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A Comprehensive Workforce Analysis for Chambers County, Alabama

Prepared for

Chambers County
DEVELOPMENT AUTHORITY
STRENGTH WOVEN IN

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INTRODUCTION

The Chambers County Development Authority (Authority) asked Garner Economics to help refine the community's approach to workforce development by undertaking a workforce analysis. This resulting analysis focuses on those workforce characteristics that concern employers. While much economic analysis looks at trends in employment and wages by certain industries, an existing or potential employer is more interested in the critical underlying characteristics of the workforce itself, developed or acquired skills, knowledge of specific principles, education and age. These valuable workforce features show employers the true economic capacity and potential of a local or regional economy.

The failure of looking at a workforce solely through the lens of industry employment or even by type of occupation is that it ignores the fact that every business has its own unique set of processes, worker roles, culture, and organizational structure. A typical worker in manufacturing for example, does not fit the needs of every manufacturer. Instead, an employer seeks to find workers that hold unique sets of attributes matching the employers' particular needs. Employers may intentionally look beyond hiring from the same industry and even occupation. Once hired, the worker can then be educated and trained in the business' operations, but his or her differentiating value to the employer are the *skills, knowledge principles and education* that have already been developed or acquired.

By quantifying the critical underlying characteristics of Chambers County's workforce, this analysis provides a more real-world view of the County's true capacity and potential. The findings can be used to view the County as an existing or potential employer might, to reveal unique workforce strengths or marketing opportunities, and to provide prospects with the critical workforce information needed for expansion or relocation decisions.

MEASURING CHAMBERS COUNTY'S COMPLETE WORKFORCE

The typical methods used to count workers fail to capture the majority of Chambers County's actual complete workforce. That is because workers are normally counted only at their place of employment—and 60 percent of Chambers County's workforce commutes outside the county for employment. Those workers are counted as another county's workers, not Chambers' County.

Chambers County's complete workforce should include those that live and work in the county, those that commute into the county from outside, and those county residents that commute outside Chambers County for work. A current or potential employer is interested in *all* available workers, including both in- and out-commuters. In fact, the prospect of offering employment opportunities closer to a worker's home can be a used as a powerful incentive for employers wishing to attract new workers.

To capture the complete workforce in Chambers County's, data from the US Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) program was used. The program links personal administrative records to employer administrative records. This enables the comparison of where a worker lives to where they work, along with some pertinent industry and demographic information.

An employer seeks to find workers that hold unique sets of attributes matching the employers' particular needs.

LEHD worker data is available from 2002 to 2011 for Chambers County (Figure 1 and Table 1). In general, the data shows that out-commuting has grown from 8,806 to 11,559 workers, growing from 53 to 60 percent of the county's complete workforce. Over the same period, the number of workers that live and work in Chambers County has declined from 4,884 to 3,660 workers, falling from 30 to 19 percent of the county's complete workforce. And finally, the number of workers that commute into the county for employment has increased from 2,785 to 4,065, up from 17 to 21 percent of the county's complete workforce.

To calculate 2012 to 2014 employment and commuting trends; published data from the U.S. Bureau of Labor Statistics was used for employment within the county (workers that live and work in the county, and those that in-commute), and employment trends in adjoining Lee County AL and Troup County GA was used to approximate out-commuting patterns. The two counties have been the major employment destinations of Chambers County's out-commuters (Figure 2).

The results show that as of 2014 Chambers County's complete workforce totals 20,265, of which 8,014 are employed in the County and the remaining 12,251 are out-commuting. Over the previous three years, overall employment has increased by 981 or 5.1 percent; with 71 percent of the additional jobs occurring outside the county.
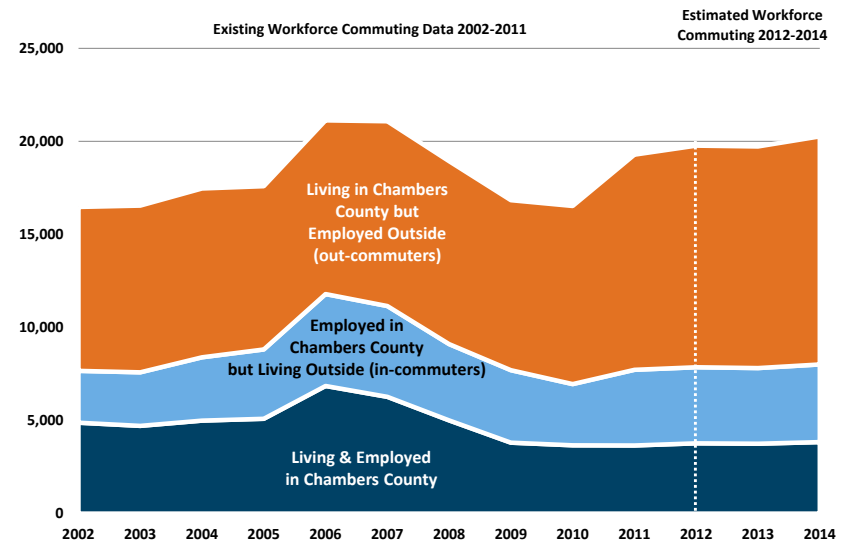
For out-commuting workers, a separate series of calculations was used to estimate employment by industry, education, age and occupation.[1] This estimation was essential for the examination of particular workers characteristics detailed elsewhere in this analysis.

As noted earlier, one aim of this analysis is to present a comprehensive and complete view of Chambers County's workforce, so there are no efforts to re-divide the commuting groups for separate analyses. However, it may be helpful to see the estimates of out-commuting employment by industry, which can be found in Table 20 in the Appendix.

Unless otherwise noted, Chambers County's complete workforce is used throughout this report.

FIGURE 1: CHAMBERS COUNTY WORKFORCE COMMUTING

Source: Garner Economics, US Census Bureau, US Bureau of Labor Statistics, US Bureau of Economic Analysis

The typical methods used to count workers fail to capture the majority of Chambers County's actual complete workforce.

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[1] Estimation process included matching out-commuters first to specific census blocks, then aggregating to respective ZIP Codes. Employment by major industry groups was initiated with LEHD data, and then allocated to two-digit NAICS using the U.S. Census Bureau's 2012 *ZIP Code Business Patterns* program. Trends for 2013-2014 were based on industry employment changes in the respective counties of each ZIP Code, published by the U.S.

TABLE 1: CHAMBERS COUNTY WORKFORCE COMMUTING

	2002	2003	2004	2005	2006	2007	2008
Living and Employed in Chambers County	4,884	4,713	4,996	5,094	6,857	6,274	5,008
Living in Chambers County but Employed Outside (out-commuters)	8,806	8,956	9,069	8,771	9,331	9,926	9,827
Employed in Chambers County but Living Outside (in-commuters)	2,785	2,877	3,401	3,725	4,938	4,878	4,098

	2009	2010	2011	2012*	2013*	2014*
Living and Employed in Chambers County	3,811	3,669	3,660	3,776	3,754	3,842
Living in Chambers County but Employed Outside (out-commuters)	9,133	9,569	11,559	11,905	12,105	12,251
Employed in Chambers County but Living Outside (in-commuters)	3,894	3,289	4,065	4,088	4,064	4,172

*Estimated.
Source: Garner Economics, US Census Bureau, US Bureau of Labor Statistics, US Bureau of Economic Analysis

FIGURE 2: CHAMBERS COUNTY RESIDENT WORKER PLACE OF EMPLOYMENT

2011 - Each dot represents five workers

Source: Garner Economics, US Census Bureau

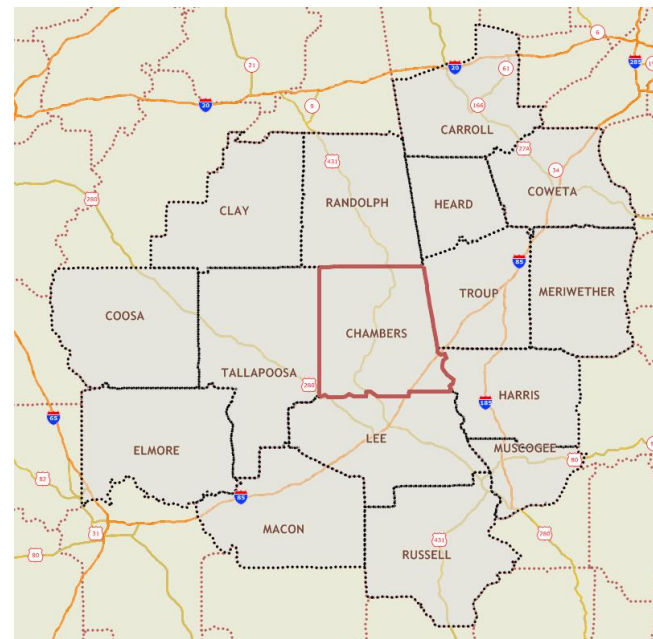*The results show that as of 2014 Chambers County's complete workforce totals 20,265, of which 8,014 are employed in the County and the remaining 12,251 are out-commuting.*

REGIONAL LABOR POOL

A potential or existing employer may be interested in the broader labor pool of workers outside of Chambers County. As Chambers County currently experiences significant worker commuting; it is reasonable to view workers in surrounding counties as comprising the County's regional labor pool.

Fifteen counties are within 45 miles of Chambers County, eight in Alabama and seven in Georgia (Figure 3). The regional labor pool totals 331,166 workers currently employed, and another 41,875 potential workers who are presently unemployed (Table 2).

FIGURE 3: COUNTIES WITHIN FORTY-FIVE MINUTES

Source: Garner Economics

TABLE 2: COUNTIES WITHIN FORTY-FIVE MINUTES

County	Total Employed*	Total Unemployed
Clay County, Alabama	3,766	338
Coosa County, Alabama	1,286	310
Elmore County, Alabama	18,625	1,7161
Lee County, Alabama	54,643	993
Macon County, Alabama	5,007	647
Randolph County, Alabama	4,631	600
Russell County, Alabama	13,461	1,468
Tallapoosa County, Alabama	13,072	1,233
Carroll County, Georgia	38,662	3,797
Coweta County, Georgia	35,032	3,785
Harris County, Georgia	4,190	1,004
Heard County, Georgia	2,006	368
Meriwether County, Georgia	4,117	858
Muscogee County, Georgia	94,412	6,519
Troup County, Georgia	38,256	2,794
Total	**331,166**	**41,875**

Includes Chambers County's Out-Commuting Workers
Source: Garner Economics, US Bureau of Labor Statistics, unemployed as of January, 2015

WORKFORCE SKILLS

"Worker skills" consistently rank at or near the top of factors important to businesses expansion or location decisions. However, defining what "skills" really mean and how they apply to employers and workers is a more complex question. Typical analysis would usually stop at an examination of existing industry employment, occupation, or level of educational attainment of a workforce, largely leaving the skills question unanswered.

For this analysis, strict definitions of precise worker skills are used. A worker skill is a developed capacity to perform a certain work activity. Particular skills are defined by the Occupational Information Network (O*NET), developed under the sponsorship of the US Department of Labor/Employment and Training Administration. O*NET conducts a robust, ongoing survey and data collection program of 940 occupations, defining their key features under a set of standardized and measurable variables. O*NET measures the importance of 25 individual skills for each occupation relative to the performance of that occupation. The skills are further organized under five major skill groups (Table 3). See Appendix Table 21 for complete definitions.

