development information and entrepreneurial networks are included in this report as separate regional reviews.

Data Sources

Secondary data sources include, but are not limited to, data provided by Economic Modeling Specialists Inc. (EMSI),[*] Northland Connection, MN DEED, and other Minnesota and Wisconsin state data sources.

Readers are cautioned to carefully observe the limits of the study area, the sectoring structure level of data (2-digit, 3-digit, and 4-digit), as well as the sectoring definition source (NAICS, IMPLAN, EMSI). Also important to note, possible aggregations and combinations of industries can make a dramatic difference in the analytical results. For example, an analysis that shows mining's concentration as a location quotient is reported as either 2.76 or 422 times as concentrated as the US depending on the sector aggregation or disaggregation (all mining, or specifically iron ore mining) and depending on the comparison of the State, Region, or County to the US. (For more detail, see the 3-digit IMPLAN location quotients of Appendix D compared to the supersector and 2-digit aggregations of EMSI data.)

[*] Economic Modeling Specialists Inc. PO Box 9008 Moscow, ID 83843 866.999.3674 . EMSI was founded in 1987 as Robison and Associates, and became Economic Modeling Specialists Inc. in 1995. EMSI specialized in regional input/output modeling and began producing its own regional economic data throughout the 1990s as a basis for input/output models. http://www.economicmodeling.com/

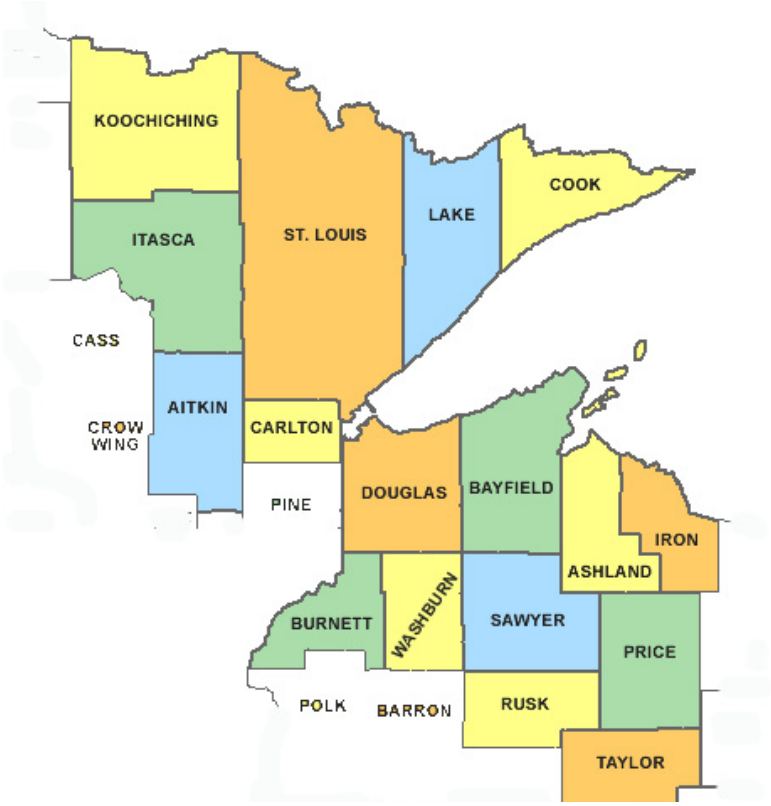
Data sources also included the secondary federal government data sources for IMPLAN modeling:

- US Bureau of Economic Analysis Benchmark I/O Accounts of the US
- US Bureau of Economic Analysis Output Estimates
- US Bureau of Economic Analysis REIS Program
- US Bureau of Labor Statistics County Employment and Wages (CEW) Program
- US Bureau of Labor Statistics Consumer Expenditure Survey
- US Census Bureau County Business Patterns
- US Census Bureau Decennial Census and Population Surveys
- US Census Bureau Economic Censuses and Surveys
- US Department of Agriculture Crop and Livestock Statistics

The Study Area

The geographic scope for this economic impact analysis is proposed to be seventeen adjacent counties in Northeast Minnesota and Northwest Wisconsin. This region is comprised of the Minnesota counties of Aitkin, Cook, Itasca, Koochiching, Lake, St. Louis, and Carlton Counties (also known as the Arrowhead Region), as well as the Wisconsin counties of Ashland, Burnett, Bayfield, Douglas, Iron, Price, Rusk, Sawyer, Taylor, and Washburn Counties.

Figure 1. Minnesota and Wisconsin Counties in the Northland Works study region.



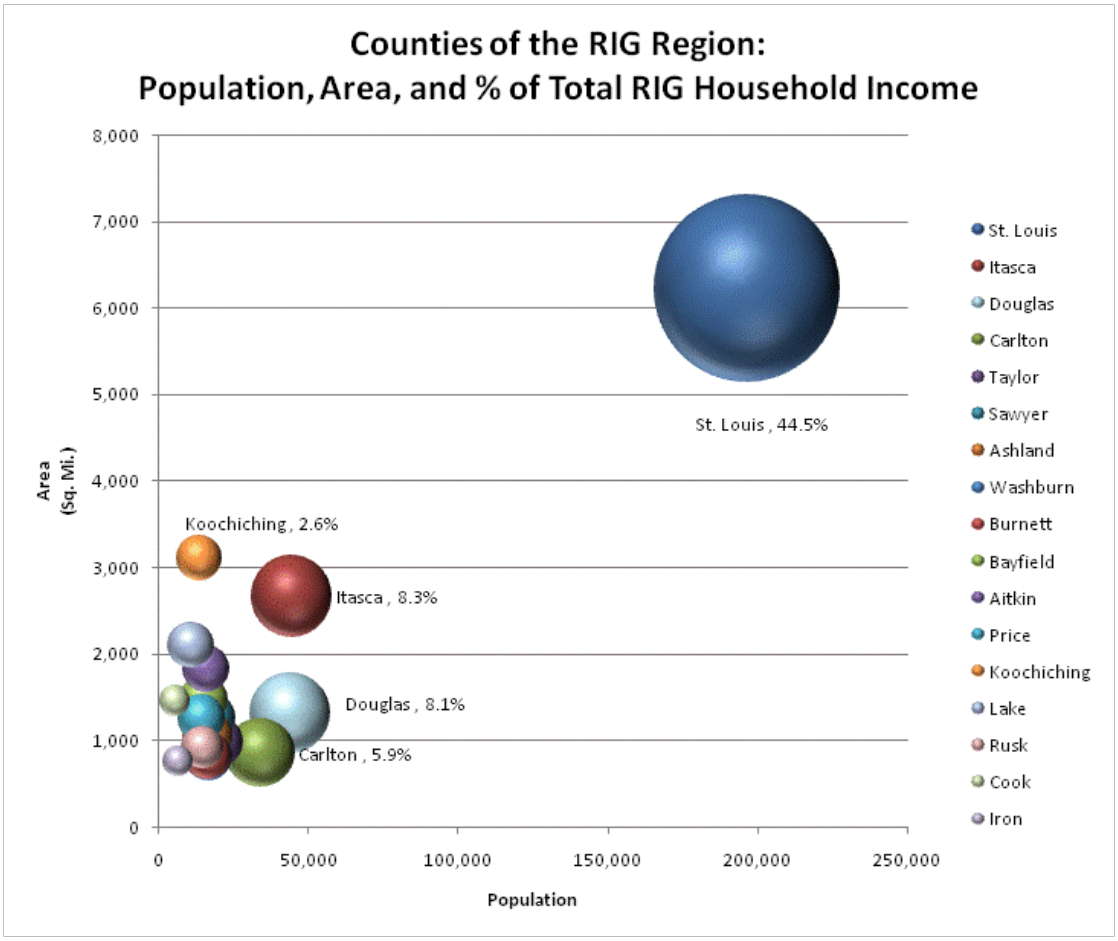
Source: Copyright 2005 digital-topo-maps.com (by permission).

General characteristics of the region

The following regional characteristics assume a base year of 2007 (the most recent IMPLAN data year available).

The following chart shows the relative significance of population, area in square miles, and percent of total regional household income by county.

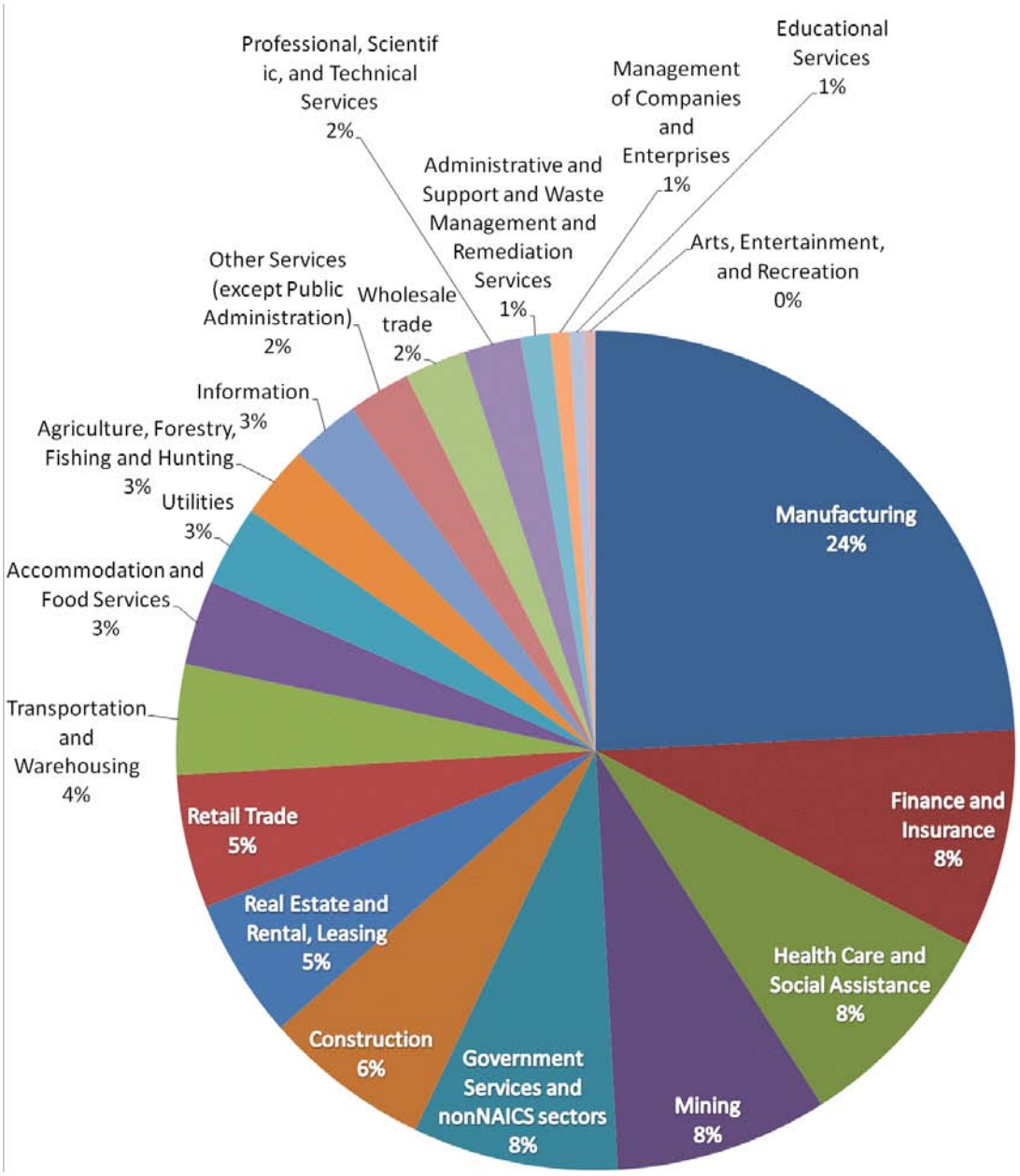
Figure 2. Counties of the Northland Works Region: Population, Area, and % of Total Household Income



Source: IMPLAN; BBER

The following chart shows the economic sectors of the region and their relative importance to the region, according the output (or the value of local production, or sales).

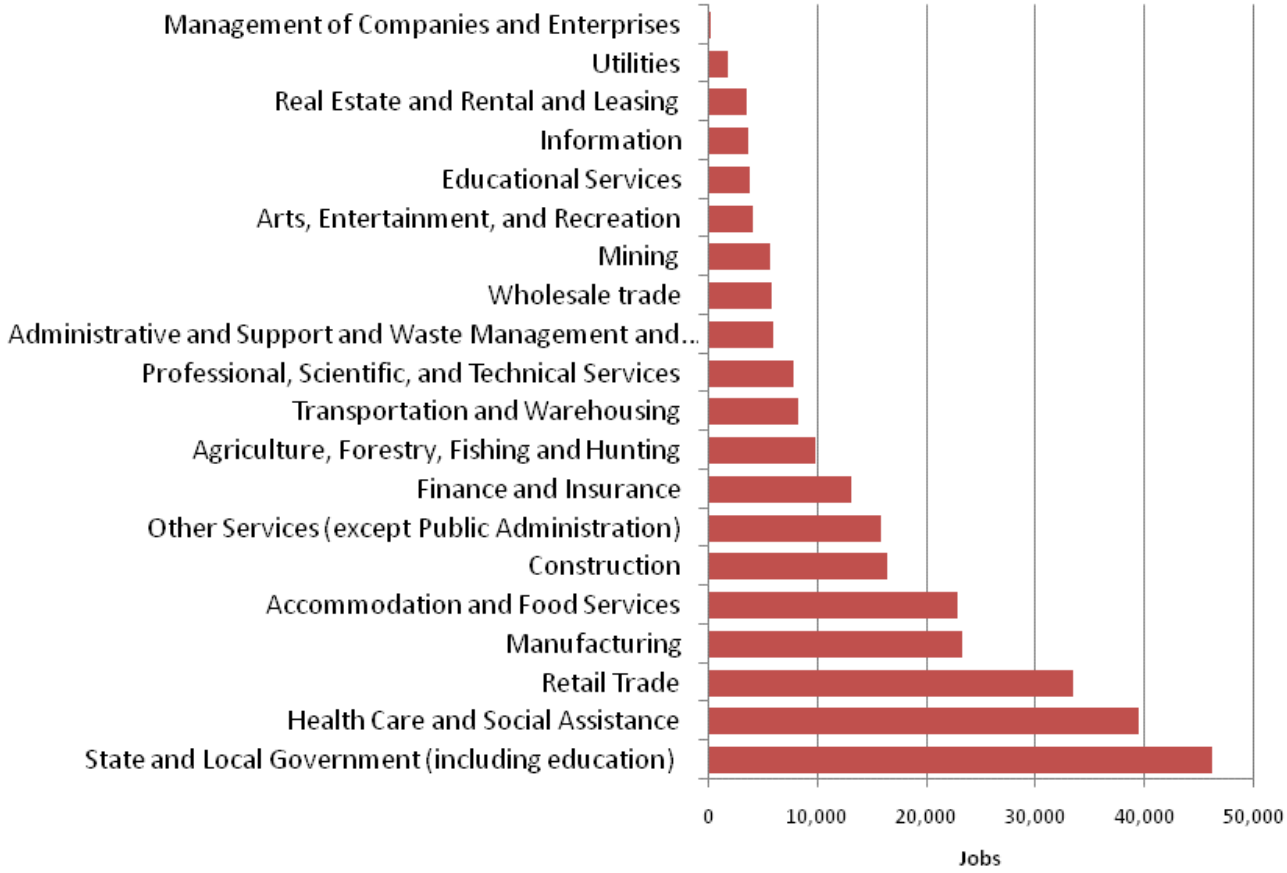
Figure 3. Northland Works Economy by NAICS Supersector, % Output (Sales) in 2007



Source: IMPLAN; BBER

The following chart shows total employment for regional industry sectors, ranked from smallest to largest employing industries.

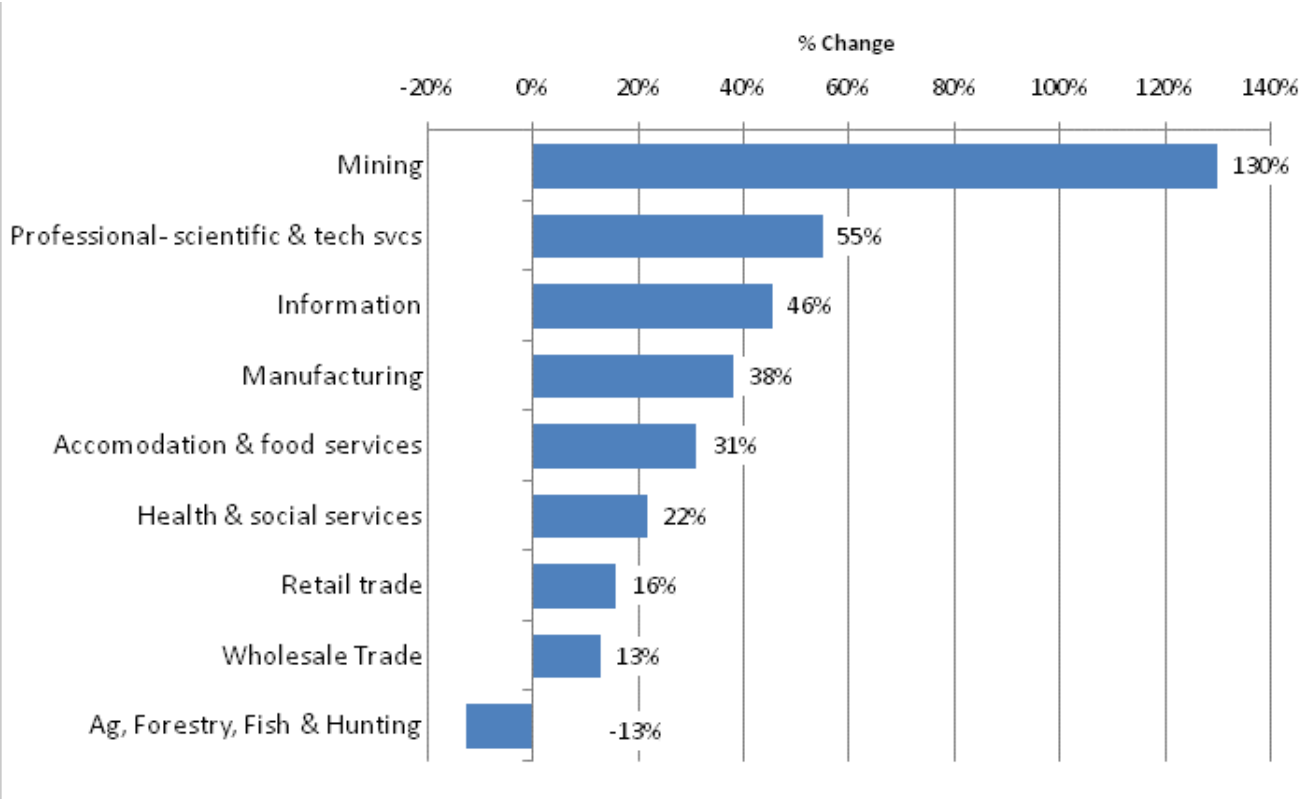
Figure 4. Northland Works Regional Employment by NAICS Supersector, 2007



Source: IMPLAN; BBER

The following chart shows the percent change in regional suspersector output, from 2002 to 2007, ranked by sector from greatest positive change to most negative change.

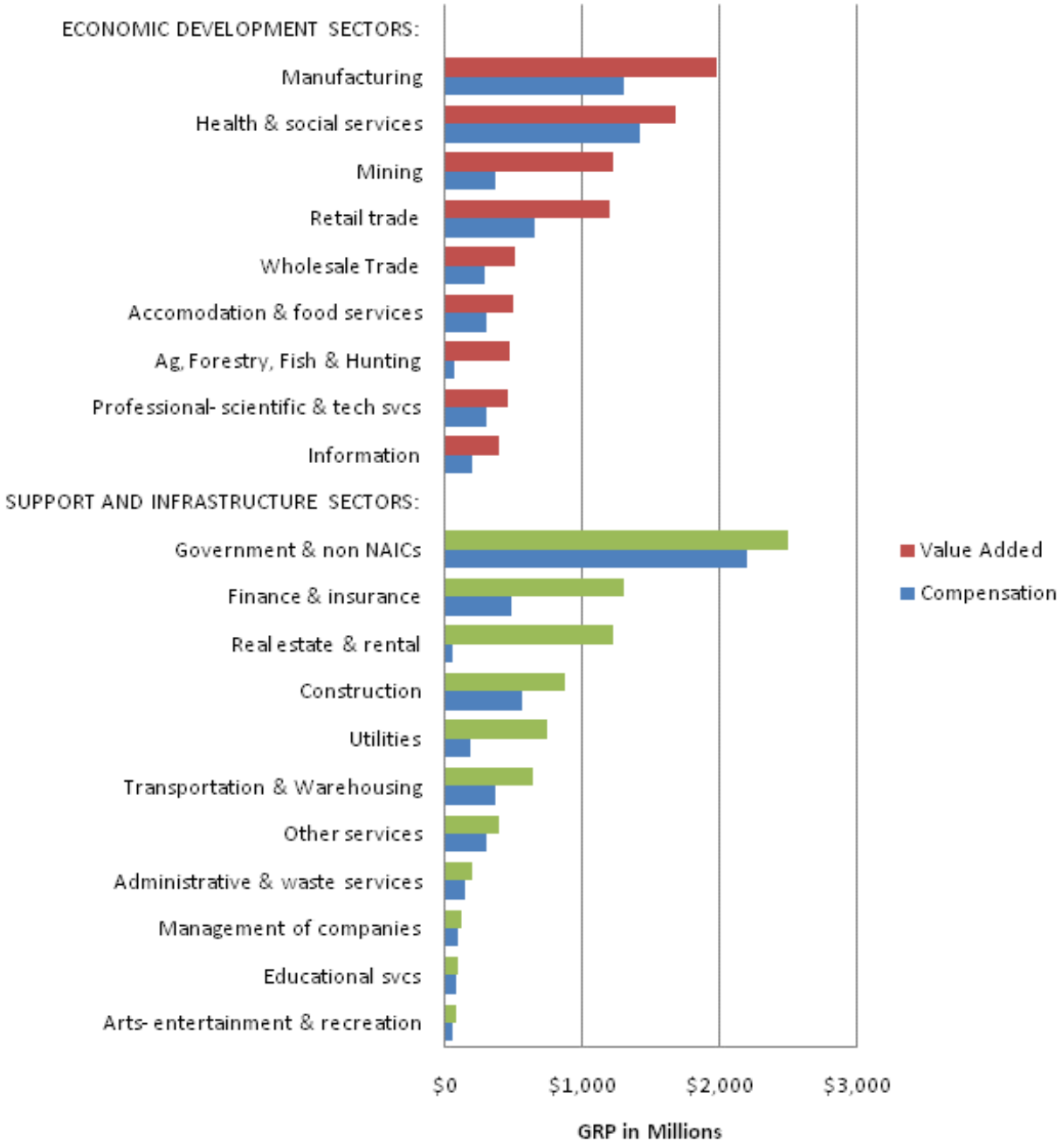
Figure 5. Change in Northland Works Supersector Output, 2002 to 2007



Source: IMPLAN; BBER

The following chart shows the region's gross regional product (GRP) by industry sector, and compares the industry's GRP with the industry's employee compensation, showing the extent to which payrolls contribute to the gross regional product for each industry.

Figure 6. Comparison of Northland Works Value Added (Regional Gross Product) with Employee Compensation, by Industry Sector, 2007



Source: IMPLAN; BBER

Regional industries with highest worker productivity. (This table shows a list of only the top 20 most productive industries, ranked by output per work.)

