



Root Causes Cover Sheet
Economic Growth Region #3: Northeast Indiana

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1. Introduction to Economic Growth Region 3 Strategic Skills Initiative Root Causes Report

“While we have hope, we are realists. It will take time for Northeast Indiana to emerge from its current state. But together, with a shared understanding and clear purpose forged through consensus, we can make our region thrive and grow once again.”

This concluding statement from the Northeast Indiana Strategic Skills Initiative’s (SSI) Skills Shortages Report takes on new life as the Root Causes phase of the project unfolds. Throughout the months of November and December, a thorough investigation of the core, systemic causes of the target-occupation shortages was undertaken, focusing on the positions outlined in the initial Skills Shortages Report.

In our first report, we uncovered four targeted occupations and skills that demanded attention in the Strategic Skills Initiative. They are:

- **Registered Nurses** (Standard Occupation Code: 29-1111)
- **CNC-MIMMs** (A multi-skilled hybrid of five occupations: Industrial Machinery Mechanics, SOC 49-9041; Maintenance and Repair Workers, General, SOC 49-9042; Maintenance Workers, Machinery, 49-9043; Computer controlled Machine Tool Operators & Tenders, Metal & Plastic, SOC 51-4011 and Machinists, SOC 51-4041)
- **Industrial Engineers** (SOC 17-2112)
- **Computer Systems Analysts** (SOC 15-1051)

First-person perspectives were gathered from target-industry employers and employees, students, service providers and educators at both the secondary and post-secondary levels. Their insights were substantiated by additional secondary research.

We uncovered three universal root causes challenges to be addressed if Northeast Indiana is to succeed in the global economy. These challenges permeate nearly all occupations. They are:

1. **The need to replace the silo effect with meaningful systems thinking across our region.** Systems thinking – bridging the individual needs of institutions to achieve collective goals – should improve basic skills development, set realistic expectations of the world of work in our youth and improve the understanding of the regional economy in all sectors of business, government and education.
2. **The need to promote loyalty within our workforce, and to demonstrate loyalty in return.** By investing in our strategic workforce, we can stem occupational leakage and develop a more productive workforce with expert skills.
3. **The need to better promote Northeast Indiana as a great place to live and work.** Recruiting workers to our region has been and will be a challenge, but we find that those who do move to Northeast Indiana have found our region to offer an excellent quality of life and are reluctant to leave.

Other root causes are specific to individual occupations. They include issues such as employee stress and burnout, instructor pay in our training programs and comparative pay disparities in relation to other Midwestern communities.

This report will explain the process and the findings. It will also present endorsements of our findings from our industry partners.

2. Methodology

The Staff and Lead Team of the Northeast Indiana SSI project employed the methodology laid out by Workforce Associates in the first Root Causes phase online workshop, conducted on November 21, 2005. Two subsequent workshops were held on November 28 and December 5. Whereas the first workshop defined the process, the final two workshops were used to discuss local implementation of the methodology and solicit expert feedback on ideas to counter key stumbling blocks.

Pursuant to the methodology in the SSI Research and Identification Guidebook 2.0 and the November 21 workshop, EGR-3's Root Causes phase investigation was largely driven by primary data gathering. Using the same methodology as the Shortages' phase, this approach used primary data to drive the secondary data gathering. The secondary data was then used to verify or dispel the primary's assertions.

Primary data collection was done using multiple methods: online surveys, focus groups, interviews and discussions. The findings were aggregated into a single source. Recognizing the geographic challenges of developing a bank of knowledge to represent our eleven-county region, data collection was coordinated through an online-survey-response-collection tool, SurveyMonkey.com. Links to the eight specific surveys were posted at the Northeast Indiana Workforce Investment Board's Internet home page, www.neiwib.org. Local Economic Development Organizations (LEDO) and Chambers of Commerce across the eleven-county region participated in the SSI Root Causes phase via the online surveys.

To gain adequate first person perspective, a series of 19 focus groups were scheduled. The focus group calendar was designed to ensure that opinions representing both the north and south of EGR-3 were represented for all industry and occupational groups. Geographic diversity in meeting sites was a prime consideration in planning. Supply and demand focus groups were scheduled separately to allow employers and employees to speak with a degree of anonymity.

Wage data was considered by comparing U.S. Census Bureau wage information for the targeted Standardized Occupation Codes for the Fort Wayne Metropolitan Statistical Area (the only MSA containing any EGR-3 counties) against those of other Michigan, Illinois, Indiana, Kentucky and Ohio MSAs. We then normalized to adjust for the Fort Wayne MSA's low cost of living using the Salary.com "Cost-Of-Living Wizard."

