



Region 9 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.

The CTE Pathways in Region 9 have been expanded and enhanced in recent years, providing a reasonable foundation from which to build. Clearly, not all needs are being met and opportunities remain to more effectively engage employers to address current needs and anticipate future challenges. Postsecondary institutions have worked well with high schools for appropriate alignment. There are not nearly enough students, though, in the pipeline to address the needs (skilled and unskilled). Thus, our view must also include incumbent workers and unemployed/underemployed individuals.

Region 9 economic sector growth is seen in Manufacturing & Logistics/Transportation, Healthcare, Construction, Hospitality & Tourism, and Education. Partnerships within the Region appear to be ahead of other parts of the state and in various manners. However, this varies across the region, sometimes by community and/or high school. Workforce growth among the counties/communities in the Region will range from declining to moderate growth, seeming to follow infrastructure and community investment. The employment sectors identified for opportunity represent about 40% of the total projected need. The challenges range from technical skills, diversity, and middle skills to the inability to meet costs of postsecondary education costs. In Bartholomew County there is a crisp understanding of the CTE pathway outcomes/alignment to industry needs. Thus, we will explore other currently available data (eg. from local economic development offices) and a potential survey.

There are a multitude of partnerships relative to innovative CTE curricula across the Region. An opportunity exists to duplicate these efforts through better coordinated efforts among K12, postsecondary, career centers, economic development professionals and employers.

We will pursue a variety of Next Steps around Clusters and Pathways, Survey of Employers, Coordination amongst stakeholders, Marketing and Delivery of Curriculum.

CTE Pathways

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.

Region 9 is served by C4 Columbus Area Career Connection in Columbus and Southeastern Career Center in Versailles. Additionally, CTE courses are offered at various high schools in the region. Over 10,000 students are taking CTE courses in this region.

CTE courses at all locations are clustered under 11 State Clusters and 34 Pathways. A comprehensive list is attached on a spreadsheet labeled Region 9.

Project Lead the Way (pre-engineering and biomedical sciences) is currently being offered in twenty-five school districts in the region (100% of districts in the region and up from six districts in 2008).

- High school enrollment in pre-engineering is 2,015 students.
- Middle school enrollment in Gateway to Technology is 2,114 students.
- High school enrollment in biomedical is 644 students.

This region was fortunate to receive a \$38 million Lilly Endowment grant that in 2008 launched EcO₁₅₁ (Economic Opportunities through Education by 2015), administered by the Community Education Coalition and Heritage Fund, the Community Foundation of Bartholomew County in conjunction with the community foundations of Southeast Indiana. The grant focused on economic growth clusters most important to economic growth: Manufacturing, Health Science, and Hospitality & Tourism. It is evident on the attached spreadsheet, that C4, Southeastern CC, and area high schools have responded enthusiastically on those course offerings. In 2012, the region received follow-on funding of \$5 million focused on further expansion of the STEM education pathways that are most connected to economic growth.

An additional resource for our Region has been and continues to be the Indiana Virtual Academy. As an example, summer school enrollment for 2013 exceeded 2,000 students statewide.

Please see the appendix for detailed information regarding clusters and pathways offered. The file is named "Region 9 Pathways." In addition, a map is included. The name is "advanced manufacturing and integrated technology labs push pin map 4 5 12."

CTE Articulation to Postsecondary Opportunities

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

Students in Region 9 are earning dual credit and industry certifications in their CTE field. Most students earn dual credit from Ivy Tech Community College, Vincennes University and IUPUC. Attached are lists from Ivy Tech and C4 detailing dual credits earned by regional students. Due to lack of available information across the Region, dual credit courses offered in conjunction with other higher education institutions (IU, Purdue, etc.) are not captured in this analysis.

The Council identified five primary areas of employment opportunities relative to openings and/or growth: manufacturing/logistics/transportation, healthcare, hospitality/tourism, education, and construction. Clusters and pathways in the Region exist and do align with the opportunities, but the degree to which they exist or are being used throughout the Region is still under study.

Please see the appendix for detailed information regarding CTE articulation to postsecondary opportunities. The files are named “2012-2013 C4dualcredit” and “CTE Data Region 9 (October 25, 2013 final).”

Regional Employment Sector Information

Please summarize the data that best illustrates industry partnerships or economic sector growth in your region.

Current State -

2012 Current Employment Sectors identified within 2012 Occupational Employment Statistics, DWD report – production/operations (23,880), office & administrative support (16,500), food preparation & serving related (12,130), transportation & material moving occupations (11,520), sales & related occupations (11,040), education, training and library occupations (6,990), healthcare practitioners & technical occupations (6110) management occupations (5910), installation, maintenance & repair (5810), construction (4820), engineering & architecture (4810). This is a snapshot of the Region at this time.

