

CRITICAL SKILL SHORTAGES INITIATIVE

Identification of Root Causes Manufacturing

Prepared by the



**Southern
Economic
Development
Region**

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SOUTHERN ECONOMIC DEVELOPMENT REGION CRITICAL SKILLS SHORTAGE INITIATIVE

Overview of the Southern Economic Development Region's (SEDR) Response to the CSSI

Due to past successes and the desire to be a successful regional system, the Southern Economic Development Region (SEDR) is applying for CSSI training funds as a calendar year applicant. Included you will find the Root Causes Report for Manufacturing: Assemblers and Fabricators. With this initiative, the Southern Economic Development Region's partners are collaborating to ensure a prosperous future for the nineteen county area. Specifically, the workforce development system is working with economic development, local businesses, education, and labor organizations to create effective partnerships which will ensure a strong, vibrant economy in the next decade and beyond. As part of this process, the SEDR previously submitted Phase One: Identification of Industry Sectors. This report fulfills the first half of report submissions **Phase Two: Root Causes.**

Included in the **Section One: Root Causes Report:**

- Part One:** Description of the comprehensive methodology utilized:
- Employer Recruitment and Retention
 - Education and Training Capacity
 - Student/Worker Career Awareness and Access
- Part Two:** Regional Coalition and Industry Partner Engagement
- Required regional coalition partner input
 - Regional identification of root causes
 - Industry partner involvement and support
- Part Three:** Description of Root Causes
- Evidence used in identification of root cause
 - Ranking of root causes

SECTION 1: ROOT CAUSES REPORT

Part One: Description of Comprehensive Methodology

The Southern Economic Development Region (SEDR) includes the counties served in Workforce Investment Areas 25 and 26. Representatives of education, workforce development, labor, economic development and business/industry have been aggressively preparing a plan of action for addressing critical skills shortages in the region.

Staff have examined both quantitative and qualitative research in an attempt to identify critical skills shortages in the 19 southernmost Illinois counties served in the SEDR. Using this mixed-method research and complementary results of focus group summits and local surveys, staff were able to analyze and document the underlying root causes for shortages in manufacturing.

As a part of this initiative, staff involved in the SEDR has worked closely with Drs. Richard Judy and Jane Lommel who conducted community audits for LWA 25 and 26. In addition, Sandra Hastings from Sandra Hastings and Associates and John Washburn, professor of Workforce Education and Development of Southern Illinois University Carbondale, were involved to facilitate a series of summits to more clearly focus on critical skills shortages and the underlying root causes behind those shortages in the SEDR.

In addition, data culled from the Community Audits for regions 25 and 26 were used to validate the recommendations of the focus groups and Steering Committee. The data used for discussion to make decisions included:

- Comparisons of national, state, and county economic and employment trends
- Economic and workforce projections for areas 25 & 26 (e.g., workforce shortfalls, migration patterns)
- Workforce skill gaps and long-term needs

Gathering data from multiple resources insured a comprehensive evaluation of root causes for critical skills shortages within the manufacturing sector in the Southern Economic Development Region. The following resources were used to identify root causes:

- Five Year Regional Development Strategy Report, administered by SIU-C, Office of Economic and Regional Development (August 1999)
- GROW Illinois, developed by Southeastern Illinois College-Small Business Development Center & Southeastern Illinois Regional Planning & Development Commission, (March 2003 & April 2004)
- Vital Economy Readiness Assessment for Franklin, Perry, & Williamson counties
- Southern Illinois Workforce Investment Board Survey (November 2001)

- Southern Illinois Workforce Investment Board ERISS Employer Survey (May 2003)
- Greater Egypt Regional Planning and Development Commission Report
- Southeastern Illinois Regional Planning and Development Commission Report
- Southeastern Alliance of Illinois “Quality of Labor” survey
- National Association of Manufacturers survey
- North American Industrial Classification System (NAICS)
- Standard Occupational Classification information (SOC)
- Illinois Department of Employment Security (IDES) LMI for state, county and local projections
- ES 202 wage data
- O*NET job descriptions
- U.S. Department of Labor, Bureau of Labor Statistics, *Occupational Outlook Handbook, 2004-2005*
- Illinois Institute for Rural Affairs – *Potential for Industry Clusters in the Illinois Delta Region*

In summary, there are focus group data, statistical data, and data from other information resources to support the root causes of critical skills shortages in manufacturing occupations within the SEDR.