We tried to benchmark benefits in the same way that we benchmarked wages and salaries. We learned that no such universal, standardized benchmarking entity exists. Selected individual EGR-3 agencies such as LEDOs or Chambers of Commerce do conduct benefit surveys within their service area, but we found no standardization in survey instruments that made aggregation of data possible. Detailed wage data is available in our white paper report.

Lastly, we conducted an inventory of the many training options available in EGR-3 (and, in certain cases, beyond our border) in our targeted occupations. This inventory allowed us to compare training capacity against statistical demand.

3. Employer Recruitment and Retention

Using the demand survey responses, the following recruiting patterns emerged. Note that high school recruitment is not applicable for occupations requiring degrees.

	Computer Systems Analysts	Industrial Engineers	CNC-MIMM	Registered Nurses
How do you recruit your staff?				
Classified ads	17	14	17	21
College or technical schools	14	14	10	17
Staffing agencies	10	6	9	9
Personal referrals	18	18	16	24
High schools	0	0	11	0
Other (Internet - Monster, company websites)	8	8	4	4
Which form of recruiting works best for you?				
Classified ads	5	3	3	4
College or technical schools	3	3	1	1
Staffing agencies	3	1	2	0
Personal referrals	4	7	9	17
High schools	0	0	0	0
Other (Internet - Monster, company websites)	6	5	2	2
Which form of recruiting is least successful for you?				
Classified ads	7	7	6	8
College or technical schools	6	3	2	2
Staffing agencies	4	3	4	11
Personal referrals	2	3	2	1
High schools	0	0	2	0
Other (Internet - Monster, company websites)	0	0	0	1

Recruiting information obtained from SSI root causes survey responses

Focus group feedback revealed that personal referrals prove most effective for our respondents because they are considered “warm” leads. In technical occupations, Internet recruiting is also an effective tool because

applicants for these positions are computer savvy and are already primary users of technology.

Classified ads were least successful because the survey respondents reported that they resulted in too many responses from unqualified applicants.

Health-care delivery has a strong, industry-specific staffing formula, but supply focus group respondents indicated that agency nurses are not as loyal or reliable as staff nurses.

On balance, colleges, nursing schools and technical schools were desired recruitment locations, but overall, the challenges of bringing young professionals to EGR-3 are significant and many.

4. Career Awareness and Access

The Student Career Survey was completed by 377 students. The respondents either completed the survey in paper format at a focus group or online at SurveyMonkey.com.

On a weighted score level, the careers on the table on the next page appear to be most popular with the emerging workforce (Scale of 1-5, lower score=stronger value). The lack of any extreme scores indicates that the students are diverse in their collective occupational outlook. And health and information technology-related topics are high on the priority list, a positive sign for the region.

A point of concern is the aversion to manufacturing – a point that arose in the student, employer and employee focus groups. Employers recognized that manufacturing suffers

from a stereotype of being a dirty, manual labor industry. Employers recognize that our finest students are not looking to manufacturing as a potential career option. The root causes survey data indicates employers' frustration with the poor basic skills' level of the emerging workforce entering manufacturing.

What employers and employees may not entirely understand is the depth of broad disinterest – some may even say fear – of working in manufacturing in our student population. No student in a non-vocational/tech prep program focus group volunteered that he or she wanted to enter manufacturing. The reasons for this aversion include the stereotypes mentioned above, but they also are deeply rooted in their parents' experiences. Many students are children of parents whose jobs were outsourced or offshored. Our focus-group study reveals a near-direct correlation of parents in manufacturing with students who will not consider manufacturing.

Career interests of EGR-3 high school students	
Health	- 2.45
Education & Training	- 2.72
Human Services	- 2.75
Arts Audio-Video Technology & Communications	- 2.76
Architecture and Construction	- 2.82
Information Technology (Computers & Software)	- 2.87
Business & Administration	- 2.90
Law & Public Safety	- 2.94
Other	- 3.00
Scientific Research & Engineering	- 3.09
Hospitality & Tourism	- 3.16
Agriculture & Natural Sciences	- 3.26
Finance	- 3.31
Government & Public Administration	- 3.40
Retail/Wholesale Sales & Services	- 3.45
Manufacturing	- 3.48
Transportation, Distribution & Logistics Services	- 3.59

Consistent with national trends, students' post-graduation education plans largely revolve around four-year education. More than 70 percent plan to attend four-year colleges and universities, with 20 percent intending to attend a two-year technical education program. Just 10 percent plan to go to vocational or technical school, and approximately 7 percent intend to enlist in the military.