Industry Partnerships –

- Recruiting diesel technology students from SECC – Cummins. School to work with these students.
- Partnerships with C4
- Batesville High School, Ivy Tech & business partners are running a co-op program, manufacturer – Batesville Casket, Batesville Tool & Die, Vertis, Heartwood.
- EcO15 – Dream it Do it
- CTE community advisory committees
- Casinos partner with Ohio County Learning Center – START Program
- IUPUC Business Student Internships – need further clarification on the partnership exist
- High Schools work-based learning (eg. internship classes) – students go to businesses daily
- Future – Honda’s school to work program, with high schools

Economic Sector Growth – where are the jobs going to be?

- Manufacturing & Logistics/Transportation
- Healthcare
- Construction
- Hospitality & Tourism
- Education
- Middle Skills

Workforce Growth, Projecting the Labor Force to 2020, A Publication of Indiana Business Research Center at IU's Kelley School of Business

Our region shows very modest growth, and some decline, in annual labor force, ranging from growth of up to .9% to decrease of .5%. Implication is that we need to train the existing workforce and incumbent workers who are underemployed and may need additional training/skills. Average growth for region is .1% to .4% in available workforce. Expected workforce growth will vary by counties based on economic foundation. Map with data trends through 2020. Our analysis still requires that population figures are needed to understand actual impact v. simply percentages.

- 3 counties = .4% to .9 % growth
- 6 counties = 0% to .3 % growth
- 1 county = .01% to .5 % decline

We suggest doing more to understand this report and the implications for our region. A deeper analysis is needed because we don't know how many people this converts to. We need labor force information by county.

Please see the appendix for detailed information regarding this section. The files are named "2012 OES R9," "Labor Force to 2040," "Region 9 2012 Annual Plan," and "R9 Long-term Projections."

Analysis of Pathway Alignment

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

The Region 9 annual local plan (Program Year 2012) identifies total openings of approximately 41,000 jobs. The following projects (through 2018) represent about 40% of the total and align with the needs we have found:

- 5,048 Manufacturing
- 4,459 Logistics and Transportation
- 4,128 Healthcare
- 1,250 Hospitality/tourism
- 2,630 Education
- 1,873 Construction

Employment opportunities identified in our analysis, but which we chose not to include were: management, sales, and food service.

The challenges we have found are:

- We need a more technically skilled workforce.
- Educators need to know the employer's description of "technical skills".
- Getting students in the Region at a young age into the curriculum required for technology and interested in staying or moving back.
- The number of engineers/graduates and recruiting them to our Region. The situation is even more difficult as diversity is sought.
- Financial ability of families and individuals to pay for educational opportunities.
- Hands-on technicians are needed for our region – students from career centers.
- Need middle skills – with technical training, people to fix robots, maintenance, technicians, and equipment service personnel.
- Getting current workforce to use tuition reimbursement and other programs.
- Lack of soft skills in the available workforce and commitment to employer and colleagues.

How well do secondary CTE pathway outcomes align with regional industry needs? Does the talent pipeline available through CTE match the demand that exists in the region?

An essential early step in the STEM Seamless Pathway initiative, undertaken in 2012 as the focus area of EcO₁₅'s follow-on initiative funded by Lilly Endowment, was to develop a detailed understanding of the workforce expectations and requirements of local manufacturers. With this information, we were able to match those requirements with current educational programming and, where there wasn't a match, we would work toward filling those gaps. The understanding was delivered through a 27 question detailed survey.

The survey was sent to 39 companies in Bartholomew County (the 39 companies represent 94% of total Bartholomew County jobs). The survey experienced a response from 13 out of 39 companies solicited (the 13 companies represent 68% of mfg jobs in Bartholomew County and 72% of total employment base of 39 companies receiving the survey) which was a 33% response rate. Also 9 out of the 13 companies are not currently a part of the stakeholders group that is engaged in developing the pathways.

The survey indicated that Mechanical Technology was the most needed skill field required for employees over the next 24 to 48 months, followed by Electrical then Industrial Technology. The next step was to pilot a curriculum within the Mechanical Technology career field. The team selected to focus on Engineering Drawing/CAD as the pilot curriculum. It is an active curriculum at C4 (area Career Center) and has a strong engagement and placement of its students with Cummins, Inc. one of the largest employer in Bartholomew County. However the curriculum has suffered a decline in enrollment over the past two years which could impact the cost of recruiting and productivity of Cummins Engineering Design organization.

The council believes information similar to that from Bartholomew County is warranted in the other counties in the Region, whether via a survey or some other existing data.

Cummins has been very active in dedicating resources in working with the local EcO₁₅ representatives in working toward a long term solution to the enrollment issue. The team has developed action plans which will engage teachers and counselors to understand how to reach and actively recruit students into this needed career field. The team believes that by selecting this troubled curriculum as the pilot it will provide a model to enable students to access STEM careers.

