



# **Region 3 Works Council Evaluation of Career and Technical Education Opportunities**

**November 1, 2013**

## **Executive Summary**

According to Works Council legislation, each regional Works Council must evaluate Career and Technical Education (CTE) opportunities within its region by November 1, 2013. The Region 3 Works Council addressed the following issues in developing this report: CTE pathways alignment, articulation of CTE secondary to postsecondary, overview of secondary CTE data, regional employment sector information, and an analysis that includes next steps for the Works Council.

## **CTE Pathways and Data**

The Region 3 Works Council has analyzed school year 2011/12 data provided by the Indiana Department of Workforce Development and identified the CTE courses in the region with the greatest levels of student participation. These CTE courses include Preparing for College and Careers (3,512 students), Nutrition and Wellness (1,851 students), Professional Career Internship (1,372 students), Child Development (1,266 students), Advanced Business Management (1,167 students) and Project Lead the Way Introduction to Engineering Design (1,106 students). The Works Council has some concerns over the absence of programs on this list associated with pathways in advanced manufacturing, health care, IT and transportation/logistics. Other key observations from the data include:

- The graduation rate for CTE students in Region 3 was 97%, which was 7% higher than graduation rates for all students in the region.
- Student enrollments in CTE courses for the 2011/12 school year totaled 24,334. CTE courses with the highest enrollment rates across the region were noted above.
- The number of CTE students earning dual credits for the 2011/12 school year was 2,270. CTE courses providing the greatest level of dual credits to CTE students included PLTW Introduction to Engineering Design (292 students), PLTW Principles of Engineering (176 students), Health Science Education (173 students) and Automotive Services Technology ( 110 students).
- The number of CTE students earning/passing a certification/assessment during the 2011/12 school year was 556. The certifications/assessments earned/passed at the greatest levels were Certified Nursing Assistant (CNA) and automotive technology.

## **Regional Employment Sector Information**

While the Northeast Indiana economy has been unquestionably challenged, the good news is that long term employment forecasts project employment opportunities in several key industry sectors. Building on this premise, after extensive data analysis and regional planning efforts the Northeast Indiana Regional Partnership (the RP) has identified six specific sectors as “targeted industries” for economic growth and development activities in the region. Additionally, the Northeast Indiana Regional workforce Investment Board (WIB) identified a seventh industry sector to target for workforce development purposes. Between the RP and the WIB, these seven industries have been identified as

key to the regional economy and are as follows:

- Food Processing
- Medical Device Manufacturing
- Insurance
- Logistics
- Defense Industry
- Vehicle Manufacturing
- Health Care (WIB defined industry sector)

### **Analysis and Next Steps**

The Region 3 Works Council has reviewed work already completed by the Education and Workforce Innovation Network (EWIN) team in the region and begun its own evaluation of CTE programming in the region. Based on work done to date, seven key strategies have been identified that will begin the work of expanding and enhancing CTE programs in northeast Indiana. These seven strategies are as follows:

1. Develop a Comprehensive Understanding of Employer Skill and Certification Needs – this will include developing a regional focus and commitment to key certifications as well as employer education efforts regarding specific certifications
2. Create and Expand Opportunities for Students to Access the Ivy Tech Northeast Technology Center and the IPFW Haas Machining Center
3. Expand Advanced Manufacturing CTE Programs – this will include expanding the Conexus Hire Technology curriculum to new locations and expanding experiential learning opportunities for students
4. Expand Adult Technical Education Programs at CTE Locations
5. Expand Dual Credit Options Wherever Possible – this will include expanding dual credit opportunities for general education courses supporting the completion of the Transfer Gen Ed Core requirements and pursuing new CTE program models such as full day CTE models which supports the opportunity to establish a CTE Pathway, a required component of the Early College Model.
6. Explore Offering Technical Education Programs at Employer Sites or Through Apprenticeship Programs
7. Provide Staff Development for Guidance Counselors about CTE Programs/Pathways

It should also be noted, however, that as the Works Council continues its work, additional strategies for enhancing CTE programs in the region will most certainly be identified.

### CTE Pathways in Region 3

*Please develop a comprehensive list of CTE clusters and pathways offered at high schools and/or CTE centers in your region. A regional map with CTE locations would also be helpful. The Works Council needs to convey what pathways (and corresponding enrollments) are prevalent in the region.*

Across the region, CTE providers currently offer a wide range of CTE programs in various pathways and at various CTE locations. A complete analysis of the CTE pathways offered in Region 3 can be found in attachment 1 to this report and represents the Works Councils attempt to inventory regional CTE programs by provider. As important, however, this analysis also attempts to clearly define the current opportunities students are given to earn both dual credit and industry-recognized certifications while participating in CTE programs. The Works Council believes both of these issues (dual credits and embedded certifications) are critical to the long term goals of developing a workforce that meets the needs of regional employers.

Beyond understanding CTE programs currently offered to students in the region, the Works Council was also interested in understanding student participation levels in and outcomes from the various CTE programs offered throughout the region. Using 2011/12 school year data provided by the Department of Workforce Development, the Works Council was able to gain some insight into these topics and a full and complete analysis can be found in attachment 2 to this report. However, several key observations from the 2011/12 data would include the following:

- The graduation rate for CTE students in Region 3 was 97%, which was 7% higher than graduation rates for all students in the region.
- Student enrollments in CTE courses for the 2011/12 school year totaled 24,334. CTE courses with the highest enrollment rates across the region included:

Preparing for College and Careers	3,512
Nutrition and Wellness	1,851
Professional Career Internship	1,372
Child Development	1,266
Advanced Business Management	1,167
PLTW Introduction to Engineering Design	1,106
Interdisciplinary Cooperative Education (ICE)	857
PLTW Principles of Biomedical Sciences	748
Agriculture Power, Structure and Technology	674
Animal Sciences	668
Interpersonal Relationships	634
Radio and Television I	567
Interactive Media	557
Anatomy and Physiology	551
Introduction to Agriculture, Food and Natural Res	544