Interestingly, two of our targeted occupations (registered nursing and CNC-MIMM) do not require a four-year education. Still, a cultural bias toward the four-year college/university route as the key to career success is evident in our study.

5. Ranking of Root Causes

Root causes are ranked in order of priority by occupation. The scores are directly related to answers provided on our root causes survey forms, which were used both online and in focus groups. Survey results are offered with two elements of weighting:

- **Average scores:** The strength of an average score can be considered a reasonable indicator of the level of widespread appreciation for a given statement being a root cause of the shortage in question. On occupational surveys, the ratings were from 1 to 6, with 6 being the most important. Thus, a **higher** average score represents a more significant number. We set a threshold of average scores at or above 4.00 to conduct further evaluation as possible root causes.
- **Intensity:** Intensity of opinion is indicated by tallying the number of responses in the highest and second-highest category. On occupational surveys, the quantities of scores of 5 and 6 would be added together.

Additional primary data collected through focus groups impacted the relative ranking of the root causes.

CNC-MIMM

Root Cause	Supply - Employees		Demand - Employers	
	Average Score	Intensity	Average Score	Intensity
1. High school graduates have insufficient academic preparation for this occupation	5.43/6.00	7/9	4.58/6.00	11/19
2. Potential workers have unrealistic expectations of what it's like to work in this industry.	4.57/6.00	3/9	4.28/6.00	10/19
3. School guidance counselors have little understanding of the opportunities in this occupation.	3.86/6.00	2/9	4.94/6.00	14/19
4. Not enough practical experience for students with area employers.	4.00/6.00	2/9	4.67/6.00	11/19
5. Capacity of training institutions is inadequate to prepare workers in this occupation.	4.33/6.00	4/9	4.00/6.00	10/19
6. Workers at lower skill levels find it difficult to upgrade their skills to qualify for more senior roles.	4.00/6.00	4/9	4.00/6.00	6/19
7. Workers feel there is no opportunity to advance from their present position.	3.43/6.00	1/9	4.07/6.00	7/19

INDUSTRIAL ENGINEERS

Root Cause	Supply - Employees		Demand - Employers	
	Average Score	Intensity	Average Score	Intensity
1. Difficulty in attracting engineers &/or their spouses to this area.	4.40/6.00	7/10	3.94/6.00	8/17
2. High school graduates have insufficient academic preparation for this occupation	3.70/6.00	3/10	4.89/6.00	14/19
3. School guidance counselors have little understanding of the opportunities in this occupation.	4.20/6.00	3/10	4.47/6.00	12/19
4. Not enough practical experience for students with area employers.	3.50/6.00	2/10	4.28/6.00	10/19
5. Potential workers have unrealistic expectations of what it's like to work in this industry.	3.00/6.00	0/10	4.11/6.00	8/19

COMPUTER SYSTEMS ANALYSTS

Root Cause	Supply - Employees		Demand - Employers	
	Average Score	Intensity	Average Score	Intensity
1. IT professionals leave this occupation for better pay/benefits elsewhere.	5.00/6.00	9/14	3.26/6.00	5/19
2. Workers at lower skill levels find it difficult to upgrade their skills to qualify for more senior roles.	4.46/6.00	7/14	3.50/6.00	5/20
3. Workers feel there is no opportunity to advance from their present position.	4.83/6.00	8/14	3.33/6.00	7/19
4. Not enough practical experience for students with area employers.	4.46/6.00	9/14	4.25/6.00	12/20
5. High school graduates have insufficient academic preparation for this occupation	4.15/6.00	7/14	4.24/6.00	11/21
6. Potential workers have unrealistic expectations of what it's like to work in this industry.	3.92/6.00	6/14	4.05/6.00	6/21
7. Difficulty in attracting analysts &/or their spouses to this area.	4.08/6.00	6/14	3.00/6.00	3/19
8. Instructors are not sufficiently paid to retain them.	4.00/6.00	5/14	3.29/6.00	4/20

REGISTERED NURSES

Root Cause	Supply - Employees		Demand - Employers	
	Average Score	Intensity	Average Score	Intensity
1. Capacity of training institutions is inadequate to prepare workers for this occupation.	4.26/6.00	16/36	4.46/6.00	14/36
2. Instructors are not sufficiently paid to retain them.	4.42/6.00	17/36	4.00/6.00	12/36

3. Stress &/or burnout are driving registered nurses from this occupation in my area.	4.61/6.00	22/36	4.46/6.00	13/36
4. Not enough practical experience for students with area employers.	4.07/6.00	14/36	4.31/6.00	16/36
5. Potential workers have unrealistic expectations of what it's like to work in this industry.	4.41/6.00	17/36	4.23/6.00	14/36
6. Difficulty in attracting registered nurses &/or their spouses to this area.	4.17/6.00	13/36	4.04/6.00	10/36
7. School guidance counselors have little understanding of the opportunities in this occupation.	4.41/6.00	18/36	3.97/6.00	11/36
8. Registered nurses leave this occupation for better pay/benefits elsewhere.	4.29/6.00	15/36	3.71/6.00	3/36
9. The lack of teamwork among health care staff results in new workers having low morale.	4.13/6.00	13/36	3.86/6.00	10/36

6. Analysis of Root Causes

The root causes identified in this report fit into two groups: cross-cutting and occupation-specific. Relative importance of the root causes is outlined in the earlier section.