Employer Recruitment and Retention

In focus groups and regional meetings, business, labor, economic development, and education participants spoke often of the importance of skilled labor in a region. Summits conducted on April 14 and May 17-18 examined labor market information regarding potential skill shortages in manufacturing environments. A constant theme heard from manufacturing employers participating in the summits was that shortages related to a *lack of foundational skills* for entry-level positions *across all manufacturers* in southern Illinois. A presentation to manufacturers at a May 19 meeting of the Illinois Manufacturers Association revealed the same need. According to all participants, foundational skills include areas such as teamwork, basic math, basic business understanding, general manufacturing processes, work ethic, mechanical aptitude, and computer skills.

Manufacturers repeatedly stated in meetings that they were “ready and willing” to train workers in skills unique to their operations if they could be assured of a supply of “work ready” employees. Additionally, information gathered suggests that worker shortages in manufacturing may also be due to the following factors:

- The aging manufacturing workforce;
- The difficulty in replacing retiring workers with the properly skilled workers;

- The need for higher skilled and educated workers to perform advanced manufacturing functions.

Regarding the retention of skilled employees, the GROW Illinois 2004 report states that "...65-85% of all new jobs come from the expansion of existing facilities, rather than location of new facilities; therefore, the maintenance of a skilled workforce was targeted as a key component of the project". In addition, employers identified "Labor Training" as the top need for technical assistance.

Education and Training Capacity

Manufacturers spoke often of the need for entry level manufacturing employees to be able to work in teams and have a basic understanding of lean manufacturing processes. Focus group and summit participants had many suggestions for content of a training component designed to allow entry level manufacturing employees to more quickly adapt to their work environment. Employers indicated that baseline employees held similar skills across occupations in the area. Manufacturers involved in the root causes analysis process included: Aisin, Maytag, Crownline Boats, General Cable, Airtex, Circuit City, Pepsi, Extra Help (temp agency for area manufacturers), IMEC (consultant group for manufacturers based at SIU-C), Baldwin Manufacturing, and MPP. Business and Industry directors from all six community colleges participated in the process often reflecting the concerns of the manufacturers they serve. Several discussions led to the identification of the Assemblers and Fabricators occupation, which is normally an entry-level position within the manufacturing industry, for targeting within the initiative.

Summit and focus group participants were not interested in two year associate degree programs since this project targets only entry level positions in this project. Existing community college short term or Business and Industry programs do not address the target audience or issues discussed by the groups either. It is the desire of manufacturers to create a short term Manufacturing Specialist credential which does not presently exist.

Manufacturers repeatedly reported that more advanced positions within their facilities are awarded to entry level workers who have demonstrated the work ethic and skills attainment necessary for advancement. Participants believe that a Manufacturing Specialist credential will allow employees to "hit the ground running," and advance more quickly to better paying positions. In addition, the credential would allow employees to have greater chance for advancement within the manufacturing facilities in the entire SEDR.

Student/Worker Career Awareness and Access

Lack of career awareness and development among students and workers has been cited repeatedly by participants across partner groups. Manufacturers, labor, and education participants have spoken at great length about the lack of a coherent plan for career development in the K-12 system across manufacturing and vocational occupations. Additional concerns were

expressed by participants regarding the schools' primary focus on preparing students to pursue baccalaureate studies, coupled with, a lack of focus on those students who are interested in career and vocational opportunities. It was voiced that greater effort must be made in the K-12 system to educate young people about the rewarding opportunities available to them in the manufacturing industry and about the fundamental academic skills necessary to succeed in the manufacturing industry.

Part Two: Regional Coalition and Industry Partner Engagement

Required Regional Coalition Partner Input

The Southern Illinois CSSI is a collaborative effort between Workforce Investment Areas 25 and 26. The Southern 14 Workforce Investment Board guides the WIA 26 and MAN-TRA-CON, Corp. serves as the administrative entity for the Southern Illinois Workforce Investment Board of WIA 25. To ensure cooperation and involvement of both workforce areas in all components of the initiative, the following decisions were made:

1. CSSI project management responsibilities are shared by staff from both regions. Specifically, the co-chairs of the CSSI project (one from each area) have attended and/or shared facilitation of all of the meetings and have shared the responsibility for designing and implementing the project activities.
2. The Steering Committee, which has oversight responsibilities for the CSSI initiative, consists of individuals representing areas 25 and 26 and is co-chaired by Bill Jackson, WIA 26 and John Rendleman, WIA 25. (See Attachment 1 for a list of Steering Committee members).
3. The Chairs of the Workforce Investment Boards from both areas presided over the original Regional Meeting at Southeastern Illinois College and a Regional Briefing held at John A. Logan College. In addition, the Steering Committee, led by Workforce Board members, reviews the work of the consortium committees and focus group meetings.
4. Consortia meetings involved all partners as witnessed in participant lists submitted in the Key Industry Sector and Related Occupations Report. As focus groups emerged in this part of the process, members of the previous consortia committees remained to serve as focus group participants representing an industry. (See Attachment 2 for a list of participants.)