- The number of CTE students earning dual credits for the 2011/12 school year was 2,270. CTE courses providing the greatest level of dual credits to CTE students included:

PLTW Introduction to Engineering Design	292
PLTW Principles of Engineering	176
Health Science Education	173
Automotive Services Technology I/II	110
Criminal Justice I	86
Culinary Arts & Hospitality Management	84
Construction Technology I	71
Professional Careers Internship	71
Architectural Drafting and Design	69
PLTW Principles of Biomedical Sciences	63
Anatomy and Physiology	61
Welding Technology I	56
Principles of Marketing	56

- The number of CTE students earning/passing a certification/assessment during the 2011/12 school year was 556. The certifications/assessments earned/passed at the greatest levels were as follows:

Certified Nursing Aide Exam/License	302
Automotive Service Exams (ASE and NA3SA)	110
AAFCS – Family and Consumer Sciences	71
Indiana Cosmetology License	49
ServSafe Food Handling Certification	27
AWS Welding Certification	19

### **CTE Articulation to Postsecondary Opportunities**

*Please consider the dual credit data provided by the State in conjunction with existing workforce partnership plans to determine how well aligned existing pathways are with postsecondary CTE programs.*

Over the past two years, dual credit opportunities for CTE students in Region 3 have significantly increased as CTE programs, high schools and postsecondary institutions have engaged in a concentrated effort to make this happen. As one example of this, the Northeast Indiana campus of Ivy Tech Community College experienced a 30% growth in CTE dual credit classes a year ago and followed that up with a 47% increase in dual credit courses this year. Additionally, other postsecondary institutions have followed this lead including Indiana-Purdue University at Fort Wayne (IPFW), Trine University and

Vincennes University. Overall, it is clear to the Works Council that there exists in Region 3 a strong commitment to the implementation of dual credit programs. Of note, there does appear to be strong alignment with engineering pathways as CTE programs supporting Project Lead The Way (PLTW) are flourishing in the region and are well aligned with postsecondary education opportunities at several institutions. Similarly, CTE programs focusing on automotive and construction technology appear to have been aligned well with postsecondary programs in these areas and the region has done a solid job of offering dual credit opportunities within these pathways.

From a Works Council perspective, however, there are opportunities to improve the alignment of CTE programs and dual credit opportunities with career pathways in the region. In fact, based on existing programming, enrollment levels, dual credit arrangements and pathways in the region, the Works Council believes there are three immediate opportunities that must be explored. First, the Works Council has identified a significant opportunity to expand dual credit opportunities in programs leading to advanced manufacturing pathways at the postsecondary level. This would include CTE programs focusing on welding, precision machining, the Conexus Hire Technology program, industrial maintenance and several others that would align with advanced manufacturing pathways in the region. Of interest, in the past few years (through the regional Talent Initiative effort), Ivy Tech Community College was provided significant funding to purchase and install a range of advanced and hi-tech manufacturing equipment. This regional investment was a clearly communicated and strong commitment to the development of an advanced manufacturing pathway at the postsecondary level. And, while the Works Council is pleased that dual credit opportunities are in place for many advanced manufacturing CTE programs, there nonetheless appears to be a real opportunity to expand CTE programs and dual credit opportunities leading to postsecondary education and career pathways in advanced manufacturing.

Second, at postsecondary institutions across the region there have been many programs developed to support talent development efforts around IT and technology-based career pathways. Again, while CTE programs in the region offer a range of technology-based programs, the Works Council believes there are real opportunities for expanding and enhancing technology-based CTE programming in the region to improve alignment with IT and related postsecondary education and career pathways. Naturally, this would include the development of strategies that expand dual credit opportunities in these technology-based pathways. In turn, this would also support student movement into regionally available postsecondary programs.

And third, while the region features a wide range of health care and related CTE programs, the Works Council has identified an opportunity to improve and enhance alignment of these programs and dual credit opportunities with postsecondary health care pathways in the region. The Works Council understands that health care programs can be expensive to operate and recognizes the need for new thinking on how to deliver health care related CTE programs that support student progress in the health care pathway. However, health care career pathways are critical in northeast Indiana and the opportunity to engage in this thinking, identify new strategies for delivering health care related technical

education and improve student outcomes cannot be ignored.

**Regional Employment Sectors**

While the regional economy in northeast Indiana has been steadily improving, one way to analyze industry/employment sectors is to review projected employment opportunities by occupational grouping. This type of insight can be informative and is summarized in the illustration below:

<b>Occupational Group</b>	<b>Long Term Projections 2008-18 Total Openings</b>
Management	2,143
Business and Financial	2,674
Computer and Mathematical	1,090
Architecture and Engineering	722
Life, Physical and Social Science	328
Community and Social Services	870
Legal	411
Education, Training and Library	3,668
Arts, Design, Entertainment, Media	515
Healthcare Practitioners and Technical	6,710
Healthcare Support	493
Protective Services	882
Food Preparation and Serving	0
Building and Grounds Maintenance	254
Personal Care and Service	176
Sales and Related	3,562
Office and Administrative Support	1,654
Farming, Fishing and Forestry	16
Construction and Extraction	3,998
Installation, Maintenance and Repair	2,731
Production	1,516
Transportation and Material Moving	2,875

Source: Research and Analysis Unit, Department of Workforce Development

A quick review of this occupational information confirms that the region is projected to experience significant employment opportunities in both the manufacturing and health care sectors. However, Northeast Indiana also has a bright future in such sectors as business and financial services, transportation and material moving, and construction occupations.