6.1. Cross-Cutting Root Causes

We believe that these cultural root causes are symptoms of important public policy issues. As such, we believe that these root causes represent the core qualitative solutions to the shortages in our core occupations and skills.

6.1.1. The Silo Effect

“The silo effect” describes a lack of communication and common goals between departments in an organization. The trend of root causes survey responses and focus group feedback lead us to conclude that these root causes are an outcome of the silo effect in our region. A systems-thinking approach will have to replace the silo effect if we hope to correct these important root causes of skills shortages in EGR-3.

- **“High school graduates have insufficient academic preparation for the occupations.”**

In 1990, Ian Rolland, then-President and Chief Executive Officer of Lincoln National Corporation, made the following statement when explaining why Lincoln chose not to build a \$60 million office tower in downtown Fort Wayne:

“The schools are just not preparing students with the skills we need. The 21st Century will place even greater demands on new workers, and we are not confident that schools in Fort Wayne and Allen County will produce these workers.”¹

The problem has not changed. The National Association of Manufacturers’ (NAM) “2005 Skills Gap Report – A Survey of the American Manufacturing Workforce” and the Indiana Chamber of Commerce Foundation’s “A Demand-Side Strategy to Meet Indiana’s Workforce Basic Skills Challenge” reports illustrate and explain the challenge of building a basic skills’ foundation that will allow our emerging workforce to move forward into high-skilled training and occupations.

Regionally, the root causes survey statement, “High school graduates have insufficient academic preparation for the occupations,” revealed that some of the strongest results in

¹ Thies, Bethany. “Educating Our Workforce.” *Fort Wayne News-Sentinel*, 10 Sept. 1990, p. 1B.

our root causes surveys were among three of the targeted occupations. Our industry partners want all workers to possess the following skills:

Scholastic skills	Technology skills
<ul style="list-style-type: none"> • Math • English, including writing skills 	<ul style="list-style-type: none"> • Computer and technology, including the ability to use basic software like Microsoft Office programs
Thinking skills	People skills
<ul style="list-style-type: none"> • Systems thinking • Critical thinking • Problem-solving • Trouble-shooting 	<ul style="list-style-type: none"> • Teamwork • Communications • Customer service • Listening skills

Relative to specific occupations, the following skills are needed:

CNC-MIMM	Industrial Engineer	Computer Systems Analyst	Registered Nurse
<ul style="list-style-type: none"> • Practical experience in a machining environment • Ability to read a CNC program • Machine programming • Machine setup • Machining skills • Blueprint reading 	<ul style="list-style-type: none"> • Creativity and imagination • Leadership skills • Spatial thinking • Computer Aided Design (CAD) software experience • Time management 	<ul style="list-style-type: none"> • Self-reliance and self-motivation • Personal computer hardware knowledge • Any possible computer hardware or software certifications • Detailed computer software application knowledge, especially with Microsoft Windows, Word, Excel and Access • Networking knowledge 	<ul style="list-style-type: none"> • Biological sciences • Basic clinical skills from practical training • Flexibility • Accountability • Professionalism • Compassion • Organizational skills • Time management

This is a critical root cause, as no skill development can take place without a foundation of basic skills.

• **“Potential workers have unrealistic expectations of the work world.”**

In the absence of appropriate expectation-setting from those around them, students look to other avenues to learn more about the world around them. One study indicates that high school students who use television as a primary means of determining work expectations develop conflicting values like:

- Wanting to have high-status jobs that would enable them to earn a lot of money.
- Wanting to have jobs that were relatively easy with long vacations and time-to-do-other-things-in-life attitudes.²

This study was echoed locally when CNC operators at a focus group in Fort Wayne, discussing the issue of worker expectations, agreed that new employees want to be paid a lot of money, but they don't want to do the work. A Huntington focus group participant said,

“Many [students] have unrealistic expectations for work and have a sense of entitlement. Many expect to make ‘GM money’ immediately following graduation. Our entry level employees earn \$8 an hour. Ivy Tech students with basic machine knowledge earn \$10 an hour with evaluations. Our wages are tied to skill level. Applicants do not understand the concept of working for advancement.”