Table 1. Top Twenty Regional industries with Highest Output per Worker, 2007

Top Twenty Regional industries with Highest Output per Worker, 2007

Industry	*Output per worker*
Petroleum refineries	$6,981,098
Forestry- forest products- and timber tract produc	$2,943,667
Soybean and other oilseed processing	$2,628,000
Soap and cleaning compound manufacturing	$1,077,545
Lessors of nonfinancial intangible assets	$906,308
Transport by pipeline	$869,500
Breweries	$857,750
Dry- condensed- and evaporated dairy product manuf	$786,000
Sound recording industries	$775,600
Audio and video equipment manufacturing	$755,818
Other animal food manufacturing	$744,000
Cheese manufacturing	$735,660
Lime and gypsum product manufacturing	$647,980
Paper mills	$631,142
Sanitary paper product manufacturing	$627,788
Soft drink and ice manufacturing	$612,389
Maint & repair construct of residential structures	$537,525
Transport by water	$537,339
Medicinal and botanical manufacturing	$522,588
Coffee and tea manufacturing	$506,909
(Plus 216 more sectors of the economy . . .)	

Source: IMPLAN

Regional industries with lowest productivity. (Again, this table shows a list of only the top 20 least productive industries, ranked by output per work.)

Table 2. Twenty Regional industries with Lowest Output per Worker, 2007

Twenty Regional industries with Lowest Output per Worker, 2007

Industry	*Output per worker*
Support activities for agriculture and forestry	$18,784
Performing arts companies	$21,520
Commercial Fishing	$21,984
Private elementary and secondary schools	$24,273
Fitness and recreational sports centers	$25,037
Employment services	$26,506
Investigation and security services	$26,977
Retail Stores - Miscellaneous	$27,514
Child day care services	$28,780
Retail Stores - Sporting goods- hobby- book and mu	$31,514
Animal production- except cattle and poultry and e	$31,579
Amusement parks- arcades- and gambling industries	$31,591
Nursing and residential care facilities	$32,864
Individual and family services	$34,440
Promoters of performing arts and sports and agents	$34,500
Bowling centers	$35,110
Community food- housing- and other relief services	$37,316
Independent artists- writers- and performers	$38,471
Retail Nonstores - Direct and electronic sales	$39,527
Other amusement and recreation industries	$40,278
(Plus 216 more sectors of the economy . . .)	

Source: IMPLAN

Top 50 regional output sectors, descending from largest, 2007:

Table 3. Top 50 Regional Output Sectors, Ranked Descending from Largest, 2007

Top 50 regional Output Sectors , Ranked Descending from largest, 2007

Rank	*Industry*	*Output in 2007 dollars*
1	Mining iron ore	$2,043,372,000
2	Paper mills	$1,872,588,000
3	Insurance carriers	$1,543,501,000
4	Imputed rental activity for owner-occupied dwellin	$1,398,007,000
5	* Special (S&LG Ed Emp & Payroll)	$1,274,539,000
6	Private hospitals	$1,125,364,000
7	Electric power generation- transmission- and distr	$1,025,587,000
8	Offices of physicians- dentists- and other health	$853,246,000
9	Food services and drinking places	$842,116,000
10	Monetary authorities and depository credit interme	$804,523,000
11	Wholesale trade businesses	$798,292,000
12	Petroleum refineries	$781,883,000
13	* Special (S&LG Non-Ed Emp & Payroll)	$686,998,000
14	Construct new residential permanent site single-an	$655,512,000
15	Construct new nonresidential commercial, health	$600,573,000
16	Wood windows and doors and millwork mfg	$477,716,000
17	Transport by truck	$462,667,000
18	Transport by rail	$455,797,000
19	Commercial logging	$433,636,000
20	Extraction of oil and natural gas	$382,160,000
21	Construction machinery manufacturing	$363,441,000
22	Reconstituted wood product manufacturing	$361,739,000
23	Construct other new nonresidential structures	$361,513,000
24	Telecommunications	$361,028,000
25	Nursing and residential care facilities	$335,401,000
26	Real estate establishments	$321,428,000
27	Retail Stores - Food and beverage	$277,174,000
28	Mining copper- nickel- lead- and zinc	$271,279,000
29	Retail Stores - Motor vehicle and parts	$264,418,000
30	Retail Stores - General merchandise	$260,727,000
31	Management of companies and enterprises	$251,116,000
32	Aircraft manufacturing	$242,060,000
33	Maint & repair construct of nonresident structures	$234,548,000
34	Civic- social- professional- and similar organizat	$219,292,000
35	Retail Stores - Building material and garden suppl	$215,754,000
36	Other plastics product manufacturing	$207,669,000
37	Automotive repair, maintenance- except car wash	$206,834,000
38	Cheese manufacturing	$206,167,000
39	Construct other new residential structures	$206,108,000

Top 50 regional Output Sectors , Ranked Descending from largest, 2007

Rank	*Industry*	*Output in 2007 dollars*
40	Other industrial machinery manufacturing	$201,310,000
41	Insurance agencies- brokerages- and related activi	$200,749,000
42	Sawmills and wood preservation	$198,019,000
43	Securities- commodity contracts- investments- and	$198,018,000
44	Hotels and motels- including casino hotels	$198,012,000
45	Other state and local government enterprises	$193,225,000
46	* Special (Federal Non-Military Emp & Payroll)	$192,760,000
47	Dairy cattle and milk production	$192,600,000
48	Animal (except poultry) slaughtering- rendering- a	$188,429,000
49	Architectural- engineering- and related services	$185,238,000
50	Retail Stores - Gasoline stations	$179,872,000
	. . . and so forth, descending to sectors with zero output for the region.	

Source: IMPLAN

For the most comprehensive overview of the total Northland Works economy, see Appendix C for a list of all 3-digit IMPLAN sectors (based on 4-digit NAICS coding), including output, employment, and value added measures for the aggregated and disaggregated industries of the regional economy. This appendix also identifies the top fifty output sectors (shown in red ink) and shows where these specific top performing output sectors occur in relation to other sectors and the total economy.

II. Primary Sectors of the Economy

Economic Development Sectors

The composite picture of the regional economy can be detailed by looking further into the structure of the region's economic base. The following snapshots of selected key industrial sectors of the Northland Works region, compresses important benchmarks of the economic base of the region for key industries.

The sector is first defined and represented in three economic measures (Value added or "earnings", Output or "sales," and Employment or "jobs." The definition goes on to show the relationship of the key sector to the rest of the region's economy by showing the industry's percent of sales, jobs, and earnings (or gross regional product). The industry is further described using a table that shows the direct requirements for the industry, or who the industry buys from. Finally the sector definition concludes with a list of jobs dependent on the key industry through indirect and induced employment in the region's economy.

Workforce issues are represented in a graph the historical trend of employment in the industry, as well as actual recent changes, and estimations of trend for the future.

Finally, insights from the data are highlighted, including various economic analyses which point to opportunities for regional development.

The key Northland Works industries presented here are:

1) Ag, Forestry, Fish & Hunting
2) Mining
3) Manufacturing
4) Information
5) Professional-Scientific & Tech Services
6) Health & Social Services
7) Accommodation & Food Services

Each of these sectors is discussed under three categories:

- Sector definition
- Workforce
- Analytical insights, including:
    - How concentrated is this sector in the region?
    - How fast is this sector growing?
    - How much economic impact does this sector have?
    - Is there a possibility for import substitution?

1) Ag, Forestry, Fish & Hunting

Sector definition

There are approximately 316 establishments in this sector. Occupations in the industries of this sector include (in descending importance by frequency) farmers and ranchers, agricultural managers and laborers, logging equipment supervisors and operators, fallers, and various fishing workers. Two industries in this sector are represented in the region's top 50 output (or sales) industries.

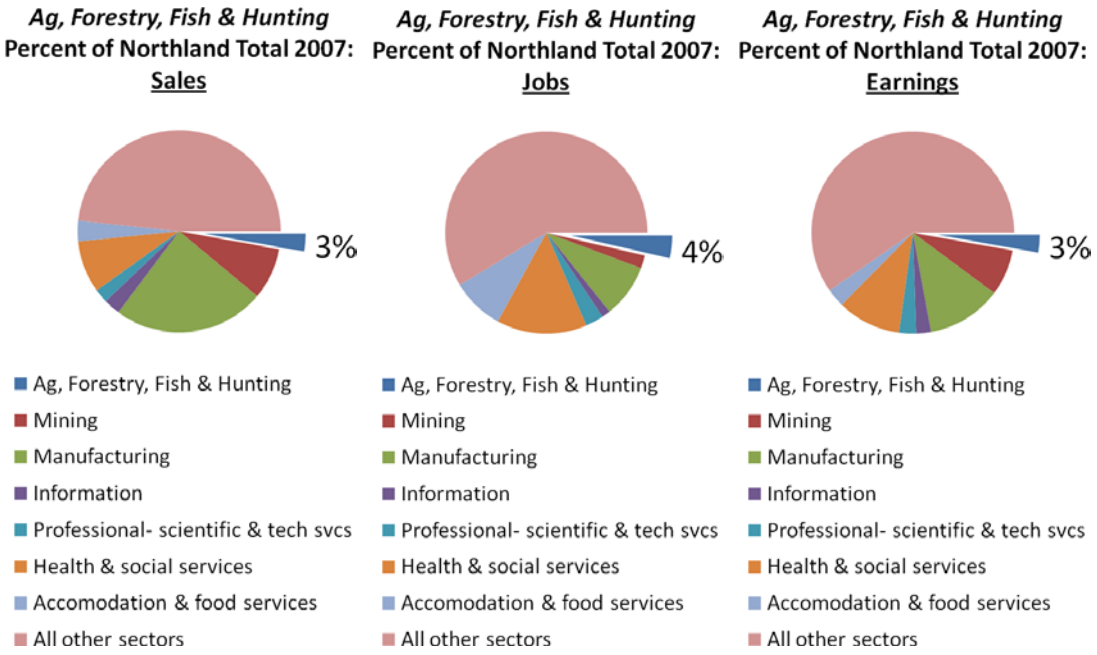
Table 4. Northland Works Regional Ag, Forestry, Fish & Hunting Industries, 2007

Regional Ag, Forestry, Fish & Hunting Industries, 2007	*Sales*	*Jobs*	*Earnings*
*Commercial logging	$433,636,000	2,820	$245,535,000
*Dairy cattle and milk production	$192,600,000	2,238	$77,680,000
Cattle ranching and farming	$63,963,000	937	$11,529,000
All other crop farming	$53,689,000	454	$17,451,000
Forestry- forest products- and timber tract produc	$46,381,000	37	$27,814,000
Fruit farming	$30,648,000	431	$16,854,000
Grain farming	$25,718,000	648	$8,358,000
Animal production- except cattle and poultry and e	$25,030,000	1,100	$13,390,000
Poultry and egg production	$24,684,000	88	$4,601,000
Commercial hunting and trapping	$22,763,000	177	$16,028,000
Greenhouse- nursery- and floriculture production	$16,072,000	204	$10,585,000
Support activities for agriculture and forestry	$12,216,000	545	$10,354,000
Oilseed farming	$5,173,000	96	$2,372,000
Vegetable and melon farming	$4,165,000	46	$2,179,000
Commercial Fishing	$1,713,000	86	$754,000
Agriculture, Forestry, Fishing and Hunting Total	**$958,451,000**	**9,907**	**$465,484,000**

*Included in the region's top 50 output sectors.

Source: IMPLAN

Figure 7. Northland Works Ag, Forestry, Fish & Hunting Sales, Jobs, and Earnings 2007



What is the economic impact of jobs in the Agriculture, Forestry, Fishing and Hunting sector? The following table shows which regional industries depend on this sector to create indirect and induced employment.

Table 5. Regional Employment Dependent on Agriculture, Forestry, Fishing and Hunting, 2007

Industry Driver	*Direct employment*	*Indirect and induced employment*	*All employment related to this industry*
AGRICULTURE, FORESTRY, FISHING AND HUNTING	**9,907**		
Jobs dependent on Agriculture, Forestry, Fishing and Hunting:			
Retail Trade		411	
Manufacturing		391	
Health Care and Social Assistance		332	
Accommodation and Food Services		242	
Professional, Scientific and Technical Services		228	
Finance and Insurance		223	
Other services		221	
Government and non NAICS		176	
Transportation and Warehousing		171	
Wholesale Trade		160	
Educational Services		158	
Real Estate and Rental and Leasing		108	
Arts, Entertainment and Recreation		56	
Construction		52	
Information		37	
Utilities		33	
Management of Companies		19	
Mining		7	
Total jobs dependent on this sector:	9,907	4,975	14,882

Who do the firms in this sector buy from in order to produce their goods and services? The following table shows regional purchases by this sector.

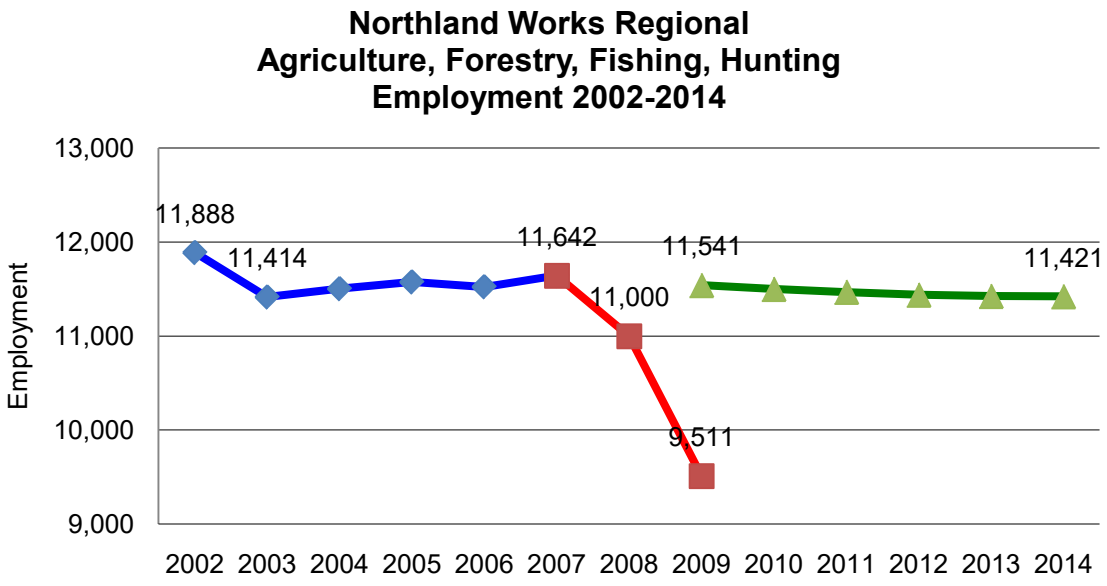
Table 6. Regional Inputs: Agriculture, Forestry, Fishing and Hunting Local Purchase of Commodities, 2007

Agriculture, Forestry, Fishing and Hunting purchases from sectors of the regional economy:	*% of industry's total purchases*
Ag, Forestry, Fish & Hunting	47.5%
Manufacturing	21.7%
Real estate & rental	8.6%
Finance & insurance	4.5%
Professional- scientific & tech svcs	4.4%
Transportation & Warehousing	4.3%
Utilities	3.3%
Wholesale Trade	3.2%
Construction	0.9%
Educational svcs	0.6%
Other services	0.5%
Administrative & waste services	0.1%
Retail trade	0.1%
Accommodation & food services	0.1%
Information	0.1%
Government & non NAICs	0.1%
Arts- entertainment & recreation	0.0%
Total Commodity Demand	100.0%

Workforce

Employment historical trend, recent events, and long-term forecast:

Figure 8. Northland Works Regional Ag, Forestry, Fish & Hunting Employment 2002-2014



Source: MN DEED, EMSI

Analytical Insights

How concentrated is this sector in the region? The location quotient for this regional sector compared to the U.S. in 2008 is 1.85. This sector is part of the economic base of the region. (See the Appendix D for more location quotient information.)

How fast is this sector growing? Shift share analysis for the years 2003 to 2008 result in a Regional Competitiveness Effect of 550, an Industrial Mix Effect of -1,277, and a National Effect 904. (See Appendix B for a sector-ranked shift share table.)

How much economic impact does this sector have? Economic multipliers for this sector, in year 2007, show that for every sector job, another 0.49 job is created; for every dollar of sales in this sector, another $0.65 is spent; and for every dollar of earnings, for example payroll, another $0.63 is added to the economy.

Is there a possibility for import substitution? Gap analysis shows the following top ten opportunities for developing local suppliers. Within the Regional Ag, Forestry, Fish & Hunting Industries sector, 2007, both Commercial logging and Dairy cattle and milk production are important. Opportunities in logging are pictured and quantified as follows:

Figure 9. 2009 (2nd Quarter) Requirements for: Logging

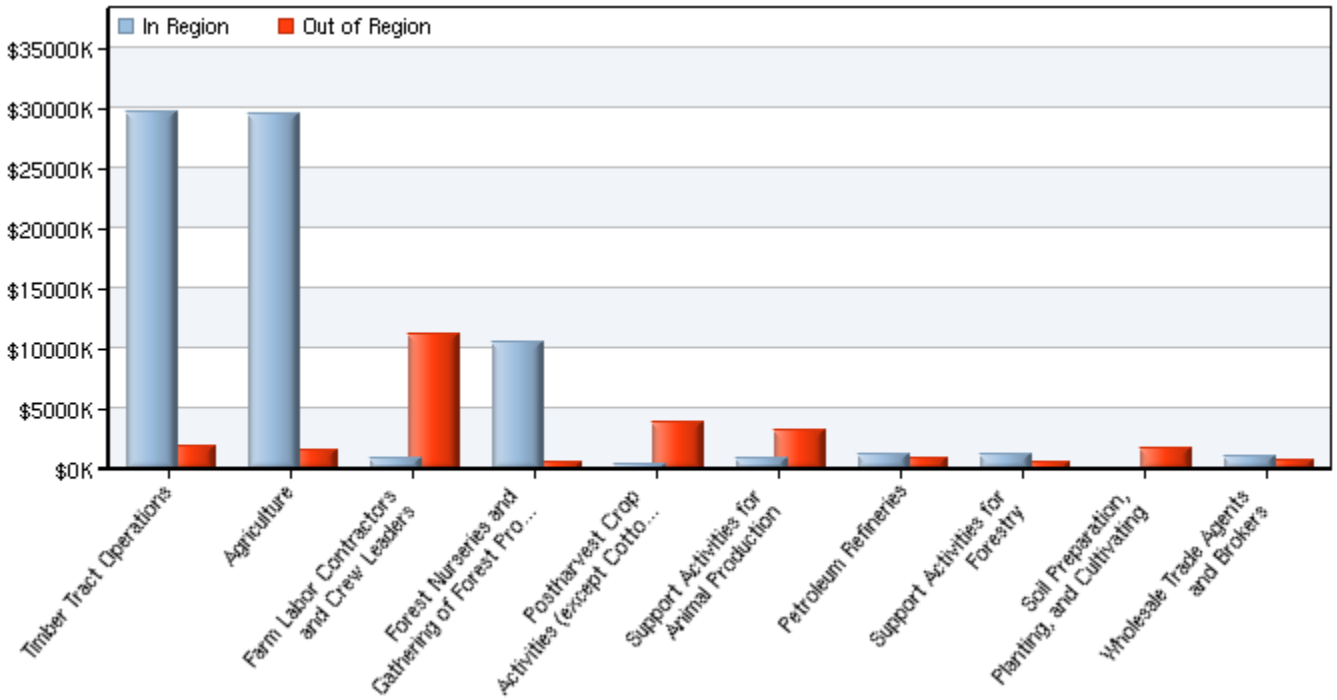


Table 7. Top 10 opportunities for import substitution: Logging, 2009

Logging requirements	*Total Requirements (K)*	*% Satisfied out of Region*
Timber Tract Operations	$31,467	6%
Agriculture	$30,974	5%
Farm Labor Contractors and Crew Leaders	$11,892	93%
Forest Nurseries and Gathering of Forest Products	$11,027	5%
Postharvest Crop Activities (except Cotton Ginning)	$4,105	92%
Support Activities for Animal Production	$3,943	79%
Petroleum Refineries	$1,905	42%
Support Activities for Forestry	$1,758	32%
Soil Preparation, Planting, and Cultivating	$1,710	96%
Wholesale Trade Agents and Brokers	$1,651	40%

Source: EMSI

Opportunities in agriculture (crop and animal production) are pictured and quantified as follows:

Figure 10. 2009 (2nd Quarter) Requirements for: Agriculture

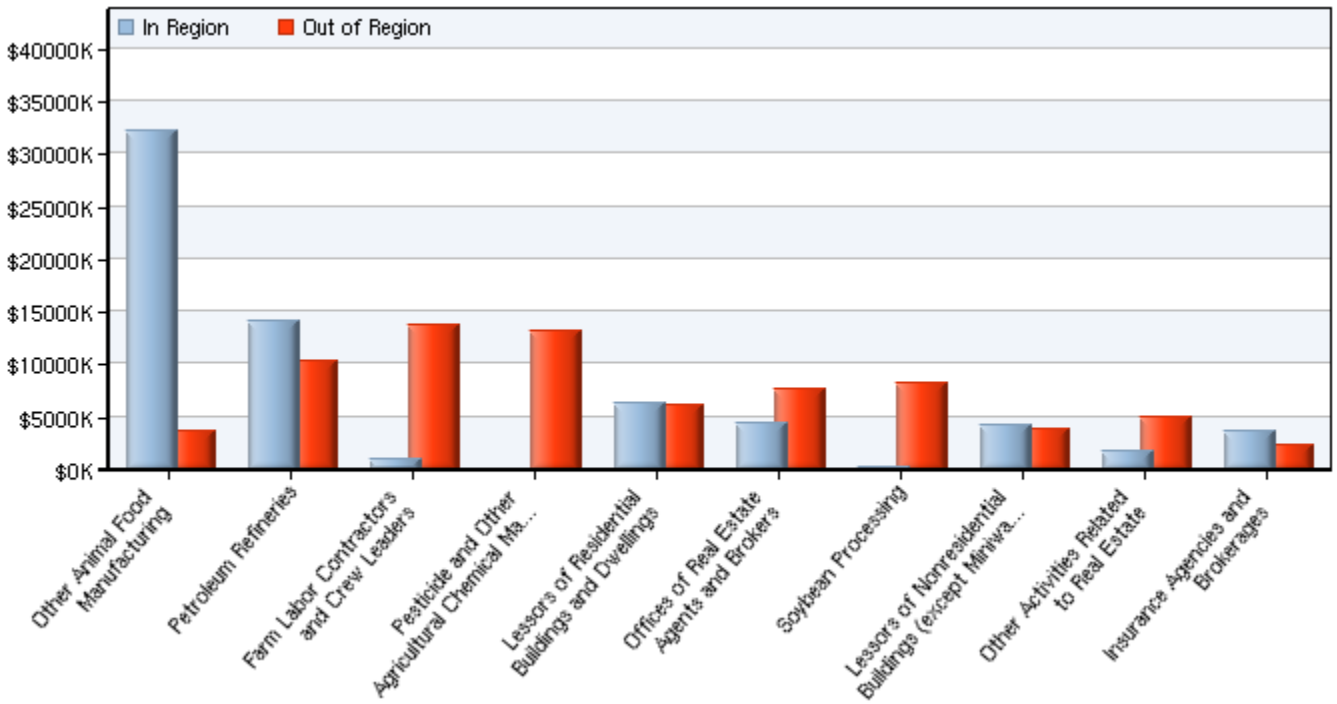


Table 8. Top 10 opportunities for import substitution: Agriculture, 2009

Agriculture requirements	*Total Requirements (K)*	*% Satisfied out of Region*
Other Animal Food Manufacturing	$35,801	10%
Petroleum Refineries	$24,365	42%
Farm Labor Contractors and Crew Leaders	$14,709	93%
Pesticide and Other Agricultural Chemical Manufacturing	$13,230	100%
Lessors of Residential Buildings and Dwellings	$12,425	49%
Offices of Real Estate Agents and Brokers	$11,985	63%
Soybean Processing	$8,457	98%
Lessors of Nonresidential Buildings (except Miniwarehouses)	$8,088	48%
Other Activities Related to Real Estate	$6,721	73%
Insurance Agencies and Brokerages	$6,025	39%

Source: EMSI

2) Mining

Sector Definition

There are approximately 44 establishments in this sector. Occupations in the industries of this sector include (in descending importance by frequency Operating engineers and construction equipment operators, heavy equipment mechanics, truck drivers, electricians, construction managers, installation and repair workers, and other managers. Three industries in this sector are represented in the region's top 50 output (or sales) industries.

