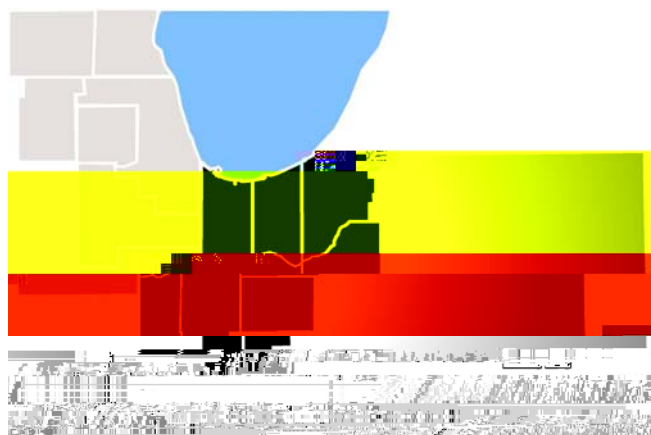


Decade of Promise: Positioning Northwest Indiana's Workforce for Economic Growth



Submitted by:

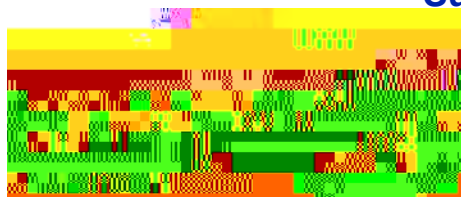


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Strategic Skills Initiative

Occupation & Skill Shortages Report 1

We are grateful to the many employers, workers, educators and economists who lent their time and expertise to this first phase of the Strategic Skills Initiative in our Region.

We look forward to their contributions during the coming months as we, together with the State of Indiana, invest in our region's economic future.

We also appreciate the assistance and support provided by the Corporation for a Skilled Workforce in the development of the report and technical assistance provided by Workforce Associates.



- › Identifying critical occupations
- › Determining critical skills
- › Identifying “skills gaps”
- › Determining the Root Causes of those gaps; and
- › Developing solutions.

In our region, this work will result in five separate reports:

- › An Occupation and Skills Report (October 2005)
- › A Root Cause Report (December 2005)
- › Three (industry-specific) Solutions Reports (March 2006).

This report is the first of the SSI reports for Region I, Northwest Indiana. It details the methods used to identify key industries and critical occupations, and addresses a series of related findings that will guide the project’s evolution over time.

Methods for Selecting Industries and Occupations

We convened an **Executive Team**, comprising industry, education, and civic leaders in the Region, to plan the project, guide the development of the project’s application for resources, and serve as the final arbiter for decisions about the direction and focus of the project.

We participated in the State’s six **web-based training sessions** to insure that we could use STATS Indiana and other required data sources effectively.

In collaboration with the Executive Team, we convened a larger group of industry leaders, economic development professionals, and educators, which we call a **Regional Industry Consortium**, to provide broader input into the project and assist project staff in data collection and validation efforts.

We assembled a cross agency project team² to conduct all project-related activities. These activities prepared us to conduct a detailed analysis of our region’s economy.

² Linda Woloshansky, President/CEO of the Center of Workforce Innovations (CWI) and Jim McShane, President/CEO of the Lake County Integrated Service Delivery Board (LCISDB) provided project oversight. John Dube, Matt Hunter, and Tammy Stump (CWI) and Tina Rongers (LCISDB), with the support of Kristin Wolff (CSW) comprised the project team.

Key Industries

In selecting our key industries, we considered many different aspects of our regional industrial landscape:

- › Which industries employ the most people?
- › Which pay the best?
- › Which are growing? How?
- › Which will offer the most new jobs in the next few years?
- › In which industries do we have a competitive advantage?
- › Which industries are interested in building a competitive advantage?
- › Which industries are prepared to capitalize on regional, national and global growth trends?
- › Which industries have been targeted by state and local economic development experts for growth and development?
- › Can we work with firms in the region to positively impact our key industries?
- › Is there community support for working with these industries?

Making extensive use of the State's SSI project resource page [http://www.stats.indiana.edu/ssi/reg_page.asp?reg=1], we gave special priority to the following:

- › **Employment**—the percentage of total employment the industry contributes to the region.
- › **Wages**—both the percentage of total wages the industry contributes to the region, and the average weekly wage associated with jobs in the industry.³
- › Our ability to **positively impact** the economic health of firms and workers in the industry; and broad-based community and business support.

We also analyzed the results of the ERISS Job Vacancy Survey completed by 361 employers in our area. Of the reported vacancies, 69% were occupations within our three target industries—Health Care, Manufacturing, and TDL.

In addition to our quantitative analysis and formal engagement of the Industry Consortium and Executive Team, we:

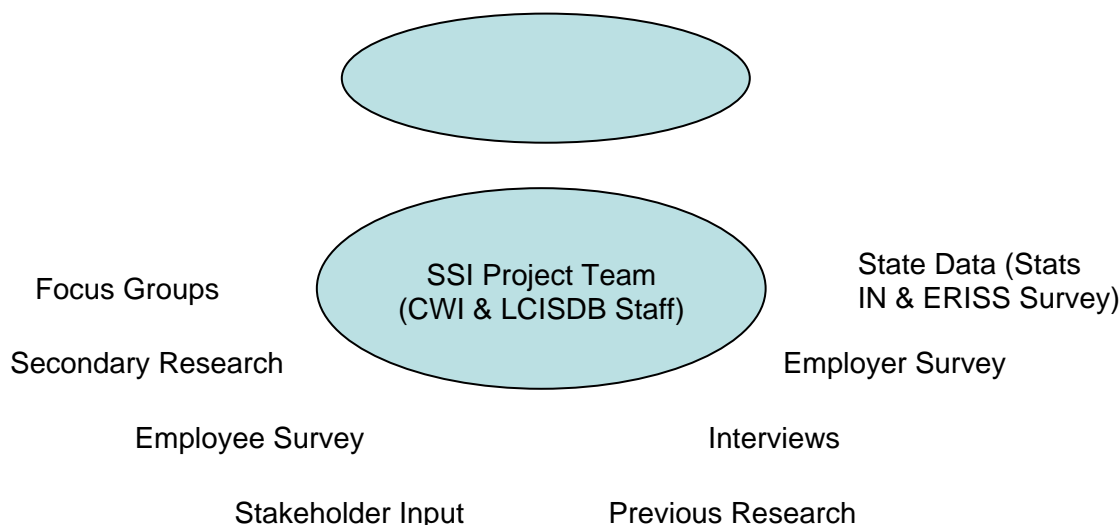
³ We were looking for an average weekly wage above both the weighted average across all industries (\$706.20) and the slightly higher non-weighted weekly wage average across all industries (\$745.73).

- › Conducted 14 formal interviews with key employers and economic development professionals in the region;
- › Completed over 100 informal discussions with employers and key stakeholders in the Region;
- › Facilitated three focus groups, one with firms, one with economic development professionals, and one with educators;
- › Surveyed 141 firms in the region; and
- › Surveyed 158 employees in the region.⁴

After assembling the data we collected through these activities, we worked with our Executive Team and Industry Consortium to validate it through a series of meetings and conference calls that occurred between September 20 and October 5, 2005. The figure Below illustrates our project input and oversight model.

⁴ The surveys for employees and employers were conducted in both print and through web-based technologies. They remain open; these numbers were received by October 10, 2005. We anticipate this data will inform the Root Cause analysis more than this report, but it did help validate both industry and occupation selection.

While there were good arguments in favor of many industries,⁵ we selected only three. Each industry is identified by name and its two-digit North American Industry



Classification System (NAICS), as follows:

- › **Healthcare and Social Services** (62)⁶
- › **Manufacturing** (31-33)
- › **Transportation, Distribution and Logistics** (42, 48, 49); and

These industries and the critical occupations identified below will be the focus of our Root Cause analysis and subsequent Solutions Reports.

Critical Occupations

Making extensive use of the State's SSI project resources, we considered the following factors in identifying critical occupations:

- › Which occupations are in high demand today?
- › In which occupations is demand expected to grow?

⁵ Our industry stakeholders were not universal in their endorsement of these industries; construction, professional services and hospitality and entertainment were also suggested.

⁶ While NAICS code 62 includes social services in addition to health care, we intend to focus on the health care sector. To maintain consistency with the other industries however, we use NAICS code 62 when a two-digit code is required.

- › In which occupations are vacancy rates high?⁷
- › Which occupations require skills transferable to other occupations and industries in our labor market?
- › Which occupations are projected to grow?

We also reviewed many third-party reports and studies that included data on our region. While we did not include all the information we reviewed, we did cite documents that were either very helpful, such as the *Measuring Up Report*, or were very good at framing complex issues in simple ways. They are listed in the bibliography at the end of this report.

Finally, the very fast timeline mandated by this project prompted us to be creative in collecting and validating data. We developed one habit that we plan to maintain: *using every point of contact as an intelligence gathering opportunity*.

We developed an initial list of 25 occupations in our three target industries, narrowing this down to 18 after consulting with our Executive Team and Industry Consortium members.

These occupations employ about 27,000 people in the region at an average wage of nearly \$45,000 per year.

Sector	Occupational Title
HEALTH CARE	
	Licensed Practical Nurses & Licensed Vocational Nurses Pharmacy Technicians Dental Hygienists Medical & Clinical Laboratory Technologists Registered Nurses Pharmacists Medical & Health Services Managers
MANUFACTURING	
	Inspectors, Testers, Sorters, Samples, & Weighers Welders, Cutters, Solderers, & Brazers First-Line Supervisors/Managers of Production & Operating Workers Sales Representatives, Wholesale & Manufacturing, Except Technical and Scientific Products Mechanical Engineers
TDL	
	Industrial Truck & Tractor Operators First-Line Supervisors/Managers of Transportation & Material-Moving Machine & Vehicle Operators First-Line Supervisors/Managers of Helpers, Laborers, & Material Movers, Hand Bus & Truck Mechanics & Diesel Engine Specialists Production, Planning, and Expediting Clerks Dispatchers, Except Police, Fire, & Ambulance

⁷ For this factor, we used the State of Indiana Job Vacancy Survey conducted by ERISS in summer 2005.

Importantly, many of these occupations lie at the heart of industry-wide changes that have the potential to dramatically improve the competitive position of Northwest Indiana firms. Many require the use of new technologies or demand increased knowledge and skills as compared to only a few years ago. We are confident that focusing on these occupations will help us make a real difference in the quality of jobs available in our region and the productivity and job satisfaction of our Region's talent.

What Do We Do?

IN RESPONSE TO THESE DEVELOPMENTS, we could have just complained or attributed our economic woes to dynamics out of our control.

But we didn't.

Recognizing that our region's key industries were experiencing *structural change* and not just cyclical expansion and contraction in Northwest Indiana, business and community leaders began asking fundamental questions of firms, citizens, and communities all over the region:

Where would people work in the future?

How would they work?

What skills would they need?

How will the jobs of the future help support the community we want to live in?

INDUSTRIES & CLUSTERS, WORKERS, & LEARNERS

IN RESPONSE TO FUNDAMENTAL CHANGES evident in the manufacturing industry for over a decade, The Center of Workforce Innovation launched an Industry Cluster Project in 2002. Working with Jennifer Montana, a colleague of Michael Porter, a team of consultants and key civic and business leaders in the region, we identified the region's key industries based on the following criteria:

- › Growth (current and projected)
- › Wages (average weekly and total payroll)
- › Employment (numbers of jobs and percentage of employment)

In an effort to integrate cluster analysis into our project, we also paid attention to "connectedness," the extent to which some industries manifested strong economic linkages to others or were critical components in local supply chains. And in an effort to understand the role of knowledge workers in our economy and prepare for future growth, we considered the concentration of knowledge-intensive jobs that promote transferable skills and enable career mobility.

We selected the following industries as those most critical to the region, conducting research and analysis and completing reports on each of them:

- › Steel (2003) (In partnership with LCISDB)
- › Health Care (2004)
- › Precision Equipment Manufacturing (2004)
- › Wholesale Trade/Logistics (2004)
- › Professional Services (2004)
- › Life Sciences (2005)
- › Information Technology (2005)

Key findings from the project are detailed in Table 1.

Mid-way through our industry cluster project, we recognized the need to assemble data on learners in our region, to identify both the numbers of students enrolled in programs likely leading to careers in our key industry clusters and the numbers likely to graduate from those programs. Our 2004 *Report on Learners* identified both gaps (e.g., too few individuals seeking to enter the trades) and positive trends (e.g., large numbers training for select high-demand positions in the health care pipeline).

Three additional reports, one commissioned by the Central Indiana Corporate Partnership (*What Indiana Makes, Makes Indiana* [2005]), one by the Northwest Indiana Quality of Life Council (*Quality of Life Indicators Report* [2004]), and another literacy report published by The Discover Alliance and CWI, (*Raise the Region* [2004]), have helped engage new stakeholders in broad-based discussions about Northwest Indiana's economic, educational, and social future.

Table 1. Industry Cluster Report Findings

Big Picture Findings	Jobs and/or Skills Identified	Employer Challenges	Connections to workforce system
Precision Equipment Manufacturing: An Overview of Advanced Manufacturing in Northwest Indiana, 2004			

- ∅ There was solid growth until 2001, after which the number of firms and employment has been declining.
- ∅ Wages have continued to increase, however.
- ∅

Big Picture Findings	Jobs and/or Skills Identified	Employer Challenges	Connections to workforce system
<p>declined, leading employers to diversify</p> <ul style="list-style-type: none"> Ø Region is geographically situated to capitalize on flow of good and materials through Chicago, with opportunities for intermodal traffic Ø Industry is extremely competitive. Most companies are small, but the few larger companies can leverage economies of scale to squeeze out smaller firms. Ø Buyer's market – customer demands are high, local firms must be able to compete against large national firms Ø Net margins are extremely low Ø Outsourcing of activities to third party logistics providers is driving down wages Ø State's Inventory Tax has been a limiting factor in growth, but steps are being taken to gradually eliminate the tax Ø High levels of technology are now essential. Require more skilled employees, but fewer of them. 	<p>Skill Deficiencies</p> <ul style="list-style-type: none"> Ø Poor technical skills Ø Poor work ethic Ø Poor interpersonal skills Ø Poor math skills <p>Ø Skill requirements tend to be lower than many other industries – two tiers of employment, with the majority of jobs being in the unskilled or semi-skilled category requiring only minimal OJT.</p> <p>Ø Increases in technology use in the industry are increasing skill requirements, however, and the few jobs in the upper tier may have significant skill requirements</p>	<p>checks and regulatory restraints on driver's hours as factors in significant loss of driver workforce in recent years</p>	<p>employers surveyed said that schools do not approach them regarding workforce opportunities for students</p> <ul style="list-style-type: none"> Ø Gap is further widened since logistics employers do not actively recruit from placement offices or use internships or school-to-work activities Ø WorkOne offices more likely to be used for entry-level and semi-skilled positions than for skilled positions

Targeted Industries Report Professional Services, 2004

<ul style="list-style-type: none"> Ø For purposes of the survey, CWI concentrated on firms engaged in accounting, engineering, architecture, computer services and related 	<p>Most Critical Jobs</p> <ul style="list-style-type: none"> Ø Desktop technician Ø Network administrator Ø Sales and marketing Ø Account/ project manager 	<ul style="list-style-type: none"> Ø Most employers have
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------

Big Picture Findings	Jobs and/or Skills Identified	Employer Challenges	Connections to workforce system
<p>shortage is forecast</p> <ul style="list-style-type: none"> Ø Architecture employment has benefited from residential housing construction and a growing market for ADA compliant housing to meet the needs of our aging population Ø Following the tech “bust” demand for computer services is beginning to rise, but it is still a buyer’s market with a large number of highly skilled workers available. Ø IT employment is fast growing, but quickly changing, and successful workers will need to be adaptable and knowledgeable of advances in software and equipment 			

IT Talent Search for Northwest Indiana, 2005

<ul style="list-style-type: none"> Ø Many employers have invested in technology, but many have resisted change and investment in computers and people with technical skills Ø Most IT workers are employed in non-IT firms – nearly all businesses use computers to manage operations, finances and communications Ø IT outsourcing in the area is going to 	<p>Skills in Demand</p> <ul style="list-style-type: none"> Ø Network engineering Ø Network administration Ø Employers report valuing a well rounded education and hands-on experience more than certifications such as MCSE or MCSA Ø Hiring decisions are made based on the need to meet an 	<ul style="list-style-type: none"> Ø Local employers are “a frustrated lot” – there is enough potential business in the region for them to grow, but competition is fierce and many have clients in other 	<ul style="list-style-type: none"> Ø Employers usually have strong relationships with one or more postsecondary institutions and report success with faculty referrals, job fairs and internships
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Big Picture Findings

local IT specific vendors who offer

Jobs and/or Skills Identified

Employer Challenges

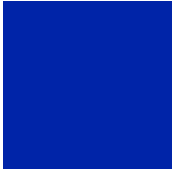
**Connections to
workforce system**

Big Picture Findings	Jobs and/or Skills Identified	Employer Challenges	Connections to workforce system
sector is much smaller than other regions with life science clusters ∅ Life science infrastructure is preliminary ∅ Wages are high, but skill and education requirements are also high			

A NEW AGENDA FOR NORTHWEST INDIANA

TOGETHER WITH KEY STATE REPORTS, these analytical and community planning efforts have helped us begin to craft a community wide agenda, while catalyzing specific action in important areas. Key components of our regional agenda follow.