The regional labor pool totals 331,166 workers currently employed, and another 41,875 potential workers who are presently unemployed.

TABLE 3: MAJOR WORKER SKILLS

Skill Group	Definition
Complex Problem Solving	Developed capacities used to solve novel, ill-defined problems in complex, real-world settings.
Resource Management	Developed capacities used to allocate resources efficiently.
Social	Developed capacities used to work with people to achieve goals.
Systems	Developed capacities used to understand, monitor, and improve sociotechnical systems.
Technical	Developed capacities used to design, set-up, operate, and correct malfunctions involving application of machines or technological systems.

*Source: Occupational Information Network (O*NET)*

Defining High-Skilled Workers

All occupations in Chambers County's workforce were measured according to the scores for each of the 25 individual skills. To identify "high-skilled" workers, only occupations with scores in the top 25 percent (top quartile) of importance for each individual skill were selected. For example, 130 occupations scored in the top 25 percent of importance for the Equipment Maintenance skill, this represented 3,123 workers in Chambers County's workforce. The top scoring occupation with Equipment Maintenance skills is Industrial Machinery Mechanic. There are 82 Industrial Machinery Mechanics in Chambers County's workforce.

Chambers County's Locally Strong Workforce Skills

To identify which skills are locally strong, the proportion of high-skilled workers in Chambers County was compared to the proportion nationwide.[2] The results show that Chambers County's workforce is strong in eight worker individual skills (Figure 4 and Table 4). All of these locally strong worker skills are within the Technical skill group. Among individual skills, Quality Control Analysis has the highest index score at 1.5, meaning the local proportion of workers highly skilled in Quality Control Analysis is roughly 50 percent higher than in the nation. In the Chambers County workforce there are 3,284 workers highly skilled in Quality Control Analysis. To employers seeking workers with this skill, Chambers County will offer a significant pool of candidates relative to the size of the economy.

A complete breakdown of all individual skills, measures of local strength and number of workers in Chambers County's workforce can be found in Table 4. Because workers can be employed in occupations that score high in numerous skills, they may be counted in several categories.

"Worker skills" consistently rank at or near the top of factors important to businesses expansion or location decisions.

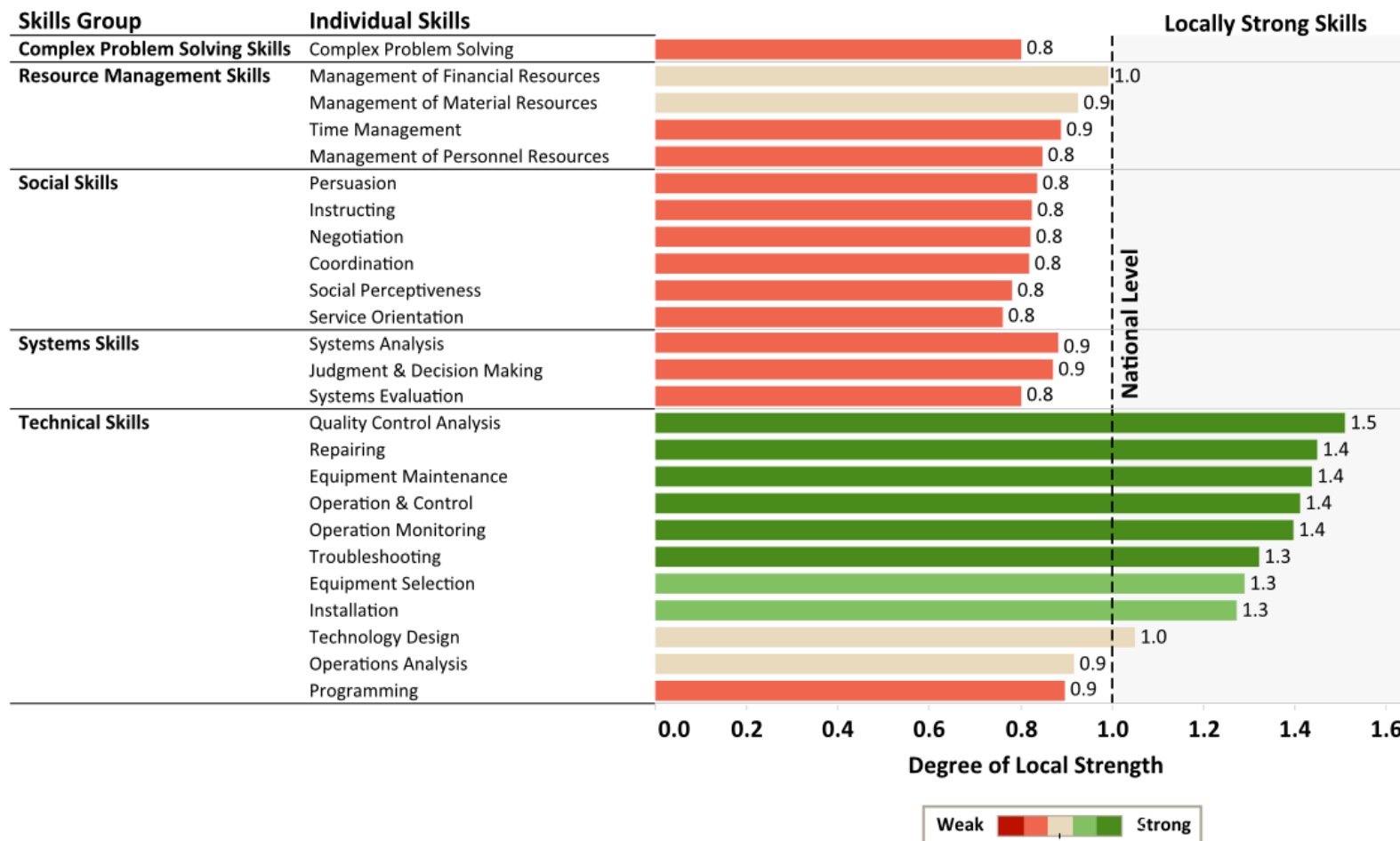[2] This comparison provides an index, where 1.0 is a proportion equal to the nation; less than 1.0 means the proportion is less than the nation, and greater than 1.0 means the proportion is greater than the nation. So locally strong skills are recognized when index scores are above 1.0. For example, a score of 1.2 would show the local proportion of high-skilled workers is roughly 20 percent greater than the nation.

FIGURE 4: CHAMBERS COUNTY WORKFORCE SKILLS BY LOCAL STRENGTH

Skills Group	Individual Skills	Degree of Local Strength
Complex Problem Solving Skills	Complex Problem Solving	0.8
Resource Management Skills	Management of Financial Resources	1.0
	Management of Material Resources	0.9
	Time Management	0.9
	Management of Personnel Resources	0.8
Social Skills	Persuasion	0.8
	Instructing	0.8
	Negotiation	0.8
	Coordination	0.8
	Social Perceptiveness	0.8
	Service Orientation	0.8
Systems Skills	Systems Analysis	0.9
	Judgment & Decision Making	0.9
	Systems Evaluation	0.8
Technical Skills	Quality Control Analysis	1.5
	Repairing	1.4
	Equipment Maintenance	1.4
	Operation & Control	1.4
	Operation Monitoring	1.4
	Troubleshooting	1.3
	Equipment Selection	1.3
	Installation	1.3
	Technology Design	1.0
	Operations Analysis	0.9
	Programming	0.9

Locally Strong Skills

National Level

Degree of Local Strength

Weak ▬▬▬ Strong

*Source: Garner Economics, Occupational Information Network (O*NET)*

TABLE 4: CHAMBERS COUNTY WORKFORCE SKILLS BY LOCAL STRENGTH

Locally Strong Skills Highlighted

Skill Group	Individual Skills	Degree of Local Strength	Workers*
Complex Problem Solving Skills	Complex Problem Solving	0.80	1,737
Resource Management Skills	Management of Financial Resources	0.99	4,567
	Management of Material Resources	0.93	5,810
	Management of Personnel Resources	0.85	3,394
	Time Management	0.89	4,287
Social Skills	Coordination	0.82	4,245
	Instructing	0.82	2,883
	Negotiation	0.82	4,273
	Persuasion	0.84	4,633
	Service Orientation	0.76	5,608
	Social Perceptiveness	0.78	4,057
Systems Skills	Judgment and Decision Making	0.87	2,856
	Systems Analysis	0.88	3,054
	Systems Evaluation	0.80	2,351
Technical Skills	Equipment Maintenance	1.44	3,123
	Equipment Selection	1.29	2,444
	Installation	1.27	3,839
	Operation and Control	1.41	3,393
	Operation Monitoring	1.40	2,898
	Operations Analysis	0.92	3,181
	Programming	0.90	2,453
	Quality Control Analysis	1.51	3,284
	Repairing	1.45	3,332
	Technology Design	1.05	3,144
	Troubleshooting	1.32	4,182

*Workers may be highly skilled in multiple areas.
Source: Garner Economics, Occupational Information Network (O*NET)

Aligning Strong Workforce Skills to Major Industry Demand

Every business demands a unique set of worker skills to operate successfully. Increasingly, finding the right mix of high-skilled workers is the most critical factor as to where a business locates or expands.
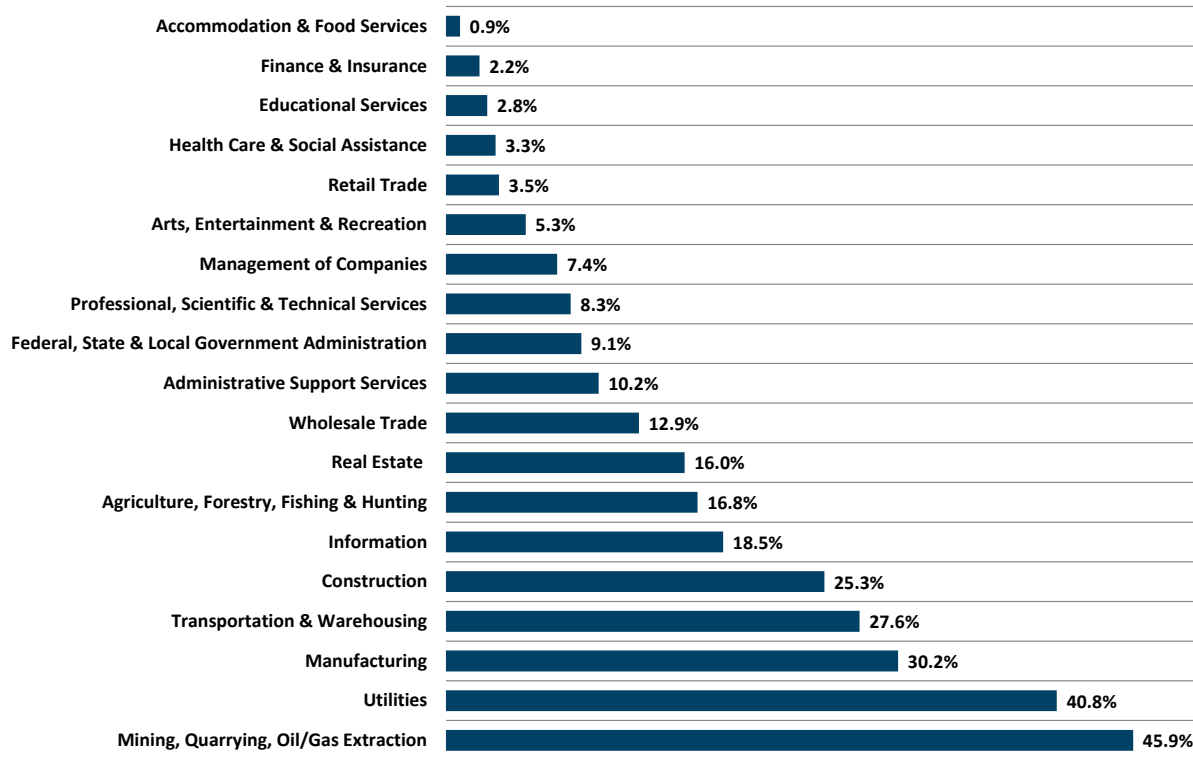
Existing industry employment patterns offer a means to view the likely match of Chambers County's strong workforce skills to industry demand.[3] For every major industry group the proportion of workers that are highly-skilled in the Technical skills category was calculated (Figure 5). This ranges from 45.9 percent of Mining, Quarrying, Oil/Gas Extraction's workforce, to 0.9 percent of Accommodation & Food Services' workforce.