² Signorielli, Nancy Ph.D. “Television and the Perpetuation of Gender-Role Stereotypes,” *AAP News*, Feb. 1998. Accessed at <http://www.aap.org/advocacy/sign298.htm> on 17 Dec. 2005.

While an important root cause, we believe that expectations will be adequately set in our new workforce if other root causes are addressed, especially those dealing with practical/applied learning.

- **“Guidance counselors have little understanding of the opportunities in the occupations.”**

Nearly every SSI focus group discussed guidance counselors’ lack of awareness of the opportunities, avenues and requirements of the businesses in their areas. Therefore, the survey statement regarding school guidance counselors was directly explored with the counselors in their focus group. When asked, “Do you as counselors know opportunities await your graduates?” one counselor answered, “No, we don’t know what’s available out there.” Another indicated that trying to stay current with the market is an incredible challenge when considering their real life work roles, including oversight and management of the schools’ many standardized tests, management of special needs student caseload and class scheduling.

The NAM report suggests that manufacturers should engage in career awareness to combat the shortfall in skilled workers with this statement – which could be applied across a number of industries where skills shortfalls exist:

“Employers must help the general public and public sector to understand what companies need. Companies need to become more engaged in public education, working with educators on curricula, holding field trips and career fairs for students, providing internships and apprenticeships and generally giving community schools opportunities to learn about manufacturing.”³

A 2002 Ferris State University study, “Decisions Without Direction,” on the alignment of school guidance and career choices by students reports:

- Students do not feel like they are receiving professional career guidance in school, leaning heavily on their parents’ advice.
- There is a bias in high school toward pursuing a four-year degree.
- Students choose their careers for reasons other than actual career opportunity.

Caution should be taken to keep from placing all responsibility on the shoulders of guidance counselors. The lack of public understanding of the work roles of the modern guidance counselor may deflect responsibility from other administrators and teachers, who also share the burden of building meaningful awareness of career options for our emerging workforce.

Addressing this root cause is an important vehicle for both developing meaningful linkages between education and the work world and combating the silo effect.

- **“Not enough practical/applied learning experience for students with area employers.”**

Across all focus groups, participants discussed the issue of applied learning at length. This concept took two paths: relevant course instruction and school-to-work concepts.

An advanced-manufacturing employer stated the first path plainly, “Students need applied learning with hands-on experience.” Relevant course instruction references real-world

³ Deloitte and The Manufacturing Institute, p. 22.

experience in standard academic offerings. It is believed that the more relevant the learning, the greater likelihood that the learning will be retained by the student.

Guidance counselors believe internships and experiential learning build greater academic discipline and relevancy between education and life. As observed in a focus group, when a student does not meet an employer's standards and is corrected in the workplace, that student realizes that the need to build skills is not just an academic exercise but a workplace necessity.

Academic studies of internships and other school-to-career (STC) learning models are supportive of practical learning concepts such as internships at both the secondary and post-secondary levels. A study of the effectiveness of STC programs in California found evidence of improved post-secondary education enrollment and post-education employment arising from STC programming like in-school business enterprise development and internships. Most notable of this study, the author commented was that, "...internship/apprenticeship programs may be particularly advantageous for the less-advantaged, as these programs boost college enrollment among those with the lowest test scores and boost employment among [those in an unfavorable socioeconomic status]."⁴

In "Education and Career Preparation for the New Millennium: A Vision for Systemic Change," CORD's Daniel Hull suggests teaching academics in context, offering relevant instruction, including:

- Relating — Learning in the context of life experiences.
- Experiencing — Learning in the context of exploration, discovery and invention.
- Applying — Learning in the context of how knowledge and information can be used.
- Cooperating — Learning in the context of sharing, responding and communicating with others.
- Transferring — Learning in the context of existing knowledge, using and building on what we know.

In a systems-thinking model where business and education partner to achieve common goals, the importance of this root cause is self-evident.

6.1.2. Employer-Employee Loyalty

The NAM report demonstrably turns manufacturing back on its former paradigm of viewing employees as commodities. In the report, the authors state:

"Employers must understand the importance of human capital as a business investment. Similar to the other aspects of their business, employers need to look at their human capital as an investment rather than as expenditure. If employees are engaged through a strategy of career ladders, incentives, competitive wages and benefits, and supportive working conditions, they will stay – research bears this out."⁵

⁴ Neumark, David, "The Effects of School-to-Career Programs on Postsecondary Enrollment and Employment," Public Policy Institute of California, 2004, p. x.