As occupational data suggests, the Northeast Indiana region is heavily invested in occupations found in such industries as health care, manufacturing, construction, and transportation/logistics. As each of

these industries is evaluated for long term future growth (through 2018), the news is actually bright in terms of a long term forecast. Key data items worth noting include:

- ✓ Base employment in the health care industry is projected to grow by 10,536 jobs (a 23.8% growth rate)
- ✓ Base employment in the construction industry is projected to grow by 2,771 jobs (a 19% growth rate)
- ✓ Base employment in professional, scientific and technical services is projected to grow by 2,785 jobs (a 31.7% increase)
- ✓ Base employment in the transportation and warehousing industry is projected to grow by 1,891 jobs (a 15.4% growth rate)

No discussion of Northeast Indiana industrial projections would be complete, however, without a review of the future of manufacturing in the region. In simple terms, the regional employment level in manufacturing is projected to decline by 10.8% by 2018. However, as has been noted in discussions about occupational projections, there will still be significant employment opportunities in this industry. This is true because many manufacturers in the region are experiencing high retirement rates, creating opportunities for new workers to move into the industry. Given this, the northeast Indiana region must continue to invest and engage in talent development programs that develop a workforce with the advanced (or STEM) skills required for success in an advanced manufacturing environment.

While the Northeast Indiana economy has been unquestionably challenged, the good news is that long term employment forecasts continue to project employment opportunities in several key industries. Building on this premise, after extensive data analysis and regional planning efforts the Northeast Indiana Regional Partnership (the RP) identified seven specific sectors as “targeted industries” for economic development activities in the region. These industries have been identified as key to the regional economy and are as follows:

- ✓ Food Processing (which is heavily weighted toward food manufacturing)
- ✓ Medical Device Manufacturing (including software engineering and development)
- ✓ Insurance
- ✓ Logistics
- ✓ Defense Industry (includes a manufacturing component as well as wireless communication technologies)
- ✓ Advanced Manufacturing (with a focus on vehicle-related manufacturing)
- ✓ Health Care

Importantly, the Regional Partnership and its county-based economic development partners have experienced real success at targeting these industries for job growth. According to a recent Targeted Industry and Business Dynamics Report, over the past three years there have been 60 companies new to Northeast Indiana, 364 business expansions and a total of 13,087 new jobs associated with these

economic development announcements. Of interest, however, is that job growth as identified in the Business Dynamics Report tends to cluster around 13 different industries (as defined by NAICS codes) and as summarized below:

<b>New Positions from New or Expanding Northeast Indiana Businesses, 2009-2011</b>				
NAICS Code	Industry Description	New Jobs from New Companies	New Jobs from Expanding Companies	Total New Jobs from New and Expanding Companies
311	Food Mfg	175	389	564
325	Chemical Mfg	100	388	488
326	Plastics & Rubber Mfg	423	242	665
331	Primary Metal Mfg	211	289	500
332	Fabricated Metal Product Mfg	192	508	700
334	Computer & Electrical Product Mfg		408	408
335	Electrical Equipment, Appliance & Component Mfg	477		477
336	Transportation Equipment Mfg	1,094	3,305	4,399
339	Miscellaneous Mfg	161	513	674
484	Truck Transportation	113	226	339
493	Warehouse and Storage	477		477
517	Telecommunications		360	360
541	Professional, Scientific & technical Services		320	320

As can be seen, a majority of these expansions were in manufacturing and transportation, distribution and logistics. As communicated in another Business Dynamics Report, however, this continues to pose an interesting challenge to Northeast Indiana. Manufacturing employment has not only declined in Northeast Indiana but in the United States, yet this industry is an obvious strength in Northeast Indiana where numerous assets have been structured to support this sector. According to the Report, “the key may be in **education** – how well positioned are the residents of Northeast Indiana to support advanced manufacturing, not the rote factory jobs of the past.”

Given that education is the key, this statement highlights the need to not only look at employment sectors but the specific skills sets required by these employment sectors. One of the common themes shared by virtually all employers in Northeast Indiana is the need for workers with a good work ethic and what are often referred to as “soft” or “work readiness” skills. By “work ethic,” employers mean attendance, punctuality, honesty, and other desirable personal attributes. However, while virtually all employers expressed an interest in workers who are well-rounded, employers are equally clear that they need workers who are technically skilled and prepared. In order for the region to attract and retain high-wage employers to the region, it is critical that the regional workforce possesses both soft skills and technical skills to perform required work.

To put more definition to this concept, the regional workforce and economic development systems recently partnered to complete an in-depth analysis of the specific skills that employers in Northeast Indiana expect from their new hires. Importantly, this analysis reviewed information gathered from

hundreds of private and public job boards that collectively represent 80-85% of total on-line job postings over a one year period. Findings from this effort have identified that there are very specific soft and STEM (Science, Technology, Engineering and Math) skills that are in-demand as evidenced by the on-line postings of Northeast Indiana employers. The following illustration highlights several of these key skills that regional employers are seeking (soft and STEM skills have been separately identified):

Targeted Industry Sector	Soft Skills Required (in order of importance as identified by employers)	STEM Skills Required (in order of importance as identified by employers)
Manufacturing	Interpersonal skills, a positive attitude, a commitment to high performance, project leadership, independent judgment, communication, a commitment to continuous improvement, and problem solving	Product development, engineering, project management, knowledge of manufacturing processes, ability to use various technologies, CAD/AutoCAD, lean manufacturing, quality systems
Defense Contractors	Communication, management, teamwork, customer support, a commitment to high performance, problem solving and time management	Familiarity with communication systems, computer science/IT degrees and skills, software development, engineering, power management
Medical Device Manufacturing	Problem solving, attention to detail, communication, a commitment to continuous improvement, customer service, interpersonal skills, and a willingness to learn	Bachelors Degree, knowledge of medical devices, knowledge of manufacturing processes, quality systems, lean manufacturing, quality control
Finance and Insurance	Communication, customer service, problem solving, project management, interpersonal skills, analytical skills, a positive attitude, organizational skills, management, and attention to detail	Computer science/IT degrees and skills, Microsoft Office, software development, product development, engineering skills, insurance skills, business development, risk management
Transportation and Logistics	Communication, customer service, a commitment to continuous improvement, problem solving, detail oriented, interpersonal skills, teamwork	Class A CDL, Hazmat Endorsement, high school diploma, Microsoft Office, lean manufacturing, equipment maintenance, and safety

Source: Monster Government Solutions, January 2011

In addition to this recent and comprehensive analysis of skill requirements as documented by employer online job postings, there are other strong indications that STEM skills are becoming more and more critical to employers in northeast Indiana. For instance, the Northeast Indiana Defense Industry Association (NIDIA) identified a specific set of skills that regional defense and aerospace contractors highly prize, including STEM skills in such areas as engineering, quality systems, communications systems, alternative energy and energy storage systems, and a range of specific technology and software applications. Similarly, the WorkOne Northeast Business Services Team (which meets with several hundred hiring employers each year) has reported a similar observation about the importance of STEM skills. STEM skills reported as in-demand by the business services team include understanding

metric systems, geometric dimensioning and tolerancing (GD&T), mechanical and electrical repair, programmable logic controllers, financial management skills and a range of specific technology skills.