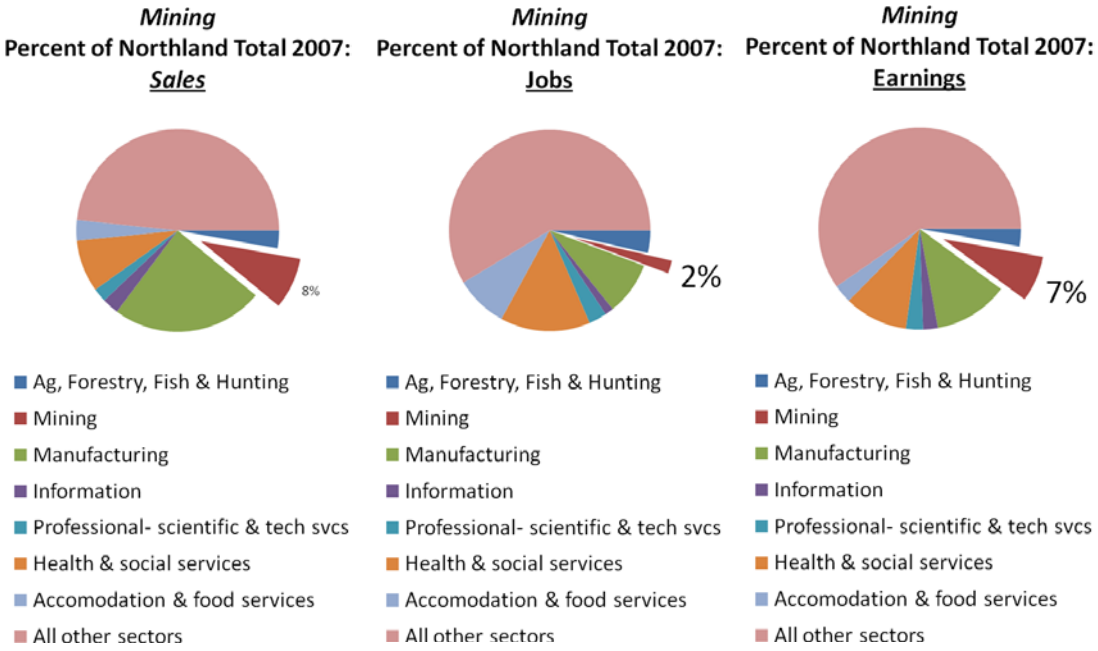
Table 9. Northland Works Regional Mining, 2007

Mining	***Sales***	***Jobs***	***Earnings***
Mining iron ore	$2,043,372,000	3,621	$927,221,000
Extraction of oil and natural gas	$382,160,000	1,027	$87,172,000
Mining copper- nickel- lead- and zinc	$271,279,000	531	$182,056,000
Support activities for oil and gas operations	$38,553,000	274	$2,652,000
Support activities for other mining	$32,100,000	95	$7,060,000
Mining and quarrying sand- gravel- clay- and ceram	$13,600,000	83	$7,066,000
Mining and quarrying other nonmetallic minerals	$3,938,000	29	$1,694,000
Mining and quarrying stone	$614,000	3	$392,000
Mining Total	**$2,785,616,000**	**5,663**	**$1,215,313,000**

*Included in the region's top 50 output sectors.

Source: IMPLAN

Figure 11. Northland Works Regional Mining Sales, Jobs, and Earnings, 2007



What is the employment impact of jobs in the Mining sector? The following table shows which regional industries depend on this sector to create indirect and induced employment.

Table 10. Regional Employment Dependent on Mining, 2007

Industry Driver	*Direct employment*	*Indirect and induced employment*	*All employment related to this industry*
MINING	**5,663.00**		
Jobs dependent on MINING:			
Retail Trade		1,670	
Health Care and Social Assistance		1,182	
Construction		1,138	
Manufacturing		1,089	
Professional, Scientific and Technical Services		962	
Accommodation and Food Services		926	
Other services		769	
Government and non NAICS		733	
Finance and Insurance		712	
Educational Services		592	
Transportation and Warehousing		585	
Wholesale Trade		408	
Management of Companies		348	
Real Estate and Rental and Leasing		346	
Agriculture, Forestry, Fishing and Hunting		298	
Arts, Entertainment and Recreation		198	
Information		157	
Utilities		138	
Total jobs dependent on this sector:	5,663.00	12,272	17,935

Who do the firms in this sector buy from in order to produce their goods and services? The following table shows regional purchases by this sector.

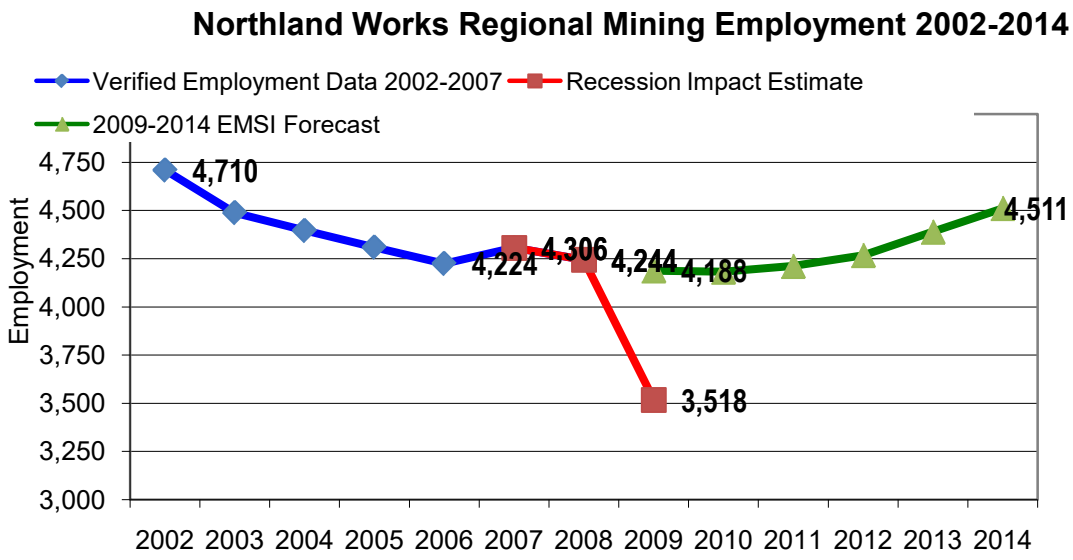
Table 11. Regional Inputs: Mining's Local Purchase of Commodities, 2007

Mining purchases from sectors of the regional economy:	% of industry's total purchases
Utilities	24.80%
Professional, Scientific and Technical Services	17.85%
Government and non NAICS	12.41%
Retail Trade	9.13%
Real Estate and Rental and Leasing	7.93%
Management of Companies	7.13%
Educational Services	6.08%
Agriculture, Forestry, Fishing and Hunting	6.08%
Transportation and Warehousing	2.97%
Other services	1.41%
Arts, Entertainment and Recreation	0.93%
Finance and Insurance	0.89%
Manufacturing	0.74%
Mining	0.74%
Information	0.49%
Wholesale Trade	0.30%
Construction	0.09%
Accommodation and Food Services	0.03%
Total Commodity Demand	100.00%

Workforce

Employment historical trend, recent events, and long-term forecast:

Figure 12. Northland Works Regional Mining Employment 2002-2014



Source: MN DEED, EMSI

Analytical Insights

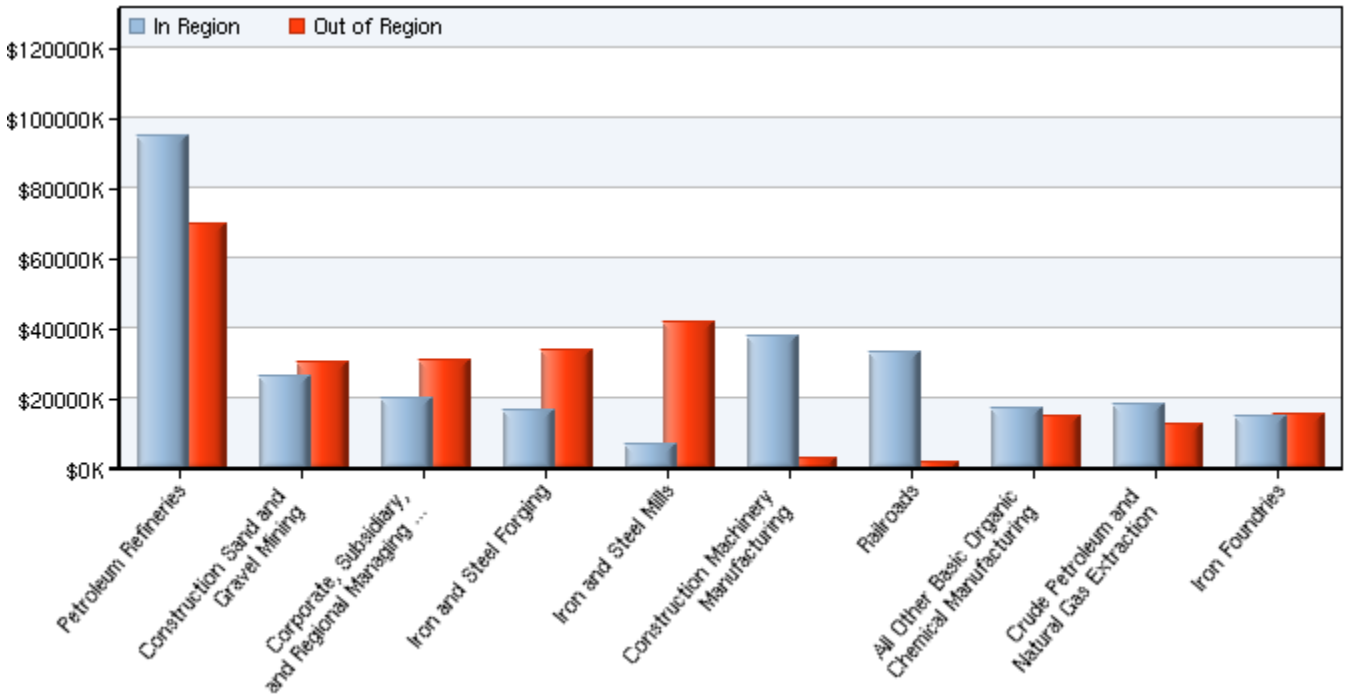
How concentrated is this sector in the region? The location quotient for this regional sector compared to the U.S. in 2008 is 2.76. This sector is part of the economic base of the region. (See the Appendix D for more location quotient information.)

How fast is this sector growing? Shift share analysis for the years 2003 to 2008 result in a Regional Competitiveness Effect of -306, an Industrial Mix Effect of 237, and a National Effect 6. (See Appendix B for a sector-ranked shift share table.)

How much economic impact does this sector have? Economic multipliers for this sector, in year 2007, show that for every sector job, another 2.06 jobs are created; for every dollar of sales in this sector, another $0.58 is spent; and for every dollar of earnings, for example payroll, another $0.64 is added to the economy.

Is there a possibility for import substitution? Gap analysis shows the following top ten opportunities for developing local suppliers:

Figure 13. 2009 (2nd Quarter) Requirements for: Mining



Primary economic drivers: Mining Supplier opportunities

Table 12. Top 10 Mining Opportunities for Import Substitution

Mining requirements:	*Total Requirements (K)*	*% Satisfied out of Region*
Petroleum Refineries	$164,998	58%
Construction Sand and Gravel Mining	$56,698	46%
Corporate, Subsidiary, and Regional Managing Offices	$51,140	39%
Iron and Steel Forging	$50,297	33%
Iron and Steel Mills	$48,126	14%
Construction Machinery Manufacturing	$41,033	92%
Railroads	$35,036	95%
All Other Basic Organic Chemical Manufacturing	$32,240	54%
Crude Petroleum and Natural Gas Extraction	$30,694	60%
Iron Foundries	$29,998	49%

Source: EMSI

3) Manufacturing

Sector definition

There are approximately 774 establishments in this sector. Occupations in the industries of this sector include (in descending importance by frequency) assemblers, managers, freight and stock movers, production workers, and woodworking machine setters and operators. Sixteen industries in this sector are represented in the region's top 50 output (or sales) industries and are listed here. See the Appendix C for details of the other 133 manufacturing sectors.

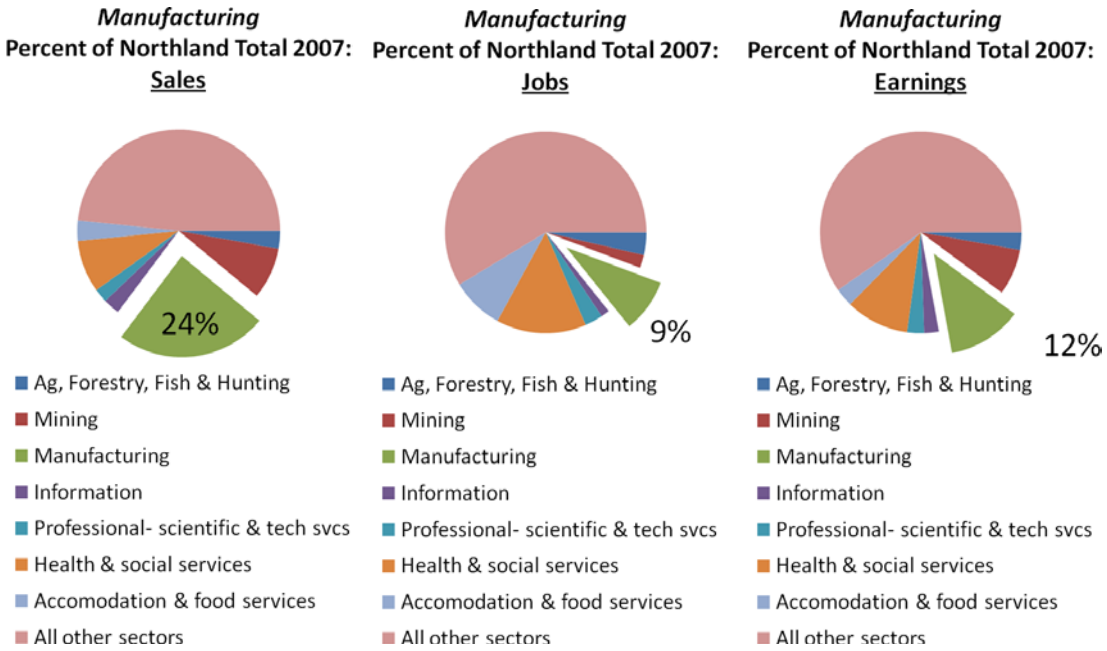
Table 13. Northland Works Regional Manufacturing, 2007

Manufacturing	***Sales***	***Jobs***	***Earnings***
*Paper mills	$1,872,588,000	2,825	$376,816,000
*Petroleum refineries	$781,883,000	112	$43,184,000
*Wood windows and doors and millwork mfg	$477,716,000	2,762	$143,816,000
*Construction machinery manufacturing	$363,441,000	870	$100,378,000
*Reconstituted wood product manufacturing	$361,739,000	962	$149,683,000
*Aircraft manufacturing	$242,060,000	648	$75,705,000
*Other plastics product manufacturing	$207,669,000	1,012	$61,898,000
*Cheese manufacturing	$206,167,000	279	$14,767,000
*Other industrial machinery manufacturing	$201,310,000	937	$79,143,000
*Sawmills and wood preservation	$198,019,000	770	$41,458,000
*Animal (except poultry) slaughtering- rendering- a	$188,429,000	436	$17,762,000
*Mineral wool manufacturing	$155,718,000	434	$62,337,000
*Veneer and plywood manufacturing	$129,202,000	757	$39,215,000
*All other chemical product and preparation manufac	$127,356,000	256	$32,076,000
*Heavy duty truck manufacturing	$120,340,000	108	$17,714,000
*Other basic organic chemical manufacturing	$112,980,000	56	$10,579,000
See the Appendix C for details of the other 133 manufacturing sectors.			
Manufacturing Total	**8,213.9**	**23,309**	**1,972.9**

*Included in the region's top 50 output sectors.

Source: IMPLAN

Figure 14. Northland Works Regional Manufacturing Sales, Jobs, and Earnings, 2007



What is the impact of jobs in the Manufacturing sector? The following table shows which regional industries depend on this sector to create indirect and induced employment.

Table 14. Regional Employment Dependent on Manufacturing, 2007

Industry Driver	*Direct employment*	*Indirect and induced employment*	*All employment related to this industry*
MANUFACTURING	**23,309**		
Jobs dependent on MANUFACTURING:			
Agriculture, Forestry, Fishing and Hunting		4,811	
Retail Trade		4,449	
Health Care and Social Assistance		3,357	
Accommodation and Food Services		2,949	
Other services		2,628	
Wholesale Trade		2,435	
Government and non NAICS		2,428	
Professional, Scientific and Technical Ser		2,189	
Transportation and Warehousing		2,129	
Educational Services		2,024	
Finance and Insurance		1,456	
Management of Companies		979	
Arts, Entertainment and Recreation		605	
Real Estate and Rental and Leasing		597	
Construction		530	
Information		440	
Utilities		367	
Mining		127	
Total jobs dependent on this sector:	23.309	41.205	64.514

Source: IMPLAN

Who do the firms in this sector buy from in order to produce their goods and services? The following table shows regional purchases by this sector.

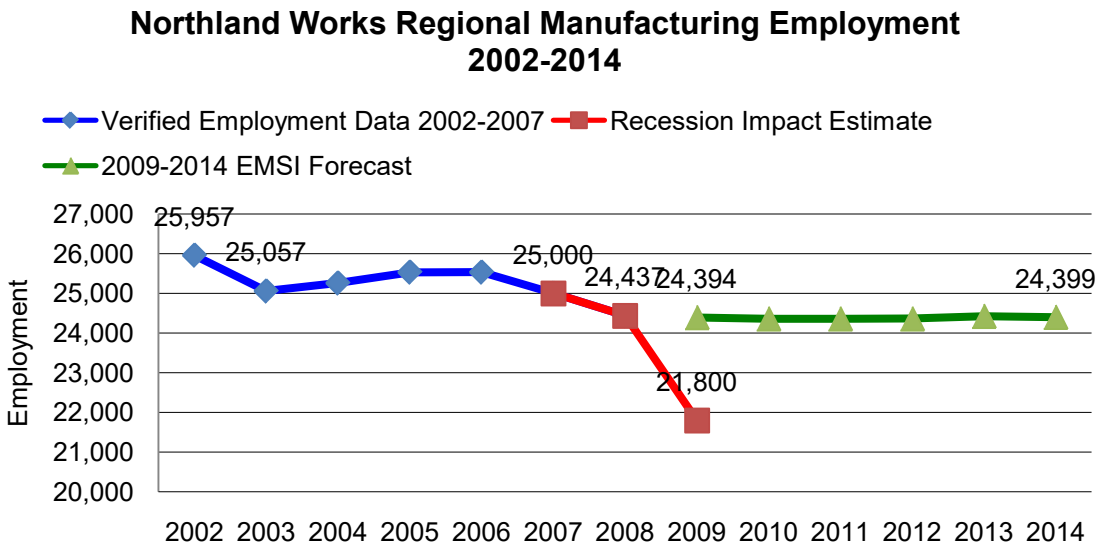
Table 15. Regional Inputs: Manufacturing, 2007

Manufacturing purchases from sectors of the regional economy:	% of industry's total purchases
Manufacturing	53.92%
Ag, Forestry, Fish & Hunting	10.05%
Wholesale Trade	6.83%
Transportation & Warehousing	6.71%
Utilities	4.51%
Professional- scientific & tech svcs	4.18%
Management of companies	3.82%
Real estate & rental	1.90%
Other services	1.72%
Finance & insurance	1.54%
Administrative & waste services	1.33%
Construction	1.14%
Accommodation & food services	0.86%
Retail trade	0.63%
Information	0.54%
Government & non NAICs	0.18%
Mining	0.07%
Arts- entertainment & recreation	0.07%
Total Commodity Demand	100.00%

Workforce

Employment historical trend, recent events, and long-term forecast:

Figure 15. Northland Works Regional Manufacturing Employment 2002-2014



Source: MN DEED, EMSI

Analytical Insights

How concentrated is this sector in the region? The location quotient for this regional sector compared to the U.S. in 2008 is 1.05. This sector is part of the economic base of the region. (See the Appendix D for more location quotient information.)

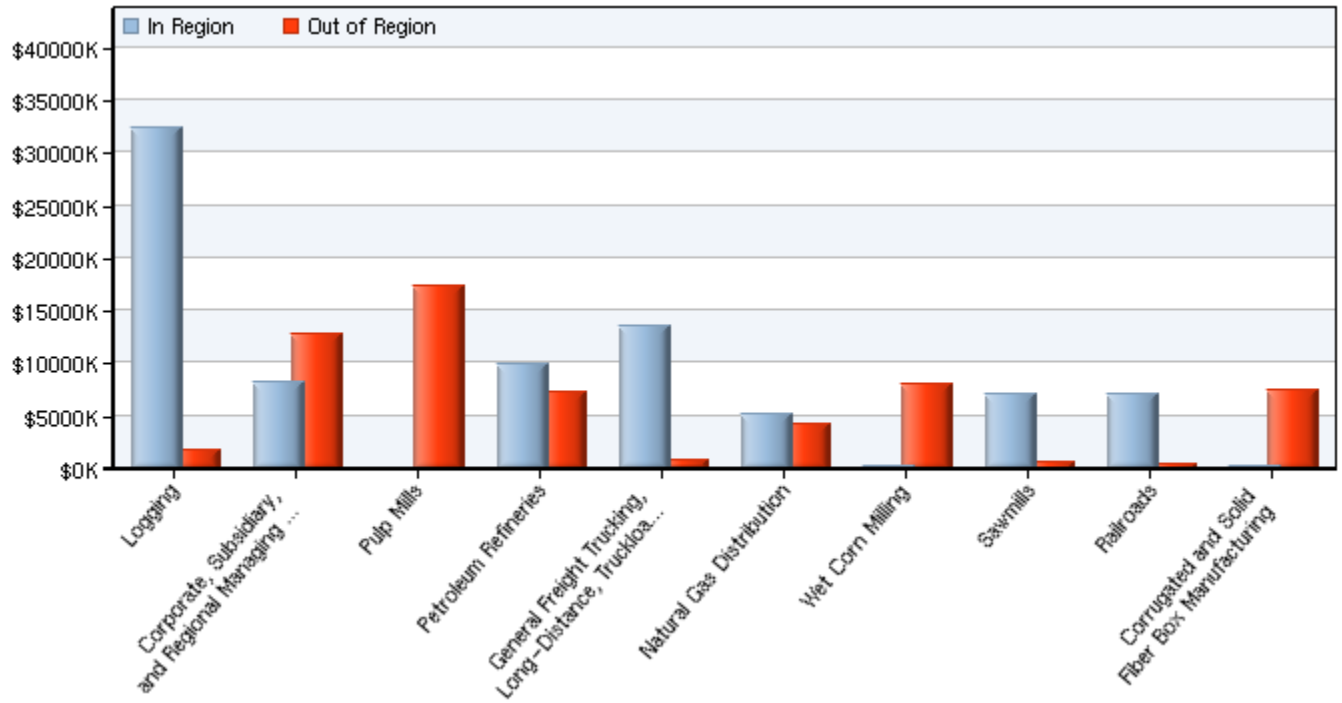
How fast is this sector growing? Shift share analysis for the years 2003 to 2008 result in a Regional Competitiveness Effect of -80, an Industrial Mix Effect of -518, and a National Effect 35. (See Appendix B for a sector-ranked shift share table.)

How much economic impact does this sector have? Economic multipliers for this sector, in year 2007, show that for every sector job, another 1.68 jobs are created; for every dollar of sales in this sector, another $0.71 is spent; and for every dollar of earnings, for example payroll, another $1.27 is added to the economy.

Is there a possibility for import substitution? Gap analysis shows the following top ten opportunities for developing local suppliers for the largest manufacturing cluster in this sector, which is paper manufacturing (Forest and Wood Products).