⁵ Deloitte and The Manufacturing Institute, p. 22.

An important component of our targeted occupation and skills shortages is **leakage** – people leaving their employer, leaving the area or leaving the industry. Addressing the following two sub-items would address worker frustrations that contribute to leakage, building loyalty within the workforce in the process.

- **“Workers at lower skill levels find it difficult to upgrade their skills to qualify for more senior roles.”**

The old manufacturing paradigm makes skill upgrading a challenge, as evidenced by the following comments from CNC-MIMM focus group participants:

- There is nowhere to send employees for advanced training.
- Training programs are generally offered during the evening hours; therefore, anyone working second shift would not be available to attend.

For computer systems analysts and industrial engineers, the challenges are more difficult in Northeast Indiana. As of 2002, there were only 920 systems analysts and 1,220 industrial engineers across EGR-3.⁶ Thus, to build a core competency where workers will have avenues in which they can advance their careers, the focus groups suggested two approaches: 1) Identification and promotion of an ongoing education continuum for professional participation; and 2) Development of an understanding by all employers that information technology skills must be upgraded as a matter of enlightened self-interest.

A subset of the skill-upgrade question relates to a demand-side concern from the Skills Shortages phase of the report regarding obtaining a sufficient number of post-degree, advanced certifications for registered nurses to staff regional care centers. As these centers (like the Parkview Heart Institute or the St. Joseph Hospital Burn Center, both in Fort Wayne) are generators of new regional wealth within a health-care delivery industry that largely recirculates existing wealth, this issue demanded special attention. A special focus group was scheduled to deal with this question. A focus group of nurses with such certifications indicated that, with the exception of satisfying the self-motivated nurse who chooses to learn for learning’s sake, there is no incentive to obtain advanced certifications – no visual recognition (such as extra certification letters on a name badge) or wage increase. The lack of meaningful employee incentives makes rectifying this shortage a challenge.

While not quantifying, industry leaders indicate that improved access to training will reduce EGR-3’s occupational and skill shortages. Especially with CNC-MIMMs and computer systems analysts, who identified this as a root cause, we should prioritize building efforts to provide flexible-training programming, be it from a time, distance or timeliness perspective.

- **“Employees in my field feel that there is no opportunity to advance from their current position.”**

The other component of employee loyalty is the opportunity for career progression. Many employees want to advance their careers through improved wages, title changes, new responsibilities, etc. – especially in the information technology field, which carries a public image of upward mobility. EGR-3 is challenged with hosting a small but important

⁶ Lookup of “Computer Systems Analysts” and “Industrial Engineers” in egr3projections.xls.

population of computer systems analysts whose short-term expectations are not necessarily accurate for our region.

The best insight came from IT workers themselves. One computer systems analyst said that IT-trained individuals come to his company right out of college. Within one to two years, he expects them to move on. Two other employers of engineers said that applicants don't want to come to Northeast Indiana because there are no further development options beyond the company they hire into.

As with any emerging occupation, it will be a challenge to keep the core of our region's computer-systems expertise intact while growing it into a larger foundation of our future growth. We are not certain if this root cause can be addressed in the SSI process and will look to potential solutions providers for creative insights.

6.1.3. The Marketing Challenge

- **“Difficulty attracting workers in target occupations &/or their spouses to our area.”**

This issue has a number of components, all related to the core issue.

- **Emerging Workforce: The Grass is Greener.**

Results demonstrate that only 29 percent of the 377 SSI Student Career Survey respondents definitely plan to live in Northeast Indiana when they graduate. Focus-group feedback indicates that our young people find Northeast Indiana to be boring and lack cultural amenities, or “excitement.”

The perceived flight from Indiana and the Midwest may not necessarily be the primary challenge; we may want to focus on recruiting. The Midwest keeps 25 percent of its graduates, according to economist Richard Mattoon, whereas the national average is only 23 percent. At the same time, the Midwest attracts 9 percent of outside graduates; the national average is around 23 percent.⁷

- **Recruiting/Retention – Do We Measure Up?**

A key component of this root cause is the ability to attract young professionals and families to our region. Using Richard Florida's Creative Class Index, a measurement designed to determine this capacity, the Fort Wayne region ranks 113 and the Muncie region ranks 180 out of 268 regions in America.

This capacity is weakened further by the leakage of high-wage employers (and their jobs) out of Northeast Indiana. Finding adequate employment for spouses is a challenge in this environment. Furthermore, workers are less likely to move to a community where there are no other similar jobs available in case the positions for which they relocate do not work out.