WE NEED A COMMUNITY-WIDE VISION FOR NORTHWEST INDIANA’S ECONOMIC FUTURE



19. Projections of growth in workforce with needed skills.
20. Post-education and training plans and activities of workforce with needed skills enrolled in post-secondary education or training.
21. Workforce mobility.
22. Self-sufficiency income requirements.

In addressing these issues, we relied heavily on the resources suggested by the State and the tools aggregated on the statewide SSI project web-site [http://www.stats.indiana.edu/ssi/reg_page.asp?reg=1].

Our SSI work was completed by a team comprising the Center of Workforce Innovations and Lake County Integrated Services Delivery Board staff, supported by a CSW consultant. Our decisions were guided by a regional Industry Consortium, and key decisions were made by the Executive Team, a subset of the Consortium. Members of these groups are listed by name and affiliation on page 36 and 38 respectively. Key stakeholder groups we engaged in this project included:

- › Northwest Indiana Forum (NWIF)
- › Northwest Indiana Regional Planning Commission (NIRPC)
- › The Kankakee-Iroquois Regional Planning Commission (K-IRPC)
- › KV Works (KV)
- › Workforce Development Services (WDS)
- › Regional Development Authority¹²
- › Regional Development Corporation (RDC)
- ›
- ›

Web-based Workshops

To facilitate data collection at the regional level, the State developed six web-based workshops as a part of the SSI project. We completed all of them on the following schedule:

- › **Session 1: Overview**, Tuesday, September 13, 2005
- › **Session 2: Outline of the Report**, Tuesday, September 20, 2005
- › **Session 3: Identifying Key Industries and their Growth Potential**, Tuesday, September 20, 2005
- › **Session 4: Identifying Critical Occupations and Skills (Demand)**, Tuesday, September 27, 2005
- › **Session 5: Identifying Critical Occupations and Skills (Supply)**, Monday, October 3, 2005
- › **Session 6: All Together Now: Compiling, Validating, and Writing**, Monday, October 10, 2005

Because we sought to emphasize the capacity building aspect of SSI, we opened the workshops to staff who do not generally par

First, we are building an identity as an economic region across a geographic area that is not accustomed to thinking of itself as a cohesive region. The more we are able to talk to people and engage them in shared initiatives, the more effective regional level planning will become. We know this is not short-term work, and every point of contact matters.

Second, we have invested considerable time and effort engaging regional employers in our industry Cluster Initiative. This project used methods similar to SSI to examine the following industries:

- › Steel (2003)
- › Health Care (2004)
- › Precision Equipment Manufacturing (2004)
- › Wholesale Trade/Logistics (2004)
- › Professional Services (2004)
- › Life Sciences (2005)
- › Information Technology (2005)

We published reports on all of these industries, and developed posters for display in

were either very helpful, such as the *Measuring Up* Report, or were very good at framing complex issues in simple ways. These are listed in Appendix B (Bibliography).

Finally, the very fast timeline mandated by this project prompted us to be creative in collecting and validating data. We developed one habit that we plan to maintain—using every point of contact as an intelligence gathering opportunity. Early in the project, our team decided that data collection would have to occur both within assigned project tasks and also through existing day-to-day work. We placed interview protocols on our walls near our phones and used them religiously with individuals we talked to who could lend their insight and expertise to the project.

We also carried these protocols with us, in our briefcases and cars, to use remotely. While these interviews were not formal ones, we learned much from them. Our contacts offered to help with surveys, lent their professional and personal opinions, led us to secondary data sources, and simply cheered us on.

Communication like this will eventually help our region's non-workforce, education, and economic development professionals understand the importance of these issues.

Aggregating Data and Writing Report 1

We divided responsibility for data collection and analysis among the core team members¹⁵ and then convened as a group through a series of phone calls and meetings to work through the meaning of the data and identity inconsistencies—these will be explored in the Root Cause Analysis.

We then shared responsibility for writing the final report.

Chronology of Methods & Activities

Shortly after the SSI project was announced in summer of 2005, the Center of Workforce Innovations (CWI) and the Lake County Integrated Services Delivery Board (LCISDB) convened a *Planning Consortia* to take responsibility for the project's launch. This group included:

- › Deb Butterfield, President, Greater Valparaiso chamber of Commerce and Officer, Valparaiso Economic Development Corporation
- › John Greaves, U.S.WA 6787, former President of the Northwest Indiana Chapter of the AFL-CIO and current Program Chair for Manufacturing Industrial Technology with Ivy Tech Community College of Indiana

¹⁵ Core team members included staff of The Center of Workforce Innovations, The Lake County Integrated Services

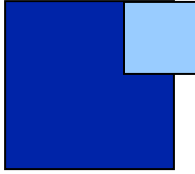
Although our surveys remain live, we had to establish a cut-off date for analysis to include relevant findings in this report. We collected survey data through October 11, 2005, data collected after that date will be included in the Root Causes analysis and used to validate (or challenge) our findings to date.

From October 11, 2005 to present, we have been assembling the report, sending pieces to key stakeholders as they are completed for review, input and validation or challenge.

During the second week in November, we will launch the Root Cause Phase of the SSI project. We feel confident that our survey data will give us very useful information to use in engaging our employers and stakeholders more broadly and we look forward to learning from their insight and expertise.

Industry Consortium Members

Name	Company	County
HEALTH CARE		
Amy Bean	Pulaski Hospital	Pulaski
Tony Ferracane	Community Hospital System	Lake
Gary Mitchell	Opportunity Enterprises	NWI*
Connie Ford	La Porte County Hospital	La Porte
IT		
Greg Scasny	Golden Technologies	Porter
Richard Barnes	Hokey Spokes	Lake
TDL		
Bob Ernth	NICTD	NWI
Travis Colbaugh	Smith Transport	Jasper



Section II: Selection and Definition of Key Industries and/or Clusters

TOGETHER WITH OUR PARTNERS AND STAKEHOLDERS in the region who helped implement our cluster study project, we have learned a much about our regional industrial base during the past three years.

This knowledge and experience, combined with the quantitative analysis we completed as a part of the SSI project provided a well-rounded picture of the opportunities in our economy and labor market. While there were good arguments in favor of many industries, we selected three. Each is identified by name and two-digit North American Industry Classification System (NAICS) as follows:

- › **Health Care and Social Services** (62)¹⁶
- › **Manufacturing** (31-33)
- › **Transportation, Distribution and Logistics** (42, 48, 49); and

In selecting our key industries, we considered many different aspects of all of our regional industrial landscape:

- › Which industries employ the most people?
- › Which pay the best?
- › Which are growing? How?
- › Which will offer the most new jobs in the next few years?
- › In which industries do we have a competitive advantage?
- › Which industries are interested in building a competitive advantage?
- › Which industries are prepared to capitalize on regional, national and global growth trends?
- › Which industries have been targeted by state and local economic development experts for growth and development?
- › Can we work with firms in the region to positively impact our key industries?

¹⁶ While NAICS code 62 includes social services in addition to health care, we intend to focus on the health care sector. To maintain consistency with the other industries, however, we use NAICS code 62 when a two-digit code is required.

- › Is there community support for working with these industries?
- › While all of these factors are important, they are not all *equally* important. As explained below, we prioritized four factors in determining our key industries:
 - › Employment—the percentage of total employment the industry contributes to the region
 - › Wages—both the percentage of total wages the industry contributes to the region, and the average weekly wage associated with jobs in the industry¹⁷
 - › Our ability to positively impact the economic health of firms and workers in the industry; and
 - › Broad-based community and business support.

Employment & Wages

EMPLOYMENT AND WAGES WERE CRITICAL FACTORS IN IDENTIFYING OUR KEY INDUSTRIES.

Our region has experienced significant job loss during the past three years—over 5,000 (net) jobs comprising nearly 2% of our industrial base. Much of this job loss has occurred in our largest industry, manufacturing, which employs 9,000 fewer people today than it did three years ago. Despite these overall reductions, manufacturing firms are hiring for specific high-paying positions.

We learned this during our manufacturing cluster study work. At the public launch of our Manufacturing report this year, a panel of experts from major Northwest Indiana manufacturing firms that included *Emerson Power Transmission Corporation*, *Sullair*, *Swiss Controls* and *Tri-State Manufacturing* all agreed—the future of the industry is bright, but it will rely on fewer more skilled people in better paying and more demanding positions.

Stephen Oswald (Sullair) observed that his company no longer focuses on selling the product, but on delivering solutions to customers. “We’re hiring!” he said, explaining that his firm is looking for smart people who embrace change and can commit themselves to improving the company and its products and services.

This shift in our economic landscape—and in the needs and challenges of firms in our major industries—means three things:

¹⁷ We were looking for an average weekly wage above both the weighted average across all industries (\$706.20) and the slightly higher non-weighted weekly wage average across all industries (\$745.73).

manufacturers have a competitive advantage over peers dependent on poorly developed TDL infrastructures elsewhere.

- › **Construction** also plays an increasingly important role in the region's economy, employing 6.4% of workers whose wages comprise 8.1% of those earned in the region.
- › **Educational Services** is also major source of jobs, employing nearly one in ten workers (9.1%); and **Accommodation and Food Services** is nearly as large, employing one in eleven (8.1%). But both industries pay lower than average wages. Accommodation and Food Services in particular maintains the largest gap—employing 8.1% of the workforce but paying only 2.6% of the wages.

Table II.1 Comparing Northwest Indiana Industries (Employment & Wages)

NAICS	Industry	% of Employment (2004)	% of Wages (2004)	Avg. Weekly Wage (2004, Q4)
	All Industries			\$706.20
11	Agriculture, Forestry, Fishing and Hunting	0.6%	0.4%	\$553.78
21	Mining	0.2%	0.3%	\$1,110.22
22	Utilities	0.8%	1.6%	\$1,287.58
23	Construction	6.4%	8.1%	\$910.61
31-33	Manufacturing	15.8%	25.9%	\$1,181.36
42	Wholesale Trade	3.4%	4.3%	\$965.22
44-45	Retail Trade	12.7%	7.9%	\$430.19
48-49	Transportation and Warehousing	4.2%	4.7%	\$792.62
51	Information	1.3%	1.3%	\$658.74
52	Finance and Insurance	2.5%	2.8%	\$748.17
53	Real Estate and Rental and Leasing	1.2%	0.8%	\$512.21
54	Professional, Scientific, and Technical Services	2.8%	3.2%	\$849.02
55	Management of Companies and Enterprises	0.5%	1.0%	\$1,360.32
56	Administrative and Support and Waste Management and Remediation Services	4.5%	3.0%	\$447.06
61	Educational Services	9.1%	8.2%	\$572.61
62	Health Care and Social Services	13.5%	14.0%	\$776.43
71	Arts, Entertainment, and Recreation	3.3%	2.7%	\$524.17
72	Accommodation and Food Services	8.1%	2.6%	\$217.35
81	Other Services(Except Public Administration)	3.6%	2.2%	\$416.92
92	Public Administration	5.5%	5.1%	\$636.18
99	Unallocated	0.0%	0.0%	\$709.62

Source: Stats Indiana, 2005

Table II.2 Changes in the Size of Northwest Indiana's Industries 2001-2004

NAICS	Industry	# of Firms (2004)	Average Employment		Numerical Change in Employment	Percent Change in Employment
			2001	2004		
	Total	17,783	319,462	314,292	-5,170	-1.6%
11	Agriculture, Forestry, Fishing and Hunting	142	1,792	1,757	-35	-2.0%
21	Mining	26	662	638	-24	-3.6%
22	Utilities	25	2,655*	2,497	-158	-6.0%
23	Construction	2,167	19,474	20,062	588	3.0%
31-33	Manufacturing	872	58,479	49,502	-8,977	-15.4%
42	Wholesale Trade	1,122	11,351	10,758	-593	-5.2%
44-45	Retail Trade	2,785	41,365	39,945	-1,420	-3.4%
48-49	Transportation and Warehousing	692	12,729	13,095	366	2.9%
51	Information	219	4,852	4,169	-683	-14.1%
52	Finance and Insurance	1,009	7,838	7,940	102	1.3%
53	Real Estate and Rental and Leasing	679	4,100	3,640	-460	-11.2%

explains why the region will need to cultivate nearly 300 metals industry workers each year even while the industry's demand for new workers remains flat (Table II.5).¹⁹

While this analysis suggests the potential for rising wages for the region's workers, who will be older, more experienced and fewer in number as the "baby boomers" begin to retire, it also means that the region will have to compete on skills and talent, or firms will be tempted to locate or recruit from neighboring regions where there are more and cheaper workers available to fill high-demand jobs.

Table II.3 Select Industry Sub-sectors Employing Large Numbers of Older Workers in Northwest Indiana

	Indiana		Northwest Indiana
# of Employees	% of Total Emp	# of Workers	

Indiana

Northwest Indiana

of

NAICS	Industry	Establishments	LQ (IN base)	LQ (Midwest base)	LQ (U.S. base)
53	Real Estate and Rental and Leasing	631	1.04	0.89	0.96
61	Educational Services	369	1.29	1.35	1.34
92	Public Administration	242	0.77	1.14	0.95
51	Information	202	0.78	0.69	0.7
71	Arts, Entertainment, and Recreation	185	0.89	0.71	0.78
11	Agriculture, Forestry, Fishing & Hunting	136	1	1.3	0.72
55	Management of Companies & Enterprises	53	0.6	0.74	0.67
21	Mining	24	0.64	0.85	0.49

Potential Industry Strengths & Weaknesses

FIRM-LEVEL INDUSTRY CONCENTRATION

As shown in Table II.7, compared to the State of Indiana,²³ only two industries show significant concentrations by firm at the two-digit NAICS code level: Health Care and Social Services, with a 26% greater concentration of establishments than the state average; and Educational Services with a 29% greater concentration.

establishments in: Wholesale Trade (positively), Manufacturing (negatively), Waste Management (negatively), Transportation and Warehousing (negatively), Educational Services (negatively) and Agriculture (positively).²⁵

National influences played a strong role in changing regional industry concentrations in the following industries: Health Care Services (positively); Professional, Scientific and Technical Services (positively); Wholesales Trade (positively), Manufacturing (positively), Transportation and Warehousing (positively), Real Estate (positively) and Educational Services (positively).