Opportunities in logging are pictured and quantified as follows:

Figure 16. 2009 (2nd Quarter) Requirements Paper Mills



Primary economic drivers: Manufacturing Supplier opportunities

Table 16. Top 10 Opportunities for Import Substitution (using, for example, this sector's largest Northland industry, Paper Mills)

Paper mills requirements:	*Total Requirements (K)*	*% Satisfied out of Region*
Logging	$34,136	5%
Corporate, Subsidiary, and Regional Managing Offices	$21,022	61%
Pulp Mills	$17,277	100%
Petroleum Refineries	$17,198	42%
General Freight Trucking, Long-Distance, Truckload	$14,141	5%
Natural Gas Distribution	$9,274	44%
Wet Corn Milling	$8,076	99%
Sawmills	$7,536	7%
Railroads	$7,502	5%
Corrugated and Solid Fiber Box Manufacturing	$7,496	98%

Source: EMSI

4) Information

Sector definition

There are approximately 263 establishments in this sector. Occupations in the industries of this sector include (in descending importance by frequency) equipment installers, service representatives, sales agents, sales workers, office clerks, announcers, and editors. Three industries in this sector are represented in the region's top 50 output (or sales) industries.

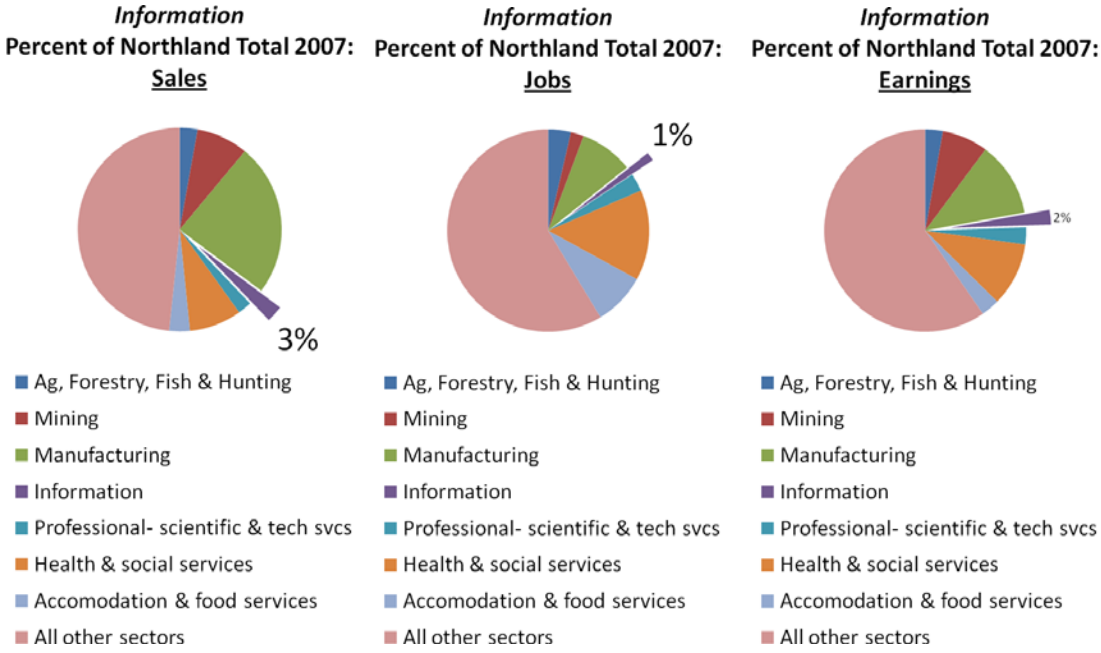
Table 17. Northland Works Regional Information Sector, 2007

Information	***Sales***	***Jobs***	***Earnings***
*Telecommunications	$361,028,000	1,155	$183,131,000
*Periodical publishers	$136,604,000	552	$34,553,000
*Newspaper publishers	$104,903,000	954	$42,437,000
Radio and television broadcasting	$88,698,000	526	$22,605,000
Other information services	$69,206,000	53	$46,538,000
Internet publishing and broadcasting	$63,474,000	51	$44,158,000
Motion picture and video industries	$26,357,000	256	$4,485,000
Data processing- hosting- ISP- web search portals	$20,755,000	127	$6,504,000
Cable and other subscription programming	$13,671,000	19	$1,258,000
Software publishers	$4,376,000	26	$1,497,000
Directory- mailing list- and other publishers	$4,339,000	13	$1,236,000
Sound recording industries	$3,878,000	5	$486,000
Book publishers	$1,258,000	15	$719,000
Information Total	**$898,547,000**	**3,752**	**$389,607,000**

*Included in the region's top 50 output sectors.

Source: IMPLAN

Figure 17. Northland Works Regional Information Sales, Jobs, and Earnings, 2007



What is the impact of jobs in the Information sector? The following table shows which regional industries depend on this sector to create indirect and induced employment.

Table 18. Regional Employment Dependent on the Information sector, 2007

Industry Driver	*Direct employment*	*Indirect and induced employment*	*All employment related to this industry*
INFORMATION	**3,752**		
Jobs dependent on Information:			
Retail Trade		499	
Accommodation and Food Services		471	
Professional, Scientific and Technical Services		459	
Educational Services		423	
Health Care and Social Assistance		413	
Other services		374	
Government and non NAICS		311	
Arts, Entertainment and Recreation		276	
Manufacturing		228	
Finance and Insurance		219	
Transportation and Warehousing		152	
Wholesale Trade		98	
Real Estate and Rental and Leasing		96	
Construction		76	
Agriculture, Forestry, Fishing and Hunting		58	
Management of Companies		37	
Utilities		20	
Mining		4	
Total jobs dependent on this sector:	3,752	4,477	8,229

Source: IMPLAN

Who do the firms in this sector buy from in order to produce their goods and services? The following table shows regional purchases by this sector.

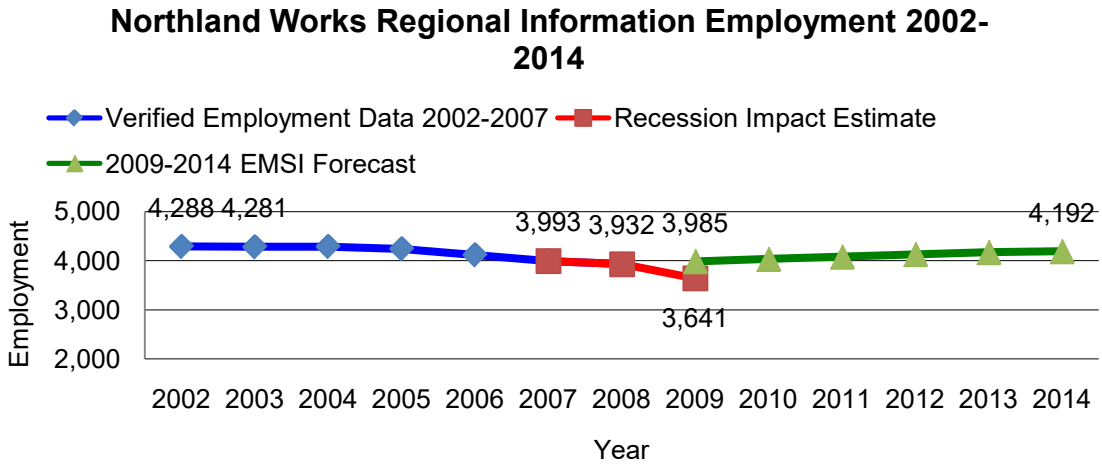
Table 19. Regional Inputs: The Information Sector's Local Purchase of Commodities, 2007

Information's purchases from sectors of the regional economy:	% of industry's total purchases
Information	20.25%
Professional- scientific & tech svcs	18.06%
Manufacturing	12.47%
Real estate & rental	9.17%
Administrative & waste services	6.82%
Finance & insurance	5.75%
Transportation & Warehousing	5.72%
Other services	3.83%
Accommodation & food services	3.65%
Arts- entertainment & recreation	3.58%
Construction	2.93%
Government & non NAICs	2.43%
Utilities	1.82%
Wholesale Trade	1.80%
Management of companies	1.41%
Educational svcs	0.19%
Retail trade	0.11%
Ag, Forestry, Fish & Hunting	0.00%
Total Commodity Demand	100.00%

Workforce

Employment historical trend, recent events, and long-term forecast :

Figure 18. Northland Works Regional Information Employment 2002-2014



Source: MN DEED, EMSI

Analytical Insights

How concentrated is this sector in the region? The location quotient for this regional sector compared to the U.S. in 2008 is 0.67. This sector is not part of the economic base of the region. (See the Appendix D for more location quotient information.)

How fast is this sector growing? Shift share analysis for the years 2003 to 2008 result in a Regional Competitiveness Effect of -31, an Industrial Mix Effect of -36, and a National Effect 6. (See Appendix B for a sector-ranked shift share table.)

How much economic impact does this sector have? Economic multipliers for this sector, in year 2007, show that for every sector job, another 1.12 jobs are created; for every dollar of sales in this sector, another $0.55 is spent; and for every dollar of earnings, for example payroll, another $0.63 is added to the economy.

Is there a possibility for import substitution? Gap analysis shows the following top ten opportunities for developing local suppliers for the industry as a cluster.

Figure 19. 2009 (2nd Quarter) Requirements for: Information Technology and Telecommunications

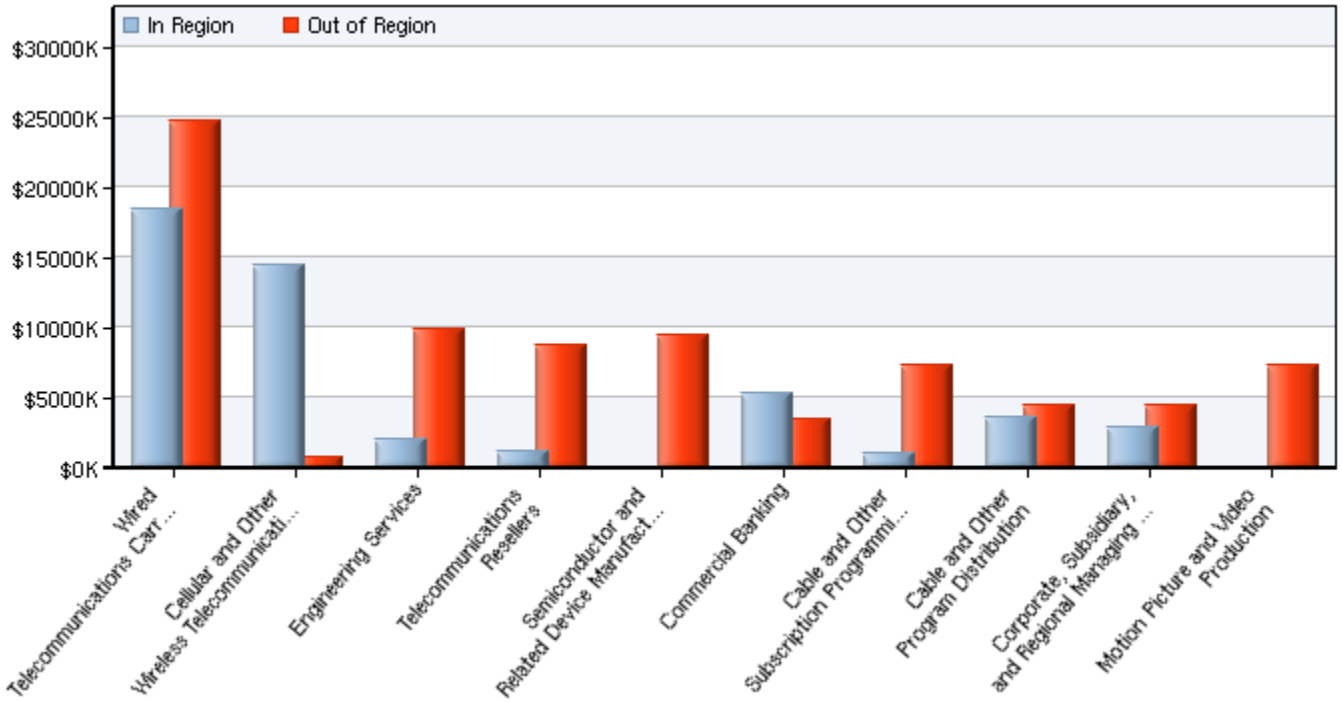


Table 20. Top 10 Opportunities for Import Substitution: Information Technology and Telecommunications, 2009

Telecommunications requirements:	*Total Requirements (K)*	*% Satisfied out of Region*
Wired Telecommunications Carriers	$43,183	57%
Cellular and Other Wireless Telecommunications	$15,130	5%
Engineering Services	$11,830	84%
Telecommunications Resellers	$9,947	88%
Semiconductor and Related Device Manufacturing	$9,423	100%
Commercial Banking	$8,693	39%
Cable and Other Subscription Programming	$8,199	89%
Cable and Other Program Distribution	$8,005	56%
Corporate, Subsidiary, and Regional Managing Offices	$7,339	61%
Motion Picture and Video Production	$7,228	100%

Source: EMSI

5) Professional- Scientific & Technical Services

Sector definition

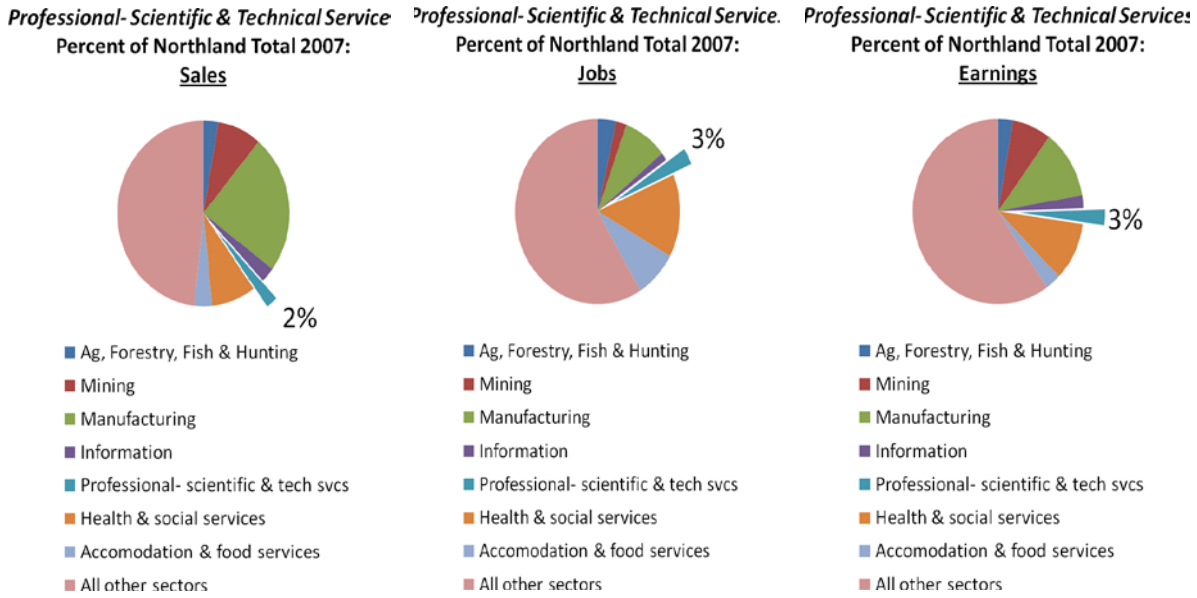
There are approximately 912 establishments in this sector. Occupations in the industries of this sector include (in descending importance by frequency) photographers, accountants and auditors, lawyers, management analysts, accounting clerks, other managers, and tax preparers. One industry in this sector is represented in the in the region, and in the region's top 50 output (or sales) industries.

Table 21. Northland Works Regional Professional, Scientific, and Technical Services Industries, 2007

Professional, Scientific, and Technical Services	***Sales***	***Jobs***	***Earnings***
*Architectural- engineering- and related services	$185,238,000	1,788	$113,114,000
*Legal services	$128,118,000	1,437	$89,915,000
*Advertising and related services	$103,125,000	1,019	$50,149,000
Custom computer programming services	$80,017,000	993	$55,585,000
Accounting- tax preparation- bookkeeping- and payr	$76,981,000	974	$47,626,000
Veterinary services	$36,460,000	536	$15,515,000
Management- scientific- and technical consulting s	$33,882,000	280	$18,784,000
Computer systems design services	$21,573,000	223	$10,020,000
Scientific research and development services	$18,115,000	153	$8,605,000
Environmental and other technical consulting servi	$15,481,000	120	$8,736,000
Photographic services	$9,192,000	134	$4,011,000
Specialized design services	$6,141,000	77	$2,728,000
Other computer related services- including facilit	$2,530,000	14	$477,000
All other miscellaneous professional- scientific-	$32,839,000	143	$25,694,000
Professional, Scientific, and Technical Services Total	$749,692,000	7,891	$450,959,000

*Included in the region's top 50 output sectors.
Source: IMPLAN

Figure 20. Northland Works Regional Professional-Scientific & Technical Services Sales, Jobs, and Earnings, 2007



What is the employment impact of jobs in the Professional, Scientific, and Technical Services sector? The following table shows which regional industries depend on this sector to create indirect and induced employment.

Table 22. Regional Employment Dependent on Professional, Scientific, and Technical Services, 2007

Industry Driver	*Direct employment*	*Indirect and induced employment*	*All employment related to this industry*
PROFESSIONAL, SCIENTIFIC & TECHNICAL SERVICES	**7,891**		
Jobs dependent on Professional, Scientific & Technical Services:			
Retail Trade	0	785	
Accommodation and Food Services	0	748	
Health Care and Social Assistance	0	665	
Educational Services	0	472	
Other services	0	419	
Government and non NAICS	0	309	
Finance and Insurance	0	306	
Manufacturing	0	223	
Transportation and Warehousing	0	162	
Arts, Entertainment and Recreation	0	145	
Real Estate and Rental and Leasing	0	127	
Wholesale Trade	0	106	
Information	0	87	
Agriculture, Forestry, Fishing and Hunting	0	70	
Construction	0	50	
Management of Companies	0	35	
Utilities	0	22	
Mining	0	4	
Total jobs dependent on this sector:	7891	5,111	13,002

Who do the firms in this sector buy from in order to produce their goods and services? The following table shows regional purchases by this sector.

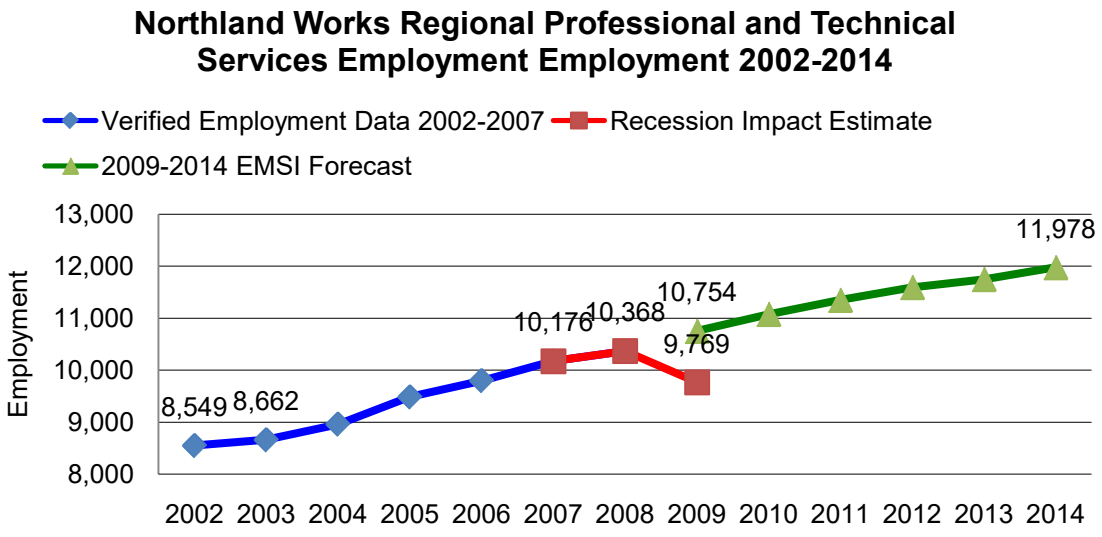
Table 23. Regional Inputs: Professional, Scientific, and Technical Services Local Purchase of Commodities, 2007

Professional-Scientific & Technical Services' purchases from sectors of the regional economy:	*% of industry's total purchases*
Professional- scientific & tech svcs	19.26%
Real estate & rental	15.50%
Finance & insurance	11.85%
Administrative & waste services	10.35%
Accommodation & food services	9.59%
Manufacturing	8.24%
Transportation & Warehousing	7.31%
Information	3.53%
Other services	3.45%
Government & non NAICs	2.74%
Construction	1.79%
Utilities	1.74%
Management of companies	1.70%
Wholesale Trade	1.24%
Arts- entertainment & recreation	1.11%
Retail trade	0.24%
Ag, Forestry, Fish & Hunting	0.16%
Total Commodity Demand	100.0%

Workforce

Employment historical trend, recent events, and long-term forecast:

Figure 21. Northland Works Regional Professional and Technical Services Employment 2002-2014



Source: MN DEED, EMSI

Analytical Insights

How concentrated is this sector in the region? The location quotient for this regional sector compared to the U.S. in 2008 is 0.51. This sector is not part of the economic base of the region. (See the Appendix D for more location quotient information.)

How fast is this sector growing? Shift share analysis for the years 2003 to 2008 result in a Regional Competitiveness Effect of -25, an Industrial Mix Effect of -25, and a National Effect 203. (See Appendix B for a sector-ranked shift share table.)

How much economic impact does this sector have? Economic multipliers for this sector, in year 2007, show that for every sector job, another 0.49 job is created; for every dollar of sales in this sector, another $0.65 is spent; and for every dollar of earnings, for example payroll, another $0.63 is added to the economy.

Is there a possibility for import substitution? Gap analysis shows the following top ten opportunities for developing local suppliers.

Figure 22. 2009 (2nd Quarter) Requirements for: Architectural Services

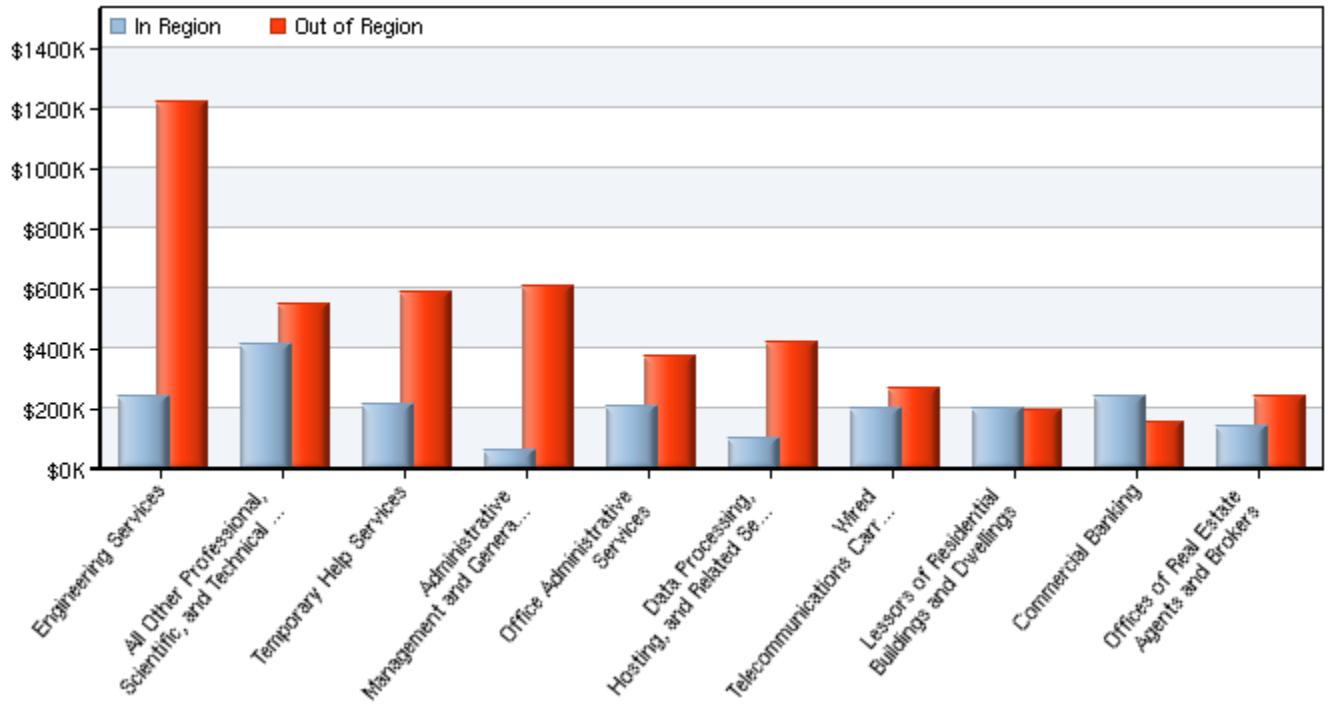


Table 24. Top 10 Opportunities for Import Substitution: Architectural Services, 2009

Architectural Services requirements:	*Total Requirements (K)*	*% Satisfied out of Region*
Engineering Services	$1,460	84%
All Other Professional, Scientific, and Technical Services	$959	57%
Temporary Help Services	$797	74%
Administrative Management and General Management Consulting Services	$664	91%
Office Administrative Services	$581	64%
Data Processing, Hosting, and Related Services	$526	81%
Wired Telecommunications Carriers	$461	57%
Lessors of Residential Buildings and Dwellings	$397	49%
Commercial Banking	$396	39%
Offices of Real Estate Agents and Brokers	$383	63%

Source: EMSI

6) Health & Social Services

Sector definition

There are approximately 1,156 establishments in this sector. Occupations in the industries of this sector include (in descending importance by frequency) registered nurses, nursing aides, home health aides, child care workers, personal and home care aides, human services assistants, and licensed practical and vocational nurses. Five industries in this sector are represented in the region's top 50 output (or sales) industries.

