

June 2019 Update to Phelps County Development Corporation Target Industries Review

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Executive Summary

This report is the first update (2019 Update) to the “*Phelps County Development Corporation Target Industries Review September 2016*” (2016 Study). The 2019 Update contains revisions to the core set of industries identified as likely candidates for future retention, expansion, and possible recruitment efforts.

The area included in this report is the same as in the 2016 Study and consists of Phelps plus ten nearby counties. Each of the nearby counties either provided at least two percent of the primary jobs held by Phelps County residents or was the county of residence for at least two percent of workers in Phelps County businesses in the 2016 Study. Four of the ten counties are core metropolitan or micropolitan counties and six counties are classified as rural.

Information on recent and projected labor force, workforce, and industry trends plus data on occupational and industry wages has been updated and is used to identify the relative strengths and importance of existing industries and occupations in the study area. As in the 2016 Study, location quotient analysis is used to identify an initial, broad set of industries for further study as possible future drivers of the study area economy. Shift-share analysis for the recent period 2012 to 2018 and projected values for the period 2018 to 2024 is used to update the more detailed, 4-digit North American Industrial Classification (NAICS) code, industries as possible future drivers of the Phelps County economy. Sales to the core industries by other local businesses are compared to exports and this supply chain analysis identifies possible opportunities for local input substitution.

Six, 2-digit industries identified as possible drivers of the area economy in the location quotient analysis and replace the seven, broad core industry groups in the 2016 Study. These 2-digit industries are:

- 1) NAICS 11 Agriculture, Forestry, Fishing and Hunting
- 2) NAICS 31 Manufacturing
- 3) NAICS 48 Transportation and Warehousing
- 4) NAICS 52 Finance and Insurance
- 5) NAICS 54 Professional, Scientific, and Technical Services
- 6) NAICS 62 Health Care and Social Assistance

Shift share analysis is used to identify the 23 more detailed, 4-Digit NAICS codes below as likely to be highly important to the current and future economic vitality of Phelps County industries (industries with an * were also selected in the 2016 Study):

- 1) NAICS 1110 Crop Production
- 2) NAICS 1120* Animal Production
- 3) NAICS 3111* Animal Food Manufacturing
- 4) NAICS 3116* Animal Slaughtering and Processing
- 5) NAICS 3219* Other Wood Product Manufacturing
- 6) NAICS 3251 Basic Chemical Manufacturing
- 7) NAICS 3339* Other General Purpose Machinery Manufacturing
- 8) NAICS 3391* Medical Equipment and Supplies Manufacturing
- 9) NAICS 4238* Machinery, Equipment, and Supplies Merchant Wholesalers
- 10) NAICS 4245* Farm Product Raw Material Merchant Wholesalers
- 11) NAICS 4247 Petroleum and Petroleum Products Merchant Wholesalers
- 12) NAICS 4249 Miscellaneous Nondurable Goods Merchant Wholesalers
- 13) NAICS 4821 Rail Transportation
- 14) NAICS 4841 General Freight Trucking
- 15) NAICS 4842* Specialized Freight Trucking
- 16) NAICS 5221 Depository Credit Intermediation
- 17) NAICS 5242 Agencies, Brokerages, and Other Insurance Related Activities
- 18) NAICS 5416* Management, Scientific, and Technical Consulting Services
- 19) NAICS 5511 Management of Companies and Enterprises
- 20) NAICS 5611 Office Administrative Services
- 21) NAICS 5621 Waste Collection
- 22) NAICS 6221 General Medical and Surgical Hospitals
- 23) NAICS 6233 Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly

Additionally, 11 industries rated as highly important potential targets in the rural counties but not in the core metropolitan and micropolitan counties are identified for possible future study:

1. NAICS 3259 Other Chemical Product and Preparation Manufacturing
2. NAICS 3261 Plastics Product Manufacturing
3. NAICS 3351 Electric Lighting Equipment Manufacturing
4. NAICS 3364 Aerospace Product and Parts Manufacturing
5. NAICS 4242 Drugs and Druggists' Sundries Merchant Wholesalers
6. NAICS 4251 Wholesale Electronic Markets and Agents and Brokers
7. NAICS 4862 Pipeline Transportation of Natural Gas
8. NAICS 5222 Nondepository Credit Intermediation
9. NAICS 5616 Investigation and Security Services
10. NAICS 5629 Remediation and Other Waste Management Services
11. NAICS 6231 Nursing Care Facilities (Skilled Nursing Facilities)

Industries identified as possible targets for import substitution are:

- 1) NAICS 311119 Other Animal Food Manufacturing
- 2) NAICS 111000 Crop Production
- 3) NAICS 517311 Wired Telecommunications Carriers
- 4) NAICS 484230 Specialized Freight (except Used Goods) Trucking, Long-Distance
- 5) NAICS 339112 Surgical and Medical Instrument Manufacturing
- 6) NAICS 522292 Real Estate Credit

May 2016 Update to Phelps County Development Corporation Target Industries Review

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Introduction

This report (2019 Update) is the first update to the “*Phelps County Development Corporation Target Industries Review September 2016*” (2016 Study). The 2019 Update provides Phelps County Economic Development Corporation (PCDC) with more recent information to be used as part of an on-going process to identify industries for future retention, expansion, and possible recruitment efforts. Additional information that may be used in this process includes insights of PCDC and community members plus possible further investigations conducted by PCDC.

The 2019 Update contains more recent information on the relative sizes and trends, both historic and projected, of area industries and labor forces plus information on interactions between the Phelps County economy and the economies of counties linked to it by commuting patterns. Industries that are key drivers of Phelps County’s recent economic growth, that are expected to be future drivers of economic growth, and that appear to have potential to become drivers of the area economy are identified. Also identified are industries that are currently highly important to the area’s economic health but may be at risk due to expected declines in overall national employment.

Methodology

As in the 2016 Study, U.S. Census Department's Bureau of the Census and Economic Modeling Specialist International (EMSI) are the primary sources of information for the 2019 Update. EMSI, a private data vendor, collects and analyzes data from a variety of public sources, including the U.S. Census Department, the U.S. Department of Labor, and the U.S. Department of Education. EMSI uses this information to derive estimates of local data suppressed by government agencies to protect proprietary information. Data from EMSI enables a level of analysis that would not be possible in many Nebraska counties due to high levels of data suppression common in areas of relatively small population. NPPD subscribes to EMSI data services and provides this information to wholesale and retail customers as part of its economic development services to these communities.