For recruitment and expansion efforts it is worth noting that Chambers County's strong Technical workforce skills matches 30.2 percent of Manufacturing's high-skilled technical worker demand, and 27.6 percent of Transportation & Warehousing's high-skilled technical worker demand. Chambers County's existing workforce skills offer a significant competitive advantage to firms in those industry sectors.

[3] The US Bureau of Labor Statistics (BLS) publishes staffing patterns for each industry classification. The typical mix of occupations demanded by each industry is determined via the results of an ongoing survey of approximately 200,000 business establishments every six months.

FIGURE 5: HIGH-SKILLED TECHNICAL WORKER DEMAND MATCHING
CHAMBERS COUNTY'S WORKFORCE STRENGTHS

Industry	Percentage
Accommodation & Food Services	0.9%
Finance & Insurance	2.2%
Educational Services	2.8%
Health Care & Social Assistance	3.3%
Retail Trade	3.5%
Arts, Entertainment & Recreation	5.3%
Management of Companies	7.4%
Professional, Scientific & Technical Services	8.3%
Federal, State & Local Government Administration	9.1%
Administrative Support Services	10.2%
Wholesale Trade	12.9%
Real Estate	16.0%
Agriculture, Forestry, Fishing & Hunting	16.8%
Information	18.5%
Construction	25.3%
Transportation & Warehousing	27.6%
Manufacturing	30.2%
Utilities	40.8%
Mining, Quarrying, Oil/Gas Extraction	45.9%

*Source: Garner Economics, Occupational Information Network (O*NET)*

Aligning Strong Workforce Skills to Chambers County's Optimal Targets

In July 2012 Garner Economics selected optimal industry targets for Chambers County. The targets fell into four major groups; Food Manufacturing, Logistics & Warehousing, Diversified-Demand Manufacturing, and Continuing Care/Retirement Communities. Each group encompasses a set of individual subsector industry targets.
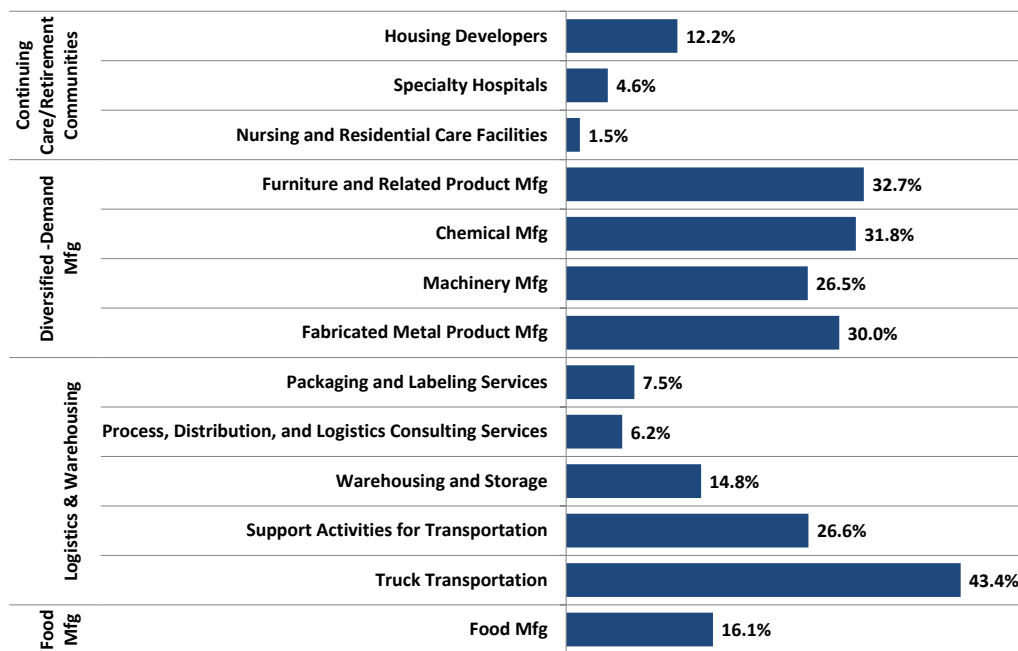
The proportion of high-skill technical workers comprising total employment for each subsector industry was calculated (Figure 6 and Table 5). The results provide a measure of how important high-skill

technical workers are to each subsector, and indicate where Chambers County would have a competitive advantage with its strong workforce skills.

The Truck Transportation subsector has a highest demand for high-skill technical workers, who encompass 43.3 percent of its workers. All four subsectors in the Diversified-Demand Manufacturing target group have relatively high demand for high-skill technical workers; averaging 30.3 percent of its workers.

**FIGURE 6: CHAMBERS COUNTY OPTIMAL TARGETS
HIGH-SKILL TECHNICAL WORKER DEMAND**

Percent of Industry Workforce

*Source: Garner Economics, Occupational Information Network (O*NET)*

TABLE 5: CHAMBERS COUNTY OPTIMAL TARGETS
HIGH-SKILL TECHNICAL WORKER DEMAND

Optimal Target	% of Industry Workforce
Food Manufacturing	
Food Mfg	16.1%
Logistics & Warehousing	
Truck Transportation	43.4%
Support Activities for Transportation	26.6%
Warehousing and Storage	14.8%
Process, Distribution, and Logistics Consulting Services	6.2%
Packaging and Labeling Services	7.5%
Diversified -Demand Mfg	
Fabricated Metal Product Mfg	30.0%
Machinery Mfg	26.5%
Chemical Mfg	31.8%
Furniture and Related Product Mfg	32.7%
Continuing Care/Retirement Communities	
Nursing and Residential Care Facilities	1.5%
Specialty Hospitals	4.6%
Housing Developers	12.2%

*Source: Garner Economics, Occupational Information Network (O*NET)*

A Closer Look at Chambers County's Technical Skills Workers

Viewing workers in terms of their skills is a major objective of this analysis; however it may be helpful to have a broader understanding about the County's Technical skills workers. This will provide a deeper insight into who they are, which may be valuable to potential employers.

In terms of education, the highest level of educational attainment for the majority is a High School Diploma,[4] accounting for 62 percent of the total (Figure 7). Some College or Associate's Degree accounts for another 20 percent. The results challenge the perception that valued high-skilled workers hold upper levels of formal education, in fact only 1 percent of Chambers County's Technical skills workers have obtained a Graduate or Professional Degree.
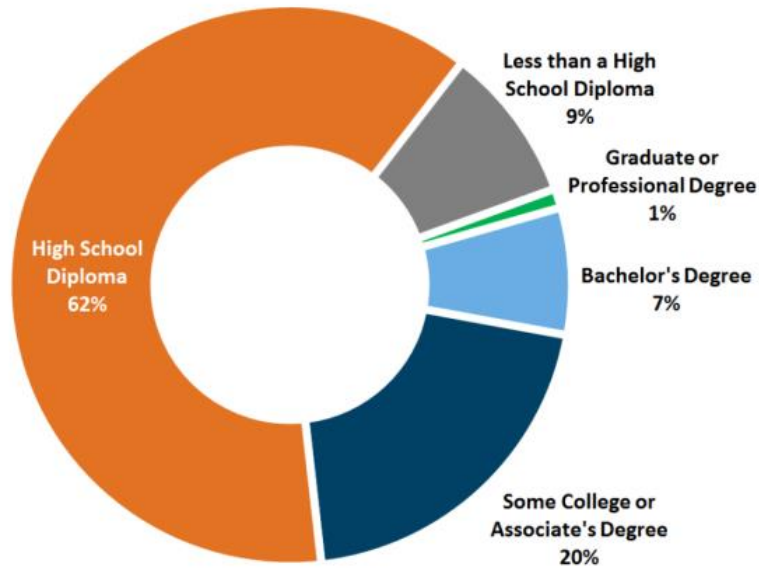
In terms of which occupational groups they are presently employed, one-third of the County's Technical skills workers are currently in the Production group (see Figure 8). However, other groups such as Installation, Maintenance & Repair and Transportation & Material Moving also hold sizeable proportions, 21 and 15 percent respectively. The results may challenge the perception that these valued high-skilled technical workers are currently doing the same kinds of work. For potential employers the results broadens the variety of occupational groups to explore.

Finally, in terms of current occupations, it should be noted that workers in some 150 different occupations meet the requirements for being highly-skilled in the Technical category. While this represents just sixteen percent of all occupations, it denotes a group too diverse to simplify easily. Again, for potential employers the results broadens the variety of avenues to explore in seeking employees. Below is a sample of the occupations of highly-skilled Technical workers in Chambers County and the number of workers currently employed (Table 6).
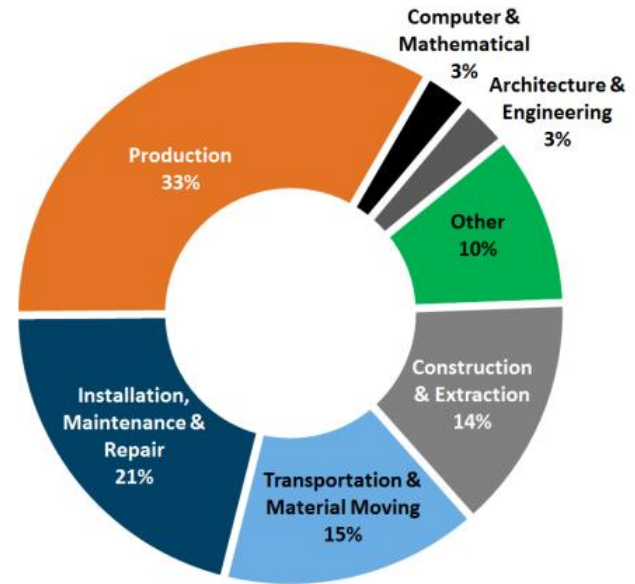
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[4] Also includes those who have passed GED tests.