Finally, dynamics within the industry were responsible changes in industry concentration in the following: Retail Trade (negatively); Wholesale Trade (negatively); Transportation and Warehousing (negatively); Transportation and Warehousing (negatively); Public Administration (negatively); Information (negatively); and Agriculture (negatively).

Changes in the number of establishments tell us something about economic shifts over time, but are less important than shifts in the concentration of jobs.

JOB-LEVEL CONCENTRATIONS BY INDUSTRY

A SIMILAR PICTURE EMERGES USING JOBS AS THE UNIT OF ANALYSIS IN ASSESSING CONCENTRATION. Table II.8 shows location quotients as indicators of job concentration (by industry) in Northwest Indiana compared to the state, the Midwest and the U.S. We have used two-digit NAICS codes in Table II.8 to illustrate this comparison.²⁶

With the exception of Primary Metals Manufacturing, which is extremely concentrated in Northwest Indiana (both by establishments and jobs), only Arts and Entertainment, Agriculture and Construction jobs are significantly more concentrated in the region than in the State of Indiana—116%, 48% and 46% respectively—and only Finance and Insurance is significantly less concentrated at 71% of the state average.

Comparatively, Northwest Indiana jobs in Construction, Agriculture, Arts and Entertainment are more concentrated—46%, 48% and 116%, respectively—than jobs in these industries in the Midwest region. Only Finance and Insurance and Professional Scientific and Technical Services stand out as significantly less concentrated, employing half as many of these workers as the Midwest as a whole. Predictably, Primary Metals shows extreme concentration, employing ten times more people than the Midwest average.

²⁵ “Positively” and “negatively” describe only the direction of the regional influence on industry concentration; these are not assessments of the overall positive or negative impact of the change in concentrations.

²⁶ We did include Primary Metal Manufacturing (331) in this table because of its extreme concentration.

Compared to the U.S., Northw

to changes in the region, but changes in the industry decreased that figure by 511.

Table II.7 Shifts in Industry Concentrations Measured by Number of Establishments 2001-2004

NAICS	Industry	Establish- ments	Estab LQ (IN base)	Estab LQ (Midwest base)	Estab LQ (U.S. base)	Change	National Growth	Industry Mix	Regional Shift
0	Total	16,388	1	1	1	850	1,100	-292	41
44-45	Retail Trade	2,506	1.12	1.19	1.25	22	176	-189	35
23	Construction	1,963	1.05	1.19	1.22	185	126	26	32
62	Health Care and Social Services	1,636	1.26	1.21	1.23	144	106	40	-2
81	Other Services(Except Public Admin)	1,518	1.1	0.97	0.71	31	105	-39	-35
72	Accommodation and Food Services	1,370	1.1	1.17	1.25	96	90	18	-13
54	Professional, Scientific, and Technical Svcs	1,342	0.9	0.8	0.78	144	85	21	38
42	Wholesale Trade	1,036	0.74	0.87	0.9	70	69	-56	57
52	Finance and Insurance	946	0.9	1.07	1.08	81	61	29	-9
31-33	Manufacturing	828	0.84	0.99	1.16	-34	61	-124	29
56	Administrative & Support & Waste Management & Remediation Svcs	723	0.89	0.93	0.88	35	49	16	-30
48-49	Transportation and Warehousing	643	1.09	1.34	1.43	-24	47	-40	-31
53	Real Estate and Rental and Leasing	631	1.04	0.89	0.96	40	42	22	-24
61	Educational Services	369	1.29	1.35	1.34	15	25	31	-41
92	Public Administration	242	0.77	1.14	0.95	6	17	-15	5
51	Information	202	0.78	0.69	0.7	-11	15	-25	-1
71	Arts, Entertainment, and Recreation	185	0.89	0.71	0.78	33	11	8	14
11	Agriculture, Forestry, Fishing & Hunting	136	1	1.3	0.72	13	9	-15	19
55	Management of Companies & Enterprises	53	0.6	0.74	0.67	6	3	1	1
21	Mining	24	0.64	0.85	0.49	-3	2	-2	-3

N/A = This item is not available. This is due to non-disclosure requirements, or because a calculation could not be created.

Data sources: Indiana Business Research Center based on ES202 data, U.S. Bureau of Labor Statistics.

Provided by: Indiana Business Research Center, IU Kelley School of Business

Table II.8 Shifts in Concentrations of NW IN Industries As Reflected by Location Quotients of Jobs in the Region 2001-2004

NAICS	Industry	Jobs	Jobs LQ (IN base)	Jobs LQ (Midwest base)	Jobs LQ (U.S. base)	Jobs Change	Jobs National Growth	Jobs Industry Mix	Jobs Regional Shift
0	Total	319,426	1	1	1	3,643	5,890	-1,268	-656
62	Health Care and Social Services	42,674	1.13	1.02	1.1	4,342	721	3,181	439
23	Construction	21,106	1.27	1.46	1.19	3,933	323	1,589	2,020
72	Accommodation and Food Services	25,507	0.99	1.09	0.98	2,394	435	1,835	124
56	Administrative and Support and Waste Management and Remediation Services	14,872	0.86	0.8	0.75	2,039	242	517	1,280
48-49	Transportation and Warehousing	13,427	0.96	1	1.05	928	235	-511	1,204
61	Educational Services	30,977	1.11	1.02	1.06	847	567	1,622	-1,342
92	Public Administration	17,125	1.21	1.08	0.99	363	315	100	-52
11	Agriculture, Forestry, Fishing & Hunting	1,810	1.4	1.48	0.66	358	27	143	188
52	Finance and Insurance	7,980	0.71	0.5	0.56	133	148	459	-473
71	Arts, Entertainment, and Recreation	10,106	2.14	2.16	1.95	132	188	967	-1,022
54	Professional, Scientific, and Technical Services	8,618	0.87	0.52	0.51	94	160	-268	201
81	Other Services(Except Public Admin)	11,353	1.23	1.08	1.07	74	212	16	-154
44-45	Retail Trade	40,827	1.08	1.12	1.07	-14	769	557	-1,340
21	Mining	593	0.83	0.97	0.46	-55	12	6	-73
53	Real Estate and Rental and Leasing	3,603	0.9	0.72	0.69	-173	71	127	-371
42	Wholesale Trade	10,820	0.81	0.77	0.78	-612	215	-430	-397
51	Information	4,135	0.79	0.55	0.53	-758	92	-840	-10
331	Primary Metal Manufacturing	20,340	3.8	11.05	17.81	-8,274	539	-6,711	-2,102
31-33	Manufacturing	49,787	0.78	1.21	1.43	-10,278	1,131	-10,289	-1,120

N/A = This item is not available. This is due to non-disclosure requirements, or because a calculation could not be created.

Data sources: Indiana Business Research Center based on ES202 data, U.S. Bureau of Labor Statistics.

Provided by: Indiana Business Research Center, IU Kelley School of Business.

Industry Trends

- › Lower labor costs by automating repetitive and predictable tasks.
- › Facilitate integration of supply chains between parts manufacturers, assemblers, OEMs, distributors, wholesalers, retailers and service providers.
- › Enable trade outside the region—even for small firms.²⁹
- › Increase productivity across firms and industries (even if they change nothing else operationally).
- › Measure and improve quality.
- › Support relationships with customers all over the world.

While many firms in our region are working hard to make effective use of technology and improve their competitiveness, we encountered firms during our SSI research that lacked web-sites or email, and whose operations had not changed substantially for decades. They are holding themselves, their employees, and our region back.

IDENTIFYING UNIQUE WAYS TO ADD VALUE IN KEY INDUSTRIES

- › People with problems solving and critical thinking skills look for solutions to customers challenges, enhancing the agility and inventiveness of their firms.
- › People with communication skills help insure that knowledge and expertise gets to the people who need it, helping their firms perform more

Industries Targeted by Economic Development Organizations and Other Key Stakeholders

STATE-LEVEL INTEREST IN KEY INDUSTRIES

THE STATE OF INDIANA RELEASED *A NEW PATH TO PROGRESS IN THE SUMMER OF 2005*, a Strategic Plan developed by the State Department of Commerce. The plan relies on cluster analysis to identify targets for investment and development.

The state focused on fourteen clusters and created a typology to characterize the opportunities for development within them in different parts of the state.

- › A “star” cluster is specialized and becoming more concentrated
- › A “mature” cluster is specialized but becoming less concentrated
- › An “emerging” cluster is not specialized but is becoming more concentrated (and, therefore, likely to specialize)
- › A “transforming” cluster is not specialized and is decreasing in concentration.

Relying on cluster-based analysis rather than the narrower industry-based view and using data from 2001-2003, the report identifies five clusters as “stars” in Northwest Indiana. These include:

- › Advanced Manufacturing
- › Biomedical/Biotechnical
- › Earth Products (mining, glass, etc.)
- › Chemicals
- › Advanced Logistics

These five clusters are more concentrated in Northwest Indiana than in the rest of the state, and are either growing jobs or offer jobs that pay very well compared to the average in the region.

Arts and entertainment was the only “mature” cluster in Northwest Indiana named in the report.

Specialized, Increasing Concentration

Advanced Manufacturing	29,099	-12.0%	2.17	2.7%	60,127
Biomedical/Biotechnical (Life Sciences)	34,293	6.7%	1.08	2.2%	34,565
Earth Products	1,847	-3.6%	1.03	5.5%	46,369
Chemicals	5,026	-2.2%	1.01	5.0%	45,942
Advanced Logistics	7,805	-4.1%	1.01	1.0%	36,166

REGION-LEVEL INTEREST IN KEY INDUSTRIES

WE ARE VERY EXCITED ABOUT THE RECENT LAUNCH OF THE NEW REGIONAL DEVELOPMENT AUTHORITY (RDA). The RDA, formally enabled by the state legislature earlier this year, has identified the Transportation, Distribution and Logistics industry (TDL) as one of three key overall priorities—and the only clear industry priority. A detailed industry report is currently under development by Purdue University Calumet.

While no formal release of data has occurred, researchers have identified eight “conjectures.” These include:

- › TDL is not clearly defined as an industries sector—economic impact may be underestimated using available tools.
- › Increasingly, logistics is a strategic function that plays a role in product pricing, supply chain management and customer acquisition and satisfaction.
- › Logistics costs are rising, the competitive advantage for firms who do this well is increasing.
- › Efficient integration of different modes of transport is critical to the growth of the industry.
- › Efficient freight management is central to regional employment growth and competitiveness.
- › Technology (e-commerce, radio-frequency, enterprise resource applications) is increasing the integration of supply chains worldwide.
- › There is an increasing need for workforce education and training in the industry—at all levels.
- › The logistics industry will struggle with sustainability and quality of life issues, and will require a close relationship with community stakeholders to secure competitive advantage.

These interim findings echo those of the Center of Workforce Innovation’s TDL Cluster Report, available on www.innovativeworkforce.com, under resources.

We anticipate that the RDA will identify other industries as priorities over time—and we plan to be there to help support the workforce strategy.

LOCAL-LEVEL INTEREST IN KEY INDUSTRIES

NIPSCO, THE NORTHWEST INDIANA FORUM AND THE NORTHWEST INDIANA REGIONAL PLANNING COMMISSION (NIRPC) are three economic development and planning organizations in the region that work across multiple counties rather than for specific communities.

Workforce issues and transportation are key priorities for these organizations.

Finally, at the community level, our Chambers and professional and trade associations echo the industry interests of the state and region. Increasingly, they are interested in both helping today's key industries (e.g., manufacturing) maximize productivity and competitiveness, while laying the groundwork for the industries of the future (e.g., Bio-Science).

POTENTIAL IMPACT AND COMMUNITY SUPPORT

O

In contrast, several growing Northwest Indiana TDL firms reported explicitly seeking employees in Illinois because they felt the skills and experience of the workers there were better than they could find in Northwest Indiana.

Finally, when asked about their key shortage occupations, 41% of firms responding to the electronic survey indicated that the jobs they cited “have always been hard to fill.” Another 36% cited cycles as the norm, reporting that the jobs they identified have been hard to fill from time to time. Only 5% of employers surveyed indicated that the jobs they cited had recently become hard to fill.

We suspect that this is because the requirements are increasing for these jobs faster than the processes employers use to cultivate and attract talent. We will explore these findings further in the Root Cause Phase of the project.

Consortium Input

OUR REGION IS GEOGRAPHICALLY VAST, A TOTAL OF OVER 3,200 SQUARE MILES, stretching from Munster to Morocco and Whiting to Winamac. As a result, we have taken to minimizing the number of face-to-face meetings, but increasing their length, and conducting business by telephone and email as often as possible.

We used this same protocol to staff the governance infrastructure for the SSI project.

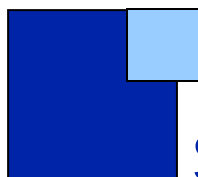
We established an Industry Consortium to provide broad-based input on the project, and a smaller Executive Team to guide operations and be accountable for decision-making.

The Executive Team first met on July 13, 2005—and then met again on July 29, 2005—to plan the SSI project approach and develop the draft application. It met again on August 23rd to plan project oversight and protocols for decision-making with the larger Industry Consortium.

At that time, the full Industry Consortium was engaged by email and telephone, but met in person on September 20 for a three-hour work-session. During this session, we:

- › Informed members about the SSI project, its status and key objectives;
- › Facilitated a discussion about their key workforce issues; and
- › Facilitated a debate about the five industries we nominated for consideration as SSI industries—Health Care, Manufacturing, Construction, TDL and Professional Scientific and Technical Services.

The comments of our consortium members about their own workforce issues mirrored those of firms who completed our survey through October 11, 2005:



Section III: Selection and Definition of Critical Occupations and Skill Sets

Total employment numbers tell us that we have a base of qualified workers across the eighteen occupations. Our assumption is that an employed individual has been deemed “qualified”. In 2005, the estimated base of qualified workers in the eighteen critical occupations is 27,436. Projected into year 2012, the base will grow 4% to 28,570. Table III.1 shows employment data from 2002-2012.