- **Transplanted Workers: I Like It Now That I'm Here.**

For this aspect, anecdotal evidence is most compelling. An industrial engineering participant, a father of two, added that when offered a job in Fort Wayne, he was not drawn to the city. He moved here with no intentions of “retiring” here. When considering the

⁷ Evens, Mary. “Governor's Conference on Economic Development: A novice's perspective,” *What's News*, Center for Community Partnerships, University of Wisconsin Oshkosh, Spring 2003. Accessed at <http://www.uwopartners.org/whatsnews/spring2003/weda.html> on 18 December 2005.

move to Fort Wayne, nothing sold him on the region. Once here, however, he has found the character of the community very attractive and now is reluctant to leave. He believes we should aggressively market Fort Wayne as a city and all that it has to offer.

- **Recruiters: Fort Wayne Is A Family Community.**

Recruiters and human resources managers, from our research, have settled on a paradigm of how to recruit people to come to Fort Wayne and Northeast Indiana: Make sure they have families. Two focus-group participants stated having “given up” on recruiting from outside Fort Wayne. The only thing that can bring candidates back to this area, in their opinion, is family.

As a root cause, this is systemic to our community’s outlook, both as others look at it and as it looks at itself. Recruitment of non-resident professionals will be vital until business-education linkages are institutionalized. This is one of the most important root causes.

6.2. Additional Occupation-Specific Root Causes

6.2.1. Registered Nurses

- **“Capacity of training institutions is inadequate to prepare workers for this occupation.”**

As indicated above, we conducted a broad inventory of training options in all of our targeted occupations to ensure that training-related concerns could be addressed, as well as to compare training capacity against anticipated demand.

Comparing the current EGR-3 nursing school capacity of approximately 400 against the projections, the region only falls short in capacity against the upper demand projection of 487 to 563 seats per year. When including the additional 50 seats of Huntington University’s anticipated new program, it appears that our nursing schools will have sufficient seats to meet all but the highest demand for registered nurses in Northeast Indiana. These supply and demand factors must be closely monitored in case demand reaches the upper projection.

We remain confident in our middle projection range of 386 to 421 required registered nursing seats per year. Huntington’s new program also offers a valuable hedge against an upper demand projection scenario. The faculty shortage referred to by IPFW and the University of Saint Francis are of great concern, however, as there is little margin for error when comparing EGR-3’s anticipated demand against the projected supply. Any reduction in faculty will result in an accompanying shortage of class seats, which can not be allowed to happen.

- **“Instructors are not paid sufficiently to retain them.”**

The American Association of Colleges of Nursing (AACN) explains this argument in stating:

“Almost two-thirds (64.8 percent) of the nursing schools responding to the 2003 survey pointed to faculty shortages as a reason for not accepting all qualified applicants into entry-level baccalaureate programs.”⁸

⁸ “Nursing Shortage Fact Sheet.” AACN – Media Relations, <http://www.aacn.nche.edu/Media/Backgrounders/shortagefacts.htm>, accessed 15 Dec. 2005.

The shortages are largely related to lack of teaching nurses. Current accreditation standards and state regulations allow for a defined number of student nurses per instructor.

In addition, the AACN's "Nursing Faculty Shortage Fact Sheet" paints a picture that extends the discussion into issues of relative pay for the precious few qualified nurses when they report that, "Higher compensation in clinical and private-sector settings is luring current and potential nurse educators away from teaching."⁹

Both IPFW and the University of Saint Francis, two of EGR-3's largest nursing schools, indicated in our survey that they are challenged in attracting and recruiting teaching-degreed nurses.

This is a critical shortcoming that must be addressed to fix the nursing school bottleneck.

- **"Stress &/or burnout are driving registered nurses from this occupation in my area."**

This is the largest issue for the registered-nursing supply. Much of the stress comes from long hours as a result of staffing shortages. Thus, a proper allocation of nurses logically should alleviate a great deal of nursing stress.

Other causes of occupational stress exist, and the shortage of nurses will not be fixed in the short-term. Thus, some form of short-term project to address stress in nursing is appropriate while systemic changes take effect.

- **"Registered nurses leave this occupation for better pay/benefits elsewhere."**

Our research demonstrates that pay satisfaction is a driver of personal employment decision-making. Both focus groups and surveys referred to pay disparities in their discussion of the registered nursing shortage.

After adjusting the cost of living in the different MSAs against the Fort Wayne MSA, data indicate that the Fort Wayne MSA pays its 4,730 registered nurses lower mean salaries than eighteen of the twenty-one sampled MSAs.

The Fort Wayne MSA mean annual wage for registered nurses is \$10,586 lower than the highest-paying adjusted mean salary, offered in the Elkhart-Goshen, Indiana, MSA (1,570 RNs, \$55,763 adjusted mean annual wage).