### **Analysis of Pathways Alignment**

#### **Question #1: What is the degree and magnitude of the workforce challenges faced in the region?**

Although the workforce challenges in the region are many, it is the critical concept of skill development that is the underlying root cause of virtually all these challenges. In short, employers in the region have been reporting to economic development and workforce officials for some time that they need more workers with greater levels of skills than ever before. And the reason for this is simple – the region (and the world) marketplace has become much more competitive for employers and their ability to compete and be successful in the marketplace is now directly tied to their ability to find the talent they require. This challenge has significant implications for technical education systems in the region as these systems must now be designed to understand and meet the specific and changing skill needs of regional employers.

It is also clear that employers in Northeast Indiana are expecting workers to possess higher level STEM skills (Science, Technology, Engineering and Math skills). Occupations in STEM fields – which make up a large number of the high-demand, high-wage jobs in the region – almost always require higher levels of education and/or greater levels of technical skill. The implications of this on the regional technical education system are clear – workers of the future must be trained to higher levels of technical competence than ever before. In other words, skills training must occur on advanced machinery/equipment/processes, quality or Lean training must be imbedded in every course that is offered, and digital literacy skills are an absolute must for any worker preparing to enter the workforce.

#### **Question #2: How well do secondary CTE pathways outcomes align with regional industry needs? and**

#### **Question #3: Does the talent pipeline available through CTE match the demand that exists in the region?**

Overall, the Works Council believes there is some effective alignment of CTE programs with regional industry needs, but clearly greater alignment is needed. For instance, employers in the region are experiencing a growing need for skilled maintenance workers to maintain and repair industrial equipment. This requires a worker to possess technical skills in multiple disciplines including electrical, mechanical, hydraulics, pneumatics, power systems, programmable logic controllers and many others. Despite this growing need, however, there are no current CTE programs in the region that offer coursework in industrial maintenance. Such a CTE program, when coupled with appropriate dual credits, would be a tremendous step forward in aligning CTE programs with this specific labor market need and with postsecondary technical education programs already available in the region. Also in the area of advanced manufacturing, while the region is fortunate to have multiple CTE welding programs,

the region does not yet offer a level of precision/CNC machining programming that meets industry needs. As such, a significant program expansion is needed in this area to support this specific labor market need as well.

Beyond manufacturing, the Works Council has identified other opportunities to improve the alignment of CTE pathways and programs to industry needs. For instance, while there are multiple CTE programs in the region that focus on the development of Certified Nursing Assistants (CNAs), there is a growing opportunity for CTE programs to align with other health care employer needs as well. This could include programs that focus on dental assisting, paramedic services and a range of occupations that are impacted by medical technologies. While the options are many, the Works Council is convinced that a real opportunity exist to improve the alignment of CTE programs with the rapidly changing needs of health care employers.

And finally, while the Works Council understands the history of offering such CTE programs as cosmetology, radio/TV production, nutrition and wellness, adult roles and responsibilities, interpersonal relationships and others, there is a real question as to how programs such as these (especially with the high number of students involved) align with the needs of the regional labor market. As such, the Works Council intends to engage CTE programs and school districts in a meaningful dialogue about programs such as these in an effort to determine their labor market relevance. As part of this discussion, based on industry needs and available labor market data, the Works Council will also work with these CTE providers and school districts to explore options for identifying CTE programs that focus on high-demand careers in the region (financial services, logistics and others) for which limited programming currently exist.

**Question #4: What innovative examples from CTE curricula (internships, apprenticeships, certifications, etc.) are already happening within the region?**

The Works Council is early in its process of evaluating CTE programs in the region but has already identified a number of innovative programming examples that highlight what the region is capable of. And while the Works Council is convinced that it will find many more examples of CTE innovation as it continues its work, several examples of innovation already underway include:

- At the Impact Institute, there has been considerable success at working with local foundations to secure funding necessary to support the purchase of advanced equipment for several CTE programs. On a similar note, the Impact Institute has also partnered with Ivy Tech Community College to house one of their CNC mills on site at the CTE program facility. This means CTE students have access to use the CNC machine during the day as part of their precision machining coursework and adult learners in Ivy Tech classes have access to the machine in the evening since the Impact Institute allows Ivy Tech to use the facility after hours.
- Anthis Career Center offers a program in aviation maintenance and has created partnerships with Ivy Tech Community College who has instructors who help teach coursework as well as a

small local airport who has agreed to house and support the program. Successful students can earn 34 dual credits opportunities and an FAA Powerplant certification. Moreover, students can matriculate directly into the Ivy Tech aviation program with a solid start and background.

- The Area 18 CTE program has developed a relationship with the Adams-Wells Industrial Alliance which is comprised of roughly 15-18 advanced manufacturing employers in these two counties. These employers, through the Alliance, works with Area 18 and their instructors to ensure that the precision machining and other advanced manufacturing CTE programs produce graduates with industry relevant skills. This industry partnership has been so successful that the Industrial Alliance essentially now serves as the advisory board to this specific CTE program.

While other examples of program innovation are sure to exist in the region, these three examples all illustrate the value that partnerships can bring to CTE programs. Given this, the Region 3 Works Council is committed to supporting the development of additional partnerships for all CTE programs in the region to help ensure their success.