Table III.1

Code	Occupational Title	2002 Employment	2005 ¹ Estimate	2012 Projection	Total Growth	% Change	Replacements	Total Openings
HEALTH CARE								
29-2061	Licensed Practical and Licensed Vocational Nurses	2,200	2,248	2,360	160	7%	480	640
29-2052	Pharmacy Technicians	950	1,001	1,120	170	18%	120	290
29-2021	Dental Hygienists	430	472	570	140	33%	40	180
29-2011	Medical and Clinical Laboratory Technologists	300	324	380	80	27%	80	160
29-1111	Registered Nurses	6,630	7,014	7,910	1,280	19%	1,390	2,670
29-1051	Pharmacists	890	932	1,030	140	16%	170	310
11-9111	Medical and Health Services Managers	460	502	600	140	30%	90	230
	Totals	11,860	12,493	13,970	2,110	18%	2,370	4,480
MANUFACTURING								
51-9061	Inspectors, Testers, Sorters, Samplers, & Weighers	1,690	1,651	1,560	-130	-8%	390	260
51-4121	Welders, Cutters, Solderers, and Brazers	1,970	1,973	1,980	10	1%	560	570
51-1011	First-Line Supervisors/Managers of Production and Operating Workers	2,660	2,636	2,580	-80	-3%	560	480
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	2,320	2,344	2,400	80	3%	610	690
17-2141	Mechanical Engineers	540	522	480	-60	-11%	150	90
	Totals	9,180	9,126	9,000	-180	-2%	2,270	2,090
TDL								
53-7051	Industrial Truck and Tractor Operators	1,930	1,879	1,760	-170	-9%	370	200
53-1031	First-Line Supervisors/Managers of Transportation and Material-Moving Machine and Vehicle Operators	590	593	600	10	2%	140	150
53-1021	First-Line Supervisors/Managers of Helpers, Laborers, and Material Movers, Hand	490	487	480	-10	-2%	120	110
49-3031	Bus/Truck Mechanics and Diesel Engine Specialists	1,000	1,009	1,030	30	3%	260	290
43-5061	Production, Planning, and Expediting Clerks	1,570	1,519	1,400	-170	-11%	380	210
43-5032	Dispatchers, Except Police, Fire, and Ambulance	330	330	330	0	0%	70	70
	Totals	5,910	5,817	5,600	-310	-5%	1,340	1,030
	Totals for 3 Industries	26,950	27,436	28,570	1,620	6%	5,980	7,600

¹Based on straight-line method

Source: Indiana Workforce Development Agency

Healthcare – Critical Occupations

In Health Care, Nursing has been an ongoing concern for some time among employers who have difficulty recruiting and retaining people for this occupation. Even though they may employ CNAs, LPNs and RNs, and these occupations are positioned within a well-defined career ladder, the actual training requirements and path to a particular job vary widely. For instance, some RNs have completed an Associates degree, while others may have a Bachelor of Science degree in Nursing or even a Masters degree. Clearly, the more experience and education nurses have, the more employable they should be with increased compensation and responsibilities within their organizations, though that is often not the case in the Northwest Indiana job market since some employers are not willing to pay a premium for a nurse with advanced degrees.

The following table describes the educational requirements for these critical occupations in Healthcare. All of these occupations require appropriate licenses from the State of Indiana.

Table III.2

SOC Code	Occupational Title	Education Requirements
29-2061	Licensed Practical & Licensed Vocational Nurses	Postsecondary vocational training
29-2052	Pharmacy Technicians	Moderate-term on-the-job training*
29-2021	Dental Hygienists	Associate degree
29-2011	Medical & Clinical Laboratory Technologists	Bachelor's degree
29-1111	Registered Nurses	Associate's degree
29-1051	Pharmacists	First professional degree
11-9111	Medical & Health Services Managers	Work exp. + BA or higher degree

*Increasingly, employers are requiring an Associate's degree in an accredited pharmacy technician program.

Table III.3 Employment, Wages, & Earnings for Occupations in Health Care

SOC	Occupational Title	Employ-ment	Mean Wage	Mean Annual	Entry Wage	Entry Annual
29-2061	L.,10.54(nsed Pra)329-1(ci)739 Tw000,073S.9-1(ci)731					

POSITION DESCRIPTIONS FOR SELECT OCCUPATIONS IN HEALTH CARE

29-2061 LICENSED P

WORK EXPERIENCE

Potential workers can volunteer in a nursing home or other medical setting to gain practical experience. Work experience as a nursing aide is also very helpful.

Table III.4 Top O*Net Critical Skills

Importance	Skill
94	Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
93	Reading Comprehension — Understanding written sentences and paragraphs in work related documents.
92	Time Management — Managing one's own time and the time of others.

Source: <http://online.onetcenter.org>

29-2052 – PHARMACY TECHNICIANS

Prepare medications under the direction of a pharmacist. May measure, mix, and count out, label, and record amounts and dosages of medications..

SKILLS AND CREDENTIALS REQUIRED FOR ENTRY: There are no national and few state requirements for training pharmacy technicians. However, employers often prefer applicants who have completed formal training. Many employers have neither the time nor money to train their own technicians.

Applicants without formal training but with experience working as a pharmacy assistant in a drug store have an advantage. Employers also prefer applicants who get along well with people and know how to serve customers. Experience managing supplies and counting and measuring drugs is also preferred. Any experience using computers is helpful. Becoming certified as a Certified Pharmacy Technician might also help in the hiring process. Employers know that technicians who pass the exam have knowledge and skills.

To work as a pharmacy technician, workers must:

- › Have a high school diploma or GED
- › Complete on-the-job training or a formal training program; and
- › Have a good eye for detail.

Career Pathways to this Occupation

FORMAL EDUCATION

Some pharmacy technicians complete a formal training program. Pharmacy technician programs last one to two years. Two-year programs grant an associate's degree. One-year programs grant a certificate. During training, students study medical terminology, pharmaceutical calculations, and pharmacy recordkeeping. They also learn medication names, doses, and uses..

ON-THE-JOB TRAINING

Most pharmacy technicians learn their skills on the job from an experienced pharmacy technician. During training, they learn the names and doses of medications; ethics and laws; store policies; and customer service. Many training programs offer internships where students get hands-on experience working in a pharmacy. Interns work under the supervision of experienced technicians or pharmacists.

Table III.5 Top O*Net Critical Skills

Importance Skill

- › Complete a dental hygiene program;
- › Pass a state exam to get a license;
- › Have good interpersonal skills; and
- › Be able to work as part of a team.

Career Pathways to this Occupation

WORK EXPERIENCE

Workers may begin their career as a dental assistant. However, licensing requires a formal education as a dental hygienist that provides adequate preparation for this occupation. Prior work experience is not required.

FORMAL EDUCATION

Most dental hygiene programs take two years to complete and grant an associate degree. Some four-year programs grant a bachelor's or master's degree. Programs are available at professional technical schools, colleges, and dental schools. In a dental hygiene program, students study anatomy, radiology, and nutrition. Students also learn how to use dental tools and equipment. During training, students get hands-on experience working with patients in a clinic. About half of the programs require applicants to complete at least one year of college.

Table III.6 Top O*Net Critical Skills

Importance	Skill
86	Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
83	Speaking — Talking to others to convey information effectively.
78	Reading Comprehension — Understanding written sentences and paragraphs in work

supervise other laboratory workers. Technologists are often responsible for making sure that testing is done properly. They consult with physicians on what the tests show. Some technologists specialize. Blood bank technologists determine correct blood types for transfusions. Microbiology technologists identify bacteria and other disease organisms. In some labs, technologists conduct research under the supervision of medical researchers.

SKILLS AND CREDENTIALS REQUIRED FOR ENTRY: Employers look for applicants who can pay attention to detail and follow procedures. Employers require applicants for medical technologist jobs to have at least a bachelor's degree. They prefer applicants whose degree is in medical technology or one of the life sciences. National certification is highly valued.

To work as a medical laboratory technologist, workers must:

Importance	Skill
87	Reading Comprehension — Understanding written sentences and paragraphs in work related documents.
84	Troubleshooting — Determining causes of operating errors and deciding what to do about it.
81	Operation and Control — Controlling operations of equipment or systems.
80	Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.
79	Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
79	Science — Using scientific rules and methods to solve problems.

Source: <http://online.onetcenter.org>

29-1111 - REGISTERED NURSES

Assess patient health problems and needs, develop and implement nursing care plans, and maintain medical records. Administer nursing care to ill, injured, convalescent, or disabled patients. May advise patients on health maint

Career Pathways to this Occupation

FORMAL EDUCATION

There are three training options for registered nurses. Nursing students can earn an associate degree in nursing (A.D.N.) that are typically offered by community and two-year colleges as a two-year program. Two, they can earn a bachelor's of science degree in nursing (B.S.N.) from colleges and universities that offer these four-year programs. Three, they can earn a diploma from a hospital that offers these two to three year programs.

In general, graduates of any of the three types of programs qualify for entry-level positions. However, they must also pass national and state exams. Nurses who have a bachelor's degree have more options for jobs.

Nursing students study anatomy, physiology, and chemistry. Near the end of training, they complete a supervised work experience in a hospital. During their clinical work experience, they work in several hospital departments, such as surgery, emergency, and pediatrics.

WORK EXPERIENCE

People can volunteer in a nursing home or other medical setting to get experience. Many RNs began their career as a LPN, Health Aide, Health Technician, Certified Nursing Assistant (CNA), Home Health Assistant (HHA) or other related entry-level occupation.

Table III.8 Top O*Net Critical Skills

Importance	Skill
90	Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
84	Reading Comprehension — Understanding written sentences and paragraphs in work related documents.
82	Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Source: <http://online.onetcenter.org>

29-1051 – PHARMACISTS

Compound and dispense medications following prescriptions issued by physicians, dentists, or other authorized medical practitioners.

SKILLS AND CREDENTIALS REQUIRED FOR ENTRY

pharmacists who have good people and communication skills. This is because communication with patients is a very important part of the job.

To work as a pharmacist, workers must:

- › Complete at least two years of pre-pharmacy courses in college;
- › Graduate from a four-year pharmacy program;
- › Complete an internship; and
- › Pass a state licensing exam.

Career Pathways to this Occupation

FORMAL EDUCATION

Pharmacy programs take four years to complete and grant a Doctor of Pharmacy (Pharm.D.) degree. These programs teach students to fill prescriptions, advise patients, and confer with physicians and other health workers.

Pharmacy students need at least two years of college-level classes before entering a college of pharmacy. Most students enter pharmacy programs after completing three years of college. Many college programs qualify students for pharmacy college. Regardless of major, they should take courses in math, chemistry, and biology. They also study physics, humanities, and social sciences. They do not have to complete a formal pre-pharmacy program.

ON-THE-JOB TRAINING

Importance Skill

business administration, and public health. Other possible programs are long-term care administration and health science. Some health services managers and administrators are physicians. Clinical administrators often have a degree in a specialty, such as nursing.

Many colleges and universities offer master's programs in health services administration. Entry into these programs is competitive. Applicants with work experience and a bachelor's degree in business or a health-related field have the best chance of being accepted.

WORK EXPERIENCE

Many health services administrators begin their careers as a nurse or physician. After a working in their profession for years, they switch to administration.

ON-THE-JOB TRAINING

Health services administrators update their knowledge and skills continually. Insurance requirements, laws, medical techniques, and computer technology change quickly. To keep up, managers attend seminars and classes

Table III.10 Top O*Net Critical Skills

Importance	Skill
95	Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
89	

Manufacturing – Critical Occupations

The following table (Table III.11) describes the educational requirements for these critical occupations in Manufacturing.

Table III.11 Educational Requirements for Critical Occupations in Manufacturing

SOC Code	Occupational Title	Education Requirement
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	Moderate-term on-the-job training
51-4121	Welders, Cutters, Solderers, and Brazers	Postsecondary vocational training
51-1011	First-Line Supervisors/Managers of Production and Operating Workers	Work experience in related occupation
41-4012	Sales Representatives, Wholesale and	

SKILLS AND CREDENTIALS REQUIRED FOR ENTRY: Training requirements vary, based on the responsibilities of the inspector, tester, sorter, sampler, or weigher. For workers who perform simple “pass/fail” tests of products, a high school diploma generally is sufficient. Simple jobs may be filled by beginners provided with in-house training. Training for new inspectors may cover the use of special meters, gauges, computers, or other instruments; quality-control techniques; blueprint reading; safety; and reporting requirements. There are some postsecondary training programs in testing, but many employers prefer to train inspectors on the job.

In general, inspectors, testers, sorters, samplers, and weighers need mechanical aptitude, math and communication skills, and good hand-eye coordination and vision. Advancement for these workers frequently takes the form of higher pay. They also may advance to inspector of more complex products, supervisor, or related positions such as purchaser of materials and equipment.

Career pathways to this occupation

Many workers enter this occupation through an orientation and work experience in quality control processes, and on-the-job training. Complex precision-inspecting positions are filled by experienced assemblers, machine operators, or mechanics that already have a thorough knowledge of the products and production processes. To advance to these positions, experienced workers may need training in statistical process control, new automation, or the company’s quality assurance policies. As automated inspection equipment becomes more common, computer skills are increasingly important.

Table III.13 Top O*Net Critical Skills

Importance	Skill
------------	-------

82

51-4121 – W

Table III.14 Top O*Net Critical Skills

Importance	Skill
75	Operation and Control — Controlling operations of equipment or systems.
70	Equipment Selection — Determining the kind of tools and equipment needed to do a job.
50	Equipment Maintenance — Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.

- › Be able to direct and motivate people.

To work as a production supervisor, workers must:

- › Have at least a high school diploma or GED;
- ›

ON-THE-JOB TRAINING – MANAGERS

Some employers have management-training programs for new college graduates. They receive training in the company's products and policies. They also learn about the manufacturing process and their job duties. In order for experienced supervisors to advance to department head or production manager positions, they usually need a degree in business or engineering in addition to completing in-house training programs.

ON-THE-JOB TRAINING – SUPERVISORS

Many employers train new supervisors in management theory and human resources. Supervisors may also learn new computer software.

Table III.15 Top O*Net Critical Skills

Importance	Skill
75	Coordination — Adjusting actions in relation to others' actions.
71	Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
71	

- › Work their way up through sales jobs over many years or have a bachelor's degree;
- › Have excellent communication skills;
- ›

understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

75 **Negotiation** — Bringing others together and trying to reconcile differences.

Source: <http://online.onetcenter.org>

17-2141 – MECHANICAL ENGINEERS

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

SKILLS AND CREDENTIALS REQUIRED FOR ENTRY: To work as a mechanical engineer, workers must:

- › Have a bachelor's degree in mechanical engineering;
- › Be curious and detail-oriented;
- › Have strong analytical skills; and
- › Be creative.

The professional engineer design

SOC Code	Occupational Title	Education Requirements
53-7051	Industrial Truck and Tractor Operators	Short-term on-the-job training
53-1031	First-Line Supervisors/Managers of Transportation and Material-Moving Machine and Vehicle Operators	Work experience in related occupation
53-1021	First-Line Supervisors/Managers of Helpers, Laborers, and Material Movers, Hand	Work experience in related occupation
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	Postsecondary vocational training
43-5061	Production, Planning, and Expediting Clerks	Short-term on-the-job training
43-5032	Dispatchers, Except Police, Fire, and Ambulance	Moderate-term on-the-job training

Source: Indiana Workforce Development Agency

Table III.19 Employment, Wages and Earnings for Occupations in TDL

Source: Indiana Workforce Development Agency, 2004, 2nd quarter

53-7051 – INDUSTRIAL T

Importance	Skill
------------	-------

have more training. For example, supervisors in aerospace and electronics usually need a bachelor's degree in a related field.

WORK EXPERIENCE

Supervisors usually need experience as a wo

years old and in good physical condition. Most employers require completion of high school or a GED

Career Pathways to this Occupation

Unskilled beginners clean parts, fuel and lubricate vehicles, and drive vehicles into and out of the shop. Beginners are usually promoted to trainee mechanic positions, after they gain experience and if there are openings. In some shops, beginners who have experience in automobile service start as trainee mechanics.

After they gain a few months of experience, trainee mechanics may do planned service

increasingly requiring keyboarding skills for data entry and the ability to use various software applications for tracking, reporting, and finding information.

SKILLS AND CREDENTIALS REQUIRED FOR ENTRY:

information to develop and evaluate options and implement solutions.