Data from the U.S. Census Bureau's OnTheMap Application were used in the 2016 Study to identify ten counties closely linked to Phelps County based on commuting patterns. Each of these counties either provided at least two percent of the primary jobs held by Phelps County residents or was the residence for at least two percent of workers in Phelps County businesses and was in close geographic proximity to Phelps County. These same ten counties have been retained for the use in the 2019 Update.

Four of the ten counties are either core metropolitan or micropolitan counties (Core Metro/Micro). Phelps and the remaining six counties are classified as rural. For the analysis of area industries workforces and labor forces data, the six rural counties are usually combined into a single group (Rural Counties) and information for Phelps County is reported separately. In the analysis of potential key or target industries, information about Phelps County is combined with the other Rural Counties (Phelps Plus Rural Counties).

Information on recent and projected labor force, workforce, and industry trends plus data on occupational and industry wages is reported for the Core Metro/Micro Counties, Rural Counties, and Phelps County. This information is used to identify the relative strengths and importance of existing industries and occupations in the Core Metro/Micro Counties and the Phelps Plus Rural Counties groups.

Location quotient analysis, using past, present, and projected future employment, wages and gross regional product, is used to identify an initial, broad set of industries for further study as possible drivers of the study area economy. Shift-share analysis for the periods 2012 to 2018 and 2018 to 2024 is used to classify more detailed, 4-digit North American Industrial Classification (NAICS) code, industries as important drivers of area economies, potential drivers of area economies, important industries with national trends of declining employment and other industries. The other industries group includes businesses that primarily support local population such as retail trade, construction, personal service, plus education and healthcare.

Lastly, sales to key industries and industries identified as having the potential to become key industries by businesses outside the study area are compared to exports by similar local businesses. This supply chain analysis identifies possible opportunities for local input substitution.

Study Area and Commuting Patterns

The geographic area selected for the 2019 Update is the same as in the 2016 Study and is based on commuting data from the U.S. Census Bureau’s OnTheMap Application. Table One below and Figure One on the following page show the 10 counties.

As shown in Table One, Phelps County is the location of primary jobs for 2,531, 62.4 percent, of the county’s employed residents. The 10 other counties in Table One provide primary jobs for 973 or 24.0 percent of Phelps County’s employed residents. Also shown in Table One, Phelps County provides 56.5 percent of the workers for primary jobs within the county. The 10 other counties in Table One provide, 1,386 or 30.9 percent of Phelps County primary job workers.

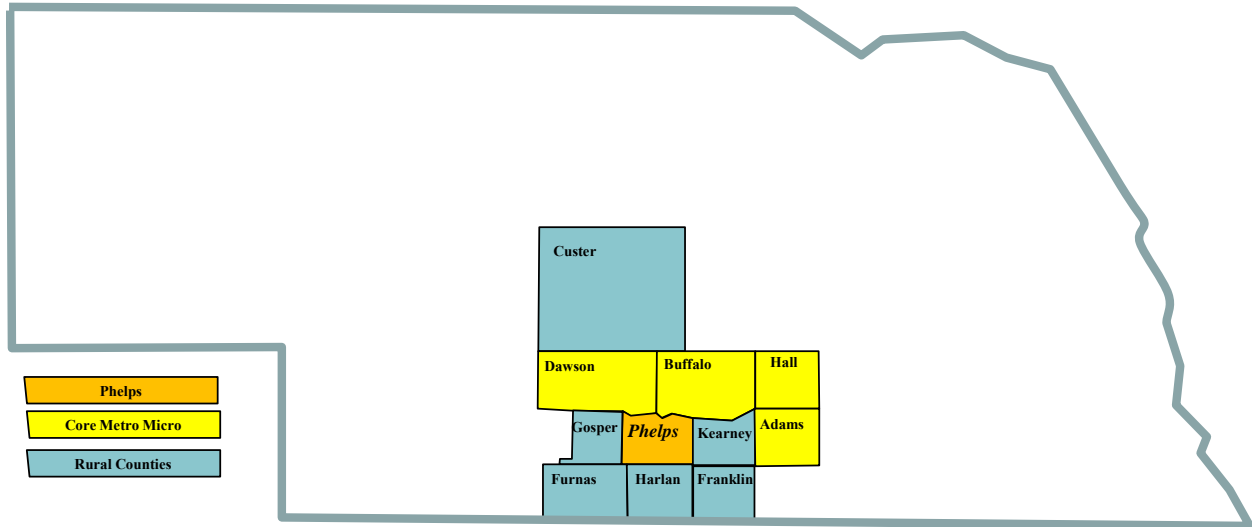
Table One also shows **Phelps County is a large net importer of labor** and has 427 or 10.5 percent more primary jobs within the county than residents working at primary jobs. This suggests compensation paid by Phelps County businesses is relatively high when compared to jobs requiring comparable skills in other counties within the region.

Table One
Worker Inflows and Resident Outflows 2015

Nebraska County	Where Phelps County Workers Live		Where Phelps County Residents are Employed	
	Number	Percent	Number	Percent
Phelps	2,531	56.5%	2,531	62.4%
Buffalo	279	6.2%	369	9.1%
Harlan	227	5.1%	37	0.9%
Dawson	210	4.7%	156	3.8%
Kearney	185	4.1%	102	2.5%
Furnas	105	2.3%	63	1.6%
Gosper	85	1.9%	20	0.5%
Custer	84	1.9%	17	0.4%
Franklin	75	1.7%	25	0.6%
Adams	70	1.6%	80	2.0%
Hall	66	1.5%	104	2.6%
All Other	565	12.6%	551	13.6%
Total	4,482	100.0%	4,055	100.0%

Source: U.S. Census Bureau, OnTheMap Application, <http://onthemap.ces.census.gov>

Figure One
Phelps County, Rural Counties, and Nearby,
Core-Metropolitan & Micropolitan Counties in the Phelps County Study Area



Source: U.S. Census Bureau, OnTheMap Application, <http://onthemap.ces.census.gov>

Four of the counties in the study (Adams, Buffalo, Dawson, and Hall) are either core metropolitan or micropolitan counties (Core Metro/Micro), with Hall being the lone metropolitan core county. Phelps and the remaining six counties (Custer, Franklin, Furnas, Gosper, Harlan, and Kearney) are classified as rural. For the analysis of area industries, workforces, and labor forces data, the six rural counties are typically combined into a single group (Rural Counties) and information for Phelps County is reported separately. In the analysis of potential key or target industries, information about Phelps County is combined with the other Rural Counties (Phelps Plus Rural Counties).