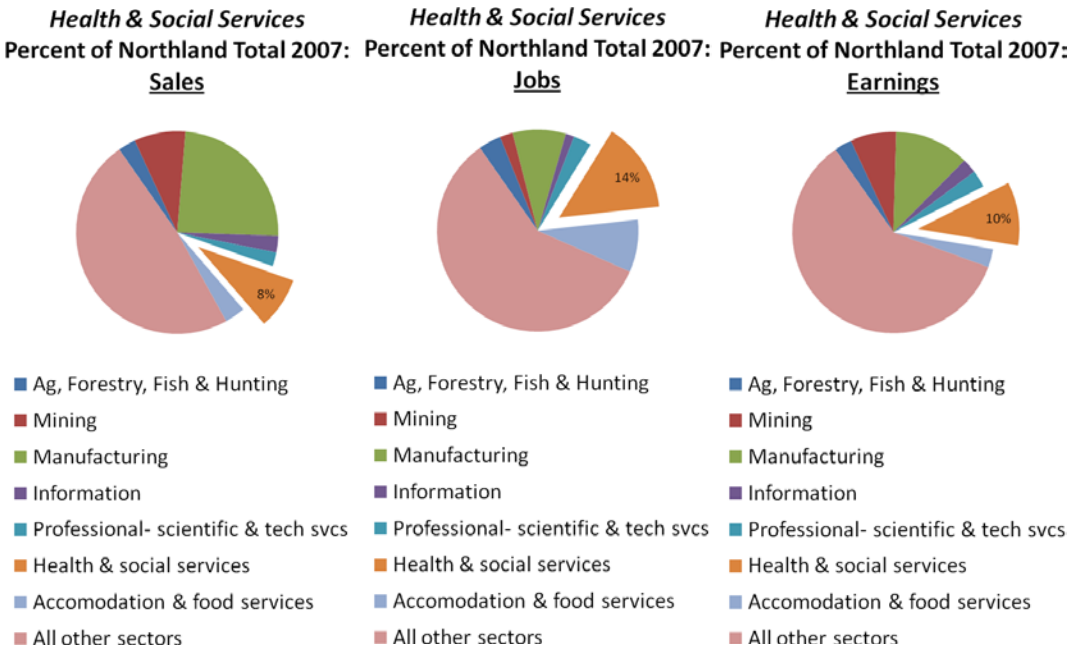
Table 25. Northland Works Regional Health Care and Social Assistance Industries, 2007

Health Care and Social Assistance	***Sales***	***Jobs***	***Earnings***
*Private hospitals	$1,125,364,000	10,475	$607,081,000
*Offices of physicians- dentists- and other health	$853,246,000	7,165	$582,860,000
*Nursing and residential care facilities	$335,401,000	10,779	$211,237,000
*Individual and family services	$154,598,000	4,560	$76,236,000
*Medical and diagnostic labs and outpatient	$149,827,000	1,361	$88,141,000
Community food- housing- and other relief serv	$97,778,000	2,300	$51,563,000
Home health care services	$56,290,000	1,434	$39,694,000
Child day care services	$43,353,000	1,366	$24,770,000
Health Care and Social Assistance Total	**$2,815,857,000**	**39,440**	**$1,681,582,000**

*Included in the region's top 50 output sectors.

Source: IMPLAN

Figure 23. Northland Works Regional Health & Social Services Sales, Jobs, and Earnings, 2007



What is the employment impact of jobs in the Health Care and Social Assistance Industries sector? The following table shows which regional industries depend on this sector to create indirect and induced employment.

Table 26. Regional Employment Dependent on Health Care and Social Assistance, 2007

Industry Driver	*Direct employment*	*Indirect and induced*	*All employment related to this industry*
HEALTH CARE AND SOCIAL ASSISTANCE	39,440		
Jobs dependent on Health Care and Social Assistance:			
Retail Trade		2,971	
Accommodation and Food Services		2,016	
Other services		1,567	
Educational Services		1,475	
Finance and Insurance		1,118	
Manufacturing		1,118	
Government and non NAICS		1,054	
Professional, Scientific Technical Services		878	
Real Estate and Rental and Leasing		529	
Wholesale Trade		497	
Transportation and Warehousing		467	
Arts, Entertainment and Recreation		397	
Agriculture, Forestry, Fishing and Hunting		288	
Information		211	
Management of Companies		170	
Construction		161	
Utilities		96	
Mining		20	
Total jobs dependent on this sector:	39.440	18.122	57,562

Who do the firms in this sector buy from in order to produce their goods and services? The following table shows regional purchases by this sector.

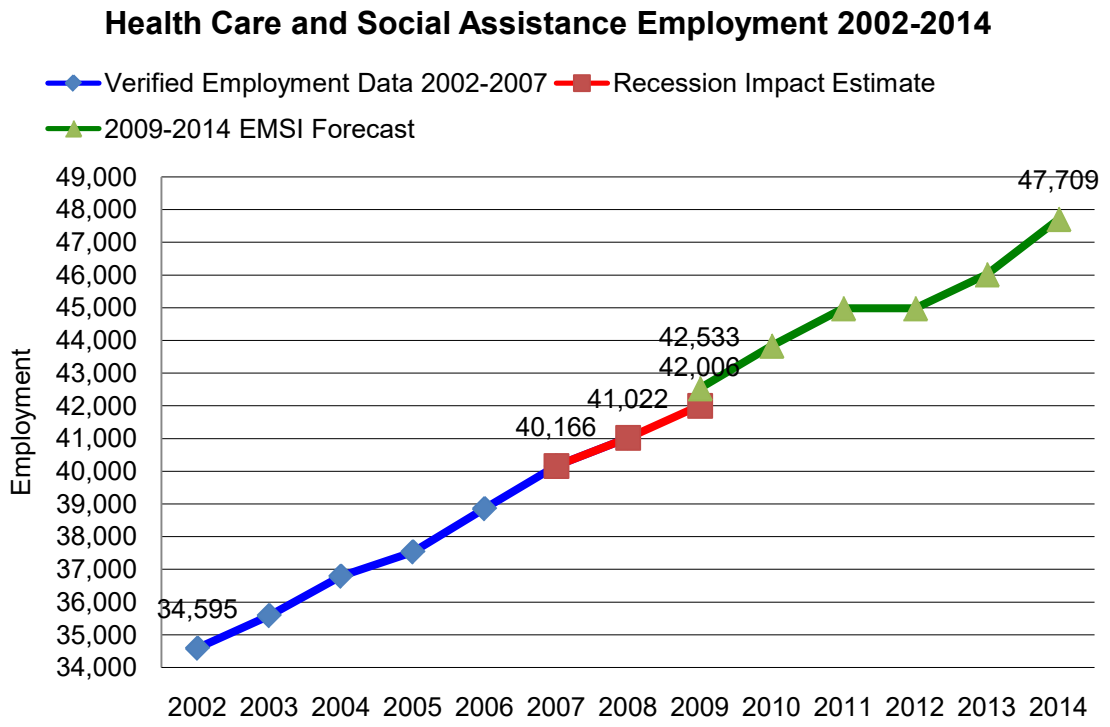
Table 27. Regional Inputs: Health Care and Social Assistance Local Purchase of Commodities, 2007

Health Care and Social Assistance purchases from sectors of the regional economy:	*% of industry's total purchases*
Manufacturing	22.39%
Real estate & rental	19.63%
Finance & insurance	10.44%
Professional- scientific & tech svcs	8.35%
Health & social services	8.17%
Administrative & waste services	7.28%
Accommodation & food services	3.34%
Transportation & Warehousing	3.06%
Wholesale Trade	3.03%
Government & non NAICs	2.98%
Utilities	2.89%
Other services	2.54%
Management of companies	2.52%
Information	1.24%
Construction	1.07%
Retail trade	0.81%
Arts- entertainment & recreation	0.19%
Educational svcs	0.06%
Ag, Forestry, Fish & Hunting	0.02%
Mining	0.00%
Total Commodity Demand	100.0%

Workforce

Employment historical trend, recent events, and long-term forecast:

Figure 24. Northland Works Regional Health and Social Assistance Employment 2002-2014



Source: MN DEED, EMSI

Analytical Insights

How concentrated is this sector in the region? The location quotient for this regional sector compared to the U.S. in 2008 is 1.65. This sector is part of the economic base of the region. (See the Appendix D for more location quotient information.)

How fast is this sector growing? Shift share analysis for the years 2003 to 2008 result in a Regional Competitiveness Effect of -76, an Industrial Mix Effect of 875, and a National Effect 56. (See Appendix B for a sector-ranked shift share table.)

How much economic impact does this sector have? Economic multipliers for this sector, in year 2007, show that for every sector job, another 0.43 job is created; for every dollar of sales in this sector, another $0.70 is spent; and for every dollar of earnings, for example payroll, another $0.60 is added to the economy.

Is there a possibility for import substitution? Gap analysis shows the following top ten opportunities for developing local suppliers in the Biomedical cluster:

Figure 25. 2009 (2nd Quarter) Requirements for: General Medical and Surgical Hospitals

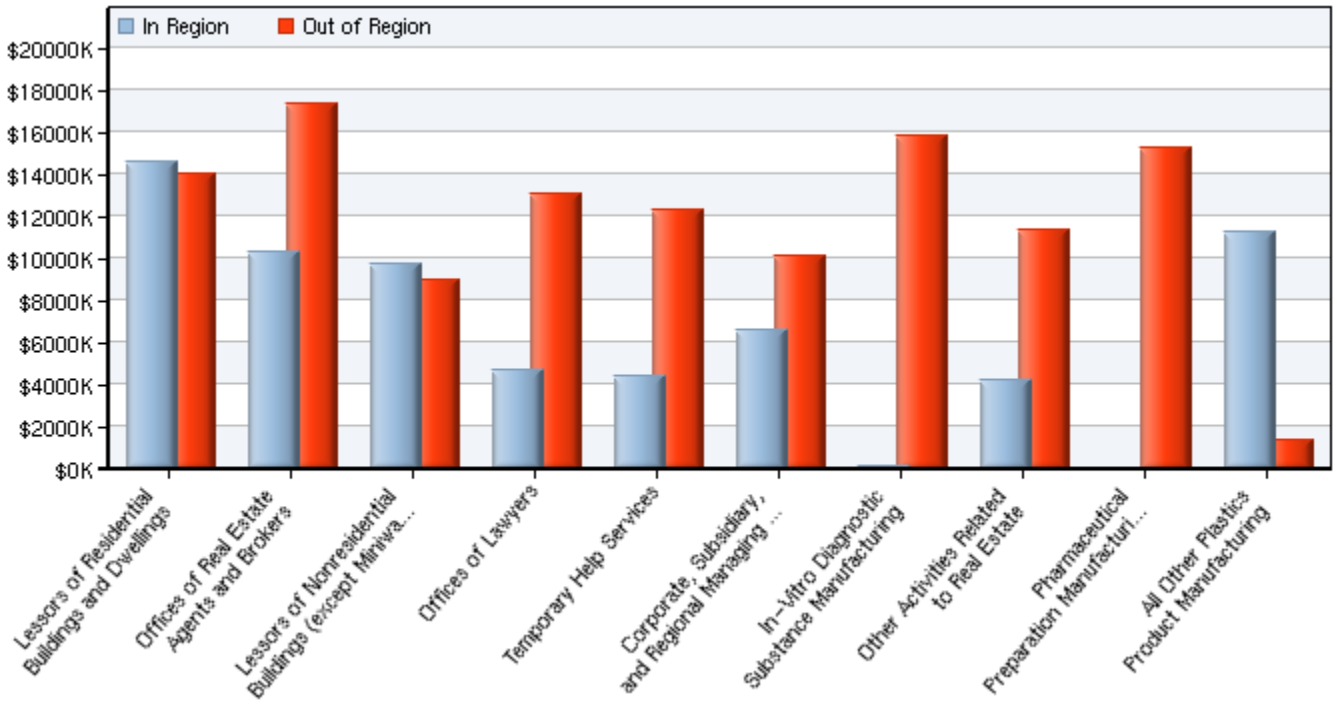


Table 28. Top 10 Opportunities for Import Substitution: General Medical and Surgical Hospitals, 2009

General Medical and Surgical Hospitals requirements:	*Total Requirements (K)*	*% Satisfied out of Region*
Lessors of Residential Buildings and Dwellings	$28,581	49%
Offices of Real Estate Agents and Brokers	$27,568	63%
Lessors of Nonresidential Buildings (except Miniwarehouses)	$18,604	48%
Offices of Lawyers	$17,714	74%
Temporary Help Services	$16,749	74%
Corporate, Subsidiary, and Regional Managing Offices	$16,713	61%
In-Vitro Diagnostic Substance Manufacturing	$15,874	99%
Other Activities Related to Real Estate	$15,461	73%
Pharmaceutical Preparation Manufacturing	$15,241	100%
All Other Plastics Product Manufacturing	$12,586	11%

Source: EMSI

7) Accommodation & Food Services

Sector definition

There are approximately 1,836 establishments in this sector. Occupations in the industries of this sector include (in descending importance by frequency) waiters and waitresses, food preparation workers,

bartenders, cooks, food managers, maids and cleaners, and lodging managers. Two industries in this sector are represented in the region and in the region's top 50 output (or sales) industries.

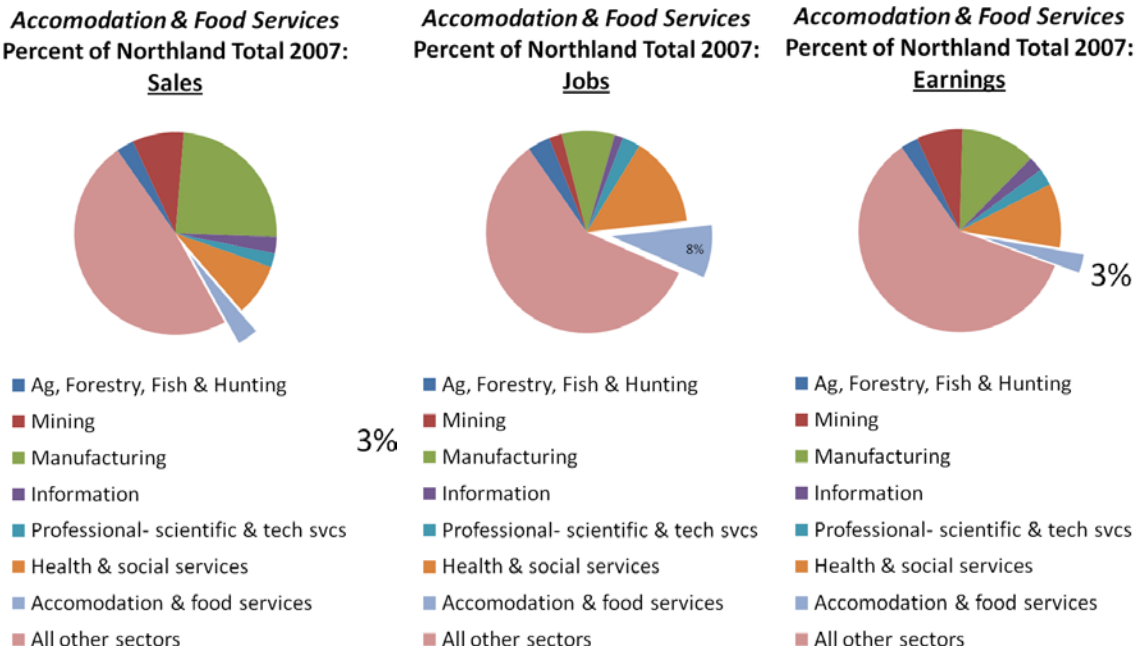
Table 29. Northland Works Regional Accommodation and Food Services Industries, 2007

Accommodation and Food Services	*Sales*	*Jobs*	*Earnings*
*Food services and drinking places	$842,116,000	18,565	$346,821,000
*Hotels and motels- including casino hotels	$198,012,000	3,381	$109,514,000
Other accommodations	$67,295,000	945	$31,536,000
Accommodation and Food Services	**$1,107,423,000**	**22,891**	**$487,871,000**

*Included in the region's top 50 output sectors.

Source: IMPLAN

Figure 26. Northland Works Regional Accommodation & Food Services Sales, Jobs, and Earnings, 2007



What is the employment impact of jobs in the Accommodation and Food Services sector? The following table shows which regional industries depend on this sector to create indirect and induced employment.

Table 30. Regional Employment Dependent on Accommodation and Food Services, 2007

Industry Driver	*Direct employment*	*Indirect and induced employment*	*All employment related to this industry*
ACCOMMODATION AND FOOD SERVICES	**22,891**		
Jobs dependent on Accommodation and Food Services:			
Retail Trade		859	
Health Care and Social Assistance		652	
Other services		572	
Government and non NAICS		571	
Manufacturing		543	
Educational Services		431	
Professional, Scientific and Technical Serv		385	
Finance and Insurance		325	
Wholesale Trade		236	
Agriculture, Forestry, Fishing and Hunting		219	
Transportation and Warehousing		198	
Arts, Entertainment and Recreation		166	
Real Estate and Rental and Leasing		165	
Management of Companies		105	
Construction		95	
Information		85	
Utilities		65	
Mining		10	
Total jobs dependent on this sector:	22,891	6,414	29,305

Who do the firms in this sector buy from in order to produce their goods and services? The following table shows regional purchases by this sector.

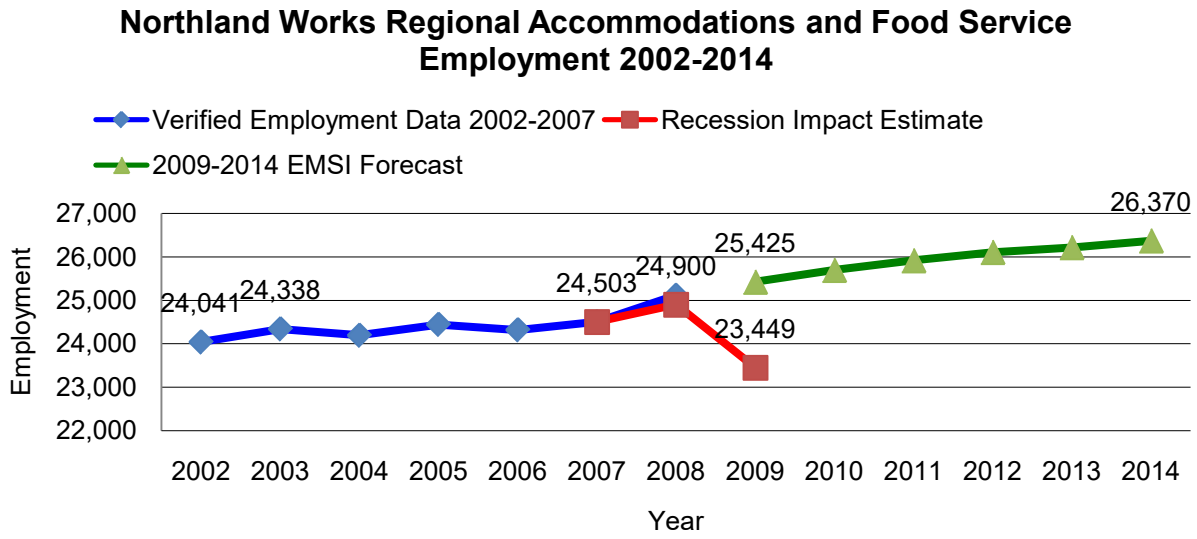
Table 31. Regional Inputs: Accommodation & food services Local Purchase of Commodities, 2007

Accommodation & food services purchases from sectors of the regional economy:	*% of industry's total purchases*
Manufacturing	30.09%
Real estate & rental	12.30%
Utilities	8.03%
Professional- scientific & tech svcs	7.93%
Government & non NAICs	6.11%
Finance & insurance	5.28%
Wholesale Trade	4.70%
Accommodation & food services	4.09%
Transportation & Warehousing	3.65%
Administrative & waste services	3.64%
Management of companies	3.62%
Other services	2.66%
Ag, Forestry, Fish & Hunting	2.51%
Construction	2.08%
Information	1.35%
Retail trade	1.21%
Arts- entertainment & recreation	0.75%
Mining	0.00%
Total Commodity Demand	100.0%

Workforce

Employment: historical trend, recent events, and long-term forecast

Figure 27. Northland Works Regional Acommodations and Food Services Employment 2002-2014



Source: MN DEED, EMSI

Analytical Insights

How concentrated is this sector in the region? The location quotient for this regional sector compared to the U.S. in 2008 is 1.23. This sector is part of the economic base of the region. (See the Appendix D for more location quotient information.)

How fast is this sector growing? Shift share analysis for the years 2003 to 2008 result in a Regional Competitiveness Effect of 248, an Industrial Mix Effect of 327, and a National Effect 34. (See Appendix B for a sector-ranked shift share table.)

How much economic impact does this sector have? Economic multipliers for this sector, in year 2007, show that for every sector job, another 0.27 job is created; for every dollar of sales in this sector, another $0.69 is spent; and for every dollar of earnings, for example payroll, another $0.78 is added to the economy.

