



**Region XI 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 their region by November 1, 2013. The 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 Southwest Indiana labor market predominately consists of a manufacturing base. Based on requirements from the state education department, students are unable to attend career and technical programs which leads to a student population that has very little if any manufacturing instruction or desire. A negative perception of manufacturing jobs among students, parents, teachers and counselors and inability to take technical classes guide students away from these avenues at the same time, over the past two decades, advanced manufacturing has grown as the required manufacturing skill in most corporations.

For several years, school corporations have been directed to produce students that are focused on a post-secondary education with an emphasis that does not point to manufacturing. An engineering degree is the lone bright spot however, this degree is achieved at a much slower rate than demand requires. The region is missing a labor force qualified to work in today's manufacturing and technical environment. The regional career and technical education programs will be fully implementing the Indiana Career Pathways in 2014-2015. These pathways were developed with strong input from secondary and postsecondary instructors, CTE directors and business/industry representatives. Not all pathways are available in all CTE districts.

## **Regional Employment Sector Information**

Region 11's primary employment sectors are Manufacturing with employment level of 39,133; Healthcare and Social Assistance with employment level of 29,727; Government including Schools and Hospitals with employment level of 26,807; Retail Trade with employment level of 27,252; and Accommodation and Food Services with employment level of 17,329.

## Analysis and Next Steps

***Please summarize the findings from the analysis conducted and recommend next steps for the Works Council.***

- In Region 11, recognizing the growth of “manufacturing” and the potential shortage of workers, a partnership with CONEXUS Indiana was started in the fall of 2012 as a way to offer additional opportunities to students regarding the “manufacturing” career path. CONEXUS is an opportunity for students to be exposed to industry and representatives involved in the partnership. The curriculum is in the second pilot year. In the first year pilot, it was difficult getting students to enroll who, it is believed, would be successful in this pathway due to other graduation requirements and the emphasis on a four year baccalaureate degree.
- It is imperative that parents, teachers, and counselors are educated regarding opportunities associated with skilled trades careers and advanced manufacturing. It is felt there is a “disconnect” in reference to opportunities as they relate to CTE and existing pathways. This reflects the research noted in The Skills Gap Issue: Insights from the Literature. “...educators strongly pushed students to attain a bachelor’s or higher degrees by presenting a narrower, professional pathway to success. High school curricula focused much attention on this academic pathway, while vocational programs were underfunded or cut from school offerings.”
- A focus on partnerships with business and industry is essential in updating and creating curriculum and opportunities for students as well as recommending changes that need to be implemented in the current educational structure. Partnerships, such as the 54 member planning and design task force from business, industry, postsecondary, and parents who met many times to design the Southern Indiana Career and Technical Center and the Learning Plan were instrumental in the construction of the Southern Indiana Career and Technical Center, a fifty million dollar investment in CTE in the region. Additionally, each program of study has advisory committees that meet two times per year to offer input on curriculum, advancements in the industry, workforce demand projections, and internship opportunities. With this in mind, additional input is always welcome from all aspects of business and industry. This allows instructors to stay abreast of continual changes in the industry.
- There must be an increased emphasis on career exploration at the middle school level so that early on, students recognize the importance of thinking about their career paths. Career assessments which inform students regarding their individual strengths and career pathways that match their aptitudes and abilities should be mandatory. With parent input, learning plans for students can be developed related to this data. There must be accountability to make sure this is accomplished. As the governor has stated, there should be two “plan A’s.” Equal emphasis and importance should be placed on careers that do not require a four-year baccalaureate degree and high school course work should reflect these choices by students and parents. It is recognized that of new jobs in the U.S between 2010 and 2020, sixty six percent will require

some post secondary education with more than half requiring an associate degree or certification. Only thirty eight percent of the jobs will require an associate degree or more.