Study Area – Labor Force

The size, skills, and recent and projected trends of an area’s labor force are critical to a community’s efforts to retain, grow, and attract businesses offering superior compensation packages. An evaluation of a region’s current and potential employee pool is a critical step in identifying industries that will be a good fit and promote future growth.

The traditional definition of a labor force is the people living within an area, e.g., Phelps County residents, 16-years of age or older that are either working or actively seeking employment. The labor force may work at locations within or outside their area of residence. In addition to the traditional definition of labor force, the U.S. Department of Labor publishes information on discouraged workers and underemployed workers at the state and national levels.

This section provides information on the demographic characteristics of Phelps County’s, the Rural Counties’, and the Core Metro/Micro Counties’ populations and labor forces.

Population Growth and Components of Growth

Typical of most rural Nebraska counties, both Phelps County and the six Rural Counties have experienced recent population declines while Core Metro/Micro Counties and Nebraska have experienced population increases. As shown in Table Two, Phelps County’s population declined by 687 people or 7.0 percent from 2000 to 2017. While the county was able to achieve a small natural increase, births minus deaths, of 69 people, net out-migration resulted in the loss of 756 people. This out-migration was equal to 7.8 percent of 2000 population. The six Rural Counties experienced even greater declines with a total population loss of 2,834 or 8.5 percent including 963 more deaths than births and net out-migration of 1,871. **Continued loss of population erodes an area’s tax base, makes it difficult to maintain current employment levels, and places future growth at risk.**

**Table Two
Population Change by Areas and Total 2000–2017**

Area	Population		Population Change 2000–2017		Natural Increase 2000-2017	Net Migration 2000–2017	
	2000	2017	Number	Percent		Number	Percent
Phelps County	9,747	9,060	-687	-7.0	69	-756	9,747
Rural Counties	33,502	30,668	-2,834	-8.5	-963	-1,871	33,502
Core Metro/Micro	151,309	166,638	15,329	10.1	18,573	-3,244	151,309
Study Area Total	194,558	206,366	11,808	6.1	17,679	-5,871	194,558
Nebraska	1,711,230	1,920,076	208,846	12.2	185,393	23,453	1,711,230

Source: U.S. Bureau of the Census, Census of Population, May 2018

When measured by population growth, the Core Metro/Micro Counties performed much better than Phelps County over the period 2000 to 2017 but slightly worse than the state. During the period 2000 to 2017, Core Metro/Micro County population increased by 15,329 or 10.1 percent, which was slightly less than the 12.2 percent increase for Nebraska. During the same 17-year period, net out-migration for the Core Micro/Metro Counties was equal to 2.1 percent of 2000 population, while Nebraska experienced net in migration of 1.4 percent.

The proximity of growing population centers provides both a challenge and an opportunity for Phelps County. Growing counties provide a potential source of workers to support the expansion of local businesses but also offer a nearby alternative to families considering relocating to another area with similar life styles. **Data from Table One, presented earlier, confirms Phelps County is highly dependent on workers living in other counties to support current and future labor requirements.**

Population Age Profile

The age distribution of its population is another important factor in assessing the ability of an area to support future business and economic growth. Table Three contains information on the size and distribution of population by study area for important age groups.

As shown in Table Three, the proportion of population in the youngest age group 0 to 14 years of age is relatively similar across all three of the areas and ranges from 18.8 percent for the Rural Counties to 21.3 percent for the Core Metro/Micro Counties. However, the proportion of residents in the oldest age group, 65 Plus, is much higher for Phelps County, 20.4 percent, and the Rural Counties, 22.8 percent, than for the Core Metro/Micro Counties, 15.2 percent. **The age distributions in Table Three suggest much of the out-migration occurring in Phelps County and the Rural Counties occurs among students and families headed by adults in the highly productive age group of 25 to 54 years of age.**

**Table Three
Age Profiles by Areas and Total 2017**

Age Group	Phelps County		Rural Counties		Core Metro/Micro		Study Area Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
0 to 14	1,771	19.5	5,780	18.8	35,473	21.3	43,024	20.8
15 to 24	1,097	12.1	3,296	10.7	25,219	15.1	29,612	14.3
25 to 54	3,108	34.3	9,872	32.2	60,111	36.1	73,091	35.4
55 to 64	1,238	13.7	4,728	15.4	20,426	12.3	26,392	12.8
65 Plus	1,846	20.4	6,992	22.8	25,409	15.2	34,247	16.6
15 to 64	5,443	60.1	17,896	58.4	105,756	63.5	129,095	62.6
Total	9,060	100.0	30,668	100.0	166,638	100.0	206,366	100.0

Source: U.S. Bureau of the Census, Census of Population, May 2018

As shown in Table Four, Hall County (90.9 percent) and Phelps County (87.3 percent) have by far the highest number of jobs as a percentage of their 15 to 64 year old (prime working age) population within the study area. As noted earlier, Hall is the only core metropolitan county in the study area. **This information confirms the relatively high importance of imported labor to Phelps and Hall counties.** Buffalo County, 82.0 percent, has the third highest ratio of jobs to prime working age population and is a core micropolitan county. The highest jobs to prime working age population ratio in the other Rural Counties is 73.6 percent in Furnas County.

Table Four
2017 Jobs as a Percent of 2017 Population Ages 15 to 64

County	Jobs 2015	2017 Jobs Percent of 2014 Population	2017 Jobs as a Percent 2017 Population Ages 15 to 64
Phelps	4,753	52.5	87.3
Adams	15,443	48.7	77.6
Buffalo	27,033	54.4	82.0
Custer	4,585	42.1	72.3
Dawson	11,417	48.2	79.0
Franklin	739	24.7	43.7
Furnas	2,054	43.0	73.6
Gosper	373	18.4	31.2
Hall	34,937	56.8	90.9
Harlan	852	24.7	43.5
Kearney	2,220	34.0	56.7

Sources: U.S. Bureau of the Census, Census of Population, May 2018
U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, November 2018.

Population Educational Attainment Profile

An area’s ability to support current and future industry expansions and attract new business formations or relocations is heavily dependent on the quality and quantity of workers and their current skill sets. Unfortunately, most of the data on workers’ skills is collected from the local workforce, much of which often comes from areas other than the county, e.g., Phelps County, or region being studied. The lack of information about the skills of the resident population makes educational attainment the default metric for evaluation of the potential skills and quality of an area’s labor force. This information is often supplemented with interviews of local employers to ascertain the availability and quality of important skills.

As shown in Table Five on the following page, Phelps (93.4 percent of residents 25 years of age and older) and the other rural counties (92.2 percent) have very high percentages of residents with at least a high school diploma. Both rural areas exceed the state average of 90.9 percent and the Core Metro/Micro Counties’ average of 86.8 percent for this level of attainment.