#### **Question #5: What are the next steps that the Works Council needs to take to improve CTE opportunities?**

To gain some perspective on this question, Works Council members have been working with the Education and Workforce Innovation Network (EWIN) team being supported in Region 3 by CELL and the Indiana Education Roundtable. The reason for this is that the EWIN team has been working on identifying a range of CTE challenges and opportunities for the past few months. In addition to several team meetings, the EWIN team also facilitated site visits to all CTE programs in the region during late August and September 2013. What came from these meetings and site visits was an identification of multiple opportunities to expand and improve the impact of technical education programming in the region. The Works Council agrees that these opportunities would be positive for CTE programming in the region and will continue to work with the EWIN team on how to move several of these opportunities forward. Additionally, as the Works Council forms and begins collecting additional information and insight about CTE programs in the region, it will work to identify additional opportunities for supporting, expanding and improving these programs.

What follows are seven specific opportunities that have been identified to date (by the EWIN team with the support of the Works Council):

- 1. Develop a Comprehensive Understanding of Employer Skill and Certification Needs:** This topic was discussed at every single site visit and essentially identifies a strong need to develop a true understanding of employer needs in the region. The recommended approach is to enhance the ExecutivePulse system (currently used by LEDOs and WorkOne to track employer activities) to collect skills/certification information on a real time basis over the long term. In other words, information about needed skills and certifications would be collected and input into the

database whenever employer visits are made by LEDOs, WorkOne staff or other partners. Over the long term, CTE providers and providers of technical education activities for adults will be able to extract real-time data from this system on what specific skills and certifications employers are demanding from workers. This information, then, can be used to inform CTE and other technical education programs which will ensure that the system is producing talent with labor-market relevant skill sets. This is a significant effort and the Works Council envisions this beginning right away. Additionally, as this data is collected, aggregated and analyzed, two additional efforts will parallel this:

- a. **The Region Must Develop a Regional Focus and Commitment to Key Certifications:** Based on what is learned from employers about the certifications (health care, IT, etc.) that are most highly valued, this information should serve as a catalyst to the development of a region-wide commitment to embedding these key certifications in all appropriate CTE and postsecondary technical education programs. Not only would this effort be supportive of the regional Big Goal (to see 60% of the regional workforce achieve a degree or high quality certification by 2025) but it would also better document for employers the skill sets of CTE/technical education graduates (thereby improving student outcomes).
  - b. **Employer Education Efforts Regarding Specific Certifications:** As employer discussions occur around the topics of skills and certifications, this will also create an opportunity to make employers more aware of certifications (MSSC, NIMS, AWS, various logistics certifications and others) that technical education students can earn. Across the region, it is generally felt that employers may not be aware of many of these certifications and the skills sets required to earn them. Education efforts targeted to specific industry sectors in the region to increase both employer understanding and acceptance of specific certifications seems like a logical way to meet this challenge. Again, however, this would be a regional effort that the Works Council, CTE providers, postsecondary technical education providers and other workforce partners would support.
2. **Create and Expand Opportunities for Students to Access the Ivy Tech--Northeast Technology Center and the IPFW Haas Machining Center:** There is a considerable need for skilled CNC machinists in the region. As such, the Works Council is also interested in identifying strategies for enabling CTE and technical education programs in the region to gain access to the Ivy Tech--Northeast Technology Center (which is resource rich with advanced manufacturing equipment acquired with support from the Talent Initiative). Several strategies need to be evaluated including arranging for student site visits, offering summer camps or programs to interested students (perhaps for dual credit), and even offering onsite CTE programming at the Technology Center. Of note, IPFW also has a CNC machining center on its campus (the Haas Center) and this is yet another resource to support this kind of advanced manufacturing programming.

**3. Expand Advanced Manufacturing CTE Programs:** Several recent regional discussions (including EWIN discussions) have focused heavily on creating opportunities for expanding technical education programs that prepare students for specific advanced manufacturing occupations (industrial maintenance, CNC machining, HVAC and several others are often mentioned). A key challenge in this concept is having the equipment required to effectively prepare students for regional employers. This specific challenge can best be solved by a regional approach and commitment to supporting these kinds of advanced manufacturing technical education programs. But it is clear to the Works Council that strategies for accomplishing this must be explored and identified to meet the growing needs of advanced manufacturing employers in the region. Within this broader discussion, the Works Council also believes that there are two related opportunities which also need to be pursued:

- a. **Expand the Conexus Hire Technology Curriculum to New Locations and Connect it to Technical Education Programs:** While there is not universal agreement that the Conexus advanced manufacturing curriculum by itself is enough to successfully propel students to the workplace or postsecondary programs, there is some common thought around the concept of offering the Conexus curriculum early in high school, allowing students to specialize in a more technical program (machining, welding, maintenance) during their later years. The Works Council believes in this concept and will support CTE programs that begin with general manufacturing skills (the four modules of the Conexus MSSC CPT program) and move students into a more specialized advanced manufacturing program during their last two years of high school. On a related note, the Works Council also believes that this approach would expand dual credit options for many students and facilitate the number of students who transition to postsecondary training programs.
- b. **Create and Expand Experiential Learning Opportunities for Students:** This concept has long been discussed and there is widespread agreement in the region that strategies for expanding internship and other site-based learning opportunities for students must be pursued. Engaging employers in creating more of these opportunities across a range of technical education programs could accomplish several things: (1) it would provide an applied learning experience for students to reinforce what has been learned in the classroom/lab, (2) it would provide a real world work context for why students need to learn what is being taught in the classroom/lab and (3) it would create a significant opportunity for employers to partner with technical education programs in the region, enhancing the employer-education relationship.

**4. Expand Adult Technical Education Programs at CTE Locations:** While this is already being done in several CTE locations, multiple conversations have occurred suggesting there are real

opportunities for expanding postsecondary provider access to CTE facilities/equipment so that they may provide technical education instruction to adult learners (most likely in the evenings). The basic premise is that, using this approach, adult technical education programming can be decentralized across the region allowing adult learners to access technical education services much closer to where they live and work. Creating this kind of expanded access would greatly expand the number of adult learners engaged in technical education which is also of great interest to the Works Council.