Regional Identification of Root Causes

In an effort to involve more coalition and industry partners, a CSSI Website was constructed at www.mantracon.org/cssi. The website includes project information, submitted reports, meeting dates and locations, and on-line root causes and solutions surveys for Manufacturing. (See Attachment 3 for a copy of the surveys). To date, over 125 hits have occurred on the website.

In order to gather input from a larger group of participants, advertisements for the April and May focus group meetings were published in *The Southern Illinoisan*, whose circulation area encompasses all of WIA 25 and most of WIA 26. In addition, ads in four regional newspapers in WIA 26 were used to recruit participants from areas not covered by *The Southern Illinoisan*. The website was part of the advertisement. (See Attachment 4 for a copy of the newspaper advertisement). In addition, hundreds of invitations and surveys were mailed to potential participants identified through the Dunn and Bradstreet listings for Manufacturing.

The Manufacturing focus group meetings were held as follows:

April 14, 2004	Marion
May 17, 2004	Marion
May 18, 2004	Harrisburg

In addition, focus group meetings regarding the Community Audit were held in June, 2003 and March, 2004.

Industry Partner Involvement and Support

Key stakeholders in the focus groups were asked to identify the root causes and possible solutions for manufacturing shortages in the SEDR. Hundreds of hours have been spent with industry partners through the original consortia committees and the focus groups which followed.

Additionally, comments received from local manufacturers after a presentation to the Southern Illinois Manufacturers Association on May 19 echoed discussions held in the consortia committee groups and focus group meetings.

A Steering Committee meeting, with representation from all stakeholders within both workforce areas, was held on May 23, 2004. Participants studied the data and input that had been gathered, then recommended adoption of the identification of root causes outlined in this report.

Part Three: Description of Root Causes

A number of causes were identified at focus groups and the Steering Committee meeting for manufacturing shortages. The following root causes are ranked in order of importance as identified by meeting participants:

- Lack of a foundation skills credential training program in the community colleges for entry-level manufacturing workers.
- Lack of understanding of career opportunities and benefits within the manufacturing industry, especially in the formative career development years of high school, limits adequate academic and foundation skills preparation.
- An aging workforce will require the development of a supply of replacement workers equipped with adequate foundation skills for entry-level positions as mentioned in Part One of this report.
- The inflow into southern Illinois of adults with poor or modest education greatly exceeds the inflow of well-educated adults. The net effect of this migration flow is to diminish

the overall level of educational attainment of southern Illinois' adult population, which, in turn lowers the quality of the workforce

Wage data supports Assemblers & Fabricators as acceptable targeted occupations for the CSSI funds. In addition, these positions offer benefit packages to employees. The following tables of Occupation Projections and Wage Data for the SEDR affirm manufacturing assemblers and fabricators for target.

Focus group participants strongly disagreed with the numbers reflected in the tables below which show a possible decrease in the positions or no growth. Economic Development participants point to the recent successes of the REDCO industrial park as an example of manufacturers interested in locating in our area. They believe that the LMI data cannot accurately reflect a growth pattern which is just beginning.

TABLE I – SEDR Occupational Projections & Wage Data

Occupations	Average Entry Wage	Short-term shortage projections for SEDR (2004-2006)	Long-term shortage projections for SEDR (2000-2010)	Average Annual Job Openings due to:		
				Growth	Replacement	Total
Team Assemblers	\$7.16	58	29	3	26	29
Assemblers & Fabricators, all other	\$6.34	32	39	4	12	16
First-Line Supvrs/Mgrs of Production & Operating Wkrs	\$12.72	42	-1	0	21	21
Structural Metal Fabricators & Fitters	\$9.07	8	17	2	2	4
Helpers-Production Workers	\$7.19	48	20	2	22	24

Source: IDES – Substate Employment Projections, Trucking & Warehousing/Manufacturing & Transportation Equipment Staffing Patterns