Phelps County also has a higher percentage of residents aged 25 and over with a bachelor’s degree or higher (26.0 percent) than the average of the other Rural Counties (20.9 percent) and the Core

Metro/Micro Counties (23.9 percent). However, the percent of Phelps County residents aged 25 and over with a graduate or professional degree (7.1 percent) is less than the values for the Core Metro/Micro Counties (7.8 percent) and Nebraska as a whole (10.2 percent).

Phelps County has a very competitive, rural labor force as measured by educational attainment at the High School and bachelor’s degree levels. However, the percent of residents with graduate and professional degrees may limit the county’s ability to sustain and compete for some businesses that require a significant number of professional workers.

**Table Five
Educational Attainment, 2013–2017, 5-Year Estimates**

Attainment	Phelps County		Rural Counties		Core Metro/Micro		Target Area Total		Nebraska	
	NUM	PER	NUM	PER	NUM	PER	NUM	PER	NUM	PER
Total; Estimate; Population 25 years and over -	6,274	100.0	21,654	100.0	104,650	100.0	132,578	100.0	1,233,842	100.0
Less than 9th grade	106	1.7	535	2.5	6,783	6.5	7,424	5.6	50,097	4.1
9th to 12th grade, no diploma	307	4.9	1,160	5.4	7,009	6.7	8,476	6.4	62,269	5.0
High school graduate (includes equivalency)	2,007	32.0	7,233	33.4	30,796	29.4	40,036	30.2	329,232	26.7
Some college, no degree	1,483	23.6	5,664	26.2	24,839	23.7	31,986	24.1	288,681	23.4
Associate degree	739	11.8	2,532	11.7	10,241	9.8	13,512	10.2	126,111	10.2
Bachelor's degree	1,185	18.9	3,360	15.5	16,844	16.1	21,389	16.1	251,182	20.4
Graduate or professional degree	447	7.1	1,170	5.4	8,138	7.8	9,755	7.4	126,270	10.2
Total; Estimate; High school graduate or higher	5,861	93.4	19,959	92.2	90,858	86.8	116,678	88.0	1,121,476	90.9
Total; Estimate; Bachelor's degree or higher	1,632	26.0	4,530	20.9	24,982	23.9	31,144	23.5	377,452	30.6

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates.

Income and Poverty

Information in Table Six suggests that **in addition to being well educated, the Phelps County labor force is relatively well compensated.** The most recent data available from the 2013-2017 American Community Survey 5-Year Estimates shows Phelps County median household income, \$56,408 is higher than five of the six Rural Counties, all four Core Metro/Micro Counties, and is 99.5 percent of the state average of \$56,675. Phelps County per capita income, \$30,166, is higher than three of the Rural Counties, all the Core Metro/Micro Counties in the study area, and higher than the state average of \$29,866.

One contributor to the high level of compensation earned by the Phelps County labor force is the large proportion, 65.5 percent, of the population ages 16 to 64 working at least 35 hours per week. This is the second highest of any of the counties in the study, behind only Gosper’s 66.4 percent, and is much higher than the state average of 57.2 percent and the national average of 49.2 percent.

A benefit of high-income levels and high levels of full-time employment is a low poverty level. The percent of people living in poverty in Phelps County, 7.1 percent, is also the lowest in the study area and well below the state, 12.0 percent, and national, 14.6 percent, levels. However, **Phelps County’s high compensation levels suggests low wage businesses may struggle to find workers.**

Table Six
Income, Poverty Rates, and Hours Worked by County, Areas and Total

Area	Median household income in the past 12 months (in 2014 Inflation-adjusted dollars)	Per capita income in the past 12 months (in 2014 Inflation-adjusted dollars)	Percentage of all persons living below poverty level	Percent of 16 to 64 years; that usually worked 35 or more hours per week – 50 to 52 weeks
Phelps	56,408	30,166	7.1	65.5
Rural Counties				
Custer	48,836	32,605	11.9	59.1
Franklin	49,453	28,635	13.3	55.8
Furnas	43,400	24,522	13.5	60.5
Gosper	61,769	31,901	5.7	66.4
Harlan	46,750	26,375	12.9	58.0
Kearney	53,207	31,234	9.4	60.5
Core Metro/Micro				
Adams	51,721	28,085	12.4	53.9
Buffalo	55,053	28,553	14.4	56.6
Dawson	51,238	24,912	13.7	59.1
Hall	53,807	26,419	13.5	57.4
Nebraska	56,675	29,866	12.0	57.2
United States	57,652	31,177	14.6	49.2

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates.

Study Area – Workforce

While data about an area’s labor force describe the characteristics of residents, analysis of an area’s workforce provides information about workers at local businesses, regardless of where they live.

Analysis of workforce data provides insights into the types of businesses that have been and are likely to be successful within a region. Table Seven on the following page (corresponds to Table Eleven in 2016 Study) provides information on the relative size of industries as measured by percent of 2018 employment, average earnings inclusive of benefits, and relative compensation as measured by their percent of US Earnings for very broad categories of Phelps County, Rural Counties, and Core Metropolitan/Micropolitan businesses.

As shown in Table Seven, NAICS 31 Manufacturing is the only private employer that both accounted for at least 6.0 percent of 2018, area employment and provided average earnings more than the Phelps County average of \$52,072 in all three areas of the study. NAICS 42 Wholesale Trade accounted 7.1 percent of 2018, private industry jobs in Phelps County while providing average earnings of \$67,448. NAICS 62 Health Care and Social Assistance accounted for 12.3 percent of 2018, private industry jobs in the Core Metropolitan/Micropolitan Counties while providing average earnings of \$56,704. No other industry in the Rural Counties met both the size and average earnings criteria. It is highly likely businesses in the broad categories of NAICS 31 Manufacturing, NAICS 42 Wholesale Trade, and NAICS 62 Health Care and Social Assistance will be the major sources of future employment growth.