**5. Expand Dual Credit Options Wherever Possible:** A significant movement is already occurring in Northeast Indiana to expand dual credit offerings for many CTE students and a great deal of success has already been achieved in this regard. However, even with this movement well underway, there is near universal agreement that even more can and should be done. Issues such as curriculum rigor and teacher credential requirements will need to be fully explored to ensure that dual credit programs are appropriate and rigorous, but a collective effort to continue the progress being made on this topic is of strong interest of the Works Council. As part of this effort, the Works Councils also sees two parallel opportunities that could support this effort to expand dual credit opportunities for students:

- a. **Explore Dual Credit Options for General Education Courses:** Most conversations about dual credit focus on CTE course; however, there is also some discussion about the opportunity to work with school systems to secure dual credit opportunities for a greater number of general education courses (math and others). This would create the opportunity for CTE students (although all students could benefit from this) to secure dual credit at both their home school and at their vocational center. In the end, pursuing additional general education dual credit courses would allow CTE students to graduate with expanded numbers of dual credits and would facilitate and support their transition to a postsecondary program (such as an Associate's Degree).
- b. **Explore Early College and Full Day CTE Models:** The EWIN team is supporting the pursuit of early college and full day CTE program models and the Works Council agrees that these models must be pursued. Currently, the EWIN team is exploring options for using EWIN funding to make site visits (in and outside of Indiana) to locations that have successfully implemented these models. The purpose of these site visits will be to learn more about how these models were implemented and to assess their potential adaptation to Northeast Indiana. The Works Council supports this effort and will play a strong role in pushing this agenda to bring early college and full day CTE programs to northeast Indiana.

**6. Technical Education Programs Offered at Employer Sites or Through Apprenticeship Programs:**  
In a number of discussions, there has been an interest in exploring the possibility of using

employer sites to house CTE and other technical education programs. Using employer sites, it is felt, would provide opportunities for hands-on learning in a real world work environment. Clearly, issues of liability and transportation (and probably others) would need to be addressed. Nonetheless, there is significant interest in identifying strategies that would seek out employers who would be willing to house even portions of a technical education class. Additionally, there is also interest in exploring models that connect CTE programs with skilled trades apprenticeship programs in the region (plumbers, electricians, HVAC and others). Thoughts expressed here have focused on using CTE programs as pre-apprenticeship programs to facilitate the transition of students into fully certified apprenticeship programs following high school graduation. This could include engaging skilled trades unions to help with the delivery of CTE curricula since many of these unions have existing curricula and equipment that CTE programs do not currently possess.

- 7. Provide Staff Development for Guidance Counselors about CTE Programs/Pathways:** This topic has come up often and focuses on providing guidance counselors with the information needed to better support and guide students into appropriate CTE programs and associated career pathways. This would include labor market information (including the information collected through the ExecutivePulse system), information about specific technical education program opportunities, information about expanded dual credit options and industry-recognized certifications and information about effective career counseling models. A regional approach to this professional development activity is being recommended to ensure consistency in messaging to guidance counselors and to avoid duplication of efforts by multiple CTE programs in the region. Of note, the Works Council is also interested in including middle school counselors in these professional development efforts as there is a strong belief that these counselors would also benefit from this information as they support of transition of students to high school CTE programs.

### CTE Programming - Region 03

Technical Education Program	Anthis & ALL Feeder HS's		Impact Institute & ALL Feeder HS's		Area 18 & ALL Feeder HS's		Heartland		Tucker Vocational Center	
	Certifications	Dual Credits	Certifications	Dual Credits	Certifications	Dual Credits	Certifications	Dual Credits	Certifications	Dual Credits
Advanced Manufacturing	X MSSC	6 - ITCC	X MPRO	6 - ITCC						
Automotive Collision Repair Technology	X ASE - Student Cert	6 - ITCC	X Inter-Industry Conference on Repair (ICAR)	6 - ITCC			X		X	6 - ITCC
Automotive Service Technology	X ASE - Student Cert	20 - ITCC	X Automotive Youth Education Systems (AYES), ASE	18- ITCC	X NATEF/NA3SA	9-15 - ITCC	X	Valvoline Vo-Tech Motor Oil	15 - ITCC	
Aviation Maintenance Technology	X FAA-PowerPlant	34 - ITCC								
Building Trades					X					
Business/Marketing		6-9 - ITCC				3-6 - ITCC				
Computer Repair	X A+ Certification	6 - VU								
Construction Technology/Trades	X SP2 X ACI X CPR	6 - ITCC	X	18- ITCC		15 - ITCC	X		9 - IVTCC	X
Cosmetology	X State Licensure	16 - VU	X State Licensure, Chroma Silk Cert, Perfection Cert	yes	X State Licensure		X	State Licensure	14- VU	
Criminal Justice			X CPR/First Aid	6 - VU - Trine		3 - ITCC	X		12 - VU	X
Culinary Arts	X ServeSafe Pre-Pac (Culinary)	6-9 - ITCC	X ServeSafe CPR/First Aid	8 - ITCC	X ServeSafe CPR/First Aid	6 - ITCC	X	Pro Start CPR/First Aid	12 - VU	X
Dental Careers	X AHA/Healthcare Provider Blood Borne Pathogens CPR									
Diesel Service Technology							X			
Drafting/CAD			X	12 - ITCC	X	6 - ITCC				X
Early Childhood Education	X Pre-Pac (AAFCS) First Aid/CPR CDA	3 - ITCC 6 pending			X		X	CPR/First Aid		X
Education Professions		3 - ITCC			X					
Electronics and Computer Technology							X	A+ Certification	6 - ITCC	
Emergency Services	X EMT Basic	7.5 - ITCC								
Fire Rescue	X Mandatory Firefighter Firefighter I and II HazMat Awareness HazMat Operations CPR	15 - ITCC								
Graphic Design & Layout	X Adobe Brainbench Adobe InDesign Adobe Illustrator Adobe Photoshop	6 - VU			X					X
Graphic Imaging Technology							X		3 - ITCC	