Source: <http://online.onetcenter.org>

43-5032 – DISPATCHERS, EXCEPT POLICE, FIRE, AND AMBULANCE

Schedule and dispatch workers, work crews, equipment, or service vehicles for conveyance of materials, freight, or passengers, or for normal installation, service, or emergency repairs rendered outside the place of business. Duties may include using radio, telephone, or computer to transmit assignments and compiling statistics and reports on work progress.

Most dispatchers utilize computers and customer services skills to perform their jobs. Many often have supervisory responsibility or at least manage the work of drivers and other workers. In some small companies, the role of dispatcher is often embedded into other occupations like terminal manager or customer service, making it difficult to accurately determine the actual number of employees and job growth rates.

SKILLS AND CREDENTIALS REQUIRED FOR ENTRY: Employers require dispatchers to have a high school diploma or GED. They prefer to hire people who are familiar with radio equipment and other telecom equipment, and know how to use a computer to track orders and perform some data entry. Dispatchers need to know geography: knowledge of land, sea, and air masses; they also need to know how to describe their location, features, and relationships.

To work as a dispatcher, workers must:

- › Complete a high school diploma or GED;
- › Complete on-the-job training;
- › Have good communications skills; and
- › Work well under stress.

Career Pathways to this Occupation

FORMAL EDUCATION

Emergency vehicle dispatchers may take special courses. Training in dispatching can include study in interpersonal communications, public safety telecommunications, radio broadcasting, and computer operations. Dispatchers also learn proper procedures for emergency communications with police, fire, and rescue functions.

ON-THE-JOB TRAINING

Most dispatchers learn their skills through on-the-job training. Training may last from

Competitive levels and Trends for Critical Occupations with Midwest and National Comparisons

HEALTHCARE

Below, in Table III.26, you will find median wages from 2003 as Northwest Indiana's median wages of our critical occupations as compared to the Midwest and Nation.

LPN's median wage is slightly below both the Midwest and Nation. Pharmacy

Technician's make slightly more in Northwest Indiana. Dental Hygienist's is in line with

both the Midwest and Nation. Medical & Clinical Lab Technologist's median wage is not

far off the Midwest and Nation. A Registered Nu and National Compl 5 TD-0.n16u90 TD0.0001 T.000

MANUFACTURING

In Table III.28, all occupations in this industry make a higher median salary as compared to the Midwest and Nation.

Table III.28

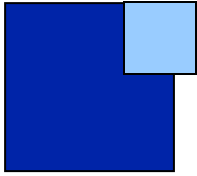
Manufacturing			
	Location	Median Wage 2003	
		Hourly	Annual
Inspectors, Testers, Sorters, Samplers, & Weighers	United States	13.56	28,200
	Midwest	14.34	29,800
	NW Indiana	15.37	31,978
Welders, Cutters, Solderers, and Brazers	United States	14.39	29,900
	Midwest	15.02	31,200
	NW Indiana	16.25	33,791
1st-line Supervisors/ Mgrs of Production & Operating Workers	United States	21.23	44,200
	Midwest	21.59	44,900
	NW Indiana	22.56	46,919
Sales Representatives Wholesale, Manufacturing, Except Technical/Scientific Products	United States	21.41	44,500
	Midwest	21.41	44,500
	NW Indiana	21.98	45,715
Mechanical Engineers	United States	31.35	65,200
	Midwest	29.23	60,800
	NW Indiana	31.36	65,233

Midwest = median of the following states: IL, IN, MI, OH, WI
 Source: Bureau of Labor Statistics, Occupational Employment Statistics Survey; Indiana Department of Workforce Development, Labor Market Information

But in Table III.29, every single occupation in Manufacturing shows slower growth rates than the Midwest and Nation.

Table III.29

Manufacturing				
	Location	Employment		Percent Change
		2002	2012	
Inspectors, Testers, Sorters, Samplers, & Weighers	United States	515,400	539,500	5%
	Midwest	112,790	116,240	3%
	NW Indiana	1,690	1,560	-8%
Welders, Cutters, Solderers, and Brazers	United States	390,500	456,700	17%
	Midwest	77,940	86,780	11%
	NW Indiana	1,970	1,980	1%
1st-line Supervisors/ Mgrs of Production & Operating Workers	United States	733,400	803,300	10%
	Midwest	158,300	171,420	8%
	NW Indiana	2,660	2,580	-3%



Section IV: Size and Location of Short- and Long-Term Occupational Shortages

Occupational Shortages

An occupation is deemed to be in shortage when an employer in a certain area is unable to recruit and/or retain as many workers in that particular occupation as they would normally like to employ under current labor market and workplace conditions.

At the current moment, there is no clear-cut method in quantifying “occupational shortages” across multiply industries. And a data source that would provide us with precise information enabling us to calculate occupational shortages does not exist.

However, our team was able to utilize the resources of the ERISS Corporation, a market leader in collecting in-depth business information, specializing in gathering business intelligence collection and technologies. ERISS was able to disseminate a Job Vacancy Survey to 991 employers throughout the seven-county region of Northwest Indiana. To be more specific, Healthcare, Manufacturing, and TDL was represented by 83, 283, and 199 companies respectively. In all, the ERISS job vacancy survey revealed to us that there are over 4,000 current job vacancies that exist in all industries across Northwest Indiana. This includes 820 in healthcare, 1,313 in manufacturing, and 623 in TDL. These three industries alone are responsible for at least 69% of all job vacancies specifically reported by the ERISS Job Vacancy Survey.

A couple of sample questions that ERISS asked the employers were;

1. How many (workers in a specific occupation) do you have?
2. How many current vacancies for this specific occupation?

We believe these two questions to be the most relevant in assisting us in estimating our short-term and long-term occupational shortages. The answer to the first question will tell us precisely how many people are employed within a certain occupation inside that company. And the answer to the second question will tell us specifically how many job vacancies exist for that specific occupation at the current moment. By knowing both of these figures, we can now calculate the “vacancy rate” for any occupation reported in the job vacancy survey. Just take the total number of “current vacancies” and divide it by the total number of “occupations”.

We were able to take the “vacancy rate” as determined by the ERISS Job Vacancy Survey for each occupation and immediately apply it to our estimated 2005 employment

figures in order to compute our current occu

Table IV.2

Healthcare					
Code	Occupational Title	2007¹ Employment	2007 Shortages+ Surpluses-	2012 Employment	2012 Shortages+ Surpluses-
29-2061	Licensed Practical and Licensed Vocational Nurses	2280	60	2,360	-16
29-2052	Pharmacy Technicians	1,035	63	1,120	71
29-2021	Dental Hygienists	500	-42	570	-148
29-2011	Medical and Clinical Laboratory Technologists	340	12	380	17
29-1111	Registered Nurses	7,270	250	7,910	348
29-1051	Pharmacists	960	98	1,030	109
11-9111	Medical and Health Services Managers	530	16	600	19
Totals		12,915	457	13,970	400
Manufacturing					
Code	Occupational Title	2007¹ Employment	2007 Shortages+ Surpluses-	2012 Employment	2012 Shortages+ Surpluses-
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	1,625	51	1,560	55
51-4121	Welders, Cutters, Solderers, and Brazers	1,975	207	1,980	378
51-1011	First-Line Supervisors/Managers of Production and Operating Workers	2,620	28	2,580	32
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	2,360	200	2,400	231
17-2141	Mechanical Engineers	510	-1	480	-43
Totals		9,090	485	9,000	653
TDL					

Code Occupational Title

2007ifi397.7ef446.64 4fOref3d5 3624e7e2382 67.00.0045 Twcalmployzer 3Tjelpm

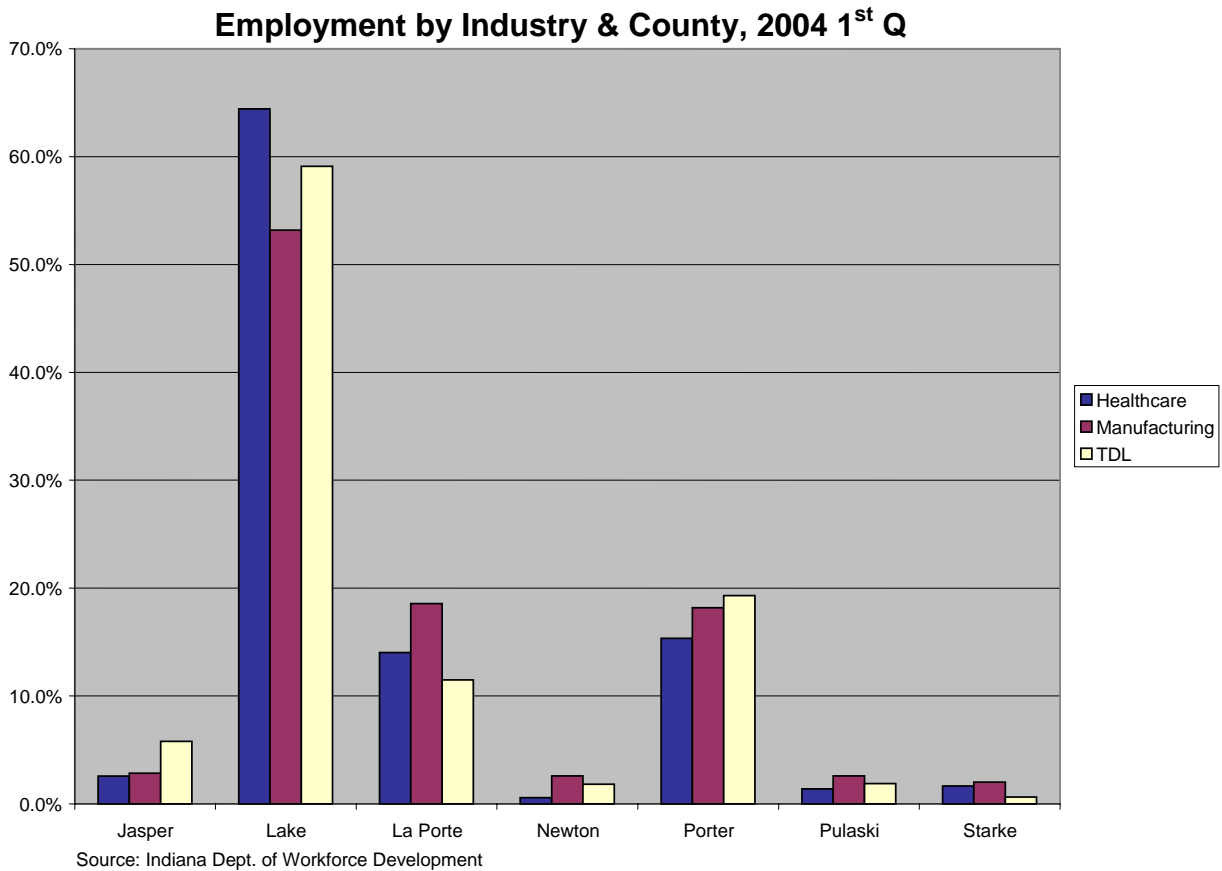
nurses being produced versus demand for nurses is getting larger over the next seven years.

“Everyone knows that our nursing shortage is well documented requiring our schools of nursing to increase capacity, but the shortage has also impacted the number of graduate faculty trained to teach the new workforce. State and community colleges can only bear so much of the financial burden. Additional funds from other sources are needed to solve this State and National dilemma”, says Anthony Ferracane, Vice President of Human Resources-Community Foundation of Northwest Indiana.

Location

When estimating the occupatio

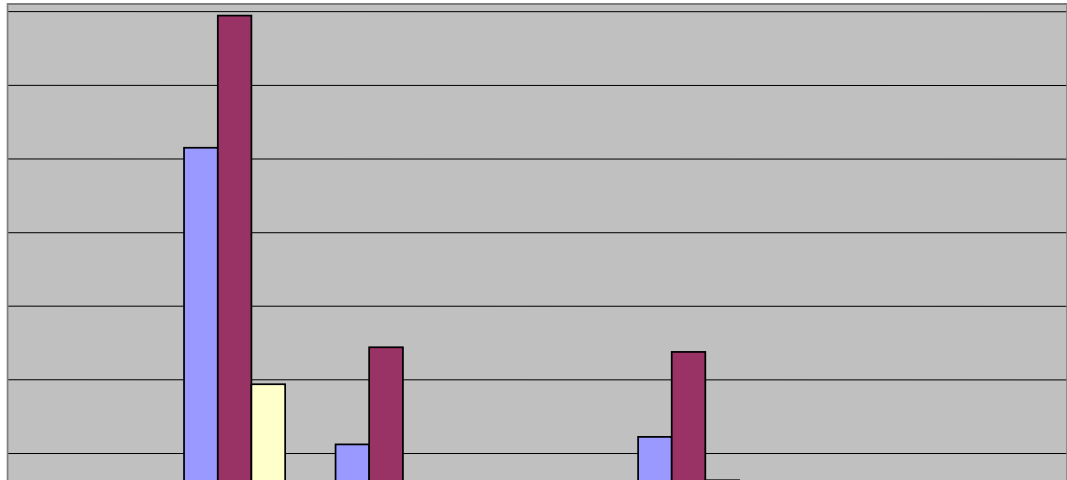
Chart IV.3



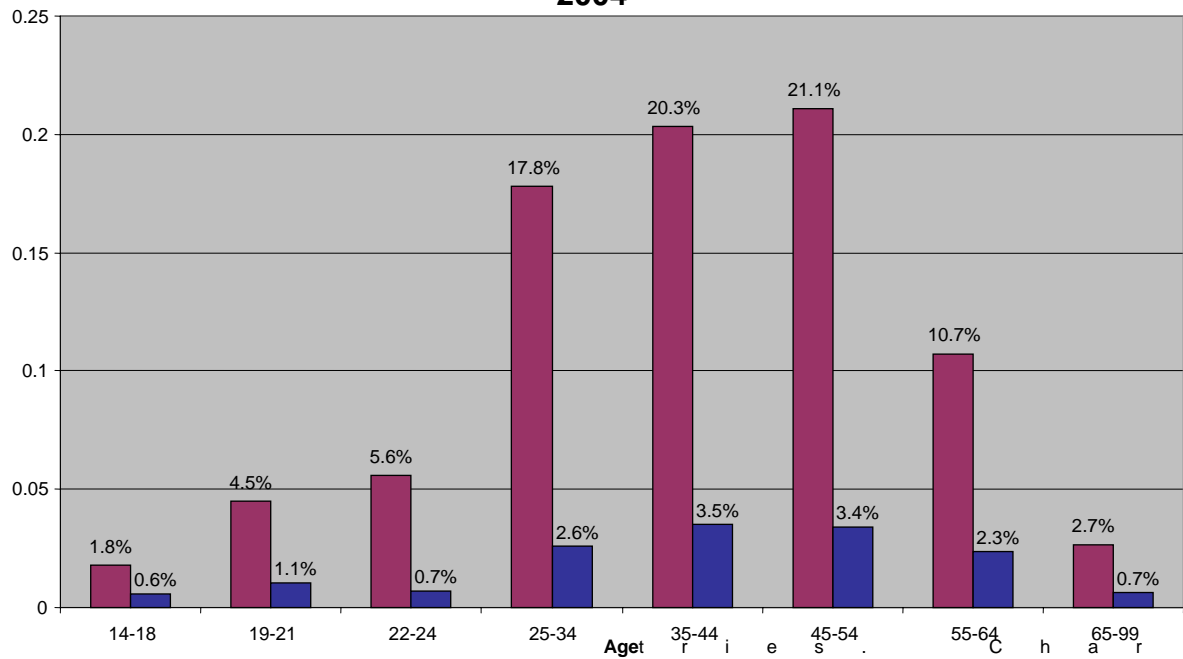
Lake County employers provide the highest percentage of occupations across the Region averaging 59% across all three industries along with Porter County averaging 18%. La Porte furnishes an average of 15% of jobs within these three industries, while Jasper is at 4%. Newton and Pulaski both average 2% of employment and directly behind them is Starke at an average of 1%.