Table Seven
Distribution of 2018 Employment, 2018 Average Annual Earnings & Earnings as a Percent of U.S. Average
Phelps County, Rural Counties & Metropolitan/Micropolitan Core Counties

NAICS	Phelps County			Rural Counties			Core Metropolitan/Micropolitan		
	Percent 2018 Area Employment	Average Earnings	Percent US Earnings	Percent 2018 Area Employment	Average Earnings	Percent US Earnings	Percent 2018 Area Employment	Average Earnings	Percent US Earnings
11 Crop and Animal Production	9.1	50,256	117.5	11.6	48,049	112.3	2.2	41,974	98.1
21 Mining, Quarrying, and Oil and Gas Extraction	NA	NA	NA	NA	NA	NA	0.1	48,398	38.5
22 Utilities	0.5	70,594	48.2	0.1	145,615	99.3	0.1	112,227	76.6
23 Construction	4.8	57,464	77.6	3.9	48,085	64.9	4.6	54,085	73.0
31 Manufacturing	15.6	75,291	88.5	10.7	64,522	75.8	18.5	58,572	68.8
42 Wholesale Trade	7.1	67,448	74.7	4.7	56,044	62.1	3.7	59,785	66.2
44 Retail Trade	9.2	35,201	92.4	9.5	27,212	71.4	12.4	31,224	82.0
48 Transportation and Warehousing	1.9	80,663	121.6	2.1	64,650	97.4	3.6	61,275	92.3
51 Information	0.7	22,023	16.9	1.5	47,269	36.3	0.8	50,410	38.8
52 Finance and Insurance	3.6	69,478	55	4.6	59,418	47	3.0	66,328	52.5
53 Real Estate and Rental and Leasing	NA	NA	NA	0.3	50,661	75.3	0.7	39,737	59.1
54 Professional, Scientific, and Technical Services	2.4	56,034	50.7	2.3	46,279	41.9	2.3	59,303	53.6
55 Management of Companies and Enterprises	1.7	39,417	27.6	0.7	77,267	54	1.6	61,661	43.1
56 Administrative and Support and Waste Management and Remediation Services	1.5	59,320	123.2	1.1	30,066	62.5	3.7	35,199	73.1
61 Educational Services	0.5	20,632	40.5	NA	NA	NA	1.2	26,580	52.2
62 Health Care and Social Assistance	14.0	46,446	76.7	12.6	38,399	63.5	12.3	56,704	93.7
71 Arts, Entertainment, and Recreation	2.7	11,737	26	0.6	23,344	51.8	1.1	19,627	43.5
72 Accommodation and Food Services	4.7	14,916	60.8	5.9	13,671	55.7	8.4	18,188	74.1
81 Other Services (except Public Administration)	4.0	24,761	64.7	2.9	22,648	59.2	3.9	26,416	69.1
90 Government	15.8	55,686	72.8	24.8	46,782	61.2	15.7	58,739	76.8
Total	100.0	52,072	76.3	100.0	44,735	65.5	100.0	48,368	70.8

NA – Not available.

Data source: Economic Modeling Specialists International (EMSI) / www.economicmodeling.com.

Major Occupations and Wages

The composition of occupations, including associated skill levels, employed within a region is determined by the mix of existing industries. An analysis of average area compensation relative to national averages provides information on the attractiveness of an area for retention and growth of industries dependent upon specific abilities plus some indication of relative skill levels.

Table Eight (Table Fifteen in the 2016 Study) on the following page provides information by major occupational categories on the number of employees, average hourly earnings, and average hourly earnings as a percent of the US average for Phelps County, the Rural Counties, and the Core Metro/Micro Counties.

As shown in Table Eight, Office and Administrative Support occupations is the largest occupational category when measured by employment in each of the three areas analyzed in this study. This is due to the prevalence of these occupations across virtually all industries. The low absolute and relative average wages for this occupation within the study area, suggest relatively modest overall levels of productivity for this occupational group.

Production is the second largest occupational group by employment in Phelps County and the Core Metro/Micro Counties and the third largest occupational group in the other Rural Counties. Average pay for production workers ranges from 94.9 percent of the U.S. average in the Core Metro/Micro Counties to 109.6 percent in Phelps County. **This suggests the area contains a large pool of skilled production workers, which is consistent with the presence of a large manufacturing sector.**

The only other occupation with at least 3.0 percent of the area workforce, average wages consistently above 90.0 percent of the national average, and an average annual wage that is at least 80.0 percent of the area average was Transportation and Materials Moving. Industries requiring workers with these skills might also be potential targets for expansion or recruitment.

Table Eight
Employment Distribution, Median Hourly Earnings, and Median Hourly Earnings as a Percent of U.S.
by Standard Occupational Category (SOC), 2018,
Phelps County, Rural Counties, and Core Metro/Micro Counties

SOC	Occupation Category	Phelps County			Rural Counties			Core Metro/ Micro		
		2018 Percent Jobs	2018 Average Earnings \$	% US Average Earnings	2018 Percent Jobs	2018 Average Earnings \$	% US Average Earnings	2018 Percent Jobs	2018 Average Earnings \$	% US Average Earnings
11-0000	Management	5.6	36.57	63.9	5.7	31.94	55.8	4.2	42.33	74.0
13-0000	Business and Financial	3.0	31.64	86.4	2.7	29.38	80.2	3.0	31.97	87.3
15-0000	Computer and Mathematical	1.0	31.71	73.9	1.0	29.70	69.2	1.0	30.44	70.9
17-0000	Architecture and Engineering	1.5	34.00	82.1	1.0	29.46	71.1	1.1	31.43	75.9
19-0000	Life, Physical, and Social	0.7	28.64	80.0	0.8	26.83	74.9	0.8	27.46	76.7
21-0000	Community and Social Service	1.7	18.96	82.4	2.0	18.93	82.3	1.7	20.73	90.1
23-0000	Legal	0.4	49.87	96.7	0.4	40.12	77.8	0.4	49.27	95.6
25-0000	Education, Training, and	5.8	20.17	76.5	7.3	20.93	79.4	6.1	24.22	91.9
27-0000	Arts, Design, Entertain., Sports, and Media	0.9	17.34	60.5	1.0	16.31	56.9	0.9	19.72	68.8
29-0000	Healthcare Practitioners and Technical	6.2	30.05	77.4	6.2	30.54	78.6	5.8	35.61	91.7
31-0000	Healthcare Support	3.9	13.46	89.3	4.0	12.96	86.0	3.1	15.03	99.7
33-0000	Protective Service	1.3	20.79	91.6	1.5	19.01	83.7	1.2	21.59	95.1
35-0000	Food Preparation and Serving Related	6.2	10.94	92.0	7.1	11.14	93.7	9.0	11.88	99.9
37-0000	Building and Grounds Cleaning and Mait.	2.5	12.73	91.9	2.8	12.54	90.5	3.5	13.19	95.2
39-0000	Personal Care and Service	3.3	12.54	96.0	3.4	13.18	100.9	2.3	12.60	96.5
41-0000	Sales and Related	9.3	19.65	98.1	9.1	17.52	87.4	10.7	16.79	83.8
43-0000	Office and Administrative	13.4	16.25	89.2	13.3	14.83	81.4	14.1	16.16	88.7
45-0000	Farming, Fishing, and Forestry	6.1	20.38	148.1	7.8	19.20	139.5	1.7	19.17	139.3
47-0000	Construction and Extraction	3.8	20.06	83.6	3.9	17.88	74.5	3.9	18.75	78.2
49-0000	Installation, Maintenance, and Repair	5.9	21.39	92.7	4.1	20.51	88.9	4.8	20.94	90.8
51-0000	Production	10.3	20.07	109.6	8.1	18.30	99.9	12.4	17.37	94.9
53-0000	Transportation and Material Moving	6.9	18.96	104.1	6.5	16.98	93.2	8.3	17.08	93.7
	Total	100.0	20.65	84.9	100.0	19.25	79.2	100.0	20.14	82.8