Is there a possibility for import substitution? The Accommodation and food services industries are difficult to track for import substitution because the sector is comprised of at least fifteen diverse component subsectors. Gap analysis shows the following top ten opportunities for developing local suppliers for Full-service Restaurant industry, and the Hotels and Motels industry:

Figure 28. 2009 (2nd Quarter) Requirements for: Full-Service Restaurants

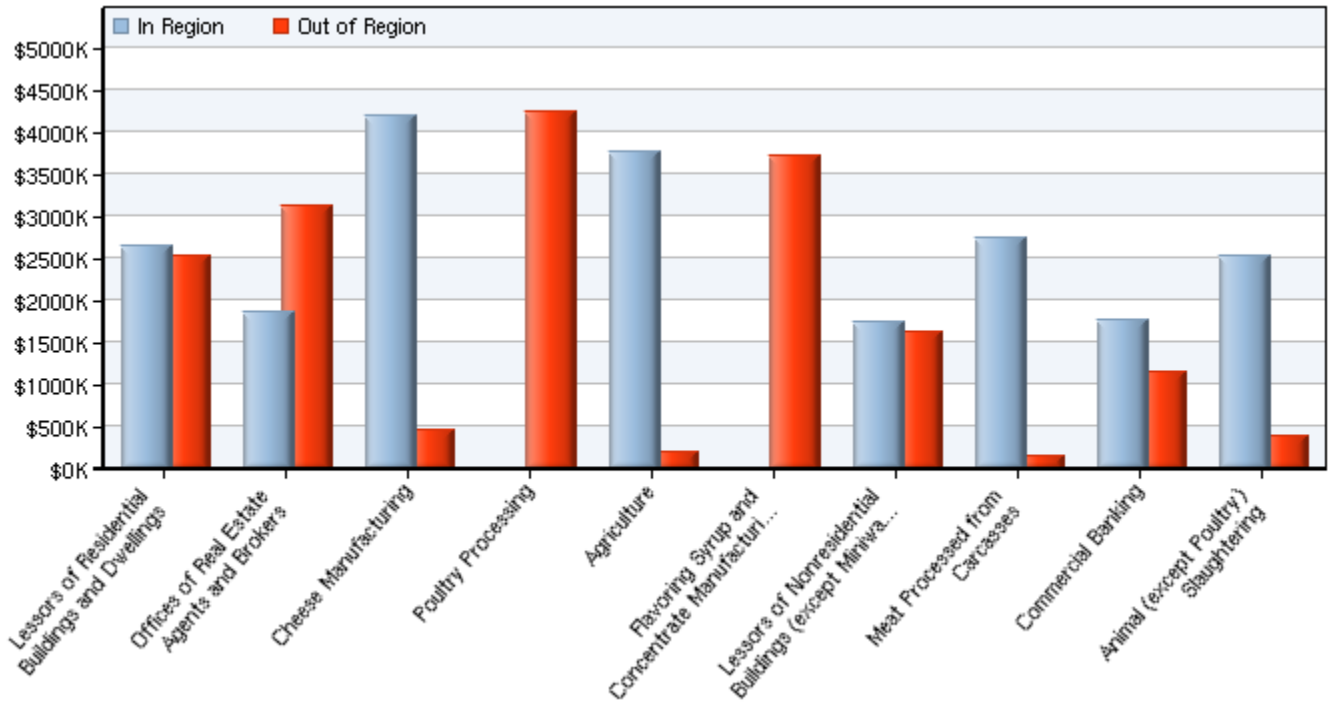


Table 32. Top 10 Opportunities for Import Substitution: Full-Service Restaurants, 2009

Full-Service Restaurants requirements:	*Total Requirements (K)*	*% Satisfied out of Region*
Lessors of Residential Buildings and Dwellings	$5,155	49%
Offices of Real Estate Agents and Brokers	$4,972	63%
Cheese Manufacturing	$4,652	10%
Poultry Processing	$4,231	100%
Agriculture	$3,969	5%
Flavoring Syrup and Concentrate Manufacturing	$3,706	100%
Lessors of Nonresidential Buildings (except Miniwarehouses)	$3,355	48%
Meat Processed from Carcasses	$2,893	5%
Commercial Banking	$2,891	39%
Animal (except Poultry) Slaughtering	$2,889	13%

Source: EMSI

Figure 29. 2009 (2nd Quarter) Requirements for: Hotels (except Casino Hotels) and Motels

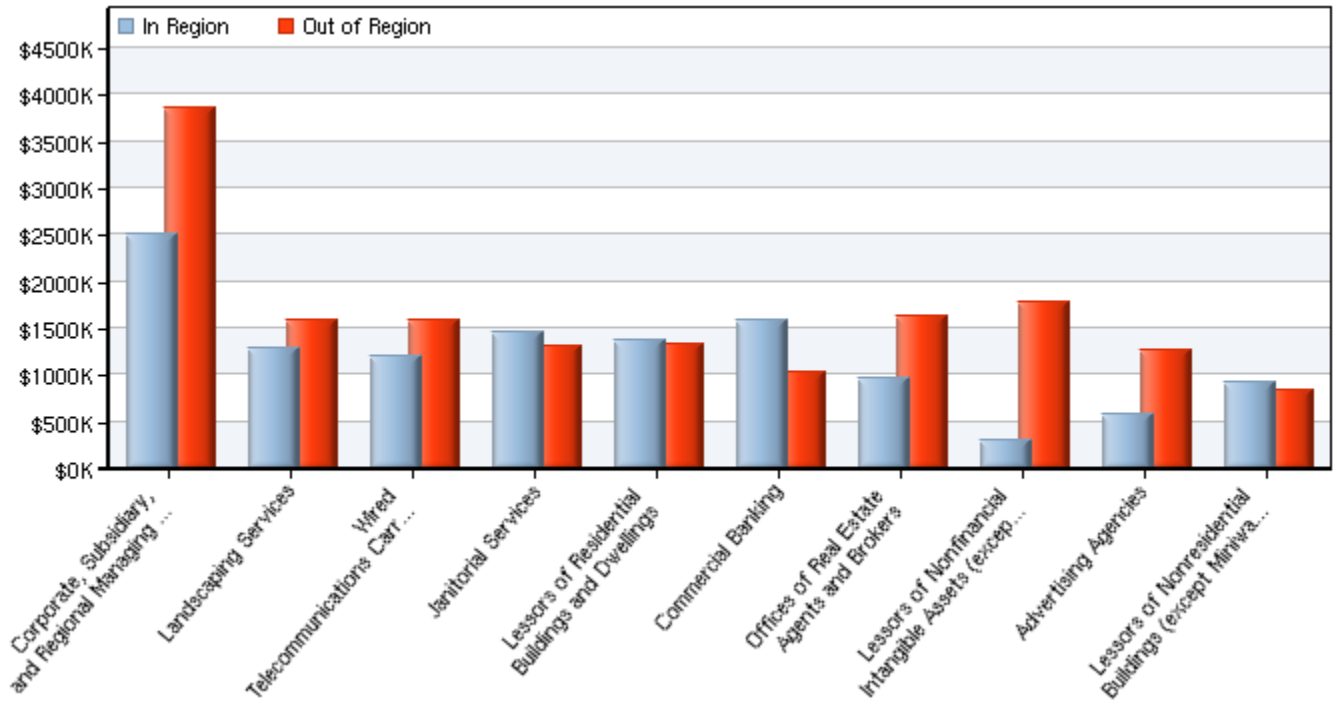


Table 33. Top 10 Opportunities for Import Substitution: Hotels (except Casino Hotels) and Motels, 2009

Hotels (except Casino Hotels) and Motels *requirements:*	*Total Requirements (K)*	*% Satisfied out of Region*
Corporate, Subsidiary, and Regional Managing Offices	$6,348	61%
Landscaping Services	$2,863	55%
Wired Telecommunications Carriers	$2,782	57%
Janitorial Services	$2,772	47%
Lessors of Residential Buildings and Dwellings	$2,701	49%
Commercial Banking	$2,620	39%
Offices of Real Estate Agents and Brokers	$2,606	63%
Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	$2,074	86%
Advertising Agencies	$1,841	68%
Lessors of Nonresidential Buildings (except Miniwarehouses)	$1,758	48%

Source: EMSI

Other Sectors

The foregoing discussion has focused on the primary sectors of the Northland Works economy. The primary sectors are shown in relation to other sectors of the economy in the table below, which uses location quotients (LQ) for the regional economy compared to the US in 2007. (See Appendix D for LQ for all 4-digit sectors of the economy sorted to show base and non-base industry detail.) Note that the primary sectors discussed above are (almost all) in the group described by location quotients as part of the region's "base" economy.

Table 34. Industry Sectors of the Region's Base and Non-base Economy, 2007, Ranked by Location Quotient

Source: IMPLAN	*Northland Works*	*US*	
2-Digit Industry Sector	*Employment*	*Employment*	*LQ*
Industry Sectors of the Region's Base Economy:			
Mining	5,665	907,573	4.05
Utilities	1,841	558,531	2.14
Ag, Forestry, Fish & Hunting	9,908	3,770,081	1.70
Health & social services	39,440	17,659,646	1.45
Accommodation & food services	22,891	11,979,559	1.24
Government & non NAICs	46,132	25,014,178	1.20
Retail trade	33,439	18,898,375	1.15
Manufacturing	23,310	13,864,678	1.09
Finance & insurance	13,155	8,199,726	1.04
Other services	15,871	10,105,926	1.02
Industry Sectors of the Region's Non-Base Economy:			
Transportation & Warehousing	8,287	5,667,143	0.95
Construction	16,360	11,315,567	0.94
Arts- entertainment & recreation	4,187	3,540,540	0.77
Educational svcs	3,813	3,501,423	0.71
Information	3,751	3,601,885	0.68
Wholesale Trade	5,876	6,339,832	0.60
Management of companies	1,515	1,865,779	0.53
Professional- scientific & tech svcs	7,890	12,065,692	0.42
Administrative & waste services	6,017	10,468,528	0.37
Real estate & rental	3,588	7,583,639	0.31
Totals	272,936	176,908,300	

The following table shows location quotients for the top 50 employers, identifying which among these largest employers has the greatest sector intensity compared to the US. (*Note that education and

government employment are of less importance for economic development strategies. Also note that these industrial sectors constitute the more aggregated primary sectors analyzed previously in this report. The primary sectors discussed above appear in the following table in bold type.)

Table 35. Northland Works 50 Largest Employers, Ranked by Location Quotient (Region compared to the US, 2007)

	Top 50 Employers in the Northland Works Counties, 4-digit Industry Sector	*Northland Works Employment*	*LQ*
	Source: IMPLAN		
Basic (Primary) Industries	**Mining iron ore**	**3,621**	**422.2**
	Paper mills	**2,825**	**20.29**
	Commercial logging	**2,820**	**12.55**
	Wood windows and doors and millwork manufacturing	**2,762**	**10.66**
	Dairy cattle and milk production	**2,238**	**5.09**
	Electric power generation- transmission- and distr	1,796	2.83
	Retail Stores - Gasoline stations	3,441	2.40
	Insurance carriers	5,878	2.29
	Nursing and residential care facilities	**10,779**	**2.25**
	Community food- housing- and other relief services	2,300	2.05
	Hotels and motels- including casino hotels	**3,381**	**1.73**
	Individual and family services	4,560	1.73
	Civic- social- professional- and similar organizat	4,728	1.60
	Grantmaking- giving- and social advocacy organizat	1,734	1.56
	* Special (S&LG Ed Emp & Payroll)	24,353	1.52
	Retail Stores - Building material and garden suppl	3,011	1.38
	Retail Nonstores - Direct and electronic sales	3,885	1.29
	Automotive repair and maintenance- except car wash	2,591	1.18
	Monetary authorities and depository credit interme	3,619	1.18
	Retail Stores - General merchandise	5,669	1.15
	Retail Stores - Food and beverage	**5,484**	**1.14**
	* Special (S&LG Non-Ed Emp & Payroll)	14,712	1.13
	Food services and drinking places	**18,565**	**1.11**
	Retail Stores - Miscellaneous	2,665	1.11
	Transport by truck	3,578	1.10
	Insurance agencies- brokerages- and related activi	1,977	1.05
	Offices of physicians- dentists- and other health	**7,165**	**1.04**

(continued)

	Top 50 Employers in the Northland Works Counties, 4-digit Industry Sector	*Northland Works Employment*	*LQ*
Non-basic (Secondary) industries	Retail Stores - Motor vehicle and parts	3,337	0.98
	Maint & repair construct of nonresident structures	2,494	0.94
	Personal care services	1,505	0.93
	Construct new residential permanent site single-an	3,603	0.91
	Construct other new nonresidential structures	3,226	0.91
	Construct new nonresidential commercial and health	5,146	0.91
	Retail Stores - Health and personal care	1,647	0.89
	US Postal Service	1,370	0.85
	Private household operations	3,083	0.84
	Home health care services	1,434	0.81
	Private junior colleges- colleges- universities- a	1,872	0.76
	Child day care services	1,366	0.70
	* Special (Federal Non-Military Emp & Payroll)	2,059	0.66
	Wholesale trade businesses	5,876	0.59
	* Special (Federal Military Emp & Payroll)	2,079	0.58
	Retail Stores - Clothing and clothing accessories	1,496	0.57
	Architectural- engineering- and related services	1,788	0.53
	Management of companies and enterprises	1,515	0.51
	Legal services	1,437	0.51
	Services to buildings and dwellings	1,680	0.46
	Real estate establishments	2,625	0.25
	Employment services	1,583	0.22

The foregoing analysis also presents a view of the primary sector's suppliers as well as sectors indirectly impacted by the economic activity of the primary sector. The tables of the primary sector reports include many of these non-basic sectors as part of the sector's regional purchases. Gap analyses for industries of the primary sectors also show where other secondary non-basic but important suppliers could be introduced into the region's economy.

As discussed in the Data Sources section of this report, the (sometimes dramatic) difference in location quotient between the 2-digit and the 4-digit analyses of these tables is due, for example, to the preponderance of specifically iron ore mining in the region, compared to the aggregated mining sector in the nation. A further (less dramatic) difference can be noted between location quotients derived from EMSI data (in the primary sector discussion) and IMPLAN data.

IV. Entrepreneurial Networks

The Northland Works Region has a fairly sophisticated network of entrepreneurial support organizations that includes the Northeast Entrepreneur Fund, the University of Minnesota Duluth's Center for Economic Development, and traditional small business development centers.

The Northeast Entrepreneur Fund is a nonprofit organization helping people in the region start, stabilize, or expand small businesses. Their services include individual consulting, classroom training, financing, and networking opportunities. They serve an 11-county region of northeast Minnesota and northwest Wisconsin including Aitkin, Carlton, Cass, Cook, Crow Wing, Itasca, Koochiching, Lake, Pine, and St. Louis counties in Minnesota and Douglas County, Wisconsin. The Entrepreneur Fund's Women's Business Network is a program focused on assisting women entrepreneurs and advocating for women-owned businesses. The Entrepreneur Fund was conceived in the mid-1980s when the region, long-dependent on the iron mining and timber industries, underwent a difficult period of recession. Although the industry went on to regain strength, not all of the jobs returned. The vision for the organization, which started in 1989, was that it would provide technical assistance and financing to individuals who would start their own businesses to create their own jobs. By helping individuals start and grow their own businesses, the fund would also be helping to create role models for entrepreneurship and a source of inspiration for others in the region. The Entrepreneur Fund's loan fund is a flexible source of business financing for start-up and existing businesses. Loans range from $1,000 to $100,000. The Entrepreneur Fund also has launched the Greenstone Group, whose purpose is to increase the number of skilled entrepreneurs and thus build community and business wealth and employment through the growth of locally owned businesses." Working with business, education and economic development partners, the Greenstone Group expects to build the region's economy by targeting support and resources toward 500 entrepreneurs in the region who are committed to growing their businesses. Growth Groups of 6-8 business owners will be teamed a business coach and a coordinated network of service providers committed to providing the right services at the right time.

The region also has the University of Minnesota Duluth's Center for Economic Development (CED), which is a joint program of the Labovitz School of Business and Economics, Natural Resources Research Institute, and Swenson College of Science and Engineering. CED houses the regional offices of the Minnesota Small Business Development Center network, and has a mission to assist entrepreneurs and businesses to grow and succeed. The UMD Center for Economic Development is funded in part through a cooperative agreement with the U.S. Small Business Administration, Minnesota Department of Employment and Economic Development, and regional support partners.

In Wisconsin, the Small Business Development Center at the University of Wisconsin-Superior offers owners and managers of small businesses and entrepreneurs considering going into business confidential, individual counseling services at no charge. They also offer low-cost training programs in a variety of business related areas including but, by far, not limited to: writing a business plan, buying or selling a business, marketing, accounting, managing personnel, and controlling costs.

The Northland Works Leadership Steering Committee has complied additional resources for tracking the history of economic development and entrepreneurial support in the region.

V. Strategic Insights

As the Northland Works strategic planners begin to prepare their action steps, some analysts have suggested the importance of recasting the economic development discussion away from the traditional "4Ts" that have dominated (if not constrained) an understanding of the region's resource-based economy. Suggestions from the Northland Works planning committee have proposed ways to challenge and change thinking about economic development opportunities, including a new way of thinking about infrastructure.

In this report, BBER looked at defining the region's industries in NAICS and IMPLAN codes in order to look more closely at the available data, to describe the economy's sectors in relation to each other, as well as to present relevant analyses of the data. This was done in order to give the planning committee and others working on the larger economic development issues a shared view of the economy's sectors and to get participants to begin their planning discussion on the "same page."

A careful examination of trend data can show if and when a key industry is faltering. For example, planners may ask when are fossil fuels expected to be replaced, and what kind of energy sector re-constitution would be a driver of the regional economy? How can the possible sector replacement be planned as ready, nimble, and dynamic when the opportunity strikes? If not, what's missing?

From the analyses presented in this report, regional planners can begin to define what we mean by "green" jobs, the "transportation" sector, and the "energy" sector. Planners can also begin to combine attributes of the sectors (emerging, declining, basic, non-basic) for specific brain-storming about opportunities for development. For instance, a supersector like manufacturing has been shown to contain both declining industries and growing industries. The location quotients for three-digit sectors, as well as other analyses provided in this report, can help planners examine the regional significance of specific parts of the larger sector. Planners can then draft action steps in relation to the way companies are transforming and realigning in the larger sector. The asset mapping of primary sector discussion also includes a gap analyses which shows opportunities for import substitution. This "leakage," or outsourcing of suppliers, is a further economic development opportunity.

In addition, a question like "How does an important but declining company begin to downscale?" can be studied in the context of its secondary impacts and supply chain linkage, also presented in this report. A complementary report, "Key Subsector Reports," provided by the Northeast Minnesota Regional Analyst of the Minnesota Department of Employment and Economic Development provides selected additional data and analyses on the Northland Works regional economy.

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Appendix A: EMSI Suggested Industries for Development

The EMSI Strategic Advantage Web site can "suggest industries" with economic development potential. The following suggestions are based on EMSI's analysis of regional requirements, multiplier effects, industry growth, shift share, and location quotients. The results of all these analyses are captured in the following tables.

Table 36. Best Industries to Meet Regional Requirements, All Industries, 2006

NAICS Code	*Description*	*$ Required(K)*	*$ Satisfied in Region(K)*	*Difference(K)*
551114	Managing offices	$425,336	$111,626	$313,710
522110	Commercial banking	$362,421	$133,265	$229,156
325412	Pharmaceutical preparation manufacturing	$225,406	$5	$225,401
211111	Crude petroleum and natural gas extraction	$358,829	$145,822	$213,007
524210	Insurance agencies and brokerages	$322,379	$110,869	$211,510
531110	Lessors of residential buildings	$290,781	$90,612	$200,169
517110	Wired telecommunications carriers	$356,673	$176,832	$179,841
531210	Offices of real estate agents and brokers	$253,161	$73,862	$179,299
541110	Offices of lawyers	$251,731	$74,352	$177,379
221210	Natural gas distribution	$178,487	$15,216	$163,272

Source: EMSI Complete Employment - Fall 2008

Table 37. Top Multiplier Effects, All Industries, 2006

NAICS Code	*Description*	*Sales Multiplier*
814110	Private households	2.64
321114	Wood preservation	2.50
321113	Sawmills	2.49
491110	Postal service	2.47
493130	Farm product warehousing and storage	2.44
493120	Refrigerated warehousing and storage	2.44
493190	Other warehousing and storage	2.44
493110	General warehousing and storage	2.44
311513	Cheese manufacturing	2.43
311223	Other oilseed processing	2.43

Source: EMSI Complete Employment - Fall 2008

Table 38. Fastest Growing Industries

NAICS	Description	2006 Jobs	2007 Jobs	Growth %
622110	General Medical and Surgical Hospitals	10,460	10,720	2%
814110	Private Households	3,509	3,727	6%
722110	Full-Service Restaurants	8,190	8,300	1%
624120	Services for the Elderly and Persons with Disabilities	1,796	1,979	10%
920000	State government	8,680	8,911	3%
334419	Other Electronic Component Manufacturing	66	468	609%
624190	Other Individual and Family Services	998	1,221	22%
623990	Other Residential Care Facilities	724	909	26%
221121	Electric Bulk Power Transmission and Control	32	294	819%
11A000	Agriculture	7,790	8,119	4%

Source: EMSI Complete Employment - Fall 2008

Table 39. Industries with Top Regional Competitiveness

NAICS	Description	Job	Ind Mix	Nat Growth	Expected	Competitive
322121	Paper (except Newsprint) Mills	14	-488	104	-385	399
334419	Other Electronic Component Manufacturing	381	-5	2	-2	384
11A000	Agriculture	276	-345	283	-62	339
221121	Electric Bulk Power Transmission and Control	299	1	1	2	297
623990	Other Residential Care Facilities	310	5	26	31	278
236210	Industrial Building Construction	265	-18	18	0	264
624190	Other Individual and Family Services	369	122	36	159	211

Source: EMSI Complete Employment - Fall 2008

Table 40. Fastest Growing Location Quotients

NAICS	Description	Size (Jobs)	1 Yr % Change LQ	Current LQ
454319	Other Fuel Dealers	41	1,396%	20.64
333291	Paper Industry Machinery Manufacturing	749	957%	49.49
325920	Explosives Manufacturing	186	838%	17.25
212210	Iron Ore Mining	3,408	697%	413.39
221121	Electric Bulk Power Transmission and Control	331	634%	7.05
486110	Pipeline Transportation of Crude Oil	117	489%	8.44
327993	Mineral Wool Manufacturing	559	481%	17.71
493130	Farm Product Warehousing and Storage	140	437%	8.69
334419	Other Electronic Component Manufacturing	448	353%	4.11
322121	Paper (except Newsprint) Mills	2,874	345%	23.69

Source: EMSI Complete Employment - Fall 2008

Appendix B: Shift Share Ranking of Selected Primary Northland Works Sectors, 2003 to 2008

Northland Works Selected Primary Sectors Shift Share Analysis for the Years 2003 to 2008, Ranked by Regional Competitiveness

Source: EMSI

	Regional Competitiveness	*Industrial Mix*	*National Effect*
Agriculture, Forestry, Fishing and Hunting	550	-1,277	904
Accommodations and Food Services	248	327	34
Professional and Technical Services	-25	-25	203
Information	-31	-36	6
Health and Social Assistance	-76	875	56
Manufacturing	-80	-518	35
Mining	-306	237	6

Shift-Share Analysis

Although location quotients (see Appendix D) are useful for giving a picture of the regional economy's strengths and weaknesses, they do not explain the sources of change over time or describe how the performance of a local economy differs from that of the nation.

The national share and industry share show the changes that would have occurred in the local economy if it corresponded exactly to national and industry trends. When these two shares are subtracted from the actual shift in employment locally, what is left is a residual change that cannot be explained by general economic conditions (national share) or industrial trends (industry share.) This change—the regional share—reveals the effects of region specific factors on local employment.

In shift-share analysis, the best target sectors for economic development are typically those with the largest regional-share effect on growth.