- Current Core 40 graduation requirements should be examined and a determination made regarding a “one size fits all” plan for students. For example, should all students be required to take algebra II regardless of their career plans? While there is agreement that some algebra is necessary for all as a way to teach problem solving and abstract thinking, the question is how much is necessary. In other words, requirements for core subjects such as math and English/language arts should be relative to a student’s career path. This would allow more flexibility in the student’s schedule allowing them to take courses pertinent to their career plan. Furthermore, core subjects could be taught in an “applied” manner insuring relevancy. All agreed that a strong foundation in the basics, such as fractions, decimals, reading graphs, and statistics was extremely important.
- To achieve the above recommendation, the Department of Education and the Commission for Higher Education must be involved and reach consensus regarding pathways.
- It is necessary for the Commission for Higher Education to examine and address issues regarding credentialing secondary teachers for teaching dual credit courses. Since teachers are no longer required to obtain their Master’s Degree, fewer teachers will earn this credential; consequently, they will not be credentialed to teach dual credit courses if we keep the current structure. Additionally, a teacher may opt to obtain a Master’s Degree outside his/her licensed curriculum area, such as school administration; thus, under the current structure, he/she would still be unable to teach a dual credit course.

- A solid plan to promote work ethic and professional skills, such as good attendance, teamwork, strong commitment to work, interpersonal skills, and workplace professionalism should be identified and developed. This is a critical need for success in the workplace reflecting input from the work council and other business and industry representatives. For educators, the next steps should include research into best practices for instilling values that are crucial to a successful career. We should identify and promote projects with curriculum objectives that will effectively address the professional competence skills employers want and need.

### **CTE Pathways in Region XI**

***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.***

CTE DISTRICT 43									
Career Pathways 2013-2014									
CLUSTER & PATHWAY	School	Vincennes Lin	North Knox	South Knox					
<b>AGRICULTURE</b>									
Agribusiness			x	x					
Horticulture									
Life Sciences									
Sustainable Energy*									
<b>ARCHITECTURE &amp; CONSTRUCTION</b>									
Commercial & Residential Facilities									
Construction Trades		x	x	x					
Drafting & Design		x	x	x					
Web & Digital Communications									
Visual Arts									
<b>BUSINESS &amp; MARKETING</b>									
Business Administration				x					
<b>EDUCATION &amp; TRAINING</b>									
Early Childhood Education									
<b>HEALTH SCIENCE</b>									
Biotechnology									
Dental									
Health Care Specialties		x	x	x					
Nursing		x	x	x					
<b>HOSPITALITY &amp; HUMAN SERVICES</b>									
Cosmetology		x	x	x					
Culinary Arts		x	x	x					
Hospitality Management		x	x	x					
Human & Social Services									
<b>INFORMATION TECHNOLOGY</b>									
Programming		x	x	x					
PC Networking & Support		x	x	x					
<b>MANUFACTURING &amp; LOGISTICS</b>									
Advanced Manufacturing		x	x	x					
Electronics		x	x	x					
Engineering (PLT' & NON-PLT')		x	x	x					
Logistics & Supply Chain Management									
Machine Technology		x	x	x					
Welding		x	x	x					
<b>PUBLIC SAFETY</b>									
Criminal Justice		x	x	x					
EMT/Paramedic		x	x	x					
Fire & Rescue		x	x	x					
<b>TRANSPORTATION</b>									
Automotive Collision Repair		x	x	x					
Automotive Technology		x	x	x					
Aviation									
Diesel Services Technology		x	x	x					
Recreational & Mobile Equipment									
Tractor Trailer Operations									

Note\* Many Twin Rivers programs are offered off site as we are a coop. Students from these schools can take these classes, but it may require they travel to another school or campus.