Data source: Economic Modeling Specialists International (EMSI) / www.economicmodeling.com.

Analysis of Potential Targets

As noted in previous sections of this study, the broad industry categories NAICS 31 Manufacturing, NAICS 42 Wholesale Trade, and NAICS 62 Health Care and Social Assistance make up a large portion of the current Phelps County, Rural Counties, and Core Metro/Micro Counties economies when measured by employment. Additionally, the Manufacturing and Wholesale Trade industries pay above average wages.

Information in this section provides a more detailed analysis of the industries and sub-industries within the study area. This information is used to assess the suitability of individual industries as potential targets for retention, expansion, and recruitment efforts.

Excluded from this analysis are industries whose growth is highly dependent on local population growth. These include Retail Trade, Construction, Government, and Real Estate and Rental and Leasing. Industries currently employing less than 2.0 percent of the workforce are also excluded as information on these industries is subject to large errors in estimation. Additionally, only industries with average annual total earnings (wages and benefits) of at least \$47,000, slightly below the average for Rural Counties, are included.

The services provided by Healthcare and Social Assistance establishments in rural areas are often designed to serve local markets. This local market focus typically excludes them from consideration as key drivers of area economies. However, the substantial, regional presence of Phelps Memorial Health Center justifies the inclusion of this sector for further analysis in the study.

Location Quotient (LQ) Analysis

In this section, LQ analysis is used to identify study area industries that have recently and/or are expected to in the future perform better than the national average. Superior performance by area industries indicates the presence of substantial competitive advantages or regional strengths. These advantages and/or strengths, such as access to skilled labor or access or specialized resources, are critical to an industry and provide a rationale for a region's expected future growth.

LQs indicate whether the percentage of total employment¹ by an area industry is greater than the national average ($LQ > 1$), is equal to the national average ($LQ = 1$) or is less than the national average ($LQ < 1$). Industries with a $LQ > 1$ typically indicate the presence of a comparative advantage, such as a large source of skilled labor or access to specialized transportation linkages.

¹ In addition to employment, location quotients can be calculated for other factors, such as total sales and taxes. For this report LQs are reported for employment only.

Industries with a LQ>1, experiencing local employment growth, with expected future growth and paying good wages (at least \$47,000 per year) are key to the future growth of a region. Industries with low LQs but increasing levels of employment and good wages may have the potential to become key drivers of the economy. Industries with a LQ>1 and stable to declining local employment are categorized as mature or declining industries. Mature or declining industries may command significant retention efforts when they employ large numbers of area workers. Other combinations of LQs and growth are typically not of interest and are not considered for further analysis in this study. The criteria used to categorize industries based on their likely potential to drive future growth are summarized in Table Nine below.

Table Nine
Initial Classification of Industries by Potential to Drive Local Growth

Category	LQ	Recent Growth	Projected Growth	Compensation
Key to Future Growth	1+	+	+	>\$47,000
Potential to Drive Future Growth	<1	+	+/-	>\$47,000
Mature or Declining	1+	+/-	+/-	>\$47,000
Not Further Considered	<1	+/-	+/-	> or < \$47,000

Table Ten (Table Twenty in the 2016 Study) on the following page contains information on current LQs, the expected trend in LQ values from 2018 to 2024, the distribution of jobs by industry, and whether a broad industry will be considered for further study for Phelps and the Rural Counties combined and the Core Metro/Micro County areas². Industries are selected for further study if they are classified as Key to Future Growth or as having the Potential to Drive Future Growth using the criteria in Table Nine above. The five major industries initially selected for further analysis as shown in Table Ten are Agriculture, Forestry, Fishing, and Hunting; Transportation and Warehousing; Financial and Insurance (new to 2019 Update), and Professional, Scientific, and Technical Services. Wholesale Trade was selected for further study in the 2016 Study but not in the 2019 Update.

Health Care and Social Assistance meets the criteria for a potential study target in the Core Metro/Micro Counties but not in Phelps Plus Rural Counties. Health Care and Social Assistance is retained for further study due to its strong presence in Phelps County.

² As in the 2016 Study, data indicated Phelps County and the Rural Counties should be combined for the remainder of the analysis.

Table Ten
Potential Target Indicators, Location Quotients, Jobs and Income
Combined Phelps and Rural Counties & Core Metro/Micro Counties

NAICS	Combined Phelps and Rural Counties				Core Metro/Micro Counties			
	2018 LQ & Projected Trend	2018 Percent Total Jobs	2018 Total Income	Potential Target	2018 LQ & Projected Trend	2018 Percent Total Jobs	2018 Total Income	Potential Target
11 Agriculture, Forestry, Fishing and Hunting	11.7 +	10.8	48,615	Yes	2.3 +	2.2	41,974	No
21 Mining, Quarrying, and Oil and Gas Extraction	0.0 o	0.0	0	No	0.2 o	0.1	48,398	No
22 Utilities	0.7 +	0.3	98,814	No	0.3 o	0.1	112,227	No
23 Construction	0.9 o	4.2	51,360	No	1.0 -	4.6	54,085	No
31 Manufacturing	1.5 +	12.2	68,728	Yes	2.2 +	18.5	58,572	Yes
42 Wholesale Trade	1.4 -	5.4	60,613	No	1.0 -	3.7	59,785	No
44 Retail Trade	0.9 o	9.4	29,599	No	1.2 o	12.4	31,224	No
48 Transportation and Warehousing	0.6 o	2.0	69,118	Yes	1.0 o	3.6	61,275	Yes
51 Information	0.7 -	1.2	43,160	No	0.4 +	0.8	50,410	No
52 Finance and Insurance	1.0 o	4.3	62,006	Yes	0.7 o	3.0	66,328	Yes
53 Real Estate and Rental and Leasing	0.2 o	0.2	47,809	No	0.5 o	0.7	39,737	No
54 Professional, Scientific, and Technical Services	0.4 o	2.3	49,369	Yes	0.4 o	2.3	59,303	Yes
55 Management of Companies and Enterprises	0.7 +	1.0	58,072	No	1.0 +	1.6	61,661	No
56 Admin. & Support and Waste Management & Remediation Services	0.2 o	1.2	40,853	No	0.6 o	3.7	35,199	No
61 Educational Services	0.1 o	0.2	25,979	No	0.5 -	1.2	26,580	No
62 Health Care and Social Assistance	1.0 o	13.1	41,036	No	1.0 -	12.3	56,704	Yes
71 Arts, Entertainment, and Recreation	0.8 o	1.2	15,754	No	0.7 +	1.1	19,627	No
72 Accommodation and Food Services	0.6 o	5.5	13,993	No	0.9 o	8.4	18,188	No
81 Other Services (except Public Administration)	0.8 +	3.3	23,444	No	1.0 o	3.9	26,416	No
90 Government	1.4 -	22.1	48,732	No	1.0 o	15.7	58,739	No