Region 3

Course	Students Earning Dual Credits for the Course	Concentrators Earning Dual Credit for the Course	Students Earning Dual Credits and Passing Another Certification/Assessment	Students with Dual Credits placed in Postsec Ed	Students with Dual Credits placed in Postsec Ed (Related)	Students with Dual Credits placed in Workforce
(PLTW) Biomedical Innovation	0	0	0	0	0	0
(PLTW) Computer Integrated Manufacturing	16	16	0	0	0	4
(PLTW) Digital Electronics	26	25	0	0	0	8
(PLTW) Engineering Design and Development	6	6	0	0	0	3
(PLTW) Human Body Systems	23	0	0	0	0	3
(PLTW) Introduction to Engineering Design	292	5	0	0	0	28
(PLTW) Medical Interventions	8	8	0	0	0	2
(PLTW) Principles of Biomedical Sciences	63	0	0	0	0	4
3D Computer Animation and Visualization	7	0	0	0	0	1
Adult Roles and Responsibilities	0	0	0	0	0	0
Advanced Business Management	38	15	0	0	0	14
Advanced Child Development	0	0	0	0	0	0
Advanced Culinary Arts	0	0	0	0	0	0
Advanced Life Science: Animals (L)	8	1	0	0	0	5
Advanced Life Science: Foods (L)	5	4	0	0	0	1
Advanced Manufacturing I	3	1	0	0	0	2
Advanced Nutrition and Wellness	0	0	0	0	0	0
Agribusiness Management	2	2	0	0	0	1
Agriculture Power, Structure and Technology	25	15	0	0	0	6
Anatomy & Physiology	61	5	0	0	0	32
Animal Sciences	10	5	0	0	0	2
Architectural Drafting and Design 1	69	42	0	0	0	26
Automotive Collision Repair Technology I	16	16	0	0	0	5
Automotive Collision Repair Technology II	0	0	0	0	0	0

Region 3

Automotive Services Technology I	94	63	20	0	0	38
Automotive Services Technology II	16	15	12	1	0	10
Aviation Maintenance	0	0	0	0	0	0
Building and Facilities Management	1	1	0	0	0	0
Business Cooperative Experiences	0	0	0	0	0	0
Business Technology Lab II	16	0	0	0	0	2
Cabinet and Furniture Manufacturing	0	0	0	0	0	0
Child Development	4	2	0	0	0	4
Civil Engineering and Architecture non PLTW	3	0	0	1	0	1
Civil Engineering and Architecture PLTW	22	22	0	0	0	8
Commercial Photography	6	3	0	0	0	0
Computer Programming I	7	0	0	0	0	3
Computer Programming II	36	3	0	0	0	10
Computer Repair & Maintenance Tech	9	9	0	0	0	2
Construction Technology Electrical I	0	0	0	0	0	0
Construction Technology Electrical II	0	0	0	0	0	0
Construction Technology I	71	70	0	0	0	30
Cooperative Occupational Family and Consumer Sciences	4	4	0	0	0	1
Cosmetology I	42	40	2	0	0	13
Criminal Justice I	86	64	0	1	1	46
Culinary Arts and Hospitality Management	84	76	29	1	0	40
Dental Assisting III	7	5	0	0	0	5
Diesel Service Technology I	0	0	0	0	0	0
Early Childhood Education I	12	11	0	0	0	4
Education Professions I	0	0	0	0	0	0
Emergency Medical Services	0	0	0	0	0	0
Entrepreneurship and New Ventures	0	0	0	0	0	0
Farm Management	0	0	0	0	0	0
Fashion and Textile Careers I & II	0	0	0	0	0	0
Financial Services	19	16	0	0	0	9
Fire and Rescue I	0	0	0	0	0	0
Fire and Rescue II	0	0	0	0	0	0
Food Science	0	0	0	0	0	0
Graphic Design and Layout	13	11	0	0	0	3

Region 3

Graphic Imaging Technology	4	2	0	0	0	0
Health Career Practicum	30	30	2	0	0	19
Health Science Education I	173	85	115	0	0	86
Health Science Education II	8	7	2	1	1	5
Health Science II: Special Topics	0	0	0	0	0	0
Horticultural Science	3	1	0	0	0	2
Human and Social Services I	0	0	0	0	0	0
Human Development and Family Wellness	0	0	0	0	0	0
Interactive Media	16	14	0	0	0	3
Interdisciplinary Cooperative Education	38	32	0	0	0	32
Interpersonal Relationships	3	1	0	0	0	1
Intro Health Care Systems	41	0	15	0	0	6
Intro to Medical Assisting	5	5	3	0	0	3
Introduction to Agriculture, Food and Natural Resources	6	0	0	0	0	0
Introduction to Culinary Arts and Hospitality	0	0	0	0	0	0
Introduction to Fashion and Textiles	2	1	0	0	0	0
Introduction to Housing and Interior Design	0	0	0	0	0	0
Landscape Management	3	2	0	0	0	2
Marketing Field Experience	8	8	0	0	0	6
Marketing Management Seminar	14	13	0	0	0	8
Medical Terminology	0	0	0	0	0	0
Natural Resources	0	0	0	0	0	0
Network Fundamentals	19	19	0	0	0	8
Nutrition and Wellness	8	5	0	0	0	2
Personal Resource Management and Family Finance	4	4	0	0	0	2
Plant & Soil Science	0	0	0	0	0	0
Precision Machining I	31	21	0	0	0	12
Precision Machining II	0	0	0	0	0	0
Preparing for College and Careers	29	16	0	0	0	1
Principles of Engineering non PLTW	0	0	0	0	0	0
Principles of Engineering PLTW	176	3	0	0	0	34
Principles of Marketing	56	56	0	0	0	19
Professional Career Internship	71	71	0	0	0	38
Radio and Television I	16	9	0	0	0	6

Region 3

Recreational & Mobile Equipment I	1	1	0	0	0	1
Sports and Entertainment Marketing	0	0	0	0	0	0
Strategic Marketing	0	0	0	0	0	0
Trade and Industrial Cooperative Education	0	0	0	0	0	0
Welding Technology I	56	56	32	0	0	22
Welding Technology II	0	0	0	0	0	0