What innovative CTE curricula (internships, apprenticeships, certifications, etc.) is already happening within the region?

The following is not intended to be comprehensive, but merely representative of the Region:

Seamless Pathway: The Columbus Community Education Coalition began an initiative in 2012 to promote STEM careers and help students select these careers. Students will move through STEM-focused programs in engineering, design, technology, production process, and logistics education programs. Students will then be assisted in obtaining employment in well-paying STEM based career pathways, especially advanced manufacturing and logistics. Cummins has been very active in dedicating resources in working with the local EcO15 representatives to work on a long-term solution.

Columbus Regional Hospital provides quality training sites for C4 students in Health Sciences and shares its Simulator lab with the teachers and students for training.

Cummins provides work-based learning for students in Manufacturing, Business and Transportation and has offered these experiences for 20 years. They typically hire qualified seniors for their pre-apprenticeship program.

Honda is working with both C4 and Southeastern Career Center to provide work-based learning sites for students.

LHP offers work-based learning sites for students in Electronics and Computer services and securities

Precise Mold offers work-based learning sites for Machining students.

Toyota seeks C4 Welding students due to their training in SMAW and GMAW.

Batesville community partnership (co-op) between the high school, Ivy Tech and four businesses using curriculum developed in conjunction with Conexus and the Manufacturing Institute.

Partnerships with healthcare providers/facilities to offer clinical lab programs.

Ivy Tech curricula which align with CTE programs and seamless pathways (internships, apprenticeships, certifications, etc.) currently running in the region:

Apprenticeships – electricians, tool and die, HVAC, MET, electronics techs, tool services techs, molding process techs, maintenance mechanics

Master Power Transmission:

Cummins, Valeo, Montrow Tool, Gerdeau Steel

Certifications:

Cummins/Seymour: CQIA, MSSC/CPT, NIMS
Cummins/Columbus: MSSC/CPT
INDOTwelding certification
SHRM Essentials of HR Management
Microsoft Excel Certification Prep in Batesville
CDL-A training Lawrenceburg

NIMS CNC Mill consortium in Batesville, Madison, and Seymour in the spring of 2014

MSSC consortium in Madison in the spring of 2014 and Lawrenceburg in the fall of 2014

Microsoft Excel Certification Prep in Batesville

Six Sigma Greenbelt

New - Industrial Maintenance Automation and Robotics degree – taught 2 days working in company and 3 days of school/lab – cohort program

Welding Institute – 7 certifications

Mechatronics – 5 certifications

Welding certification prep – multiple

Siemens PLC

HVAC – multiple

Current non-credit activities local industry recognized certificates:

Die-Maintenance and Blueprint Reading in Madison

SolidWorks 2013 in Madison

Pro – E Columbus

Industrial Maintenance in Lawrenceburg and Madison. Start in Batesville in spring.

Potential Problem Analysis (PPA) in Madison Leadership in Madison

German Business Communications in Batesville

Equipment Support Associates – Honda

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

Clusters and Pathways - There is still more information that needs to be gathered across the Region in order to better understand the link between the clusters, pathways, and employment opportunities today and into the future. Gathering this information will be a high priority of the Council.

Survey of Employers – A survey of employers, focused on the employment sectors identified, needs to be created and executed for a more keen and crisp understanding of very localized/regional needs. This information will not only assist in identifying more clearly the need, but also potential partners for innovative curricula and pathways. Since certifications are so highly valued, there needs to be consensus within the Region relative to the actual need and what will make a difference in the student obtaining employment.

EcO15 – Explore how the network can be further expanded through additional partnerships and ways in which coordination could occur with the various counties.

Coordination – An opportunity exists for leaders from business/industry, economic development (including plans), CTE organizations, K-12 education, and post-secondary education to more effectively coordinate within communities and across the Region. Engagement should be more frequent, on a regular basis, and with a feedback loop/mechanism/process for assessing what is needed, what is not needed, what is working, and what is not working. In general, this coordination should lead to offerings more directly related to workforce and employment needs and choices for the consumers of the curricula. The new Works Council should be able to provide the conduit to accomplish this goal.

Marketing– Business representatives can assist by working with C4, Southeastern CC, and local high schools to engage the students in CTE choices. Parents and counselors also need information on the advantages of taking CTE courses while still in high school. Ivy Tech also relies heavily on businesses to assist with attracting and retaining students. The Works Council needs to identify parties from the various stakeholder groups to lead this effort.

Delivery of Curriculum – Assess current delivery methods and understand the various and best practices, along with barriers and duplication. Understand the ability to leverage the different providers through hybrid systems.

Appendix – Please see attached materials