* Future Trend Symbols, 2018 - 2024: + increasing; o neutral; - decreasing.

NA: Not Available.

Data source: Economic Modeling Specialists International (EMSI) / www.economicmodeling.com.

In the 2016 Study, the major 2-digit categories were reorganized into seven broad categories for further analysis. For this 2019 Update, the six, 2-digit categories are retained, and the seven broad categories are not used in the following analysis.

Table Eleven
Jobs and Percent Area Jobs by Target Industry Group
Phelps and Rural Counties & Core Metro/Micro Counties

Target Industry Category	Phelps and Rural Counties		Core Metro/Micro	
	Total Jobs	Percent Area Jobs	Total Jobs	Percent Area Jobs
NAICS 11 Agriculture, Forestry, Fishing and Hunting	1,778	10.8	2,012	2.2
NAICS 31 Manufacturing	1,994	12.2	17,133	18.5
NAICS 48 Transportation and Warehousing	336	2.0	3,347	3.6
NAICS 52 Finance and Insurance	707	4.3	2,809	3.0
NAICS 54 Professional, Scientific, and Technical Services	379	2.3	2,164	2.3
NAICS 62 Health Care and Social Assistance	2,142	13.1	11,457	12.3
Total	16,396	44.7	92,779	41.9

Data source: Economic Modeling Specialists International (EMSI) / www.economicmodeling.com.

As shown in Table Eleven above (similar to Table Twenty-One in the 2016 Study), the six, 2-digit industries account for 44.7 percent of current employment in Phelps and the Rural Counties and 41.9 percent in the Core Metro/Micro Counties.

When measured by 2018 employment, NAICS 62 Health Care and Social Assistance is the largest industry (13.1 percent in Phelps and the Rural Counties) and the second largest in the Core Metro/Micro Counties (12.3 percent). NAICS 31 Manufacturing is the largest industry in the Core Metro/Micro Counties (18.5 percent) and the second largest in Phelps and the Rural Counties (12.2 percent).

Shift Share Analysis

Further analysis and refinement of the study area industries is accomplished using shift share analysis. Shift share analysis decomposes actual or projected changes in a local industry's employment into three components. These are the:

- National Effect:** the local industry's starting employment multiplied by the percent change in national average employment for all industries—this shows the change in local employment attributable to the change in economy-wide employment;
- Industry Effect:** the local industry's starting employment multiplied by the percent change in national employment for the industry minus the national effect—this shows the change in local employment attributable to an industry's employment trends after adjusting for national employment trends; and
- Competitive Effect:** the difference between a local industry's ending and starting employment minus the national effect and the industry effect—this is an indication of the change in local employment attributable to an area's relative advantage or competitiveness.

The following is an example of a shift share decomposition:

1. Local Industry A grows by 10.0 percent from 1,000 to 1,100.
2. The average of all industry employment change in the U.S. is a 3.0 percent increase; the national effect is 30 or 1,000 times .03.
3. Average U.S. growth for Industry A is 5.0 percent.
4. The industry effect is .05 (5.0 percent) times 1,000 minus the national effect of 30; this is 50 minus 30 and the industry effect equals 20.
5. The competitive effect is 100 minus 30, the national effect, minus 20, the industry effect, and is equal to 50 or 5.0 percent. The industry has grown twice as fast as the average of similar industries across the U.S.

If a local industry's employment changes by the same percentage as the U.S. average for that industry, 5.0 percent in the above example, the competitive effect is zero. The change in employment for a U.S. industry is also referred to as the **expected effect** for a local industry.

If the competitive effect is very strong, a local industry can grow when the national and industry effects are both negative. Likewise, if a national industry is experiencing strong growth, the expected effect can be positive when the national effect is negative. Industries with positive industry and local competitive shift share effects are either key drivers or are likely to become key drivers of the local economy.

The criteria used to evaluate 4-digit NAICS industries within the six 2-digit industries in Table Eleven and the categories assigned are shown in Table Twelve. Industries are selected as Key to Future Growth (K) if

they have an LQ greater than one, are projected to have both a positive competitive effect and a positive expected growth effect (industry effect plus national effect) and current annual earnings greater than \$47,000. Potential to Drive Future Growth (P) industries are projected to have a positive competitive effect, positive expected growth (Industry plus national effect), and current annual earnings greater than \$47,000, but have an LQ less than one. Mature (M), possibly declining industries, have an LQ greater than one and a negative expected growth effect.

Table Twelve
Shift Share Classification of Industries by Potential to Drive Local Growth

Shift Share Analysis Category	LQ	Projected Change LQ	Projected Competitive Effect	Expected Growth Effect (Projected Industry Effect + National Effect)	Average Earnings >\$47,000
(K) Key to Future Growth	>1.0	+/-	+	+	Yes
(P) Potential to Drive Future Growth	0.1-1.0	+/-	+/-	+	Yes
(M) Mature or Declining	>1.0	+/-	+/-	-	Yes
(X) Not Further Considered	>.01	+/-	+/-	+/-	Yes/No

Table Thirteen (Table Twenty-Four in 2016 Study) on the following pages contain the projected 2018 through 2024 national effects, industry effects, expected change effects, and competitive effects; the 2018 LQ and projected 2024 LQ; and the shift share target category for 4-digit NAICS industries in each of the two study areas for each of the six target industry categories in Table Twenty-One.