Although the total number of occupational shortages changes across all Counties, each County maintains the same percentage of shortages between 2007 and 2012. Jasper is responsible for 3%, Lake 58-59%, La Porte 16%, Newton 2%, Porter 17%, Pulaski 2%, and Starke 2%.

Chart IV.5



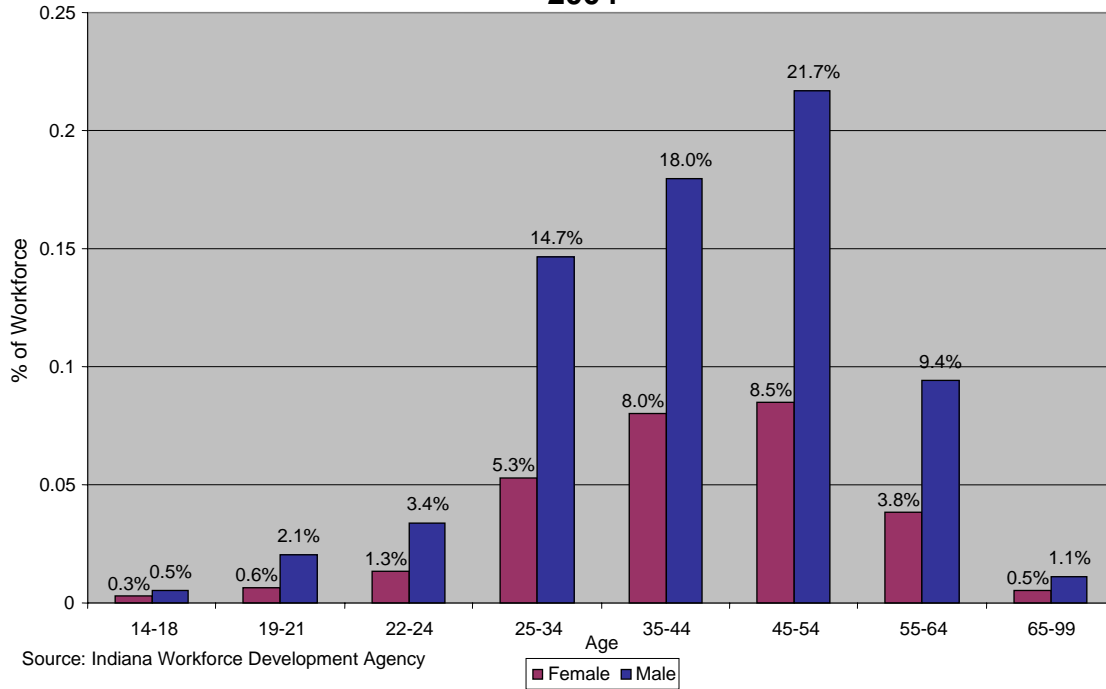
**Age Structure-Healthcare Northwest Indiana
2004**



The age structure of the Manufacturing workforce (chart IV.7) shows us that the 35-54 age bracket consists of 39.7% males compared to 16.5% females. Even though the percentage of male workers outweigh the females, it's still a closer ratio than the female workers in the Healthcare industry compared to males.

Chart IV.7

**Age Structure-Manufacturing Northwest Indiana
2004**



The TDL industry shows similarities to the Manufacturing industry in regards to the percentage of males to females. Chart IV.8 shows us that the TDL workforce comprised of 40% men as compared to 12.8% of woman being employed within the TDL industry between the ages of 35-54.

Age Structure-TDL Northwest Indiana
2004

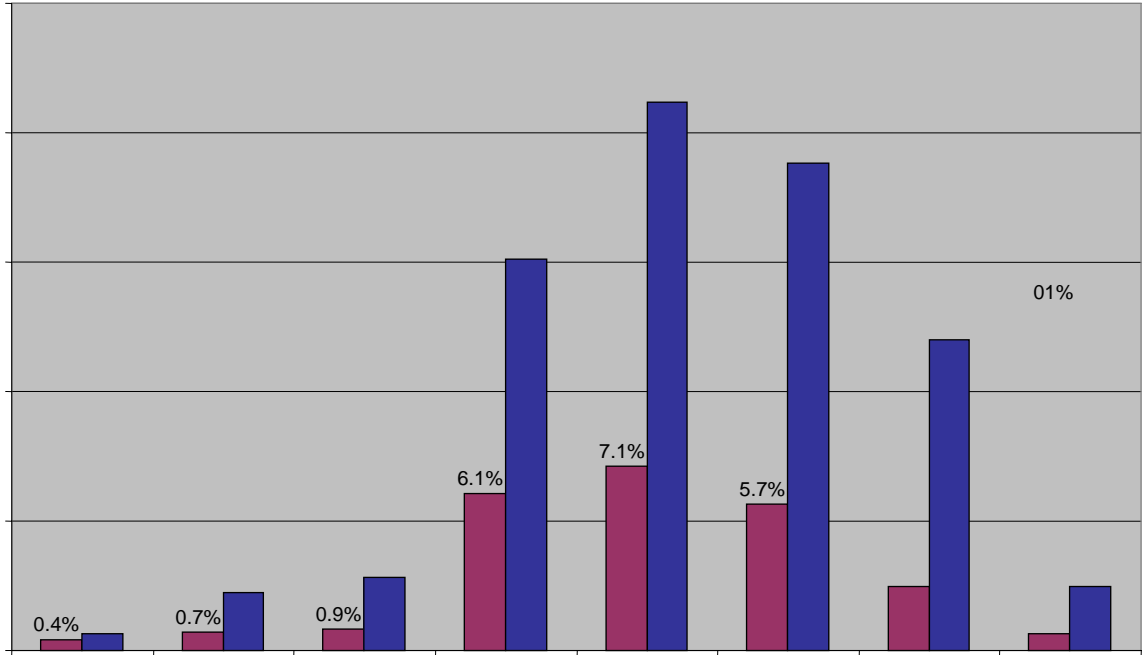


Table IV.9

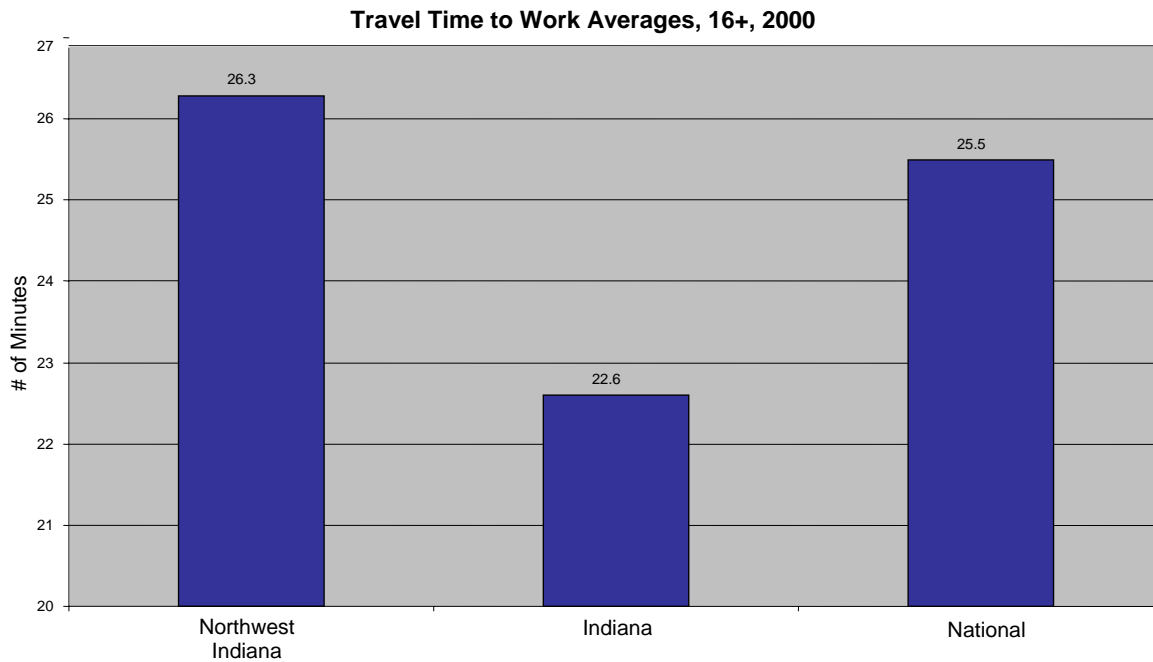
Healthcare		
Occupation	Entrants in NWIN 2005	Entrants in NWIN 2006-2012
Licensed Practical Nurse	87	609
Dental Hygienists	21	147
Medical & Clinical Laboratory Technologists	n/a	n/a
Registered Nurses	196	1372

80-85% of our grads work within the Northwest Indiana/Chicagoland area, but we can't distinguish between the two". Yet another University notified us that "we feel that 80% of our graduates remain working in Northwest Indiana" and another claimed that "90% of our graduates work in Indiana". And the last school that we contacted replied with "95% of our graduates work in Indiana". Of these four schools, none of them currently have a formal way of maintaining contact with the graduates in order to compile research data. They do have alumni associates but it's not within the scope of their operation to track data such as this.

Geographical Mobility

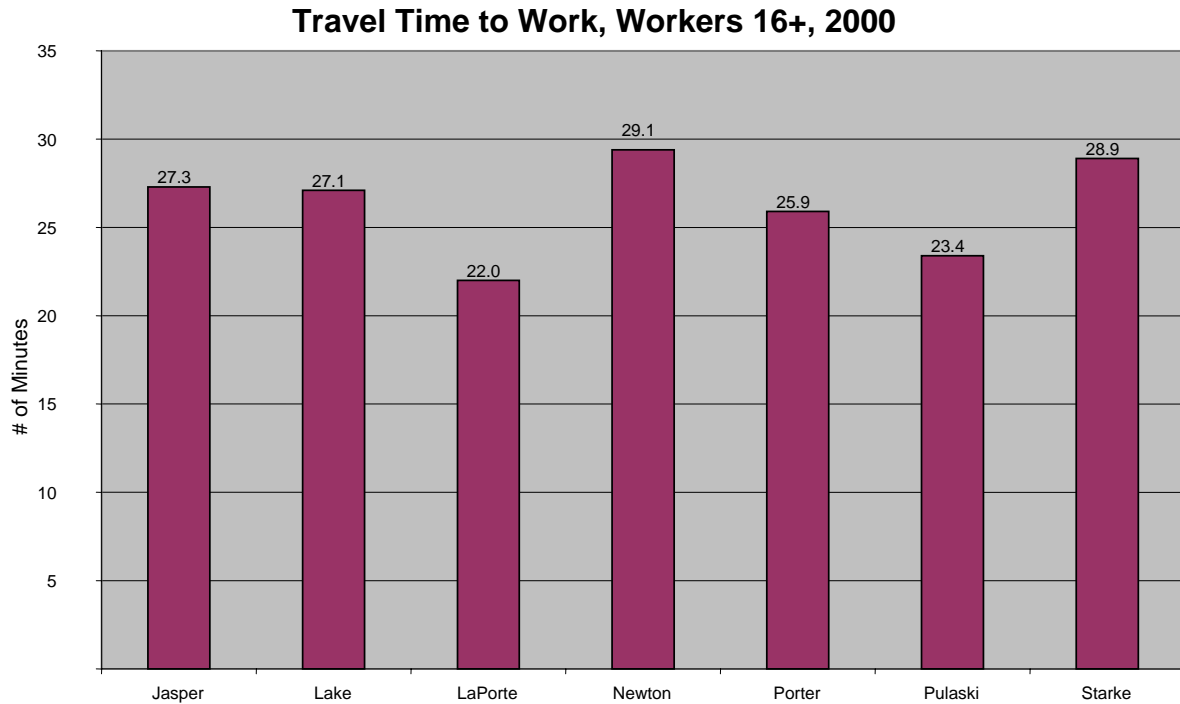
Workers from Northwest Indiana commute to work an average of almost a minute longer than their counterparts across the country. This may not seem like a lot of time, but if you multiply it by hundreds of thousands of commuters on a daily basis it will add up to a lot of time that our residents spend just commuting back and forth to work.

Chart IV.10



Source: U.S. Census Bureau

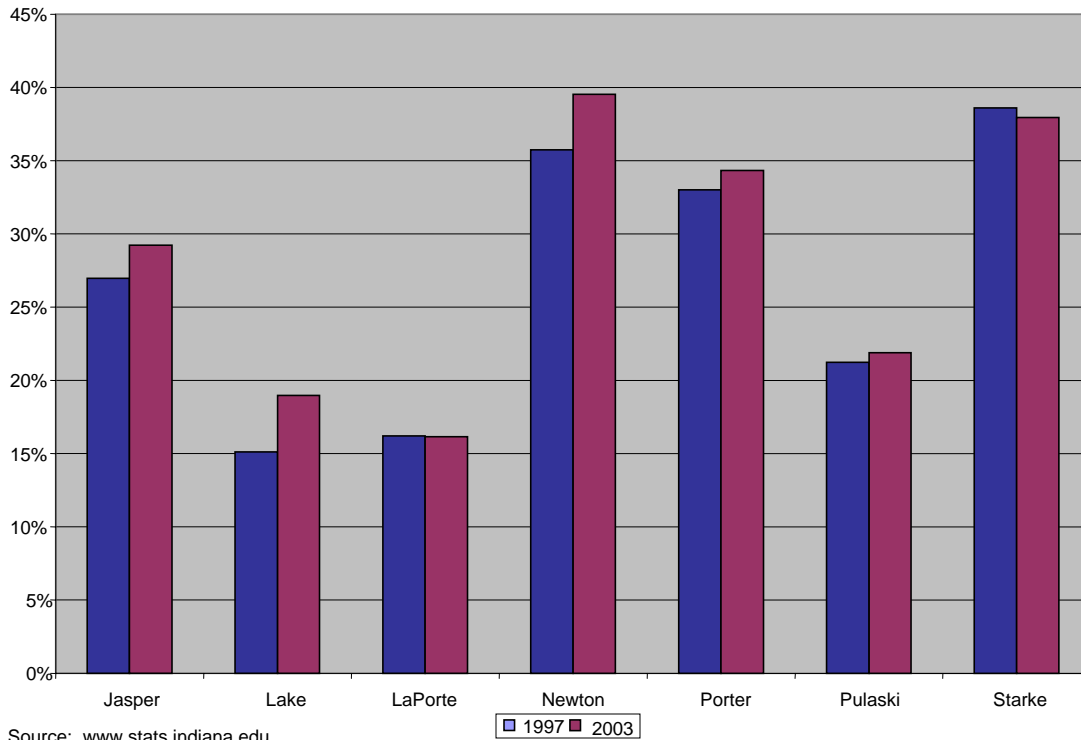
Chart IV.11



In our Region, commuters average just over 3 ½ minutes (one way) more in commuting time than the rest of the State resulting in an additional 30 hours a year in time dedicated to work. Northwest Indiana commuters range from averaging only twenty-two minutes of commute time in La Porte County to almost thirty minutes in Newton County.

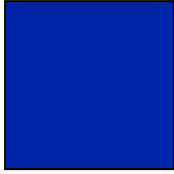
On average, the data provided in IV.12 indicates that in 2003 residents are more apt to work in a county where they don't reside. In 2003, Newton County has the highest percentage of commuters (nearly 40%) that live there but commute into other counties for employment. Only Starke County had a decrease in its percentage of persons commuting to counties where they don't reside, it only went down 1%. All the other counties except for La Porte actually rose in percentage of workers that commute to counties in which they don't live.