**District 46**

**Career Pathways 2013-2014**

CLUSTER & PATHWAY	So In Career and Te	Bosse HS	Central HS	Harrison HS	North HS	Reitz HS	AIS Diamond	AIS First Ave	New Tech Institute	Mater Dei	Memorial	Castle	Boonville	Tecumseh	Gibson Southern	North Gibson	Mt. Vernon	North Posey	South Spencer
<b>AGRICULTURE</b>																			
<b>Intro to Ag., Food and Natural Res</b>																			
<b>Agribusiness</b>												X	X	X	X	X	X	X	X
Agriculture Power Structure & Technology															X	X		X	X
Agribusiness Management													X		X	X	X		X
<b>Horticulture</b>																			
Horticultural Science	X													X	X			X	X
Landscape Management I	X												X	X				X	X
Landscape Management II	X																		
Plant & Soil Science															X				
<b>Life Sciences Animal</b>																			
Animal Science	X											X		X		X	X	X	X
Advanced Life Science Animals	X											X		X					
<b>Life Sciences Food</b>																			
<b>Life Sciences Natural Resources</b>	X																		
<b>Life Sciences Plants and Soils</b>																			
Plant & Soil Science	X											X	X		X			X	
Advanced Life Science Plants & Soils	X											X	X		X				
<b>Sustainable Energy*</b>																			
<b>ARCHITECTURE &amp; CONSTRUCTION</b>																			
<b>Commercial &amp; Residential Facilities</b>	X	X	X	X	X	X						X	X			X	X	X	X
<b>Construction Trades</b>	X																		
<b>Drafting &amp; Design</b>	X					X											X		
<b>ARTS, AV TECHNOLOGY &amp; COMMUNICATIONS</b>																			
<b>Web &amp; Digital Communications</b>																			
Introduction to Communications		X	X	X	X	X							X			X	X		
Computer Illustration & Graphics	X	X	X	X	X	X	X	X	X				X	X	X			X	X
Design Fundamentals		X	X	X	X	X	X	X	X										
Interactive Media		X	X	X	X	X									X			X	X
Web Design		X	X	X	X	X	X	X	X					X	X			X	X
Radio Television I	X																		
Radio Television II	X																		
<b>Visual Arts</b>																			
Introduction to Design Processes		X	X	X	X	X			X						X	X	X		X
Computer Illustration & Graphics	X	X	X	X	X	X	X	X	X				X						
Design Fundamentals		X	X	X	X	X	X	X	X					X					
Introduction to Fashion & Textiles		X	X	X	X	X							X						
Fashion & Textile Careers I		X	X	X	X	X													X
Fashion & Textile Careers II		X	X	X	X	X													X
Design Fundamentals		X	X	X	X	X	X	X	X						X				
Graphic Design & Layout	X																		
Web Design		X	X	X	X	X	X	X	X					X	X			X	X



## **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.***

- CTE alignment is solid. Partnerships between CTE and postsecondary are adequate. Partnerships with the existing workforce need to be further examined. In school year 2012/2013, **5027** dual credits were earned and issued to CTE students in Region 11. As was mentioned previously, partnerships are critical as we look to continuously improve CTE for students. Throughout the Region, we must have “working” partnerships to help develop curriculum, offer insight and updates, and provide work-based learning opportunities for our students. In Region 11, 781 students participated in such opportunities in addition to all students in the region enrolled in Engineering Design and Development, the fourth year Project Lead the Way curriculum.
- Please see the attached documents for all dual credit memorandum of understanding.

## Regional Employment Sectors

In order to support growing employment sectors, Region 11 currently targets sectors of Advanced Manufacturing; Energy; Healthcare and Bio-medical; and Transportation, Distribution, and Logistics. Region 11 identified these industries as key to the region for job growth and creation as well as requiring a highly skilled workforce.

Advanced Manufacturing- Between 2011 and 2012, manufacturing experienced a 2% increase in average annual employment. Region 11 is made up of various types of manufacturing. Sub-sectors with the largest numbers of annual employment at year end 2012 include: Furniture and Related Products (6,616), Transportation Equipment (6,161), Plastics and Rubber Products (4,169), Chemical (3,779) and Food (2,911). One sub-sector that experienced the largest growth from 2011 to 2012 is Paper Manufacturing. From 2011 to 2012 this sub-sector experienced growth of 260% attributed to the opening of a paper company in Vanderburgh County.

As manufacturing companies saw an increase in business, the demand for a workforce with more enhanced skills became more evident than ever.