Table Thirteen below contains the 23, 4-digit NAICS industries that achieved a target classification of Key (K), Potential (P) or Mature (M) Industries in both Phelps Plus Rural Counties and Core Metro/Micro Counties. These 23 industries can form a core of potential target industries for PCDC to consider for further evaluation as potential target industries.

Table Thirteen
Key, Potential, and Mature Industries Located in Both Phelps Plus Rural and Core Metro/Micro Counties

NAICS	Description	Phelps Plus Rural Counties				Metro/Micro Core Counties			
		2018-2024 Competitive Effect	2018 Location Quotient	2024 Location Quotient	Category	2018-2024 Competitive Effect	2018 Location Quotient	2024 Location Quotient	Category
1110	Crop Production	102	8.7	10.4	K	51	1.4	1.6	K
1120*	Animal Production	5	31.1	31.3	K	-26	3.1	3.1	M
3111*	Animal Food Manufacturing	36	14.9	19.9	K	-23	2.2	1.6	M
3116*	Animal Slaughtering and Processing	40	1.7	2.4	K	208	24.3	25.6	K
3219*	Other Wood Product Manufacturing	-8	2.8	2.5	M	-28	1.5	1.3	M
3251	Basic Chemical Manufacturing	-5	4.5	4.2	M	-1	3.5	3.6	M
3339*	Other General Purpose Machinery Manufacturing	-5	1.5	1.3	M	2	3.2	3.3	K
3391*	Medical Equipment and Supplies Manufacturing	-58	32.9	31.3	M	-3	0.2	0.2	M
4238*	Machinery, Equipment, and Supplies Merchant Wholesalers	-29	3.9	3.6	M	-104	2.2	2	M
4245*	Farm Product Raw Material Merchant Wholesalers	-85	33.4	21.6	M	-75	9.6	8	M
4247	Petroleum and Petroleum Products Merchant Wholesalers	-2	0.5	0.3	M	-30	0.8	0.3	M
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	58	8.4	10.1	M	3	1.7	1.8	M
4821	Rail Transportation	-14	3.8	3.3	M	1	2.8	2.9	K
4841	General Freight Trucking	-1	0.3	0.3	M	-24	1.8	1.8	M
4842*	Specialized Freight Trucking	-10	2.7	2.5	M	49	2.8	3	K
5221	Depository Credit Intermediation	-3	1.9	1.8	M	-68	1.1	1	M
5242	Agencies, Brokerages, and Other Insurance Related Activities	-2	1.6	1.6	M	-29	0.8	0.8	M
5416*	Management, Scientific, and Technical Consulting Services	11	0.7	0.8	P	-40	0.4	0.3	M
5511	Management of Companies and Enterprises	51	0.7	0.9	P	88	1	1.1	K
5611	Office Administrative Services	-3	0.2	0.1	M	27	0.9	1	P
5621	Waste Collection	24	3.1	4.2	K	-18	1.5	1.4	M
6221	General Medical and Surgical Hospitals	-69	1	0.9	M	-359	1	0.9	M
6233	Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly	94	2.1	2.9	K	25	1.2	1.2	K

* Key, Potential, or Mature industry in both 2016 Study and 2019 Update.

Data source: Economic Modeling Specialists International (EMSI) / www.economicmodeling.com.

Table Fourteen (Twenty-Five in the 2016 Study) below contains eleven 4-digit NAICS industries that achieved a target classification of Key (K), Potential (P) or Mature (M) Industries in Phelps Plus Rural Counties. These industries either do not exist or are classified as not further considered in the Core Metro/Micro Counties. PCDC may want to consider including these 11 industries on its list for further evaluation for its target industry program.

Table Fourteen
Key, Potential, and Mature Industries Located in Phelps Plus Rural Counties Only

NAICS	Description	Phelps Plus Rurals				Metro/Micro Core Counties			
		2018-2024 Competitive Effect	2018 Location Quotient	2024 Location Quotient	Category	2018-2024 Competitive Effect	2018 Location Quotient	2024 Location Quotient	Category
3259	Other Chemical Product and Preparation Manufacturing	8	1.7	2.6	M	0	0	0	X
3261	Plastics Product Manufacturing	-1	0.1	0.1	M	5	1.2	1.2	X
3351	Electric Lighting Equipment Manufacturing	41	20	28.1	K	14	1.3	1.8	X
3364	Aerospace Product and Parts Manufacturing	21	3	3.3	K	0	0	0	X
4242	Drugs and Druggists' Sundries Merchant Wholesalers	0	0	0	M	12	0.3	0.3	X
4251	Wholesale Electronic Markets and Agents and Brokers	3	0.1	0.1	M	-5	0.1	0.1	X
4862	Pipeline Transportation of Natural Gas	8	5.3	7.6	K	0	0	0	X
5222	Nondepository Credit Intermediation	9	0.6	0.7	P	23	0.3	0.4	X
5616	Investigation and Security Services	0	0	0	M	2	0.3	0.3	X
5629	Remediation and Other Waste Management Services	0	0.1	0.1	M	3	0.4	0.4	X
6231	Nursing Care Facilities (Skilled Nursing Facilities)	118	3.1	3.8	K	-104	1.6	1.5	X

Data source: Economic Modeling Specialists International (EMSI) / www.economicmodeling.com.

Supply Chain Opportunities

Table Fifteen (replaces Table Thirty-Seven in 2016 Study) contains information on local area, 6-Digit NAICS industries currently supplying a large portion of the total inputs purchased locally by industries in Table Thirteen. These industries may be able to increase their sales to Key, Potential, and Mature area industries and may also be considered potential targets for PCDC retention, expansion, and recruitment efforts.

Table Fifteen
In-region and Imported Purchases, Selected Industries Supplying Potential Targets

NAICS	Purchases from	In-region Purchases	% In-region Purchases	Imported Purchases	% Imported Purchases
311119	Other Animal Food Manufacturing	\$25,361,693	30.6%	\$57,458,252	69.4%
111000	Crop Production	\$28,271,992	35.5%	\$51,468,697	64.5%
517311	Wired Telecommunications Carriers	\$1,728,716	47.9%	\$1,882,805	52.1%
484230	Specialized Freight (except Used Goods) Trucking, Long-Distance	\$1,305,888	41.3%	\$1,857,482	58.7%
339112	Surgical and Medical Instrument Manufacturing	\$1,371,729	45.6%	\$1,636,197	54.4%
522292	Real Estate Credit	\$907,961	35.6%	\$1,639,488	64.4%

Source: Economic Modeling Specialists International (EMSI) / www.economicmodeling.com.