% of Persons Who Work in a County Where They Don't Reside



Source: www.stats.indiana.edu

By looking at all Counties throughout Indiana you can get an idea of what Northwest Indiana's minimum annual salary requirements must be in order to remain self-sufficient. Although a family with one adult and one preschooler's minimum annual



Section V: Location and Significance of Critical Skills Gaps

Critical Skill Sets

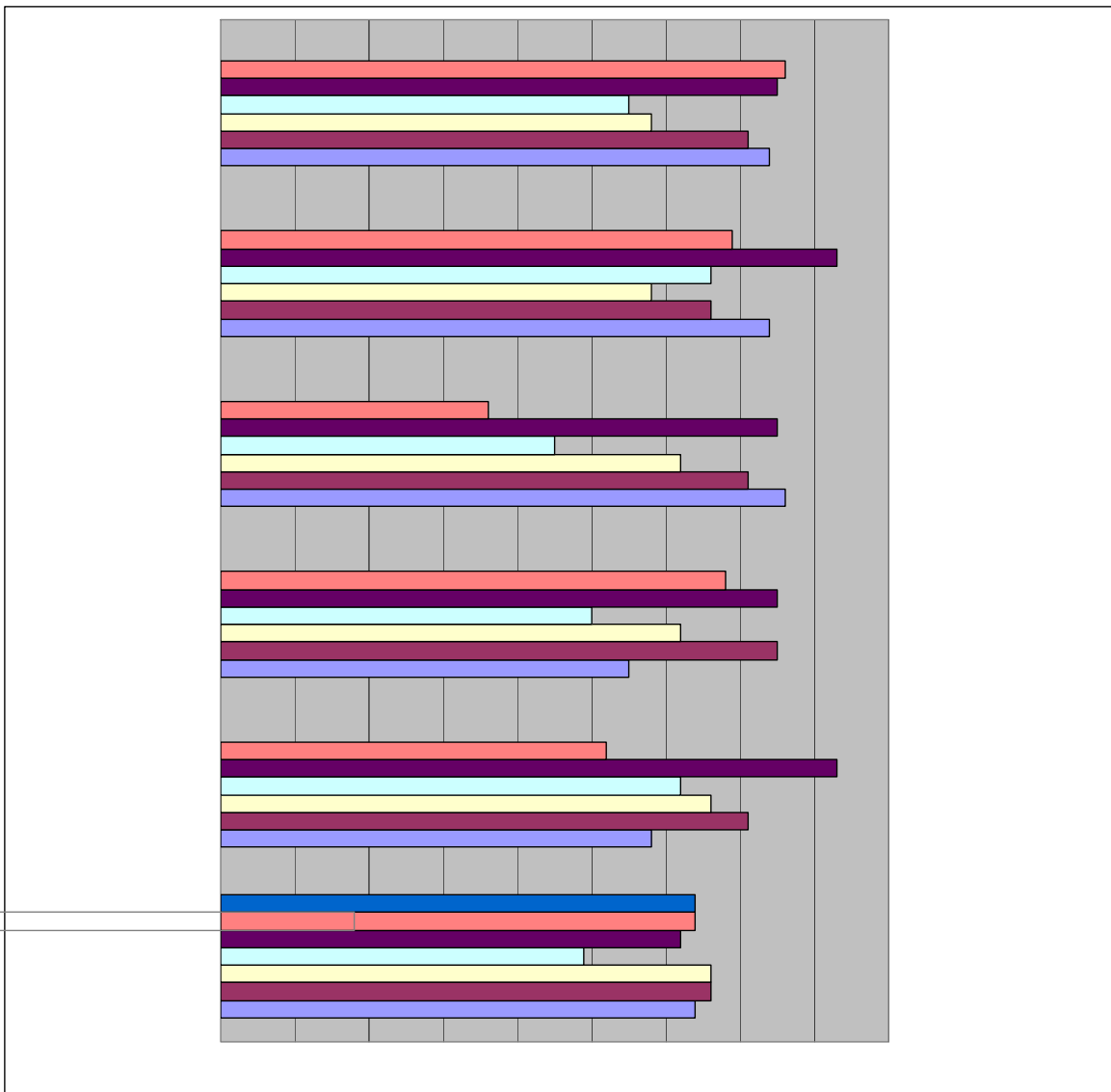
How do we determine the prevalence and growth of critical skills gaps in these specific industries and occupations? One method is to use data gathered from Northwest Indiana employers using WorkKeys assessment tools for their incumbent workforce and their applicant pool.

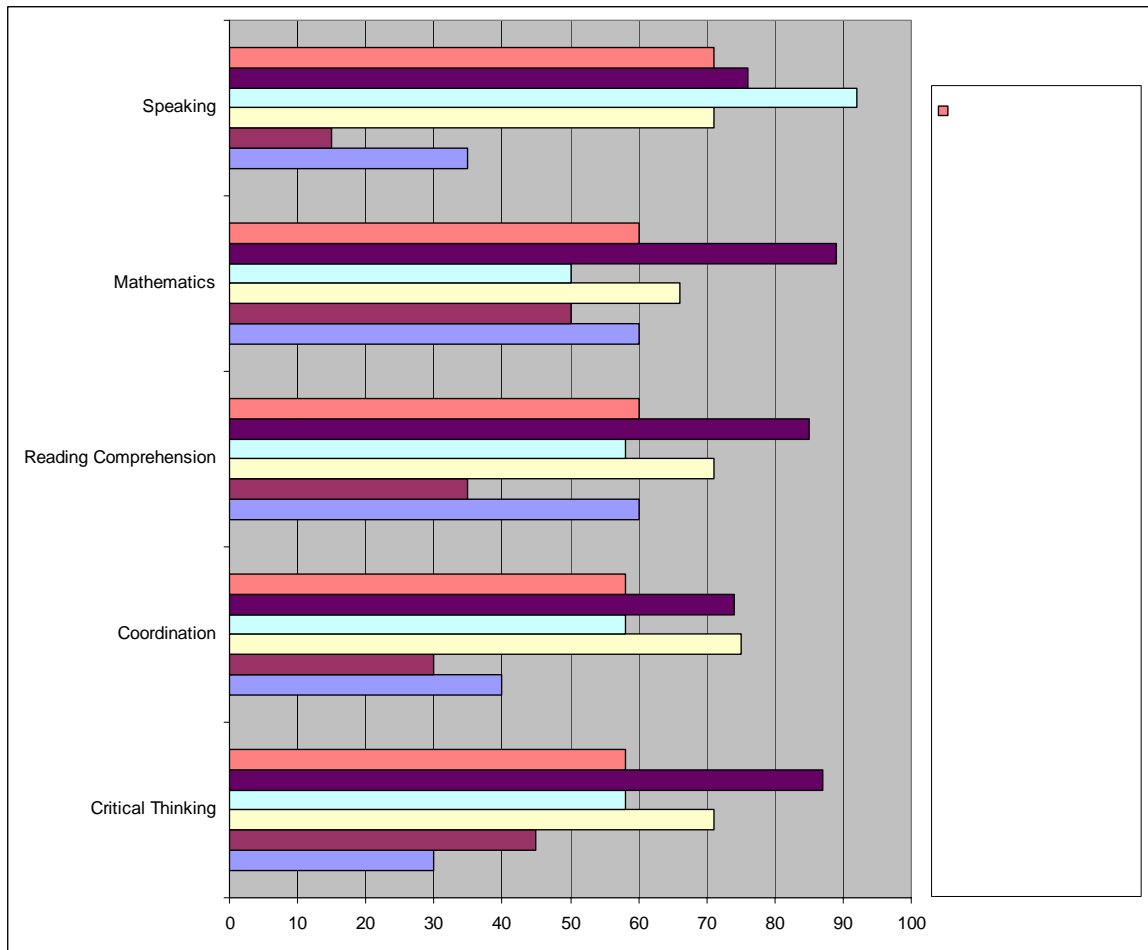
To date, over 25 employers in our Region have conducted a WorkKeys profile of critical occupations. OF these, half of the employers also utilize WorkKeys assessments to screen applicants for these critical occupations. According to the Region 1 office of the Department of Workforce Development, over 25% of applicants who pass initial screening steps are unable to meet the critical skill level requirements for the job when tested through a WorkKeys assessment. The local WorkOne offices also utilize WorkKeys assessments as a screening tool for employers who request that level of

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Table V.1

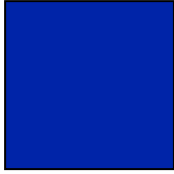
Applicant Problems
15 Manufacturing Employers*





Critical Skills Descriptions

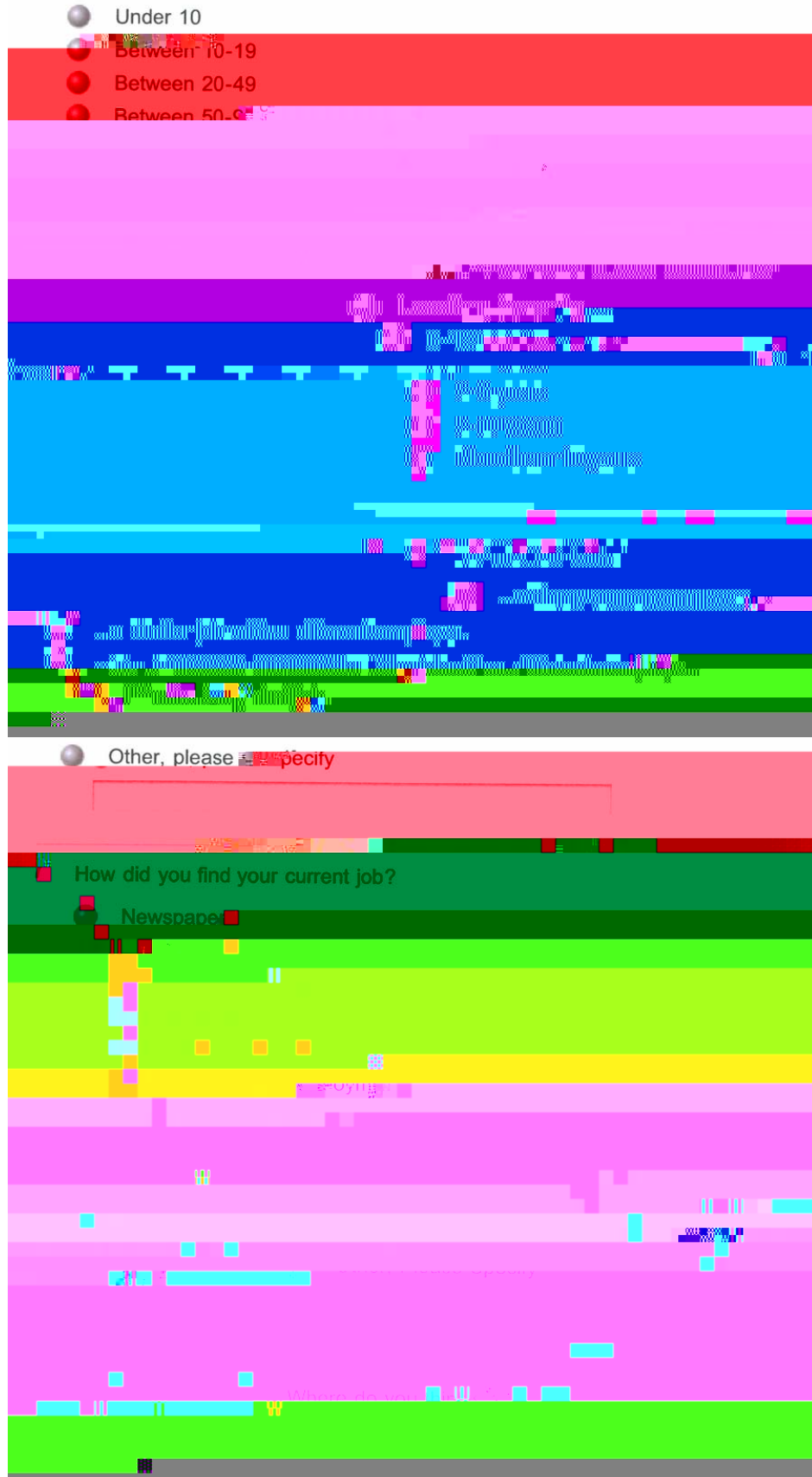
1. Speaking - Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
2. Mathematics - Communicating effectively in writing as appropriate for the needs of the audience.
3. Reading Comprehension - Understanding written sentences and paragraphs in work related documents.
4. Coordination - Actively looking for ways to help people.
5. Critical Thinking - Watching gauges, dials, or other indicators to make sure a machine is working properly.



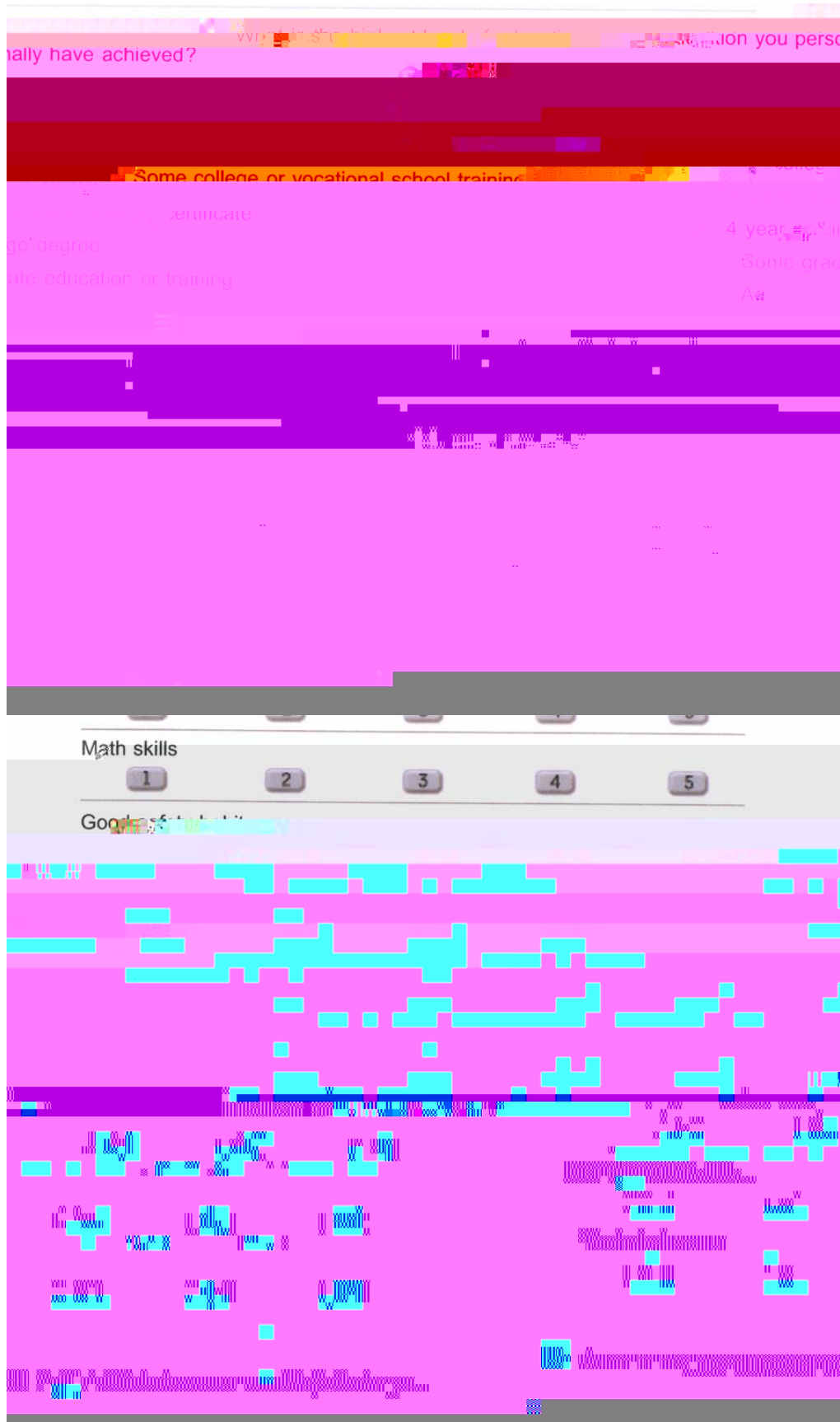
Section VI: Regional Consortium and Industry Partner Engagement

We feel comfortable with the level of industry and partner engagement we were able to

We also did our best to communicate SSI project information about, and solicit SSI input from, our service delivery partners including: *WorkOne* partners, our K-12 schools, Ivy Tech, and local universities and branch campuses.