FIGURE 1
LEVEL OF EDUCATIONAL ATTAINMENT
CHAMBERS COUNTY TECHNICAL SKILLS WORKERS

Less than a High School Diploma 9%

Graduate or Professional Degree 1%

Bachelor's Degree 7%

High School Diploma 62%

Some College or Associate's Degree 20%

FIGURE 2
CURRENT OCCUPATIONAL GROUP
CHAMBERS COUNTY TECHNICAL SKILLS WORKERS

Computer & Mathematical 3%

Architecture & Engineering 3%

Production 33%

Other 10%

Construction & Extraction 14%

Installation, Maintenance & Repair 21%

Transportation & Material Moving 15%

*Source: Garner Economics, US Bureau of Labor Statistics, Occupational Information Network (O*NET)*

TABLE 6: SAMPLE OF OCCUPATIONS CHAMBERS COUNTY TECHNICAL SKILLS WORKERS

(number currently employed)

Electricians (122)
First-Line Supervisors of Production Workers (178)
Industrial Machinery Mechanics (82)
Industrial Truck & Tractor Operators (149)
Machinists (141)
Mechanical Engineers (105)
Sheet Metal Workers (146)

WORKFORCE KNOWLEDGE

Workforce knowledge refers to the acquisition of principles and facts related to a general field of business. A worker's experiences play a greater role in workforce knowledge than in workforce skills. To many employers the terms are likely synonymous. Similar to the term skills, workforce knowledge or knowledge-worker are used frequently, but rarely defined or applied with much precision.

For this analysis strict definition of precise areas of knowledge are used. Particular areas of knowledge are defined by the Occupational Information Network (O*NET). And like skills, O*NET measures the importance of areas of knowledge for each occupation relative to the performance of that occupation. There are 33 areas of individual areas of workforce knowledge which fall within ten major knowledge groups (Table 7). See Appendix Table 22 for complete definitions.

TABLE 7: MAJOR AREAS OF WORKER KNOWLEDGE

Knowledge Group	Definition
Arts & Humanities	Knowledge of facts and principles related to the branches of learning concerned with human thought, language, and the arts.
Business & Management	Knowledge of principles and facts related to business administration and accounting, human and material resource management in organizations, sales and marketing, economics, and office information and organizing systems.
Communications	Knowledge of the science and art of delivering information.
Education & Training	Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.
Engineering & Technology	Knowledge of the design, development, and application of technology for specific purposes.
Health Services	Knowledge of principles and facts regarding diagnosing, curing, and preventing disease, and improving and preserving physical and mental health and wellbeing.
Law & Public Safety	Knowledge of regulations and methods for maintaining people and property free from danger, injury, or damage; the rules of public conduct established and enforced by legislation, and the political process establishing such rules.
Manufacturing & Production	Knowledge of principles and facts related to the production, processing, storage, and distribution of manufactured and agricultural goods.
Mathematics & Science	Knowledge of the history, theories, methods, and applications of the physical, biological, social, mathematical, and geography.
Transportation	Knowledge of principles and methods for moving people or goods by air, rail, sea, or road, including the relative costs and benefits.

*Source: Occupational Information Network (O*NET)*

Defining High-Knowledge Workers

All occupations in Chambers County's workforce were measured according to the scores for each of the 33 individual areas of knowledge. To identify "high-knowledge" workers, only occupations with scores in the top 25 percent (top quartile) of importance for each area of knowledge were selected. For example, 172 occupations scored in the top 25 percent of importance for the Mechanical area of knowledge, this represented 4,591 workers in Chambers County's workforce. The top scoring occupation with Mechanical knowledge is Heavy Equipment Mechanic. There are 97 Heavy Equipment Mechanics in Chambers County's workforce.

Chambers County's Locally Strong High-Knowledge Workers

To identify which areas of workforce knowledge are locally strong, the proportion of high-knowledge workers in Chambers County's was compared to the proportion nationwide.[5] The results show that Chambers County's workforce is strong in six individual areas of

knowledge (Figure 9 and Table 8). Four of these locally strong areas of workforce knowledge are within the Engineering & Technology group. One is in Manufacturing & Production and one in Mathematics & Science. Going forward the six areas will be referred to as simply Engineering & Technology.[6]

A complete breakdown of all individual areas of knowledge, measures of local strength and number of workers in Chambers County's workforce can be found in Table 8. Because workers can be employed in occupations that score high in numerous areas of knowledge, they may be counted in several categories.

Unsurprisingly the strongest index score, at 1.5, is Production and Processing. In the Chambers County workforce there are 4,799 workers with high-knowledge of Production and Processing. To employers seeking workers with a high level of knowledge in this area, Chambers County will offer a significant pool of candidates relative to the size of the economy.

In the Chambers County workforce there are 4,799 workers with high-knowledge of Production and Processing. To employers seeking workers with a high level of knowledge in this area, Chambers County will offer a significant pool of candidates relative to the size of the economy.
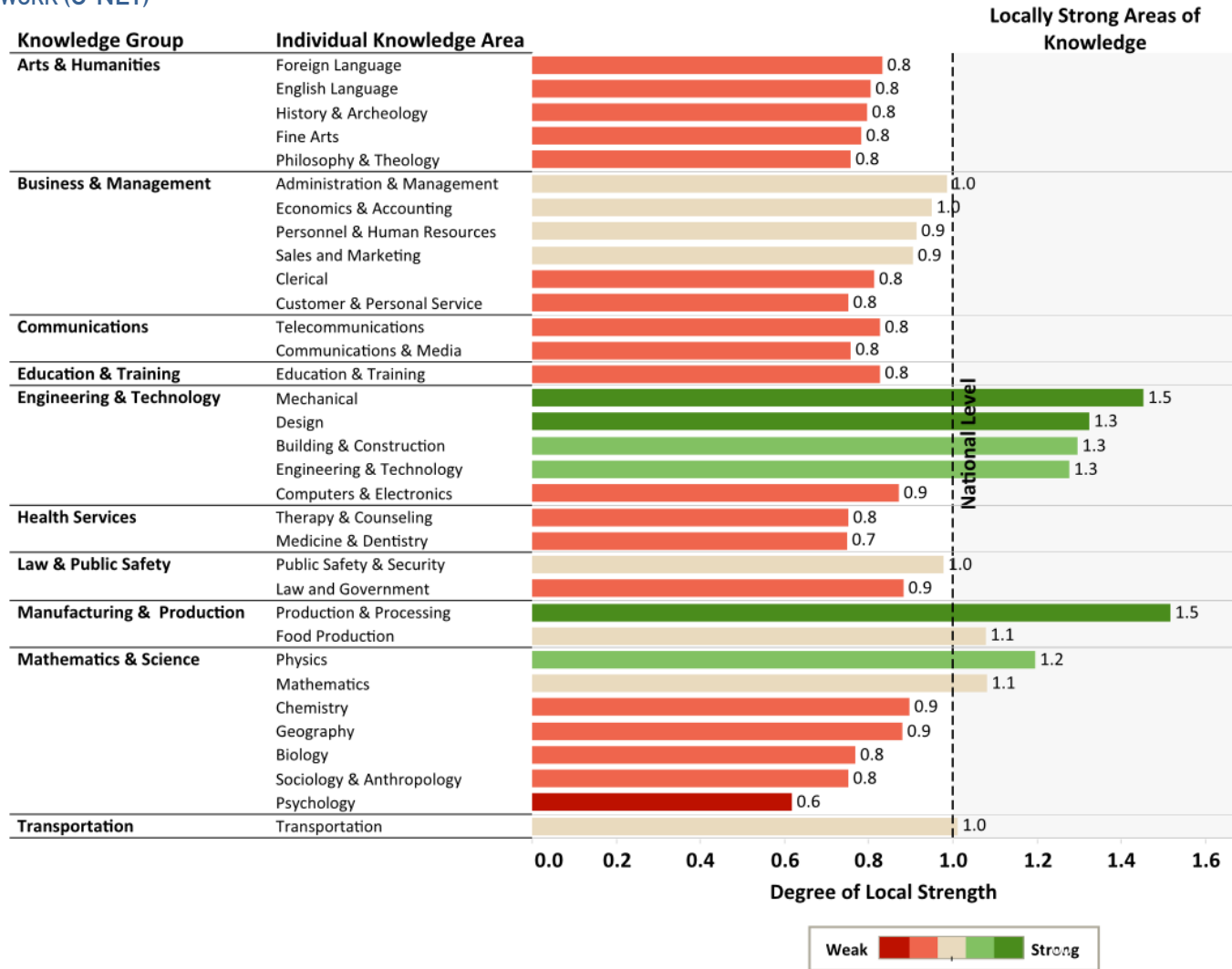
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[5] This comparison provides an index similar to that used to identify locally strong workforce skills, see Footnote 2.

[6] Many of the same occupations that scored high in the *Manufacturing & Production* or *Mathematics & Science* groups also scored high in the *Engineering & Technology* group.

FIGURE 9: CHAMBERS COUNTY WORKFORCE KNOWLEDGE BY LOCAL STRENGTH SOURCE: GARNER ECONOMICS, OCCUPATIONAL INFORMATION NETWORK (O*NET)

Source: Garner Economics, Occupational Information Network (O*NET)

Locally Strong Skills Highlighted

Knowledge Group	Individual Knowledge Areas	Degree of Local Strength	Workers*
Arts and Humanities	English Language	0.80	3,257
	Fine Arts	0.78	3,345
	Foreign Language	0.83	3,246
	History and Archeology	0.80	1,999
	Philosophy and Theology	0.76	2,843
Business and Management	Administration and Management	0.99	3,617
	Clerical	0.81	4,989
	Customer and Personal Service	0.75	4,899
	Economics and Accounting	0.95	4,811
	Personnel and Human Resources	0.91	3,979
	Sales and Marketing	0.91	5,732
Communications	Communications and Media	0.76	3,191
	Telecommunications	0.83	4,217
Education and Training	Education and Training	0.83	3,136
Engineering and Technology	Building and Construction	1.30	3,542
	Computers and Electronics	0.87	3,378
	Design	1.33	3,363
	Engineering and Technology	1.28	3,305
	Mechanical	1.45	4,591
Health Services	Medicine and Dentistry	0.75	3,531
	Therapy and Counseling	0.75	3,544
Law and Public Safety	Law and Government	0.88	3,039
	Public Safety and Security	0.98	3,508
Manufacturing and Production	Food Production	1.08	8,762
	Production and Processing	1.52	4,799

Knowledge Group	Individual Knowledge Areas	Degree of Local Strength	Workers*
Mathematics and Science	Biology	0.77	2,221
	Chemistry	0.90	2,124
	Geography	0.88	4,347
	Mathematics	1.08	4,218
	Physics	1.20	2,215
	Psychology	0.62	3,227
	Sociology and Anthropology	0.75	3,086
Transportation	Transportation	1.01	4,126

*Workers may have high knowledge in multiple areas.
Source: Garner Economics, Occupational Information Network (O*NET)

Aligning Strong Workforce Knowledge to Major Industry Demand

As with skills, every business demands a unique set of worker knowledge to operate successfully. Increasingly, finding the right mix of high-knowledge workers is the most critical factor as to where a business locates or expands.