Region 3

Region 3 CTE Snapshot		
2011-12 School Year		
	Region	Statewide
High School Graduation Rate	90%	86%
Total High School Population	40,815	344,863
CTE Graduation Rate	97%	94%
Total CTE Certifications Awarded/Assessments Passed	627	4,148

	Participants	Concentrators	Statewide Participants	Statewide Concentrators
Total	18,919	4,923	147,805	34,707
Number Earning Dual Credits	2,270	1,323	21,407	10,998
Number Earning/Passing Certifications	556	402	3,332	2,567
Placement in Workforce*	n/a	1,891	n/a	11,119
Placement in Postsecondary*	n/a	26	n/a	344
Placement in Related Postsecondary*	n/a	5	n/a	61

\*Data for placement in workforce and postsecondary is not finalized until December 2013

Region 3

Course Name	Concentrators (duplicated count)	Enrollments (duplicated count)
(PLTW) Biomedical Innovation	22	25
(PLTW) Computer Integrated Manufacturing	20	21
(PLTW) Digital Electronics	65	66
(PLTW) Engineering Design and Development	66	73
(PLTW) Human Body Systems	29	307
(PLTW) Introduction to Engineering Design	21	1016
(PLTW) Medical Interventions	74	137
(PLTW) Principles of Biomedical Sciences	45	748
3D Computer Animation and Visualization	13	58
Adult Roles and Responsibilities	56	287
Advanced Business Management	474	1167
Advanced Child Development	36	64
Advanced Culinary Arts	44	60
Advanced Life Science: Animals (L)	51	174
Advanced Life Science: Foods (L)	136	114
Advanced Manufacturing I	12	33
Advanced Nutrition and Wellness	8	260
Agribusiness Management	20	85
Agriculture Power, Structure and Technology	162	674
Anatomy & Physiology	94	551
Animal Sciences	131	668
Architectural Drafting and Design 1	62	149
Automotive Collision Repair Technology I	47	81
Automotive Collision Repair Technology II	6	37
Automotive Services Technology I	127	310
Automotive Services Technology II	41	88
Aviation Maintenance	10	21
Building and Facilities Management	1	3
Business Cooperative Experiences	26	32
Business Technology Lab II	23	80
Cabinet and Furniture Manufacturing	3	41
Child Development	285	1266
Civil Engineering and Architecture non PLTW		3
Civil Engineering and Architecture PLTW	123	197
Commercial Photography	39	88
Computer Programming I		20
Computer Programming II	8	65
Computer Repair & Maintenance Tech	12	63
Construction Technology Electrical I	1	12
Construction Technology Electrical II	1	12
Construction Technology I	130	236
Cooperative Occupational Family and Consumer Sciences	49	67
Cosmetology I	175	191
Criminal Justice I	80	187

Region 3

Culinary Arts and Hospitality Management	129	181
Dental Assisting III	22	35
Diesel Service Technology I	8	28
Early Childhood Education I	59	143
Education Professions I	33	45
Emergency Medical Services	21	53
Entrepreneurship and New Ventures	45	119
Farm Management	11	59
Fashion and Textile Careers I & II		3
Financial Services	30	68
Fire and Rescue I		18
Fire and Rescue II	1	13
Food Science	76	216
Graphic Design and Layout	16	215
Graphic Imaging Technology	26	156
Health Career Practicum	40	51
Health Science Education I	159	323
Health Science Education II	12	13
Health Science II: Special Topics	1	12
Horticultural Science	4	56
Human and Social Services I	181	73
Human Development and Family Wellness	9	93
Interactive Media	105	557
Interdisciplinary Cooperative Education	611	857
Interpersonal Relationships	200	634
Intro Health Care Systems	29	134
Intro to Medical Assisting	59	89
Introduction to Agriculture, Food and Natural Resources	98	544
Introduction to Culinary Arts and Hospitality	20	202
Introduction to Fashion and Textiles	77	445
Introduction to Housing and Interior Design	11	98
Landscape Management	10	114
Marketing Field Experience	40	50
Marketing Management Seminar	13	33
Medical Terminology	2	12
Natural Resources	27	116
Network Fundamentals	19	30
Nutrition and Wellness	224	1851
Personal Resource Management and Family Finance	24	64
Plant & Soil Science	4	51
Precision Machining I	53	72
Precision Machining II	1	10
Preparing for College and Careers	333	3512
Principles of Engineering non PLTW		65
Principles of Engineering PLTW	33	439
Principles of Marketing	117	256
Professional Career Internship	703	1372

Region 3

Radio and Television I	109	567
Recreational & Mobile Equipment I	28	27
Sports and Entertainment Marketing	52	95
Strategic Marketing	17	56
Trade and Industrial Cooperative Education	1	28
Welding Technology I	74	115
Welding Technology II	2	29
<b>Total</b>	<b>6807</b>	<b>24334</b>

Region 3

CTE Assessment Results Region 3 Academic Year 2011-2012		Attempted	Passed
National Student Skills Standards Assessment (NA3SA)- Automobile Service and Technology		8	8
National Student Skills Standards Assessment (NA3SA)-Collision Repair/Refinishing Tech		30	15
AAFCS-Family and Consumer Sciences		109	71
American Welding Society (AWS) Certification		42	19
Automotive Service Excellence Certification		11	1
Automotive Service Excellence Certification Refrigerant Recovery/Recycle Certification		12	12
Automotive Service Technician and Mechanics		109	74
Center for Agricultural and Environmental Research and Training Assessment		51	36
Certified Nurse Aide		251	251
Emergency Medical Technician (EMT)		1	1
IN State Dept. of Health Certified Nurses Assistant (CNA)Exam		51	51
NOCTI-Early Childhood Education		19	9
Registered Nurse		1	1
Safe Food Handling (ServSafe) Certification		27	27
State Board of Cosmetology		49	49
Television Production		2	2
<b>Total</b>		<b>773</b>	<b>627</b>