Appendix C: Northland Works Region Economy 2007

Northland Works Region Economy 2007
*Red = top 50 output

	Industry	Output	Employ-ment	Value Added		NAICS
Agriculture, Forestry, Fishing and Hunting	*Commercial logging	$433,636,000	2,820	$245,535,000		1133
	*Dairy cattle and milk production	$192,600,000	2,238	$77,680,000		11212
	Cattle ranching and farming	$63,963,000	937	$11,529,000		11211, 11213
	All other crop farming	$53,689,000	454	$17,451,000		11194, 111992, 111998
	Forestry- forest products- and timber tract produc	$46,381,000	37	$27,814,000		1131-2
	Fruit farming	$30,648,000	431	$16,854,000		11131-2,. . . 111339
	Grain farming	$25,718,000	648	$8,358,000		11113-6, 11119
	Animal production- except cattle and poultry and e	$25,030,000	1,100	$13,390,000		1122, 1124-5, 1129
	Poultry and egg production	$24,684,000	88	$4,601,000		1123
	Commercial hunting and trapping	$22,763,000	177	$16,028,000		1142
	Greenhouse- nursery- and floriculture production	$16,072,000	204	$10,585,000		1114
	Support activities for agriculture and forestry	$12,216,000	545	$10,354,000		115
	Oilseed farming	$5,173,000	96	$2,372,000		11111-2
	Vegetable and melon farming	$4,165,000	46	$2,179,000		1112
	Commercial Fishing	$1,713,000	86	$754,000		1141
	Agriculture, Forestry, Fishing and Hunting	**$958,451,000**	**9,907**	**$465,484,000**		
Mining	*Mining iron ore	$2,043,372,000	3,621	$927,221,000		21221
	*Extraction of oil and natural gas	$382,160,000	1,027	$87,172,000		211
	*Mining copper- nickel- lead- and zinc	$271,279,000	531	$182,056,000		21223
	Support activities for oil and gas operations	$38,553,000	274	$2,652,000		213112
	Support activities for other mining	$32,100,000	95	$7,060,000		213113-5
	Mining and quarrying sand- gravel- clay- and ceram	$13,600,000	83	$7,066,000		21232
	Mining and quarrying other nonmetallic minerals	$3,938,000	29	$1,694,000		21239
	Mining and quarrying stone	$614,000	3	$392,000		21231
	Mining	**$2,785,616,000**	**5,663**	**$1,215,313,000**		
Utilities	*Electric power generation- transmission- and distr	$1,025,587,000	1,796	$738,671,000		2211
	Natural gas distribution	$15,718,000	17	$3,595,000		2212
	Water- sewage and other treatment and delivery sys	$7,447,000	28	$5,357,000		2213

	Industry	Output	Employ-ment	Value Added		NAICS
	Utilities	**$1,048,752,000**	**1,841**	**$747,623,000**		
Construction	*Construct new residential permanent site single-an	$655,512,000	3,603	$220,956,000		23*
	*Construct new nonresidential commercial and health	$600,573,000	5,146	$250,906,000		23*
	*Construct other new nonresidential structures	$361,513,000	3,226	$154,853,000		23*
	*Maint & repair construct of nonresident structures	$234,548,000	2,494	$112,100,000		23*
	*Construct other new residential structures	$206,108,000	1,111	$73,115,000		23*
	Construct new nonresidential manufacturing structu	$75,449,000	663	$38,751,000		23*
	Maint & repair construct of residential structures	$57,681,000	117	$27,235,000		23*
	Construction	**$2,191,384,000**	**16,360**	**$877,916,000**		
Manufacturing	*Paper mills	$1,872,588,000	2,825	$376,816,000		32212
	*Petroleum refineries	$781,883,000	112	$43,184,000		32411
	*Wood windows and doors millwork manufacturing	$477,716,000	2,762	$143,816,000		32191
	*Construction machinery manufacturing	$363,441,000	870	$100,378,000		33312
	*Reconstituted wood product manufacturing	$361,739,000	962	$149,683,000		321219
	*Aircraft manufacturing	$242,060,000	648	$75,705,000		336411
	*Other plastics product manufacturing	$207,669,000	1,012	$61,898,000		32619
	*Cheese manufacturing	$206,167,000	279	$14,767,000		311513
	*Other industrial machinery manufacturing	$201,310,000	937	$79,143,000		33321, 333291-4, 333298
	*Sawmills and wood preservation	$198,019,000	770	$41,458,000		3211
	*Animal (except poultry) slaughtering- rendering- a	$188,429,000	436	$17,762,000		311611-3
	*Mineral wool manufacturing	$155,718,000	434	$62,337,000		327993
	*Veneer and plywood manufacturing	$129,202,000	757	$39,215,000		321211-2
	*All other chemical product and preparation manufac	$127,356,000	256	$32,076,000		32592, 32599
	*Heavy duty truck manufacturing	$120,340,000	108	$17,714,000		336120
	*Other basic organic chemical manufacturing	$112,980,000	56	$10,579,000		32519
	Frozen food manufacturing	$81,492,000	546	$35,142,000		31141
	Ready-mix concrete manufacturing	$76,730,000	254	$22,565,000		32732
	Soft drink and ice manufacturing	$75,989,000	122	$8,539,000		31211
	Electronic computer manufacturing	$70,706,000	197	$10,633,000		334111
	All other textile product mills	$67,717,000	172	$8,842,000		31499
	Machine shops	$67,153,000	500	$28,779,000		33271
	Sanitary paper product manufacturing	$65,290,000	104	$12,456,000		322291
	Air purification and ventilation equipment manufac	$62,601,000	276	$21,916,000		333411-2
	Ornamental and architectural metal products manufa	$60,047,000	309	$18,500,000		33232
	Sporting and athletic goods manufacturing	$54,069,000	275	$15,794,000		33992
	Printing	$53,880,000	587	$24,772,000		32311
	Valve and fittings other than plumbing manufacturi	$52,163,000	180	$20,322,000		332911-2, 332919

Industry	Output	Employ-ment	Value Added	NAICS
Other rubber product manufacturing	$51,355,000	135	$18,621,000	32629
Ferrous metal foundries	$49,515,000	227	$19,391,000	33151
Audio and video equipment manufacturing	$48,706,000	66	$4,570,000	3343
Motor vehicle parts manufacturing	$48,350,000	169	$11,198,000	3363
Urethane and other foam product (except polystyren	$45,757,000	140	$11,748,000	32615
All other miscellaneous wood product manufacturing	$45,421,000	282	$17,602,000	321999
Other electronic component manufacturing	$44,876,000	298	$13,637,000	334419
Material handling equipment manufacturing	$43,329,000	140	$9,580,000	333921-4
Confectionery manufacturing from purchased chocola	$42,997,000	117	$9,755,000	31133
Fluid milk and butter manufacturing	$40,696,000	61	$7,682,000	311511-2
Relay and industrial control manufacturing	$40,504,000	129	$15,708,000	335314
Engineered wood member and truss manufacturing	$40,206,000	224	$16,587,000	321213-4
Steel product manufacturing from purchased steel	$37,289,000	71	$5,392,000	33121, 33122
Plate work and fabricated structural product manuf	$36,714,000	133	$10,446,000	33231
Fabricated pipe and pipe fitting manufacturing	$35,501,000	131	$15,196,000	332996
Mining and oil and gas field machinery manufacturi	$35,448,000	160	$15,421,000	33313
Printed circuit assembly (electronic assembly) man	$34,733,000	79	$3,185,000	334418
All other paper bag and coated and treated paper m	$34,538,000	109	$7,022,000	322223-6
Coating- engraving- heat treating and allied activ	$34,265,000	184	$12,270,000	3328
Iron and steel mills and ferroalloy manufacturing	$33,499,000	35	$6,167,000	3311
Lime and gypsum product manufacturing	$31,751,000	49	$12,675,000	3274
Paint and coating manufacturing	$29,747,000	42	$8,869,000	32551
Wood kitchen cabinet and countertop manufacturing	$28,368,000	216	$7,628,000	33711
All other food manufacturing	$26,507,000	92	$6,205,000	31199
Asphalt paving mixture and block manufacturing	$26,454,000	59	$10,145,000	324121
Bread and bakery product manufacturing	$23,475,000	179	$4,490,000	31181
Ship building and repairing	$22,924,000	97	$10,625,000	336611
Coffee and tea manufacturing	$22,852,000	42	$2,857,000	31192
Other fabricated metal manufacturing	$22,849,000	119	$7,516,000	332997-9
Cutting tool and machine tool accessory manufactur	$22,419,000	152	$9,049,000	333515
Coated and laminated paper- packaging paper and pl	$21,134,000	54	$4,349,000	322221-2
Mens and boys cut and sew apparel manufacturing	$21,071,000	140	$3,668,000	31522
Other animal food manufacturing	$18,920,000	25	$1,977,000	311119
All other forging- stamping- and sintering	$18,106,000	67	$4,561,000	332111-2, 332117
Fluid power process machinery manufacturing	$17,263,000	64	$4,753,000	333995-6
Wood container and pallet manufacturing	$17,130,000	138	$7,055,000	32192
Glass product manufacturing made of purchased glas	$16,522,000	83	$4,701,000	327215
All other miscellaneous manufacturing	$15,769,000	122	$4,749,000	339993, 339995,

Industry	Output	Employ-ment	Value Added		NAICS
					339999
Plastics packaging materials and unlaminated film	$15,325,000	40	$4,764,000		32611
Vending- commercial- industrial- and office machin	$15,169,000	43	$1,869,000		333311-3
Paperboard container manufacturing	$14,707,000	45	$2,985,000		32221
Soap and cleaning compound manufacturing	$14,579,000	14	$5,144,000		32561
Mechanical power transmission equipment manufactur	$14,394,000	64	$4,842,000		333613
Motor and generator manufacturing	$14,386,000	48	$3,713,000		335312
Hardware manufacturing	$13,389,000	54	$4,520,000		3325
Soybean and other oilseed processing	$13,140,000	5	$332,000		311222-3
Synthetic dye and pigment manufacturing	$12,837,000	18	$2,842,000		32513
Nonferrous metal foundries	$12,708,000	61	$4,591,000		33152
Textile bag and canvas mills	$12,544,000	96	$2,852,000		31491
Nonupholstered wood household furniture manufactur	$12,337,000	94	$3,821,000		337122
Industrial gas manufacturing	$10,789,000	11	$2,367,000		32512
Breweries	$10,202,000	13	$1,849,000		31212
Electricity and signal testing instruments manufac	$9,581,000	28	$701,000		334515
Other commercial and service industry machinery ma	$9,317,000	34	$2,511,000		333319
Showcase- partition- shelving- and locker manufact	$9,173,000	53	$2,592,000		337215
Turbine and turbine generator set units manufactur	$9,136,000	21	$2,848,000		333611
Medicinal and botanical manufacturing	$8,884,000	17	$3,339,000		325411
Dental laboratories manufacturing	$8,767,000	96	$5,911,000		339116
Packaging machinery manufacturing	$8,310,000	43	$2,013,000		333993
Industrial process variable instruments manufactur	$8,117,000	50	$3,301,000		334513
Primary battery manufacturing	$7,760,000	18	$2,337,000		335912
Seafood product preparation and packaging	$7,496,000	23	$1,156,000		3117
Pump and pumping equipment manufacturing	$7,485,000	19	$2,476,000		333911, 333913
Miscellaneous nonmetallic mineral product manufact	$7,283,000	22	$2,855,000		327999
Office furniture and custom architectural woodwork	$7,214,000	66	$3,049,000		337211, 337212, 337214
Concrete pipe- brick- and block manufacturing	$7,088,000	30	$2,412,000		32733
Custom roll forming	$6,837,000	8	$1,039,000		332114
Spring and wire product manufacturing	$6,296,000	35	$2,124,000		3326
Turned product and screw- nut- and bolt manufactur	$6,090,000	31	$2,544,000		33272
Sign manufacturing	$5,950,000	43	$2,471,000		33995
Ophthalmic goods manufacturing	$5,877,000	31	$2,680,000		339115
Air conditioning- refrigeration- and warm air heat	$5,681,000	9	$1,157,000		333415
Power boiler and heat exchanger manufacturing	$5,676,000	23	$1,825,000		33241
Other cut and sew apparel manufacturing	$5,314,000	49	$1,746,000		31529
Prefabricated wood building manufacturing	$4,913,000	28	$2,097,000		321992

Industry	Output	Employ-ment	Value Added	NAICS
Truck trailer manufacturing	$4,866,000	23	$1,213,000	336212
Special tool- die- jig- and fixture manufacturing	$4,709,000	39	$1,859,000	333514
Speed changer- industrial high-speed drive- and ge	$4,621,000	19	$1,846,000	333612
Apparel accessories and other apparel manufacturin	$4,222,000	39	$914,000	3159
Other concrete product manufacturing	$4,203,000	23	$1,732,000	32739
Other aircraft parts and auxiliary equipment manuf	$3,947,000	10	$2,044,000	336413
Dry- condensed- and evaporated dairy product manuf	$3,930,000	5	$319,000	311514
Jewelry and silverware manufacturing	$3,888,000	17	$1,042,000	33991
Boat building	$3,860,000	21	$823,000	336612
Footwear manufacturing	$3,852,000	33	$566,000	3162
Power- distribution- and specialty transformer man	$3,497,000	14	$630,000	335311
Photographic and photocopying equipment manufactur	$3,395,000	13	$1,138,000	333315
Broadcast and wireless communications equipment ma	$3,369,000	12	$423,000	33422
Cookie- cracker- and pasta manufacturing	$3,033,000	9	$301,000	31182
Propulsion units and parts for space vehicles and	$2,782,000	12	$1,616,000	336415, 336419
Metal cutting and forming machine tool manufacturi	$2,652,000	11	$785,000	333512-3
Office supplies (except paper) manufacturing	$2,497,000	16	$1,042,000	33994
Other general purpose machinery manufacturing	$2,471,000	8	$912,000	333992, 333997, 333999
Pottery- ceramics- and plumbing fixture manufactur	$2,468,000	19	$936,000	32711
Industrial mold manufacturing	$2,456,000	19	$1,055,000	333511
Software- audio- and video media for reproduction	$2,453,000	10	$408,000	334611-2
Handtool manufacturing	$2,296,000	46	$725,000	332212-3
Cut stone and stone product manufacturing	$2,295,000	22	$870,000	327991
Farm machinery and equipment manufacturing	$2,263,000	11	$954,000	333111
Apparel knitting mills	$1,843,000	10	$320,000	31511, 31519
Nonferrous metal (except copper and aluminum) roll	$1,780,000	3	$480,000	33149
Support activities for printing	$1,766,000	28	$1,414,000	32312
All other miscellaneous electrical equipment and c	$1,647,000	7	$397,000	335999
All other converted paper product manufacturing	$1,522,000	7	$205,000	322299
Surgical appliance and supplies manufacturing	$1,173,000	4	$567,000	339113
Wiring device manufacturing	$895,000	4	$199,000	33593
Upholstered household furniture manufacturing	$846,000	8	$125,000	337121
Heating equipment (except warm air furnaces) manuf	$795,000	3	$266,000	333414
Other pressed and blown glass and glassware manufa	$681,000	4	$224,000	327212
Other leather and allied product manufacturing	$612,000	4	$103,000	3169
Switchgear and switchboard apparatus manufacturing	$564,000	2	$148,000	335313
Watch- clock- and other measuring and controlling	$553,000	2	$74,000	334518-9

	Industry	Output	Employ-ment	Value Added		NAICS
	Womens and girls cut and sew apparel manufacturi	$549,000	2	$65,000		31523
	All other transportation equipment manufacturing	$441,000	1	$200,000		336999
	Gasket- packing- and sealing device manufacturing	$418,000	3	$131,000		339991
	Leather and hide tanning and finishing	$412,000	2	$56,000		3161
	Wineries	$390,000	1	$69,000		31213
	Tire manufacturing	$320,000	1	$94,000		32621
	Metal tank (heavy gauge) manufacturing	$220,000	1	$54,000		33242
	Curtain and linen mills	$152,000	1	$36,000		31412
	Musical instrument manufacturing	$106,000	1	$22,000		339992
	Manufacturing	**$8,213,875,000**	**23,309**	**$1,972,918,000**		
Whole sale trade	*Wholesale trade businesses	$798,292,000	5,876	$505,095,000		42
	Wholesale trade	**$798,292,000**	**5,876**	**$505,095,000**		
Retail Trade	*Retail Stores - Food and beverage	$277,174,000	5,484	$186,274,000		445
	*Retail Stores - Motor vehicle and parts	$264,418,000	3,337	$167,361,000		441
	*Retail Stores - General merchandise	$260,727,000	5,669	$173,671,000		452
	*Retail Stores - Building material and garden suppl	$215,754,000	3,011	$150,856,000		444
	*Retail Stores - Gasoline stations	$179,872,000	3,441	$133,272,000		447
	*Retail Nonstores - Direct and electronic sales	$147,603,000	3,885	$114,204,000		454
	*Retail Stores - Health and personal care	$105,377,000	1,647	$69,516,000		446
	Retail Stores - Miscellaneous	$87,590,000	2,665	$61,414,000		453
	Retail Stores - Clothing and clothing accessories	$67,148,000	1,496	$47,772,000		448
	Retail Stores - Furniture and home furnishings	$62,104,000	823	$44,783,000		442
	Retail Stores - Sporting goods- hobby- book and mu	$41,120,000	1,277	$28,766,000		451
	Retail Stores - Electronics and appliances	$36,857,000	704	$21,532,000		443
	Retail Trade	**$1,745,744,000**	**33,439**	**$1,199,421,000**		
Transportation and Warehousing	*Transport by truck	$462,667,000	3,578	$215,238,000		484
	*Transport by rail	$455,797,000	1,168	$208,713,000		482
	*Transport by water	$177,848,000	276	$48,431,000		483
	Transport by pipeline	$73,164,000	83	$14,773,000		486
	Transit and ground passenger transportation	$68,432,000	1,128	$28,241,000		485
	Scenic and sightseeing transportation and support	$64,830,000	673	$46,116,000		487, 488
	Transport by air	$54,888,000	202	$16,884,000		481
	Couriers and messengers	$52,741,000	811	$39,530,000		492
	Warehousing and storage	$29,450,000	367	$20,105,000		493
	Transportation and Warehousing	**$1,439,817,000**	**8,286**	**$638,031,000**		
Infor mati on	*Telecommunications	$361,028,000	1,155	$183,131,000		517
	*Periodical publishers	$136,604,000	552	$34,553,000		51112

	Industry	Output	Employ-ment	Value Added		NAICS
	*Newspaper publishers	$104,903,000	954	$42,437,000		51111
	Radio and television broadcasting	$88,698,000	526	$22,605,000		5151
	Other information services	$69,206,000	53	$46,538,000		51911-2
	Internet publishing and broadcasting	$63,474,000	51	$44,158,000		51913
	Motion picture and video industries	$26,357,000	256	$4,485,000		5121
	Data processing- hosting- ISP- web search portals	$20,755,000	127	$6,504,000		518
	Cable and other subscription programming	$13,671,000	19	$1,258,000		5152
	Software publishers	$4,376,000	26	$1,497,000		51121
	Directory- mailing list- and other publishers	$4,339,000	13	$1,236,000		51114, 51119
	Sound recording industries	$3,878,000	5	$486,000		5122
	Book publishers	$1,258,000	15	$719,000		51113
	Information	**$898,547,000**	**3,752**	**$389,607,000**		
Finance and Insurance	*Insurance carriers	$1,543,501,000	5,878	$535,016,000		5241
	*Monetary authorities and depository credit interme	$804,523,000	3,619	$605,647,000		521, 5221
	*Insurance agencies- brokerages- and related activi	$200,749,000	1,977	$63,653,000		5242
	*Securities- commodity contracts- investments- and	$198,018,000	1,169	$55,681,000		523
	Funds- trusts- and other financial vehicles	$80,121,000	223	$16,997,000		525
	Nondepository credit intermediation and related ac	$39,938,000	289	$25,517,000		5222-3
	Finance and Insurance	**$2,866,850,000**	**13,155**	**$1,302,511,000**		
Real Estate and Rental and Leasing	~~*Imputed rental activity for owner-occupied dwellin~~	~~$1,398,007,000~~	~~0~~	~~$912,863,000~~		n.a.
	*Real estate establishments	$321,428,000	2,625	$263,770,000		531
	Commercial and industrial machinery and equipment	$47,076,000	143	$17,739,000		5324
	General and consumer goods rental except video tap	$21,081,000	356	$8,893,000		53221-2, 53229, 5323
	Video tape and disc rental	$16,325,000	345	$5,946,000		53223
	Lessors of nonfinancial intangible assets	$15,809,000	35	$10,177,000		533
	Automotive equipment rental and leasing	$13,220,000	85	$4,460,000		5321
	Real Estate and Rental and Leasing	**$1,832,946,000**	**3,589**	**$1,223,848,000**		
Professional, Scientific, and Technical Services	*Architectural- engineering- and related services	$185,238,000	1,788	$113,114,000		5413
	*Legal services	$128,118,000	1,437	$89,915,000		5411
	*Advertising and related services	$103,125,000	1,019	$50,149,000		5418
	Custom computer programming services	$80,017,000	993	$55,585,000		541511
	Accounting- tax preparation- bookkeeping- and payr	$76,981,000	974	$47,626,000		5412
	Veterinary services	$36,460,000	536	$15,515,000		54194
	Management- scientific- and technical consulting s	$33,882,000	280	$18,784,000		54161, 5613*
	Computer systems design services	$21,573,000	223	$10,020,000		541512
	Scientific research and development services	$18,115,000	153	$8,605,000		5417

	Industry	Output	Employ-ment	Value Added		NAICS
	Environmental and other technical consulting servi	$15,481,000	120	$8,736,000		54162, 54169
	Photographic services	$9,192,000	134	$4,011,000		54192
	Specialized design services	$6,141,000	77	$2,728,000		5414
	Other computer related services- including facilit	$2,530,000	14	$477,000		541513, 541519
	All other miscellaneous professional- scientific-	$32,839,000	143	$25,694,000		54191, 54193, 54199
	Professional, Scientific, and Technical Services	**$749,692,000**	**7,891**	**$450,959,000**		
Management	*Management of companies and enterprises	$251,116,000	1,515	$117,411,000		55
	Management of Companies and Enterprises	**$251,116,000**	**251**	**$251,116,000**		
Administrative and Support and Waste Management and Remediation Services	Waste management and remediation services	$94,470,000	577	$39,852,000		562
	Services to buildings and dwellings	$87,005,000	1,680	$41,188,000		5617
	Business support services	$60,122,000	1,181	$29,278,000		5614
	Office administrative services	$46,675,000	215	$25,374,000		5611
	Employment services	$43,484,000	1,583	$33,025,000		5613*
	Other support services	$27,818,000	267	$13,414,000		5619
	Investigation and security services	$12,329,000	405	$7,192,000		5616
	Travel arrangement and reservation services	$10,536,000	100	$4,535,000		5615
	Facilities support services	$492,000	10	$201,000		5612
	Administrative and Support and Waste Management and Remediation Services	**$382,931,000**	**6,018**	**$194,059,000**		
Educational Services	*Private junior colleges- colleges- universities- a	$110,681,000	1,872	$46,974,000		6112-3
	Other private educational services	$46,943,000	904	$25,651,000		6114-7
	Private elementary and secondary schools	$33,881,000	1,037	$17,352,000		6111
	Educational Services	**$191,505,000**	**3,813**	**$89,977,000**		
Health Care and Social Assistance	*Private hospitals	$1,125,364,000	10,475	$607,081,000		622
	*Offices of physicians- dentists- and other health	$853,246,000	7,165	$582,860,000		6211-3
	*Nursing and residential care facilities	$335,401,000	10,779	$211,237,000		623
	*Individual and family services	$154,598,000	4,560	$76,236,000		6241
	*Medical and diagnostic labs and outpatient and oth	$149,827,000	1,361	$88,141,000		6214-5, 6219
	Community food- housing- and other relief services	$97,778,000	2,300	$51,563,000		6242-3
	Home health care services	$56,290,000	1,434	$39,694,000		6216
	Child day care services	$43,353,000	1,366	$24,770,000		6244
	Health Care and Social Assistance	**$2,815,857,000**	**39,440**	**$1,681,582,000**		
Arts, Entertainment, and	Amusement parks- arcades- and gambling industries	$46,863,000	1,263	$29,437,000		7131-2
	Museums- historical sites- zoos- and parks	$12,405,000	250	$6,379,000		712
	Fitness and recreational sports centers	$12,312,000	443	$5,825,000		71394
	Spectator sports companies	$9,248,000	255	$4,285,000		7112

	Industry	Output	Employ-ment	Value Added		NAICS
	Performing arts companies	$7,655,000	329	$3,550,000		7111
	Bowling centers	$7,281,000	196	$4,481,000		71395
	Promoters of performing arts and sports and agents	$7,062,000	227	$2,121,000		7113-4
	Independent artists- writers- and performers	$3,723,000	109	$1,850,000		7115
	Other amusement and recreation industries	$44,150,000	1,114	$24,515,000		71391-3, 71399
	Arts, Entertainment, and Recreation	**$150,699,000**	**4,186**	**$82,443,000**		
Accommodation and Food Services	*Food services and drinking places	$842,116,000	18,565	$346,821,000		722
	*Hotels and motels- including casino hotels	$198,012,000	3,381	$109,514,000		72111-2
	Other accommodations	$67,295,000	945	$31,536,000		72119, 7212-3
	Accommodation and Food Services	**$1,107,423,000**	**22,891**	**$487,871,000**		
Other Services (except Public Administration)	*Civic- social- professional- and similar organizat	$219,292,000	4,728	$94,299,000		8134, 8139
	*Automotive repair and maintenance- except car wash	$206,834,000	2,591	$103,352,000		81111-2, 811191, 811198
	*Grantmaking- giving- and social advocacy organizat	$127,534,000	1,734	$45,145,000		8132, 8133
	Personal care services	$62,700,000	1,505	$32,610,000		8121
	Commercial and industrial machinery and equipment	$44,899,000	397	$26,141,000		8113
	Other personal services	$27,399,000	220	$9,366,000		8129
	Dry-cleaning and laundry services	$26,008,000	545	$17,101,000		8123
	Personal and household goods repair and maintenanc	$25,187,000	242	$10,172,000		8114
	Death care services	$24,824,000	329	$11,086,000		8122
	Private household operations	$23,549,000	3,083	$23,549,000		814
	Electronic and precision equipment repair and main	$10,682,000	86	$5,322,000		8112
	Car washes	$10,415,000	238	$4,906,000		811192
	Religious organizations	$10,382,000	172	$4,890,000		8131
	Other Services (except Public Administration)	**$819,705,000**	**15,870**	**$387,939,000**		
Government & non NAICs	* Special (S&LG Ed Emp & Payroll)	$1,274,539,000	24,353	$1,274,539,000		n.a.
	* Special (S&LG Non-Ed Emp & Payroll)	$686,998,000	14,712	$686,998,000		n.a.
	*Other state and local government enterprises	$193,225,000	984	$69,644,000		n.a.
	* Special (Federal Non-Military Emp & Payroll)	$192,760,000	2,059	$192,760,000		n.a.
	* Special (Federal Military Emp & Payroll)	$134,802,000	2,079	$134,802,000		n.a.
	*US Postal Service	$134,527,000	1,370	$102,492,000		491
	* Not unique commod (S&LG passenger transit)	$27,367,000	288	$1,755,000		n.a.
	Other Federal Government enterprises	$21,049,000	181	$18,065,000		n.a.
	* Not unique commod (S&LG electricity)	$16,691,000	108	$12,117,000		n.a.
	Government & non NAICs	**$2,681,958,000**	**46,134**	**$2,493,172,000**		
	Totals	$33,931,150,000	272,936	$16,523,167,000		

Appendix D: Location Quotients for all Northland Works Industrial Sectors of the Economy Compared to the US

LQ > 1.0 = Some Employment is Basic
Looking at the table below, note that an LQ that is greater than zero provides evidence of basic employment for a given industry. For example, for the sector Mining iron ore, we conclude that local employment is greater than expected and it is therefore assumed that this "extra" employment is basic. These extra jobs then must export their goods and services to non-local areas which, by definition, make them Basic sector employment.