Existing industry employment patterns offer a means to view the likely match of Chambers County's strong workforce knowledge to industry demand. For every major industry group the proportion of workers that have high-knowledge in the Engineering & Technology category was calculated (Figure 10). This ranges from 44.9 percent of Mining, Quarrying, Oil/Gas Extraction's workforce, to 2.9 percent of Accommodation & Food Services' workforce.
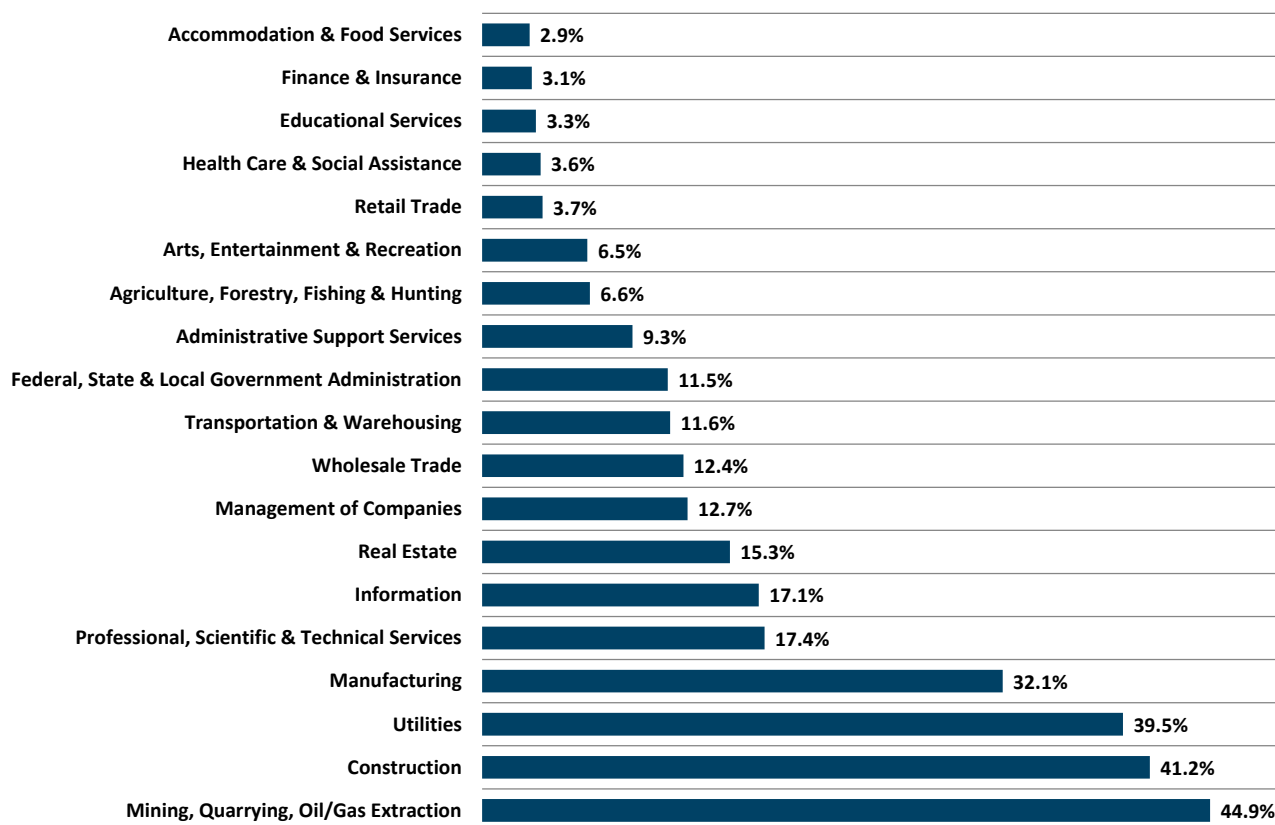
For recruitment and expansion efforts it is worth noting that Chambers County's strong workforce knowledge in Engineering & Technology matches 32.1 percent of Manufacturing's high-knowledge worker demand, and 17.4 percent of Professional, Scientific and Technical Service's high-knowledge worker demand. Chambers County's existing workforce skills offer a significant competitive advantage to firms in those industry sectors.

FIGURE 10: HIGH-KNOWLEDGE ENGINEERING & TECHNOLOGY WORKER DEMAND

Percent of Major Industry Workforce

Industry	Percent
Accommodation & Food Services	2.9%
Finance & Insurance	3.1%
Educational Services	3.3%
Health Care & Social Assistance	3.6%
Retail Trade	3.7%
Arts, Entertainment & Recreation	6.5%
Agriculture, Forestry, Fishing & Hunting	6.6%
Administrative Support Services	9.3%
Federal, State & Local Government Administration	11.5%
Transportation & Warehousing	11.6%
Wholesale Trade	12.4%
Management of Companies	12.7%
Real Estate	15.3%
Information	17.1%
Professional, Scientific & Technical Services	17.4%
Manufacturing	32.1%
Utilities	39.5%
Construction	41.2%
Mining, Quarrying, Oil/Gas Extraction	44.9%

*Source: Garner Economics, Occupational Information Network (O*NET)*

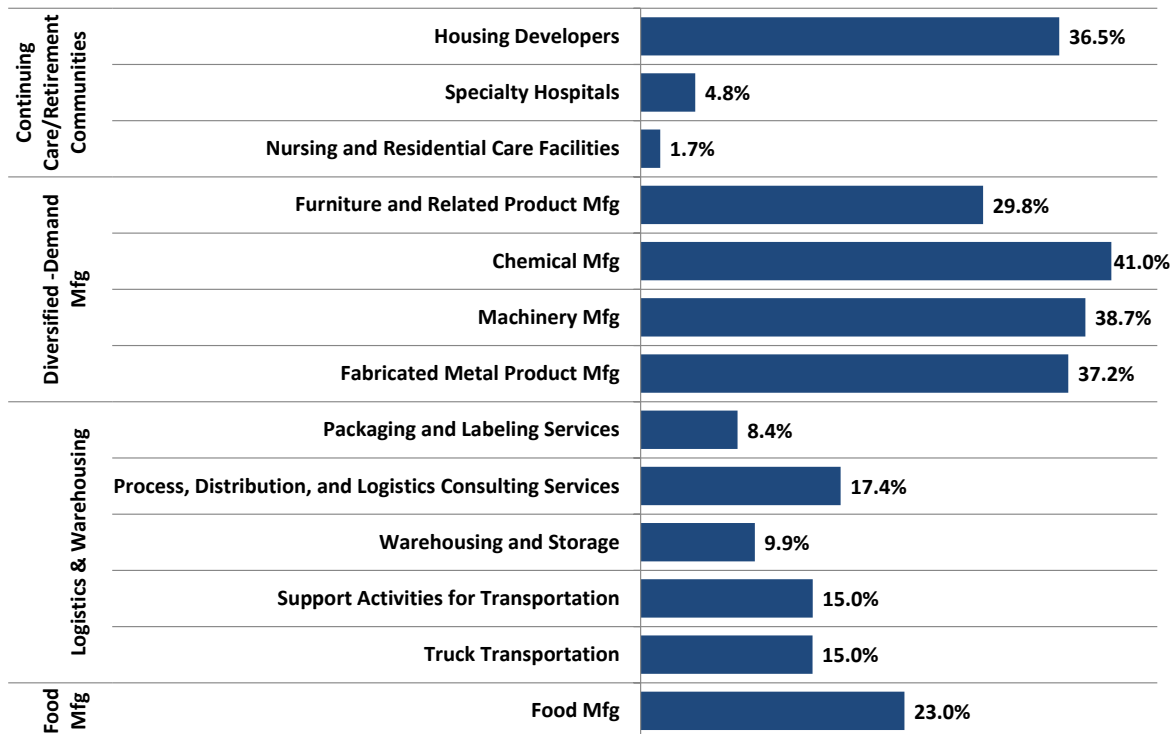**Aligning Strong Workforce Knowledge to Chambers County's Optimal Targets**

As noted earlier, in 2012 Garner Economics selected optimal industry targets for Chambers County. The targets fell into four major groups; Food Manufacturing, Logistics & Warehousing, Diversified-Demand Manufacturing, and Continuing Care/Retirement Communities. Each group encompasses a set of individual industry subsector targets.

The proportion of high-knowledge engineering & technology workers comprising total employment for each subsector industry was calculated (Figure 11 and Table 9). The results provide a measure of

how important high-knowledge engineering & technology workers are to each subsector, and indicate where Chambers County would have a competitive advantage with its strong workforce knowledge in this area.

All four subsectors in the Diversified-Demand Manufacturing target group have a high demand for high-knowledge engineering & technology workers; ranging from 41 percent of Chemical Mfg. to 29.8 percent of Furniture and Related Product Mfg. The average for the target group is 36.7 percent.

FIGURE 11: CHAMBERS COUNTY OPTIMAL TARGETS
HIGH-KNOWLEDGE ENGINEERING & TECHNOLOGY WORKER DEMAND PERCENT OF INDUSTRY WORKFORCE

Group	Industry	Percent
Continuing Care/Retirement Communities	Housing Developers	36.5%
	Specialty Hospitals	4.8%
	Nursing and Residential Care Facilities	1.7%
Diversified-Demand Mfg	Furniture and Related Product Mfg	29.8%
	Chemical Mfg	41.0%
	Machinery Mfg	38.7%
	Fabricated Metal Product Mfg	37.2%
Logistics & Warehousing	Packaging and Labeling Services	8.4%
	Process, Distribution, and Logistics Consulting Services	17.4%
	Warehousing and Storage	9.9%
	Support Activities for Transportation	15.0%
	Truck Transportation	15.0%
Food Mfg	Food Mfg	23.0%

*Source: Garner Economics, Occupational Information Network (O*NET)*

TABLE 9: CHAMBERS COUNTY OPTIMAL TARGETS
HIGH-KNOWLEDGE ENGINEERING & TECHNOLOGY WORKER DEMAND

Optimal Target	Percent of Industry Workforce
Food Manufacturing	
Food Mfg	16.1%
Logistics & Warehousing	
Truck Transportation	43.4%
Support Activities for Transportation	26.6%
Warehousing and Storage	14.8%
Process, Distribution, and Logistics Consulting Services	6.2%
Packaging and Labeling Services	7.5%
Diversified -Demand Mfg	
Fabricated Metal Product Mfg	30.0%
Machinery Mfg	26.5%
Chemical Mfg	31.8%
Furniture and Related Product Mfg	32.7%
Continuing Care/Retirement Communities	
Nursing and Residential Care Facilities	1.5%
Specialty Hospitals	4.6%
Housing Developers	12.2%

*Source: Garner Economics, Occupational Information Network (O*NET)*

A Closer Look at Chambers County's High-Knowledge Engineering & Technology Workers

Viewing workers in terms of their areas of knowledge is a major objective of this analysis; however it may be helpful to have a broader understanding about the County's high-knowledge Engineering & Technology workers. This will provide a deeper insight into who they are, which may be valuable to potential employers.