The Fort Wayne MSA offers a mean salary that is \$2,192 higher than the lowest-paying MSA, Evansville, Indiana (3,090 registered nurses, \$44,533 adjusted mean annual wage).

The median cost-of-living adjusted mean annual wages for the selected MSAs is \$49,620, approximately 6 percent higher than the average salary for Fort Wayne MSA RNs.

In both real dollar and cost-of-living adjusted mean annual wages, Fort Wayne is one of the lowest-paying Midwest MSAs for registered nurses. Nursing pay satisfaction could be a root cause, but studies in other fields show that pay dissatisfaction is often an outgrowth of workplace stress issues – leading us to believe that the root cause of stress and burnout is more critical to address.

⁹ "Nursing Faculty Shortage Fact Sheet." American Association of Colleges of Nursing, updated 18 Oct. 2005. Accessed at: <http://www.aacn.nche.edu/Media/pdf/FacultyShortageFactSheet.pdf>.

- **“The lack of teamwork among health care staff results in new workers having low morale.”**

In any organization, especially one with such well-defined work roles as the doctor-nurse relationship, issues of communication and teamwork are important to the well-being of the organization and individual job satisfaction.

This issue was only raised tangentially in the nursing focus groups, and survey results revealed no additional open-ended answers than the numerical statistics presented above. We determine this to be a possible root cause, but not likely.

6.2.2. CNC-MIMM

- **“Capacity of training institutions is inadequate to prepare workers for this occupation.”**

Upon reviewing available capacity in EGR-3’s training institutions (approximately 210 seats across the region’s secondary and post-secondary providers), we determined that a capacity shortfall does not exist against all but our upper demand projection (between 212 and 250 per year).

Some programs could be better aligned to provide for cross training between machine operation and maintenance, but our main concern is that existing capacity is not utilized. Currently, only 152 students are enrolled in CNC-MIMM programs. Therefore, a root cause could be proper marketing of the manufacturing professions per section 4, and that must be addressed in the Solutions phase.

We also must monitor and plan accordingly in case capacity tightens and demand approaches our upper projections.

6.2.3. Computer Systems Analysts

- **“IT professionals leave this occupation in my area because of better pay & benefits elsewhere.”**

This issue did not surface beyond the raw scores in the supply surveys. A computer systems analyst, supply focus group in Columbia City revealed that IT staffers are expected to leave our region for jobs earning more money elsewhere. College-trained hires can be expected to move on within one to two years.

Once mean salaries are normalized to reflect the Fort Wayne MSAs cost of living, the median of the mean annual wages for computer systems analysts in the selected MSAs is \$63,369, or 0.6 percent less than the Fort Wayne MSA.

The highest adjusted average salaries are paid in the Elkhart-Goshen MSA, where their 190 computer systems analysts earn an adjusted mean annual wage of \$69,464.

The lowest mean annual wages for computer systems analysts are paid in the Madison, Wisconsin MSA, where their 3,360 analysts earn an average of \$54,191.

The Angola IT professionals’ supply focus group revealed that an estimated wage for starting IT professionals is \$25,000 to \$32,000. The anecdotal figure offered in our focus group is approximately half of the mean annual wage for computer systems analysts in the Fort Wayne MSA. If a new IT employee working for approximately \$30,000 annually accumulates sufficient skills and experience to be employed somewhere else at the

median wage, the comments from the aforementioned Columbia City supply focus group are given context.

Wages – and the tie between skills and wage development for members of this occupation – may be a contributing root cause to a systemic shortage in qualified IT workers.

- **“Instructors are not paid sufficiently to retain them.”**

Review of focus group notes and recordings indicate no discussion of instructor pay in any of the focus groups – supply or demand. This survey statement is included in the “training” section. Discussion of the important root cause considerations related to IT training focused mainly around the lack of access to training because of distance and small occupational population.

It could be argued that agreeing with the statement about instructor pay is an endorsement of the need for investing in expanded training options and the faculty to deliver that training. We look at this as an outlier in our survey model.

7. Industry endorsements

Every individual who participated in the Shortage and Root Causes phases of the Northeast Indiana SSI project was invited to review and comment upon a draft of this report. Endorsements were received from leadership in each of our targeted industries. In addition, some employees who participated in occupational supply focus groups offered their support to our conclusions.

8. Concluding Comments

The root causes identified are as varied as our targeted occupations and skills. We look forward to the Solutions phase, bringing this SSI process to fruition by developing the line of sight between the solutions offered, the root causes presented herein and the shortages that we intend to remedy.