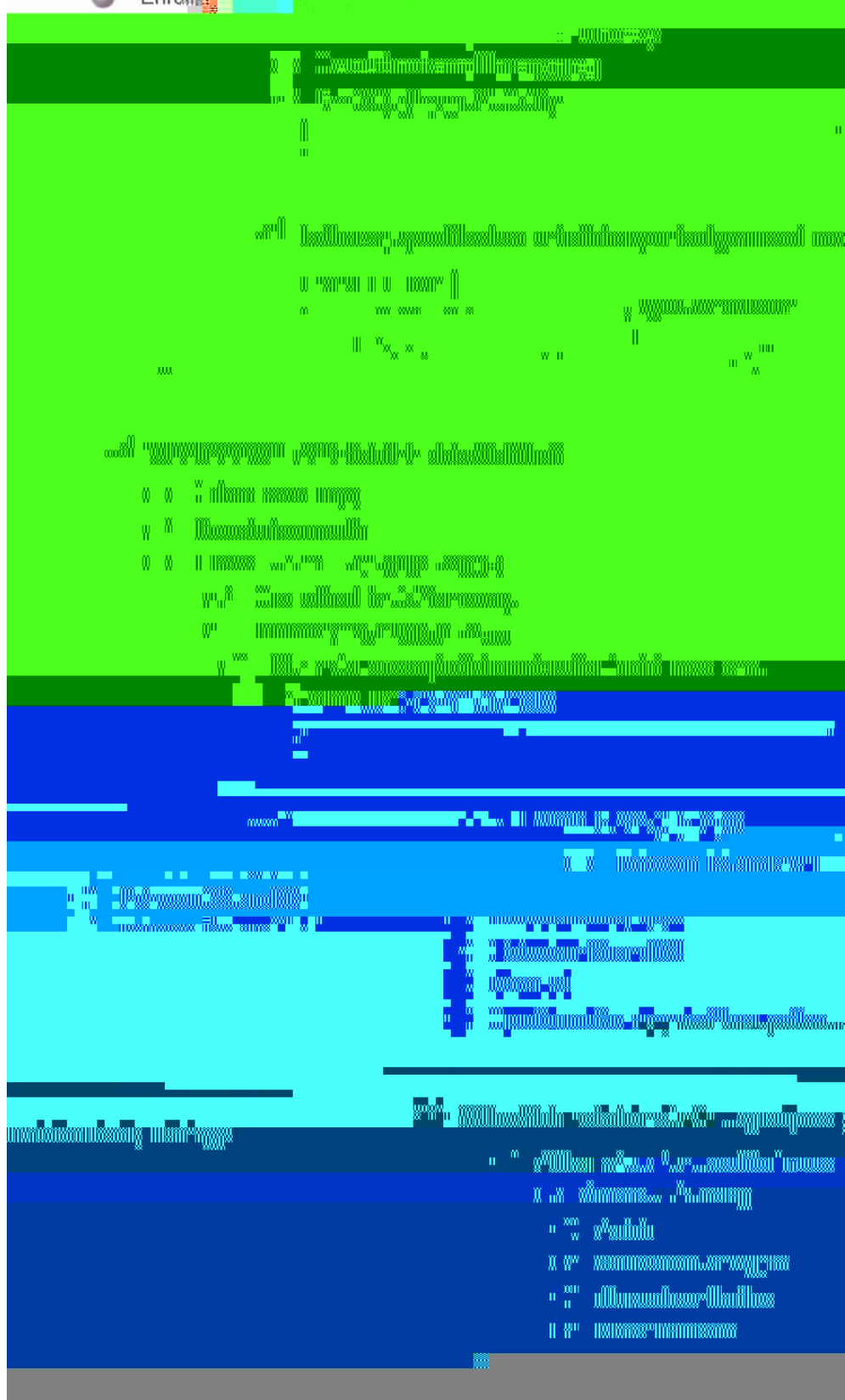








- Enroll in training/course for personal fulfillment.
- Enroll in training/education in pursuit of a diploma/degree.





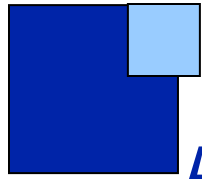
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Appendix C. Job Projections > 50 by Occupational Title

Occupational Title	Base Year Employment 2002	Projected Year Employment 2012	Openings Due to Growth	Openings Due to Replacement	Total Openings from Growth and Replacements	Annual Total Openings from Growth and Employment
Total, All Occupations	330,980	342,110	22,130	81,700	103,830	10,380
Management Occupations	13,630	14,460	1,020	2,560	3,580	360
Top Executives	5,240	5,510	280	970	1,250	130
General and Operations Managers	4,120	4,360	240	780	1,020	100
Operations Specialties Managers	2,180	2,320	160	380	550	60
Other Management Occupations	5,470	5,820	510	1,070	1,580	160
Business & Financial Operations Occupations	7,510	8,040	620	1,360	1,980	200
Business Operation Specialists	4,260	4,530	340	770	1,110	110
Financial Specialists	3,240	3,520	280	590	870	90
Accountants & Auditors	1,700	1,830	130	320	450	50
Computer & Mathematical Occupations	2,790	3,030	280	370	650	70
Computer Specialists	2,770	3,010	280	370	650	70
Architecture & Engineering Occupations	4,670	4,610	180	1,070	1,260	130
Engineers	2,460	2,400	100	540	630	60
Drafters, Engineering, & Mapping Technicians	2,030	2,010	70	500	560	60
Life, Physical, & Social Science Occupations	1,390	1,580	216	330	550	60
Community & Social Services Occupations	3,930	5,070	1,160	740	1,900	190
Counselors, Social Workers, & Other Community & Social Service Specialists	3,400	4,470	1,070	640	1,710	170
Social & Human Service Assistants	960	1,550	590	170	760	80

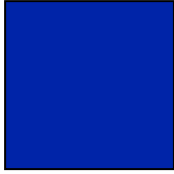
Occupational Title	Base Year Employment 2002	Projected Year Employment 2012	Openings Due to Growth	Openings Due to Replacement	Total Openings from Growth and Replacements	Annual Total Openings from Growth and Employment
Education, Training, & Library Occupations	18,340	20,780	2,440	3,940	6,380	640
Postsecondary Teachers	2,150	2,760	610	480	1,090	110
Primary, Secondary, & Special Education School Teachers	10,440	11,320	880	2,430	3,320	330
Preschool Teachers, Except Special Education	450	530	90	50	140	10
Kindergarten Teachers, Except Special Education	340	400	60	40	100	10
Elementary School Teachers, Except Special Education	3,580	3,820	240	790	1,030	100
Middle School Teachers, Except Special & Vocational Education	1,990	2,010	20	440	460	50
Vocational Education Teachers, Middle School	40	40	0	10	10	0
Secondary School Teachers, Except Special & Vocational Education	2,980	3,270	290	840	1,130	110
Vocational Education Teachers, Secondary School	220	220	0	60	60	10
Special Education Teachers, Preschool, Kindergarten, & Elementary School	330	400	70	80	150	20
Special Education Teachers, Middle School	240	290	50	60	110	10
Special Education Teachers, Secondary School	290	340	60	70	130	10
Other Teachers & Instructors	1,870	2,330	470	230	690	70
Adult Literacy, Remedial Education, & GED Teachers & Instructors	30	40	10	0	10	0
Self-Enrichment Education Teachers	550	710	160	70	230	20
Teachers, Primary, Secondary, & Adult, All Other (OES Only)	1,290	1,590	300	160	460	50
Librarians, Curators, & Archivists	510	540	20	150	170	20
Archivih4c3, C.2(nda)5.Cur.3(rs,Museumool Te)5chnhivi50 Lib65.8(r)62.3()5.s		50	0	10	10	

Occupational Title	Base Year Employment 2002	Projected Year Employment 2012	Openings Due to Growth	Openings Due to Replacement	Total Openings from Growth and Replacements	Annual Total Openings from Growth and Employment
Other Education, Training, & Library Occupations	3,370	3,830	460	640	1,110	110
Instructional Coordinators	160	190	30	20	60	10
Teacher/Assistants	3,170	3,590	420	610	1,040	100
Library, Museum, Training, & Other Education Workers, All Other (OES Only)	30	30	10	0	10	0
Arts, Design, Entertainment, Sports, & Media Occupations	3,070	3,210	240	550	780	80
Health Care Practitioners & Technical Occupations	18,480	21,710	3,240	3,500	6,740	670
Health Diagnosing & Treating Practitioners	11,200	13,210	2,020	2,210	4,220	420
Registered Nurses	6,630	7,910	1,290	1,390	2,670	270
Health Technologists & Technicians	6,910	8,070	1,150	1,230	2,380	240
Licensed Practical & Licensed Vocational Nurses	2,200	2,360	170	480	640	60
Health Care Support Occupations	7,200	9,040	1,840	1,140	2,990	300
Nursing, Psychiatric, & Home Health Aides	4,220	5,180	960	550	1,510	150
Nursing Aides, Orderlies, & Attendants	3,310	3,970	670	430	1,100	110
Other Health Care Support Occupations	2,540	3,270	730	520	1,250	130
Medical Assistants	840	1,220	380	160	540	50
Protective Service Occupations	9,130	10,170	1,050	2,440	3,500	350
Fire Fighting & Prevention Workers	1,430	1,680	250	420	660	70
Fire Fighters	1,290	1,530	240	370	620	60
Law Enforcement Workers	3,420	4,040	620	820	1,450	150
Police & Sheriff's Patrol Officers	1,890	2,280	400	490	880	90
Other Protective Service Workers	3,510	3,610	110	960	1,070	110
Security Guards	2,690	2,680	0	590	590	60
Food Preparation & Serving Related Occupations	29,610	30,270	910	11,890	12,800	1,280
Supervisors, Food Preparation & Serving Workers	2,400	2,400	20	590	610	60

Occupational Title	Base Year Employment 2002	Projected Year Employment 2012	Openings Due to Growth	Openings Due to Replacement	Total Openings from Growth and Replacements	Annual Total Openings from Growth and Employment
First-Line Supervisors/Managers of Food Preparation & Serving Workers	2,080	2,060	0	500	500	50
Cooks & Food Preparation Workers	7,200	7,190	220	2,350	2,570	260
Cooks, Restaurant	1,370	1,450	80	420	510	50
Cooks, Short Order	600	560	0	180	180	20
Food Preparation Workers	2,790	2,920	140	990	1,120	110
Food & Beverage Serving Workers	16,840	17,380	540	7,900	8,440	840
Bartenders	1,680	1,670	0	660	660	70
Combined Food Preparation & Serving Workers, Including Fast Food	8,130	8,280	150	3,530	3,670	370
Counter Attendants, Cafeteria, Food Concession, & Coffee Shop	990	1,010	20	640	670	70
Waiters & Waitresses	5,790	6,020	230	2,980	3,210	320
Food Servers, Nonrestaurant	270	400	140	90	230	20
Other Food Preparation & Serving Related Workers	3,170	3,300	130	1,050	1,180	120
Dining Room & Cafeteria Attendants & Bartender Helpers	1,170	1,260	100	390	490	50
Building & Grounds Cleaning & Maintenance Occupations	12,690	13,520	840	2,540	3,380	340
Building Cleaning & Pest Control Workers	8,670	9,300	640	1,700	2,330	230
Janitors & Cleaners, Except Maids & Housekeeping Cleaners	5,800	6,130	330	1,100	1,430	140
Maids & Housekeeping Cleaners	2,790	3,100	310	590	890	90
Grounds Maintenance Workers	3,180	3,300	130	690	820	80
Landscaping & Grounds keeping Workers	2,070	2,190	120	450	570	60
Personal Care & Service Occupations	11,830	14,130	2,340	2,990	5,330	530
Supervisors, Personal Care & Service Workers	1,350	1,590	240	310	550	60

Occupational Title	Base Year Employment 2002	Projected Year Employment 2012	Openings Due to Growth	Openings Due to Replacement	Total Openings
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Occupational Title	Base Year Employment 2002	Projected Year Employment
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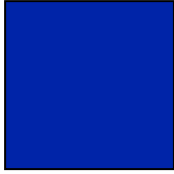
Appendix D. Percentage of Workers Over 55 in Indiana and Northwest Indiana

Industry Sub-sector	Indiana		NW IN	
	% of Total Emp	% of Workers in Industry 55+	% of Total Employment	% of Workers in Industry 55+
212 Mining (except Oil and Gas)	0.3%	15.1%	0.2%	0 or na
221 Utilities	0.6%	17.4%	1.1%	19.8%

Industry Sub-sector	Indiana % of Total	NW IN
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Appendix D. Percentage of Workers Over 55 in Indiana and Northwest Indiana

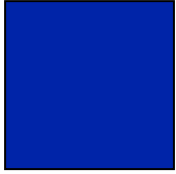
Industry Sub-sector	Indiana		NW IN	
	% of Total Emp	% of Workers in Industry 55+	% of Total Employment	% of Workers in Industry 55+
624 Social Assistance	1.6%	17.5%	1.4%	19.1%
711 Performing Arts, Spectator Sports, & Related Industries	0.3%	16.2%	0.2%	0 or na
713 Amusement, Gambling, & Recreation Industries	1.4%	14.4%	2.9%	12.0%
721 Accommodation	0.8%	14.6%	0.7%	8.8%
722 Food Services & Drinking Places	8.2%	6.4%	8.3%	6.2%
811 Repair & Maintenance	1.1%	12.6%	1.5%	12.4%
812 Personal & Laundry Services	1.1%	17.7%	1.7%	18.1%
813 Religious, Grantmaking, Civic, Professional, & Similar Organizations	1.2%	20.4%	1.4%	25.7%
All NAICS subsectors		14.2%		15.3%



Appendix E. Location Quotients

Location Quotients

- § An indicator of the *relative concentration* of employees in an industry sector in a local region vs. that same concentration in another region (e.g. the state or nation).
- § If a LQ for an industry in your Region is:
- § Equal to 1: That industry employs the same percentage of workers in your Region as it does in the Nation.
- § Greater than 1: The industry employs a greater percentage of workers in your Region than it does in the Nation.



Appendix F. Shift-Share Analysis

Shift-Share Analysis

- š A method of determining the competitive strength of an industry within your Region by breaking employment growth down into individual components.