In terms of education, the highest level of educational attainment for the largest proportion of workers is a High School Diploma,[7] accounting for 48 percent of the total (Figure 12). Bachelor's Degree holders account for another 23 percent. Like high-skilled workers, the results challenge the perception that valued high-knowledge workers hold upper levels of formal education, in fact only 2 percent of Chambers County's High-Knowledge Engineering & Technology workers have obtained a Graduate or Professional Degree.
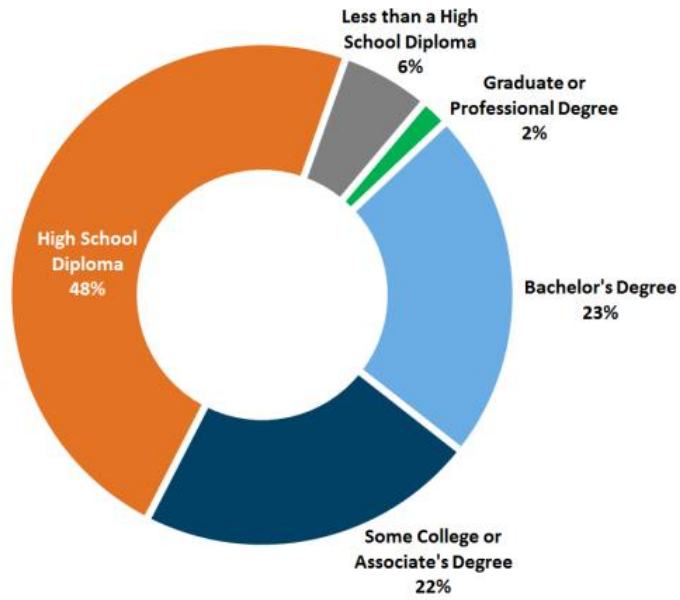
In terms of which occupational groups they are presently employed in; one-quarter of the County's High-Knowledge Engineering & Technology workers are currently in the Production group (Figure 13). However, other occupational groups such as Construction & Extraction, and Installation, Maintenance & Repair also hold ample proportions, 17 and 12 percent respectively. The results may challenge the perception that these valued high-knowledge workers are currently doing the same kinds of work. For potential employers the results broadens the variety of occupational groups to explore.

Finally, in terms of current occupations, it should be noted that workers in 172 different occupations meet the requirements for have high-knowledge in the Engineering & Technology category. While this represents just eighteen percent of all occupations, it denotes a group too diverse to simplify easily. Again, for potential employers the results broadens the variety of avenues to explore in seeking employees. Below is a sample of the occupations of high-knowledge Engineering & Technology workers in Chambers County and the number of workers currently employed (Table 10).
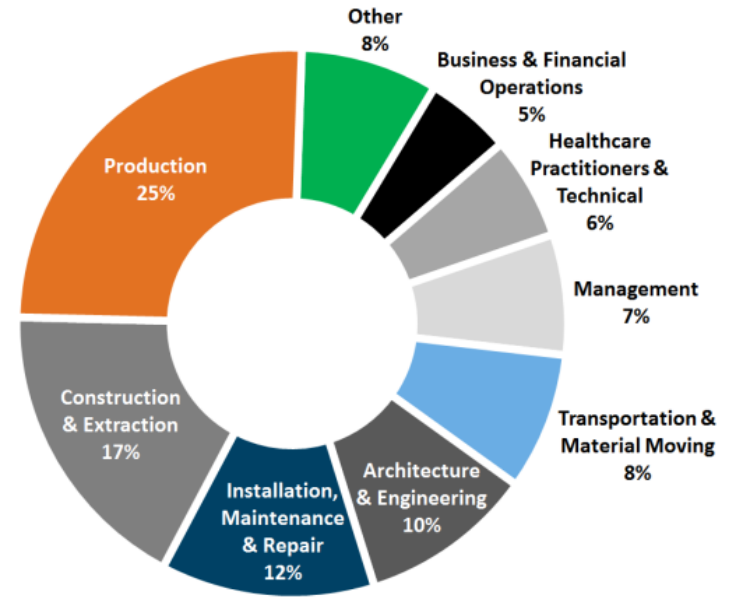
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[7] Also includes those who have passed GED tests.

FIGURE 3
LEVEL OF EDUCATIONAL ATTAINMENT
CHAMBERS COUNTY ENGINEERING & TECHNOLOGY
HIGH-KNOWLEDGE WORKERS

Less than a High School Diploma 6%

Graduate or Professional Degree 2%

High School Diploma 48%

Bachelor's Degree 23%

Some College or Associate's Degree 22%

FIGURE 4
CURRENT OCCUPATIONAL GROUP
CHAMBERS COUNTY ENGINEERING & TECHNOLOGY
HIGH-KNOWLEDGE WORKERS

Other 8%

Business & Financial Operations 5%

Healthcare Practitioners & Technical 6%

Production 25%

Management 7%

Transportation & Material Moving 8%

Construction & Extraction 17%

Architecture & Engineering 10%

Installation, Maintenance & Repair 12%

*Source: Garner Economics, US Bureau of Labor Statistics, Occupational Information Network (O*NET)*

TABLE 10: SAMPLE OF OCCUPATIONS CHAMBERS COUNTY HIGH-KNOWLEDGE WORKERS ENGINEERING & TECHNOLOGY

(number currently employed)

Computer Systems Analysts (81)
Computer-Controlled Machine Tool Operators (57)
Cost Estimators (124)
First-Line Supervisors of Construction Trades (91)
First-Line Supervisors of Production and Operating Workers (178)
General and Operations Managers (301)
Industrial Engineers(80)

OCCUPATIONAL GROUPS

Examining Chambers County's workforce in terms of occupations offers a perspective for employers interested in workers performing specific types of work. Although there are 940 individual occupations in the nation, the U.S. Bureau of Labor Statistics clusters similar occupations into 22 major occupational groups. Group labels provide an accurate description of the general types of activities these occupations are performing.

It is worth noting that occupations don't directly translate into specific industries. Industry employment is comprised of a wide mix of occupational groupings. For example, the Production occupational group comprises 52 percent of total Manufacturing employment, with the remaining 48 percent spread among the other groups. Even Food Preparation & Serving Related occupations contribute 0.4 percent of total manufacturing industry employment.

Measuring the degree of local specialization of each occupational group shows which occupations Chambers County has a high

concentration in relative to the nation.[8] This indicates areas in which the county is locally strong; implying the existence of supporting institutions (schools and training), culture, work ethic, knowledge and skills.

Among major groups, Production has the highest degree of local specialization in Chambers County, nearly double the concentration seen nationwide (Figure 14 and Table 11).[9] The Construction & Extraction group follows closely, with a concentration level roughly 50 percent greater than nationwide. The local strengths among occupational groups mirror the findings in workforce skills and workforce knowledge.

For additional analysis, the regional average hourly wage of each occupational group was examined. This offers insight into the underlying reasons behind the County's overage wage position. Only four occupational groups which are locally specialized (index greater than 1.0) have wages above the regional average (Installation, Maintenance, & Repair, Business & Financial Operations, Farming, Fishing, & Forestry and Architecture & Engineering). The County is not locally specialized in the eight remaining occupational groups that have above average wages.   In simple terms, this illustrates that there are a relatively low number of high wage occupations in which the county is locally specialized.
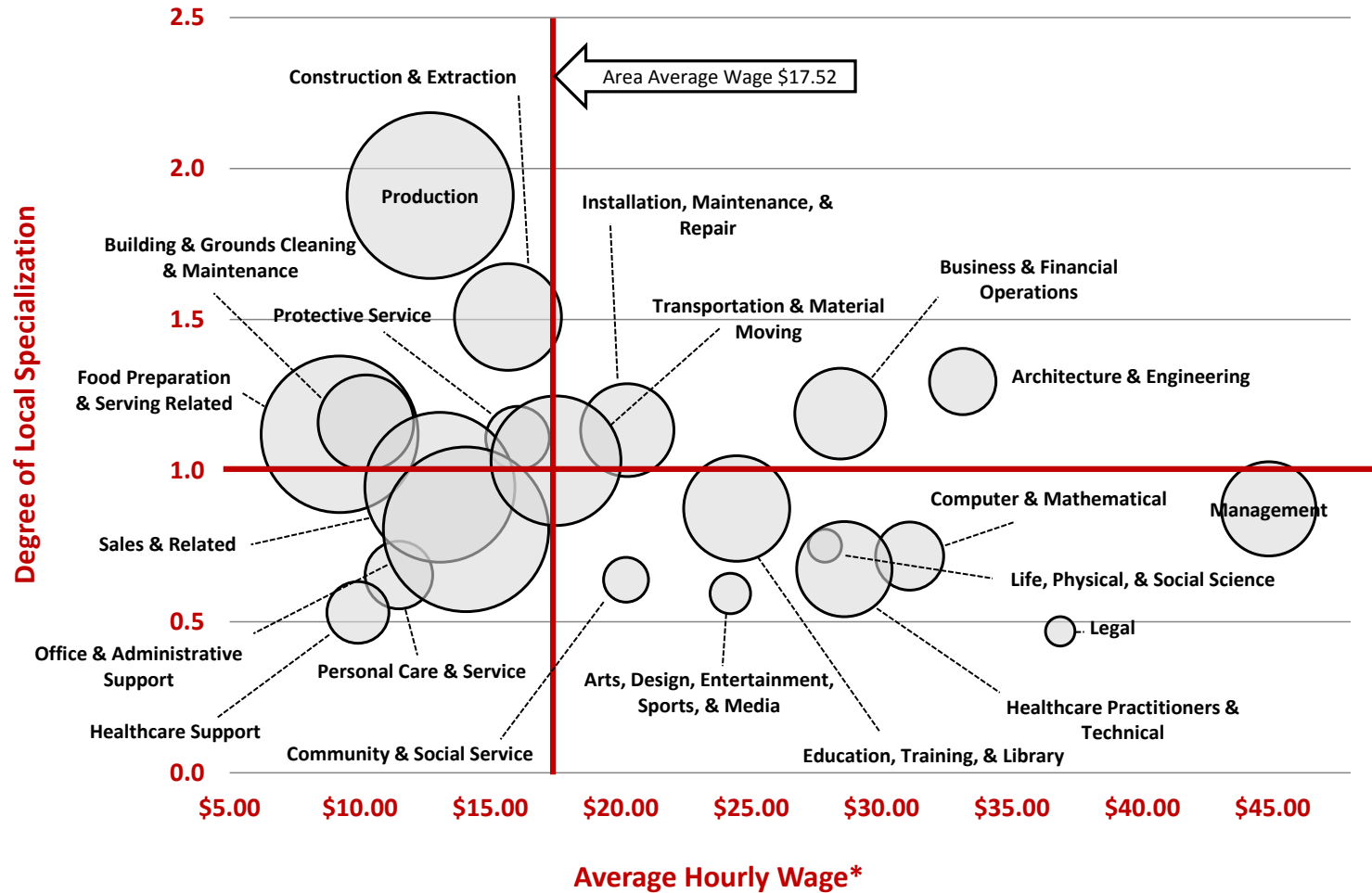
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[8] The degree of specialization index is similar to the local strength index used in workforce skills and knowledge, where 1.0 is a proportion equal to the nation; less than 1.0 means the proportion is less than the nation, and greater than 1.0 means the proportion is greater than the nation.

[9] Technically, the *Farming, Fishing, & Forestry* group has the highest degree of local specialization at 5.5; however the group is very small with total employment of 142.