Transportation, Distribution and Logistics: Closely related to the manufacturing of goods is the transportation of these goods. Manufacturers rely heavily upon a robust transportation infrastructure to bring raw materials to production facilities and to deliver finished products to consumers. Transportation and Logistics is not only the moving of goods from one site to another, but also includes warehousing and storage and all other forms of couriers and messengers. This industry has seen its share of struggles as nearly all sub-sectors have decreased from 2011 to 2012. One exception is Warehousing and Storage which saw an increase in employment of 1%. The sub-sector that saw the largest decrease in employment is Support Activities for Transportation (-24%).

Region 11 faces a severe shortage of CDL truck operators. One major challenge companies face is finding individuals that have experience in the field. Region 11 continues to work with economic development professionals and training providers to identify skills sets and their corresponding training programs for the logistics industry.

Healthcare: A shortage of healthcare professionals exists nationwide. Both two-year and four-year postsecondary educational institutions have upgraded training facilities and added staff to increase training opportunities in the healthcare industry. Training institutions are layering training modules to allow persons to enter the industry, continue education and to move up the ladder to higher skilled and higher paying jobs in this sector. This sector did not experience any decline in any of its sub-sectors but also did not see much increase. This could represent low turnover or stable employment for these facilities. One sub-sector seeing the largest percentage of growth is Social Assistance (20%). Overall, the Healthcare Industry saw a 2% decrease from 2011 to 2012.

The healthcare and Social Services cluster includes core services such as ambulatory Healthcare Services, Hospitals, Nursing and Residential Care Facilities, and Social Assistance.

Energy: The energy industry is one of the few readily accepted, long-term growth sectors of the national economy. Global energy demand is projected to grow by 44% by 2030 (EIA, International Energy Outlook 2009), as the global economy continues to expand. To meet this increased demand, every sector of the energy industry is expected to see growth. Developing economic and workforce opportunities, Region 11 advisory groups are active in each of these areas of concentration.

## **Analysis of Pathways Alignment**

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

- One major challenge is a lack of demonstrated skills, not only technical skills such as welding or CNC operation, but students and potential employees in this region lack professional skills such as problem solving, communication, team building, and a focus on attendance. In a 2012 survey of manufacturers the most severe attribute lacking among newly hired production workers was work ethic, including problem solving skills and the ability to work as a productive member of a team. The second skill listed as most crucial in the workforce was technical knowledge, including knowledge of manufacturing and quality processes. Manufacturing is a unique industry as there is not an entry-level credential for an individual to earn to represent his or her skill set that is universally recognized. Manufacturers struggle to fill open jobs with qualified candidates. Manufacturing as the largest sector in Region 11 employment has the smallest workforce pipeline.
- While healthcare industry has credentials for nearly all occupations, training facilities within Region 11 still struggle to produce enough graduates to meet the demand. Too often training providers are unable to accept students due to a lack of instructors, which creates waiting lists. Qualified instructors in healthcare areas are able to be better compensated by actually working in the medical field rather than teaching. Some of our rural areas do not have access to training facilities at all. Since many individuals indicate strong interest in healthcare, the major challenge in Region 11 is increasing access to training for these individuals.

**How well do secondary CTE pathways outcomes align with regional industry needs?**

- It is felt CTE Pathways are “fairly well” aligned with industry needs but all agree the pipeline is thin regarding future workers. The curriculum is in place but improvements to the curriculum need to be implemented relative to “professional skills” that were identified earlier in this report.

**Does the talent pipeline available through CTE match the demand that exists in the region?**

- No

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

- CTE Early College, Toyota Project, Career Advancement Partnerships, new certifications for students such as NIMS, AWS, ASE, partnership with power plants, CELL grant to promote manufacturing, Industry Advisory Task Force, Tri-state Manufacturers Alliance, Brainpower, STEP program, internships, apprenticeships, Employer Series, LEAF (Learning Experiences in Applied Fields), Robotics Competitions, PLTW including Gateway, SEA Perch.

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

Efforts need to be coordinated around the promotion of manufacturing and other technical areas through CTE among such groups as referenced above.

Numbers are located in the report

See analysis/next steps listed above