LQ = 1.0 = All Employment is Non-Basic
An LQ that is equal to zero suggests that the local employment is exactly sufficient to meet the local demand for a given good or service. For example, in the sector Retail Stores - Sporting goods- hobby- book and museums, employment is considered non-basic because none of these goods or services is exported to non-local areas.

LQ < 1.0 = All Employment is Non-Basic
An LQ that is less than zero suggests that local employment is less than was expected for a given industry. An industry in the Northland Works region like Retail Stores - Motor vehicle and parts does not meet local demand for its good or service. Therefore all of this employment is considered non-basic by definition.

Location Quotients: Northland Works Northland Works Counties Compared to the US, 2007

Industry	*Northland Works Region*	*LQ*
Source: IMPLAN		
The Industries below this line are basic to the Northland Works Counties in 2007		
Mining iron ore	3621	422.23
Reconstituted wood product manufacturing	962	29.98
Mining copper- nickel- lead- and zinc	531	22.39
Paper mills	2825	20.29
Mineral wool manufacturing	434	14.03
Commercial logging	2820	12.55
Wood windows and doors and millwork manufacturing	2762	10.66
Veneer and plywood manufacturing	757	10.49
Construction machinery manufacturing	870	7.10
Other industrial machinery manufacturing	937	6.86
All other miscellaneous wood product manufacturing	282	6.58
Air purification and ventilation equipment manufac	276	5.98
Dairy cattle and milk production	2238	5.09
Support activities for other mining	95	4.77
Cheese manufacturing	279	4.48

Industry	*Northland Works Region*	*LQ*
Commercial hunting and trapping	177	4.18
Transport by rail	1168	4.16
Sawmills and wood preservation	770	3.89
Frozen food manufacturing	546	3.87
Cutting tool and machine tool accessory manufactur	152	3.62
Other accommodations	945	3.17
Sporting and athletic goods manufacturing	275	3.03
All other paper bag and coated and treated paper m	109	2.95
Other electronic component manufacturing	298	2.87
Electric power generation- transmission- and distr	1796	2.83
Asphalt paving mixture and block manufacturing	59	2.68
Urethane and other foam product (except polystyren	140	2.59
Engineered wood member and truss manufacturing	224	2.54
Transport by water	276	2.53
Fabricated pipe and pipe fitting manufacturing	131	2.48
All other textile product mills	172	2.47
Mechanical power transmission equipment manufactur	64	2.45
Retail Stores - Gasoline stations	3441	2.40
Insurance carriers	5878	2.29
Nursing and residential care facilities	10779	2.25
Aircraft manufacturing	648	2.19
Sanitary paper product manufacturing	104	2.16
Periodical publishers	552	2.10
Confectionery manufacturing from purchased chocola	117	2.08
Community food- housing- and other relief services	2300	2.05
Textile bag and canvas mills	96	2.04
Heavy duty truck manufacturing	108	2.02
Mens and boys cut and sew apparel manufacturing	140	1.96
Bowling centers	196	1.92
Other plastics product manufacturing	1012	1.92
All other crop farming	454	1.85
All other chemical product and preparation manufac	256	1.84
Coffee and tea manufacturing	42	1.84
Dental laboratories manufacturing	96	1.78
Extraction of oil and natural gas	1027	1.76
Hotels and motels- including casino hotels	3381	1.73
Individual and family services	4560	1.73
Relay and industrial control manufacturing	129	1.70
Animal production- except cattle and poultry and e	1100	1.67
Lime and gypsum product manufacturing	49	1.65
Ferrous metal foundries	227	1.64
Fruit farming	431	1.62
Video tape and disc rental	345	1.61
Forestry- forest products- and timber tract produc	37	1.60
Civic- social- professional- and similar organizat	4728	1.60
Grantmaking- giving- and social advocacy organizat	1734	1.56
Packaging machinery manufacturing	43	1.54
Other cut and sew apparel manufacturing	49	1.53
Newspaper publishers	954	1.52
* Special (S&LG Ed Emp & Payroll)	24353	1.52
Cattle ranching and farming	937	1.52
Vending- commercial- industrial- and office machin	43	1.52
Private hospitals	10475	1.51

Industry	*Northland Works Region*	*LQ*
Audio and video equipment manufacturing	66	1.45
Mining and oil and gas field machinery manufacturi	160	1.44
Other amusement and recreation industries	1114	1.41
Other rubber product manufacturing	135	1.40
Valve and fittings other than plumbing manufacturi	180	1.39
Retail Stores - Building material and garden suppl	3011	1.38
Museums- historical sites- zoos- and parks	250	1.38
Transport by pipeline	83	1.33
Wood container and pallet manufacturing	138	1.32
Ready-mix concrete manufacturing	254	1.31
Mining and quarrying other nonmetallic minerals	29	1.29
Retail Nonstores - Direct and electronic sales	3885	1.29
Cut stone and stone product manufacturing	22	1.29
Electronic computer manufacturing	197	1.29
Apparel accessories and other apparel manufacturin	39	1.24
Radio and television broadcasting	526	1.24
Automotive repair and maintenance- except car wash	2591	1.18
Monetary authorities and depository credit interme	3619	1.18
Retail Stores - General merchandise	5669	1.15
Ophthalmic goods manufacturing	31	1.15
Machine shops	500	1.15
Retail Stores - Food and beverage	5484	1.14
* Special (S&LG Non-Ed Emp & Payroll)	14712	1.13
Transit and ground passenger transportation	1128	1.13
Material handling equipment manufacturing	140	1.13
Mining and quarrying sand- gravel- clay- and ceram	83	1.13
Food services and drinking places	18565	1.11
Retail Stores - Miscellaneous	2665	1.11
Footwear manufacturing	33	1.11
Transport by truck	3578	1.10
Fluid power process machinery manufacturing	64	1.09
Hardware manufacturing	54	1.06
Insurance agencies- brokerages- and related activi	1977	1.05
Glass product manufacturing made of purchased glas	83	1.05
Offices of physicians- dentists- and other health	7165	1.04
Animal (except poultry) slaughtering- rendering- a	436	1.02
Petroleum refineries	112	1.01
The Industries below this line are non-basic to the Northland Works Counties in 2007		
Retail Stores - Sporting goods- hobby- book and mu	1277	0.99
Primary battery manufacturing	18	0.98
Retail Stores - Motor vehicle and parts	3337	0.98
Miscellaneous nonmetallic mineral product manufact	22	0.98
Amusement parks- arcades- and gambling industries	1263	0.97
All other miscellaneous manufacturing	122	0.96
Waste management and remediation services	577	0.96
All other food manufacturing	92	0.96
Other state and local government enterprises	984	0.95
All other forging- stamping- and sintering	67	0.94
Maint & repair construct of nonresident structures	2494	0.94
Nonupholstered wood household furniture manufactur	94	0.93
Personal care services	1505	0.93

Industry	*Northland Works Region*	*LQ*
Printed circuit assembly (electronic assembly) man	79	0.92
Death care services	329	0.92
Construct new nonresidential manufacturing structu	663	0.92
General and consumer goods rental except video tap	356	0.91
Construct new residential permanent site single-an	3603	0.91
Construct other new residential structures	1111	0.91
Construct other new nonresidential structures	3226	0.91
Construct new nonresidential commercial and health	5146	0.91
Maint & repair construct of residential structures	117	0.91
Retail Stores - Health and personal care	1647	0.89
Other fabricated metal manufacturing	119	0.88
Ornamental and architectural metal products manufa	309	0.85
US Postal Service	1370	0.85
Veterinary services	536	0.85
Support activities for oil and gas operations	274	0.84
Private household operations	3083	0.84
Speed changer- industrial high-speed drive- and ge	19	0.82
Home health care services	1434	0.81
Retail Stores - Furniture and home furnishings	823	0.81
Other basic organic chemical manufacturing	56	0.80
Wood kitchen cabinet and countertop manufacturing	216	0.80
Coating- engraving- heat treating and allied activ	184	0.78
Advertising and related services	1019	0.78
Private junior colleges- colleges- universities- a	1872	0.76
Custom roll forming	8	0.75
Ship building and repairing	97	0.75
Medical and diagnostic labs and outpatient and oth	1361	0.75
Steel product manufacturing from purchased steel	71	0.74
Photographic and photocopying equipment manufactur	13	0.74
Retail Stores - Electronics and appliances	704	0.74
Business support services	1181	0.74
Handtool manufacturing	46	0.74
Soft drink and ice manufacturing	122	0.74
Coated and laminated paper- packaging paper and pl	54	0.71
Greenhouse- nursery- and floriculture production	204	0.70
Personal and household goods repair and maintenanc	242	0.70
Child day care services	1366	0.70
Photographic services	134	0.69
Synthetic dye and pigment manufacturing	18	0.68
Turbine and turbine generator set units manufactur	21	0.68
Fluid milk and butter manufacturing	61	0.67
* Special (Federal Non-Military Emp & Payroll)	2059	0.66
Private elementary and secondary schools	1037	0.66
Prefabricated wood building manufacturing	28	0.65
Poultry and egg production	88	0.65
Scenic and sightseeing transportation and support	673	0.64
Motor and generator manufacturing	48	0.63
Telecommunications	1155	0.63
Paint and coating manufacturing	42	0.62
Power boiler and heat exchanger manufacturing	23	0.62
Grain farming	648	0.62
Commercial and industrial machinery and equipment	397	0.61
Couriers and messengers	811	0.61

Industry	*Northland Works Region*	*LQ*
Printing	587	0.61
Dry-cleaning and laundry services	545	0.61
Other private educational services	904	0.60
* Not unique commod (S&LG passenger transit)	288	0.60
Wholesale trade businesses	5876	0.59
Nonferrous metal foundries	61	0.59
* Special (Federal Military Emp & Payroll)	2079	0.58
Car washes	238	0.58
Commercial Fishing	86	0.57
Retail Stores - Clothing and clothing accessories	1496	0.57
Pottery- ceramics- and plumbing fixture manufactur	19	0.57
Office furniture and custom architectural woodwork	66	0.56
Bread and bakery product manufacturing	179	0.56
* Not unique commod (S&LG electricity)	108	0.55
Industrial process variable instruments manufactur	50	0.54
Concrete pipe- brick- and block manufacturing	30	0.53
Architectural- engineering- and related services	1788	0.53
Showcase- partition- shelving- and locker manufact	53	0.52
Management of companies and enterprises	1515	0.51
Legal services	1437	0.51
Fitness and recreational sports centers	443	0.50
Support activities for agriculture and forestry	545	0.50
Other animal food manufacturing	25	0.50
Funds- trusts- and other financial vehicles	223	0.49
Commercial and industrial machinery and equipment	143	0.47
Performing arts companies	329	0.47
Custom computer programming services	993	0.46
Services to buildings and dwellings	1680	0.46
Office supplies (except paper) manufacturing	16	0.46
Plate work and fabricated structural product manuf	133	0.45
Medicinal and botanical manufacturing	17	0.45
Accounting- tax preparation- bookkeeping- and payr	974	0.44
Other support services	267	0.43
Propulsion units and parts for space vehicles and	12	0.42
Other commercial and service industry machinery ma	34	0.41
Electricity and signal testing instruments manufac	28	0.40
Spring and wire product manufacturing	35	0.40
Truck trailer manufacturing	23	0.39
Industrial gas manufacturing	11	0.38
Independent artists- writers- and performers	109	0.38
Pump and pumping equipment manufacturing	19	0.37
Water- sewage and other treatment and delivery sys	28	0.37
Seafood product preparation and packaging	23	0.36
Lessors of nonfinancial intangible assets	35	0.36
Securities- commodity contracts- investments- and	1169	0.36
Spectator sports companies	255	0.36
Motion picture and video industries	256	0.35
Promoters of performing arts and sports and agents	227	0.35
Support activities for printing	28	0.34
Special tool- die- jig- and fixture manufacturing	39	0.34
Other Federal Government enterprises	181	0.34
Warehousing and storage	367	0.34
Other personal services	220	0.33

Industry	*Northland Works Region*	*LQ*
Power- distribution- and specialty transformer man	14	0.31
Oilseed farming	96	0.31
Sign manufacturing	43	0.31
Breweries	13	0.30
Industrial mold manufacturing	19	0.30
All other miscellaneous professional- scientific-	143	0.30
Plastics packaging materials and unlaminated film	40	0.29
Office administrative services	215	0.28
Boat building	21	0.27
Vegetable and melon farming	46	0.27
All other converted paper product manufacturing	7	0.27
Transport by air	202	0.26
Investigation and security services	405	0.26
Data processing- hosting- ISP- web search portals	127	0.26
Religious organizations	172	0.25
Jewelry and silverware manufacturing	17	0.25
Real estate establishments	2625	0.25
Other information services	53	0.24
Environmental and other technical consulting servi	120	0.24
Internet publishing and broadcasting	51	0.24
Turned product and screw- nut- and bolt manufactur	31	0.23
Soybean and other oilseed processing	5	0.23
Iron and steel mills and ferroalloy manufacturing	35	0.22
Employment services	1583	0.22
Dry- condensed- and evaporated dairy product manuf	5	0.22
Specialized design services	77	0.22
Automotive equipment rental and leasing	85	0.22
Travel arrangement and reservation services	100	0.22
Other concrete product manufacturing	23	0.22
Software- audio- and video media for reproduction	10	0.21
Electronic and precision equipment repair and main	86	0.21
Apparel knitting mills	10	0.18
Leather and hide tanning and finishing	2	0.18
Motor vehicle parts manufacturing	169	0.17
Paperboard container manufacturing	45	0.17
Other leather and allied product manufacturing	4	0.17
Soap and cleaning compound manufacturing	14	0.17
Nondepository credit intermediation and related ac	289	0.17
Metal cutting and forming machine tool manufacturi	11	0.17
Management- scientific- and technical consulting s	280	0.16
All other miscellaneous electrical equipment and c	7	0.15
Computer systems design services	223	0.15
Sound recording industries	5	0.15
Farm machinery and equipment manufacturing	11	0.12
Broadcast and wireless communications equipment ma	12	0.12
Cable and other subscription programming	19	0.12
Other pressed and blown glass and glassware manufa	4	0.12
Cookie- cracker- and pasta manufacturing	9	0.11
Book publishers	15	0.11
Scientific research and development services	153	0.11
Heating equipment (except warm air furnaces) manuf	3	0.10
Natural gas distribution	17	0.10
Directory- mailing list- and other publishers	13	0.10

Industry	*Northland Works Region*	*LQ*
Other general purpose machinery manufacturing	8	0.08
Nonferrous metal (except copper and aluminum) roll	3	0.08
Other aircraft parts and auxiliary equipment manuf	10	0.08
Upholstered household furniture manufacturing	8	0.07
Software publishers	26	0.06
Air conditioning- refrigeration- and warm air heat	9	0.05
Wiring device manufacturing	4	0.05
All other transportation equipment manufacturing	1	0.05
Gasket- packing- and sealing device manufacturing	3	0.05
Musical instrument manufacturing	1	0.04
Other computer related services- including facilit	14	0.04
Switchgear and switchboard apparatus manufacturing	2	0.04
Watch- clock- and other measuring and controlling	2	0.04
Facilities support services	10	0.04
Mining and quarrying stone	3	0.04
Womens and girls cut and sew apparel manufacturi	2	0.03
Surgical appliance and supplies manufacturing	4	0.02
Metal tank (heavy gauge) manufacturing	1	0.02
Curtain and linen mills	1	0.02
Wineries	1	0.02
Tire manufacturing	1	0.01
Total	272935	

Appendix E: Industries in Common across the Region

WHAT DRIVES THE ECONOMY?

Minnesota RIG Counties' Top 25 Industries	Output*	Employment	Not in top 25 in WI
Mining iron ore	2,043.37	3,621	Not in top 25 WI
Paper mills	1,579.74	2,361	
Insurance carriers	1,509.42	5,722	Not in top 25 WI
Private hospitals	943.072	8,650	
State and Local Gov Ed Emp & Payroll	859.823	15,907	
Electric power generation- transmission- and distr	853.842	1,395	
Offices of physicians- dentists- and other health	725.094	5,882	
Monetary authorities and depository credit interme	689.296	2,389	
Food services and drinking places	561.729	12,179	
State and Local Non-Ed Emp & Payroll	507.704	9,912	
Wholesale trade businesses	482.643	3,395	
Construct new residential permanent site single	421.011	2,369	
Construct new nonresidential commer and health	383.839	3,384	
Extraction of oil and natural gas	379.765	1,020	Not in top 25 WI
Telecommunications	283.955	927	Not in top 25 WI
Reconstituted wood product manufacturing	280.522	748	Not in top 25 WI
Mining copper- nickel- lead- and zinc	271.279	531	Not in top 25 WI
Nursing and residential care facilities	266.683	8,688	Not in top 25 WI
Commercial logging	256.984	1,513	
Aircraft manufacturing	242.06	648	Not in top 25 WI
Construct other new nonresidential structures	231.222	2,122	
Transport by rail	220.024	565	
Real estate establishments	205.302	1,520	
Construction machinery manufacturing	189.925	454	
Retail Stores - Food and beverage	177.925	3,302	Not in top 25 WI

IMPLAN 2007 data

WHAT DRIVES THE ECONOMY?

RIG Region's Top 25 Industries:	Output in Millions $	Employment	% of Total Output
Mining iron ore	2,043.37	3,621	6.02%
Paper mills	1,872.59	2,825	5.52%
Insurance carriers	1,543.50	5,878	4.55%
State and Local Gov Ed Emp & Payroll	1,274.54	24,353	3.76%
Private hospitals	1,125.36	10,475	3.32%
Electric power generation- transmission- and distr	1,025.59	1,796	3.02%
Offices of physicians- dentists- and other health	853.246	7,165	2.51%
Food services and drinking places	842.116	18,565	2.48%
Monetary authorities and depository credit interme	804.523	3,619	2.37%
Wholesale trade businesses	798.292	5,876	2.35%
Petroleum refineries	781.883	112	2.30%
State and Local Gov Non-Ed Emp & Payroll	686.998	14,712	2.02%
Construct new residential permanent site single	655.512	3,603	1.93%
Construct new nonresidential commercial and health	600.573	5,146	1.77%
Wood windows, doors and millwork manufacturing	477.716	2,762	1.41%
Transport by truck	462.667	3,578	1.36%
Transport by rail	455.797	1,168	1.34%
Commercial logging	433.636	2,820	1.28%
Extraction of oil and natural gas	382.16	1,027	1.13%
Construction machinery manufacturing	363.441	870	1.07%
Reconstituted wood product manufacturing	361.739	962	1.07%
Construct other new nonresidential structures	361.513	3,226	1.07%
Telecommunications	361.028	1,155	1.06%
Nursing and residential care facilities	335.401	10,779	0.99%
Real estate establishments	321.428	2,625	0.95%

IMPLAN 2007 data

WHAT DRIVES THE ECONOMY?

Wisconsin RIG Counties' Top 25 Industries	Output*	Employment	Not in top 25 in MN
Petroleum refineries	781.883	112	Not in top 25 in MN
Wood windows, doors and millwork manufacturing	461.151	2,660	Not in top 25 in MN
State and Local Gov Ed Emp & Payroll	414.716	8,445	
Transport by truck	326.882	2,516	Not in top 25 in MN
Wholesale trade businesses	315.648	2,481	
Paper mills	292.85	464	
Food services and drinking places	280.386	6,386	
Transport by rail	235.773	603	
Construct new residential permanent site single	234.501	1,234	
Construct new nonresidential commer and health	216.734	1,763	
Other plastics product manufacturing	183.544	898	Not in top 25 in MN
Private hospitals	182.292	1,825	
State and Local Gov Non-Ed Emp & Payroll	179.295	4,799	
Animal (except poultry) slaughtering- rendering- a	178.501	413	Not in top 25 in MN
Dairy cattle and milk production	177.738	1,974	Not in top 25 in MN
Commercial logging	176.652	1,307	
Other industrial machinery manufacturing	175.294	815	Not in top 25 in MN
Construction machinery manufacturing	173.516	416	
Electric power generation- transmission- and distr	171.745	401	
Sawmills and wood preservation	164.779	639	Not in top 25 in MN
Cheese manufacturing	158.167	215	Not in top 25 in MN
Construct other new nonresidential structures	130.291	1,104	
Offices of physicians- dentists- and other health	128.152	1,283	
Real estate establishments	116.126	1,105	
Monetary authorities and depository credit interme	115.227	1,230	

IMPLAN 2007 data

What drives the economy?

Leading Industries in Common Across the RIG Region

Industry Output in Millions of $	WI	MN	RIG Region
Paper mills	$293	$1,580	$1,873
State and Local Gov Ed Emp & Payroll	$415	$860	$1,275
Private hospitals	$182	$943	$1,125
Electric power generation- transmission- and distrib	$172	$854	$1,026
Offices of physicians- dentists- and other health	$128	$725	$853
Food services and drinking places	$280	$562	$842
Monetary authorities and depository credit interme	$115	$689	$805
Wholesale trade businesses	$316	$483	$798
State and Local Gov Non-Ed Emp & Payroll	$179	$508	$687
Construct new residential permanent site single	$235	$421	$656
Construct new nonresidential commercial and health	$217	$384	$601
Transport by rail	$236	$220	$456
Commercial logging	$177	$257	$434
Construction machinery manufacturing	$174	$190	$363
Construct other new nonresidential structures	$130	$231	$362
Real estate establishments	$116	$205	$321

IMPLAN 2007 data