FIGURE 14: OCCUPATIONAL GROUPS

by Total Employment, Degree of Local Specialization & Average
Hourly Wage

*2014 regional occupational wages are weighted averages of the North East Alabama region and Lee County. Occupational wages are not available for Chambers County by itself. Bubble sizes represent total employment.
To avoid chart distortion the Farming, Fishing, & Forestry group, with a degree of specialization at 5.5, is not shown.
Source: Garner Economics, US Bureau of Labor Statistics

TABLE 11: OCCUPATIONAL GROUPS

by Total Employment, Degree of Local Specialization & Average Hourly Wage (Chambers County)

Major Occupational Group	Employment	Average Hourly Wage*	Degree of Local Specialization
Production	2,620	$12.69	1.9
Office & Administrative Support	2,588	$14.07	0.8
Food Preparation & Serving Related	2,335	$9.22	1.1
Sales & Related	2,137	$13.06	0.9
Transportation & Material Moving	1,601	$17.52	1.0
Construction & Extraction	1,086	$15.67	1.5
Education, Training, & Library	1,064	$24.45	0.9
Building & Grounds Cleaning & Maintenance	867	$10.23	1.2
Healthcare Practitioners & Technical	861	$28.57	0.7
Management	845	$44.86	0.9
Installation, Maintenance, & Repair	824	$20.25	1.1
Business & Financial Operations	785	$28.42	1.2
Computer & Mathematical	441	$31.08	0.7
Healthcare Support	434	$11.49	0.7
Architecture & Engineering	419	$33.12	1.3
Protective Service	385	$16.04	1.1
Personal Care & Service	364	$9.92	0.5
Community & Social Service	192	$20.20	0.6
Arts, Design, Entertainment, Sports, & Media	155	$24.21	0.6
Farming, Fishing, & Forestry	142	$15.37	5.5
Life, Physical, & Social Science	105	$27.83	0.8
Legal	82	$36.86	0.5

Occupational wages are weighted averages of the North East Alabama region and Lee County.
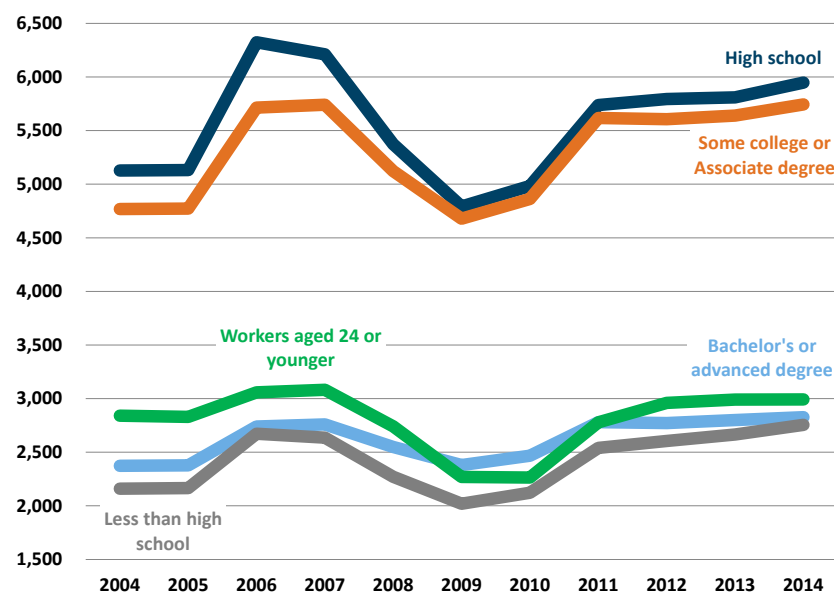*Source: Garner Economics, US Bureau of Labor Statistics*

WORKFORCE EDUCATION

Workforce education is an important metric for all employers. Along with skills, knowledge and current occupation; a worker's level of education is a critical measure of that worker's capacity and potential. Viewed across a region's workforce, the number of workers at each level of education provides employers a gauge on the depth of worker availability.

For current or potential employers, measuring education over the entire population can be misleading. With the nation's aging population there is a growing number of well-educated retired persons that are included in the broad measure of education, although they are not participating in the workforce. Employers instead seek to know the education level of active workers. In this analysis, only education-levels of the active workforce of Chambers County are examined. This provides a more accurate, real-world assessment of workforce availability by education.

Workers whose highest level of educational attainment is High school[10] comprise the largest number and proportion of workers in Chambers County (Figure 15 and Table 12). This has held over the last decade. Although at 28.3 percent, workers with Some college or Associate degree comprise just one percentage point less. Over the last ten years, the number of workers with Some college or Associate degree has grown the most, adding 975 workers, and outpaced all other education levels, increasing by 27.6 percent.

The ten year examination of employment by education also reveals the disproportionate impact the most recent recession had on Chambers County's workforce (Figure 16). Unsurprisingly, the most negatively impacted workers were those aged 24 and younger,[11] while those with a Bachelor's or advanced degree were impacted the least. And workers with Some college or Associate degree rebounded strongest of all education levels.

FIGURE 15: EMPLOYMENT BY EDUCATION

Source: Garner Economics, US Census Bureau

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[10] Also includes those who have passed GED tests.

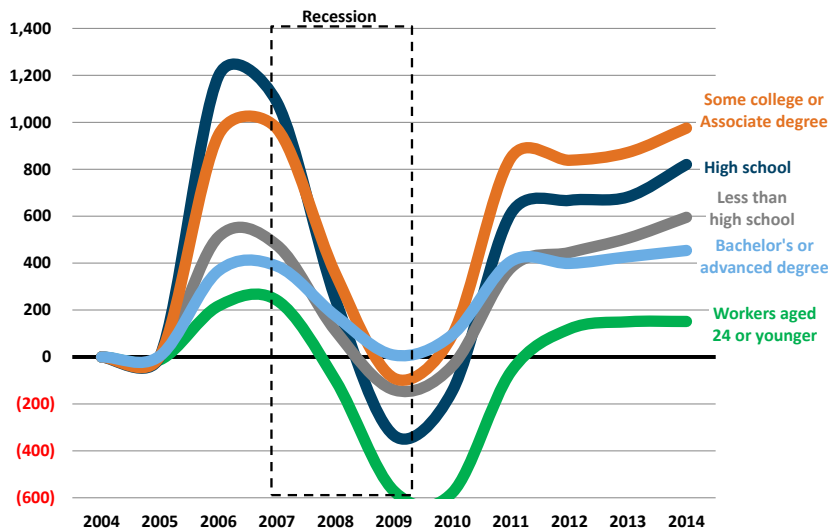[11] *Workers aged 24 or younger* are not assigned a specific education level because many are likely still in school.

TABLE 12: EMPLOYMENT BY EDUCATION

	2014		Ten-Year Change	
	#	%	#	%
High school	5,948	29.3%	820	16.0%
Less than high school	2,755	13.6%	595	27.6%
Some college or Associate degree	5,743	28.3%	975	20.5%
Bachelor's or advanced degree	2,827	13.9%	454	19.1%
Workers aged 24 or younger	2,992	14.8%	151	5.3%

Source: Garner Economics, US Census Bureau

FIGURE 16: TEN-YEAR CHANGE EMPLOYMENT BY EDUCATION

(2004 = 0)

Source: Garner Economics, US Census Bureau

A survey of Chambers County residents that hold a Bachelor's Degree shows the field with largest number is Business; 784 degree holders or 26.6 percent of the total (Table 13). The second largest field is Education; 679 degree holders or 23 percent of the total. No other field comprises more than ten percent of all Bachelor's Degree holders.

TABLE 13: FIELD OF BACHELOR'S DEGREE

Chambers County 2009-2013 estimate*

Field of Bachelor's Degree	Number	Percent
Science and Engineering		
Computers, Mathematics & Statistics	101	3.4%
Biological, Agricultural & Environmental Sciences	267	9.1%
Physical and Related Sciences	11	0.4%
Psychology	137	4.6%
Social Sciences	75	2.5%
Engineering	157	5.3%
Other Science & Engineering Related Fields	223	7.6%
Business	784	26.6%
Education	679	23.0%
Arts, Humanities & Other		
Literature & Languages	48	1.6%
Liberal Arts & History	157	5.3%
Visual & Performing Arts	69	2.3%
Communications	44	1.5%
Other	195	6.6%

Data represents a multiyear "rolling" survey of all residents presented in annual terms. Does not include workers who in-commute.
Source: Garner Economics, US Census Bureau

WORKFORCE BY AGE

As with education, employers are more interested in the ages of active workers, rather than ages across the entire population. In this analysis, only age groups in the active workforce of Chambers County are examined.
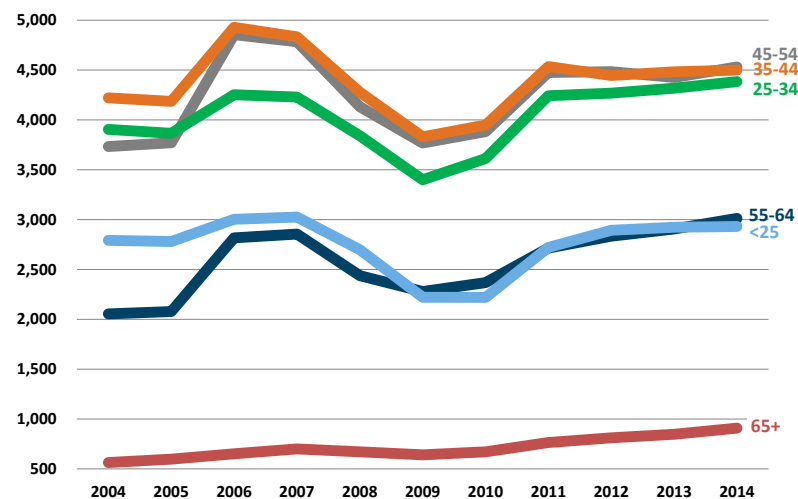
Prime-age workers, those between the ages of 25 and 54, comprised 66 percent of Chambers County's workforce in 2014, a proportion that has had held fairly steady over the last decade (Table 14 and Figure 17). In spite of the most recent national recession, all age groups currently exceed their pre-recession employment totals. Although comprising a relatively small proportion of Chambers County's total workforce, the ages 55-64 and 65+ have demonstrated the largest percentage increases since 2004; 46.6 and 61.3 percent, respectively. This mirrors a national pattern associated with an aging population.

TABLE 14: CHAMBERS COUNTY EMPLOYMENT BY AGE

Age Group	2014		Ten-Year Change	
	#	%	#	%
<25	2,931	14.5%	139	5.0%
25-34	4,384	21.6%	479	12.3%
35-44	4,499	22.2%	278	6.6%
45-54	4,531	22.4%	799	21.4%
55-64	3,012	14.9%	958	46.6%
65+	908	4.5%	345	61.3%

Source: Garner Economics, US Census Bureau

FIGURE 17: CHAMBER COUNTY WORKFORCE BY AGE

Source: Garner Economics, US Census Bureau

Prime-age workers, those between the ages of 25 and 54, comprised 66 percent of Chambers County's workforce in 2014.

SELF-EMPLOYMENT

An examination of self-employment in Chambers County may reveal the presence of business expertise, expose labor not captured by other means, or demonstrate broader economic dynamism. By its nature, measuring self-employment is much more volatile than traditional industry employment measurements. One person may self-operate several businesses concurrently or open and close several businesses within a single year.

According to the U.S. Bureau of Economic Analysis, the number of Sole Proprietorships in Chambers County totaled 4,335 in 2013, up 48.4 percent in ten years (Figure 18 and Table 15). Except for a decrease in 2009, the County has had an increase every year in the number of Sole Proprietorships over the last decade; averaging 143 or 4.3 percent annually.