TABLE II – LWA 25 Occupational Projections & Wage Data

Occupations	Average Entry Wage	Median Wage Hourly	Short-term shortage projections for SEDR (2004-2006)	Long-term shortage projections for SEDR (2000-2010)	Average Annual Job Openings due to:		
					Growth	Replacement	Total
51-2000, Assemblers & Fabricators		\$11.00*	62	0	0	31	31
51-2020, Electrical, Electronics, & Electromechanical Assemblers		\$12.15 ³	16	(-18)	0	8	8
51-2021, Coil Winders, Tapers, & Finishers	\$7.40 ²	\$10.11 ²	2	2	0	1	1
51-2022, Electrical & Electronic Equipment Assemblers	\$8.11 ¹	\$10.83 ²	12	(-20)	0	6	6
51-2023, Electromechanical Equipment Assemblers	\$8.72 ²	\$12.20 ²	2	0	0	1	1
51-2030, Engine & Other Machine Assemblers	\$8.16 ²	\$13.62 ²	2	0	0	1	1
51-2041, Structural Metal Fabricators & Fitters	\$8.64 ¹	\$12.65 ¹	2	4	0	1	1
51-2090, Miscellaneous Assemblers & Fabricators		\$11.00*	46	12	1	22	23
51-2091, Fiberglass Laminators & Fabricators	\$7.29 ²	\$9.01 ²	2	1	0	1	1
51-2092, Team Assemblers	\$7.68 ¹	\$10.27 ¹	28	(-13)	0	14	14
51-2093, Timing Device Assemblers, Adjusters, & Calibrators	\$9.62 ²	\$12.72 ²	0	2	0	0	0
51-2099, Assemblers & Fabricators, all other	\$6.24 ¹	\$7.50 ¹	20	22	2	7	10

51-1011, First-Line Supervisors/Mgrs of Production & Operating Workers	\$11.97 ¹	\$18.58 ¹	24	-8	0	12	12
51-9198, Helpers-Production Workers	\$6.30 ¹	\$8.10 ¹	28	8	1	14	14

Source: IDES, LMI

*Bureau of Labor Statistics, Occupational Outlook Handbook

¹ LMI, Local Data

² LMI, State of Illinois Data

TABLE III – LWA 26 Occupational Projections & Wage Data

Occupations	Average Entry Wage	Median Hourly Wage	Short-term shortage projections for SEDR (2004-2006)	Long-term shortage projections for SEDR (2000-2010)	Average Annual Job Openings due to:		
					Growth	Replacement	Total
51-2000, Assemblers & Fabricators		\$11.00*	58	75	8	21	29
51-2020, Electrical, Electronics, & Electromechanical Assemblers		\$12.15 ²	2	0	0	1	1
51-2021, Coil Winders, Tapers, & Finishers	\$7.40 ²	\$10.11 ²	*	*	*	*	*
51-2022, Electrical & Electronic Equipment Assemblers	\$8.13 ²	\$10.83 ²	0	(-2)	0	0	0
51-2023, Electromechanical Equipment Assemblers	\$8.72 ²	\$12.20 ²	2	2	0	1	1
51-2030, Engine & Other Machine Assemblers	\$8.16 ²	\$13.62 ²	2	1	0	0	1
51-2041, Structural Metal Fabricators & Fitters	\$10.04 ²	\$14.28 ²	6	13	1	1	3
51-2090, Miscellaneous Assemblers & Fabricators		\$11.00*	48	60	6	18	24

51-2091, Fiberglass Laminators & Fabricators	\$7.29 ²	\$9.01 ²	0	1	0	0	0
51-2092, Team Assemblers		\$10.90 ²	34	42	4	12	17
51-2093, Timing Device Assemblers, Adjusters, & Calibrators	\$9.62 ²	\$12.72 ²	*	*	*	*	*
51-2099, Assemblers & Fabricators, all other	\$10.38 ¹	\$24.00 ¹	14	17	2	5	7
51-1011, First-Line Supervisors/Mgrs of Production & Operating Wkrs	\$13.70 ¹	\$20.10 ¹	20	7	1	9	10
51-9198, Helpers-Production Workers	\$6.47 ²	\$8.54 ²	18	12	1	8	9

Source: IDES, LMI

*Bureau of Labor Statistics, Occupational Outlook Handbook; ¹ LMI, Local Data; ² LMI, State of Illinois Data

Training Provider Data

Training provider data is not available. There is not, at the present time, a training program which reflects the discussions of the focus groups and Steering Committee. The groups were not interested in 2 year associate degree programs since entry level positions are targeted in this project. Participants felt that community college short term or Business and Industry programs do not presently address the target audience or issues discussed by the groups either. Manufacturers have spoken and their desire is to create a short term Manufacturing Specialist credential which will encompass the elements they have outlined.

Final Comments

The SEDR has designed and implemented an inclusive process that engaged key community stakeholders in defining the most pressing critical skill shortages in Areas 25 and 26. Through numerous meetings, paper and Web based survey returns, independent interviews, and extensive discussions; the CSSI team has received input from a variety of sources. The work of the project has encouraged partnerships that were not in place six months ago. The responses generated by the group concerning manufacturing came as a surprise but were echoed throughout the process. Consortia members and focus group participants have shown their support of the selection of manufacturing as a critical shortage sector through continued participation and sign off sheets. Design work has begun on the elements of the Manufacturing Specialist credential. Community Colleges have pledged their support, manufacturers have promised preferential hiring for those possessing the credential, and business and economic development leaders throughout the SEDR believe this credential will make a difference in the future growth of manufacturing in the area.