Annual surveys conducted by the U.S. Census Bureau[12] show that Personal services[13] account for 23 percent of self-employed business establishments in Chambers County; the largest percent of any business type (Figure 19 and Table 16). Over the last five years a significant decline in Construction establishments led to a $5.7 million decline in self-employment receipts (Figure 20 and Table 16). Construction however remains the largest source of self-employment receipts in the County, totaling $10.2 million.
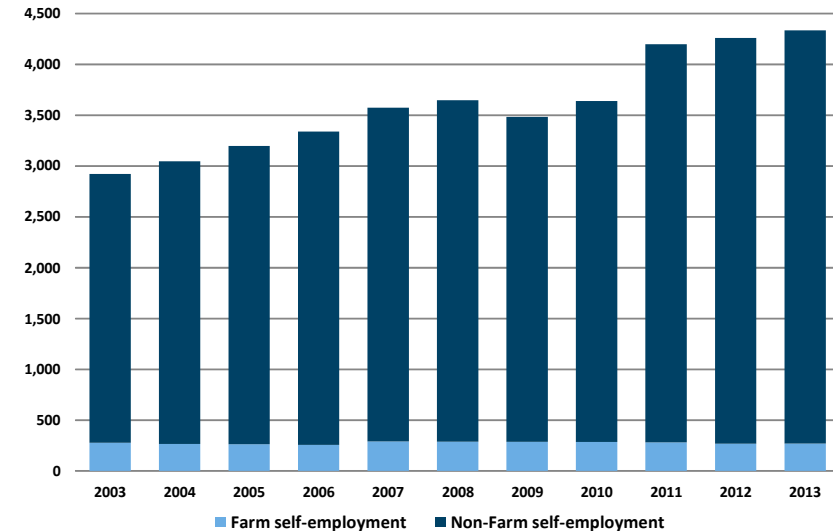
Three business types; Personal services, Administrative support services and Accommodation & food services have each demonstrated strong establishment and receipt growth among the self-employed in Chambers County

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[12] Definitions and methodology differ from those used by the U.S. Bureau of Economic Analysis.
[13] Such as repair services, laundry, pet care, barber and beauty shops.

FIGURE 18: SOLE PROPRIETORSHIPS*
Chambers County

*Residents only.
Source: Garner Economics, US Bureau of Economic Analysis

TABLE 15: SOLE PROPRIETORSHIPS*
Chambers County

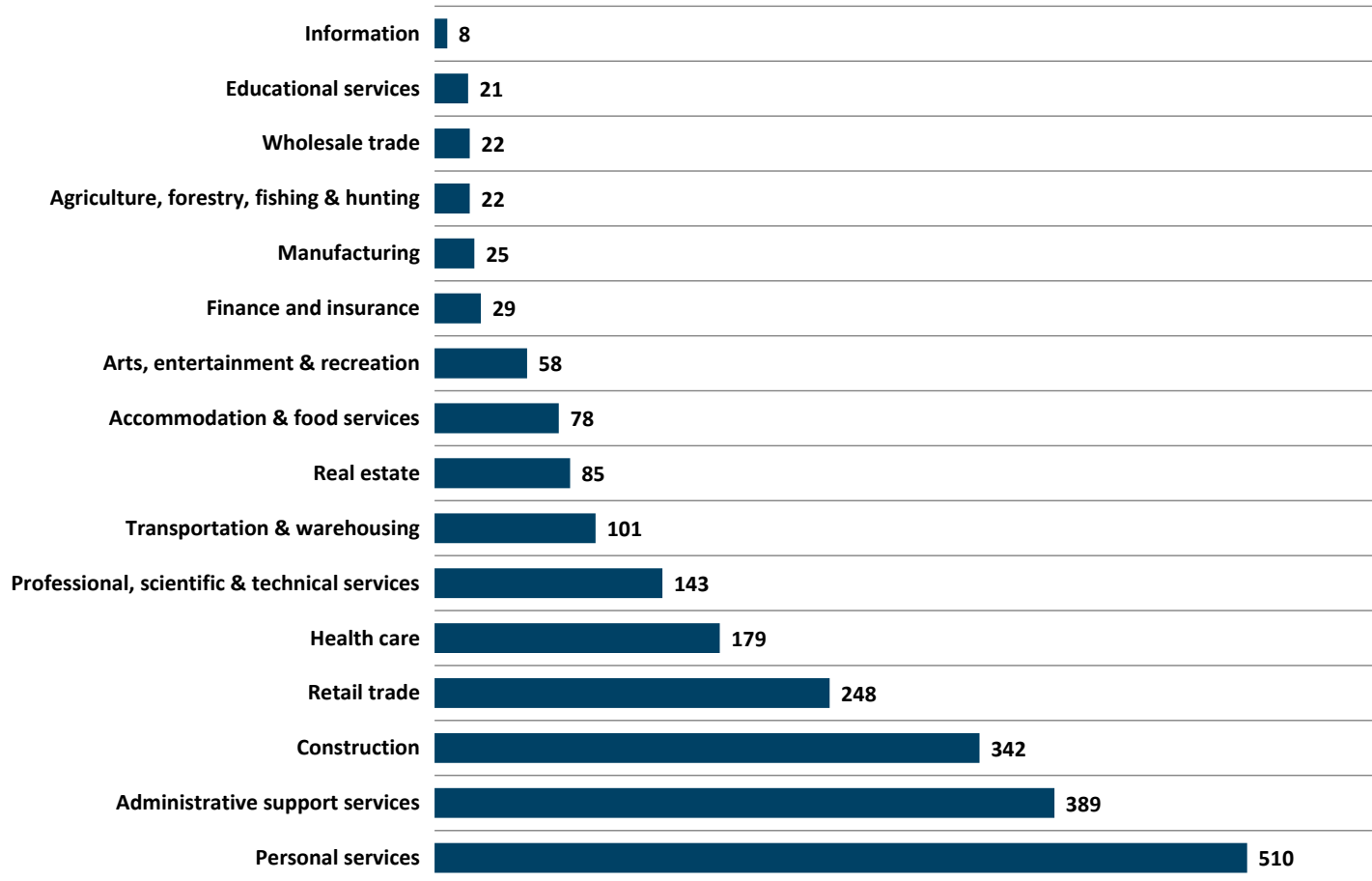|	2013		Ten-Year Change	
	#	%	#	%
Farm	270	6.2%	-8	-2.9%
Non-Farm	4,065	93.8%	1,421	53.7%
Total	4,335	-	1,413	48.4%

*Residents only.
Source: Garner Economics, US Bureau of Economic Analysis

FIGURE 19: SELF-EMPLOYED BUSINESS ESTABLISHMENTS*

Chambers County 2012

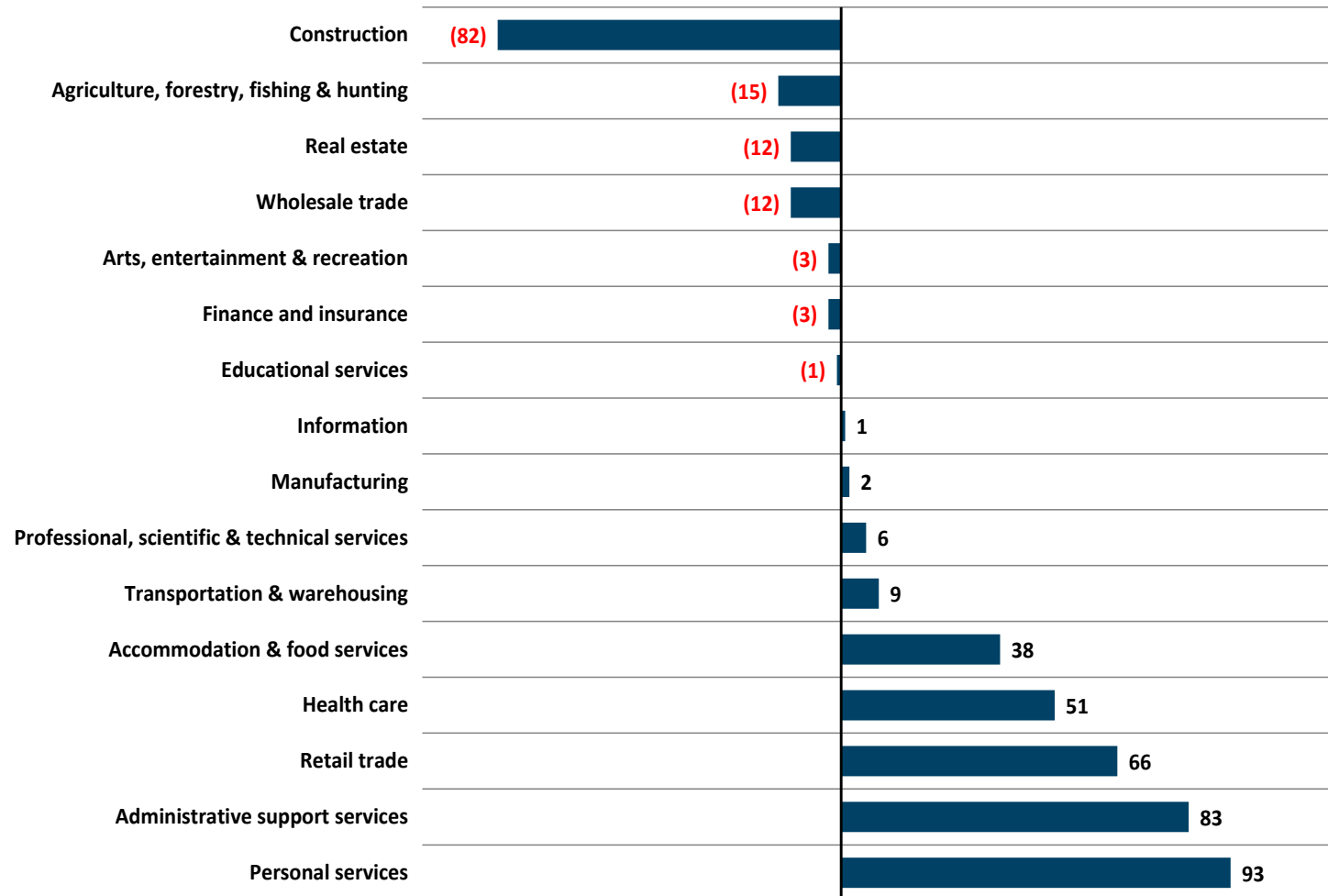| Category	Value
Information	8
Educational services	21
Wholesale trade	22
Agriculture, forestry, fishing & hunting	22
Manufacturing	25
Finance and insurance	29
Arts, entertainment & recreation	58
Accommodation & food services	78
Real estate	85
Transportation & warehousing	101
Professional, scientific & technical services	143
Health care	179
Retail trade	248
Construction	342
Administrative support services	389
Personal services	510

*Residents only. A person may operate several establishments.
Source: Garner Economics, US Census Bureau

FIGURE 20: FIVE-YEAR CHANGE OF SELF-EMPLOYED BUSINESS ESTABLISHMENTS*

Chambers County 2007-2012

Industry	Change
Construction	(82)
Agriculture, forestry, fishing & hunting	(15)
Real estate	(12)
Wholesale trade	(12)
Arts, entertainment & recreation	(3)
Finance and insurance	(3)
Educational services	(1)
Information	1
Manufacturing	2
Professional, scientific & technical services	6
Transportation & warehousing	9
Accommodation & food services	38
Health care	51
Retail trade	66
Administrative support services	83
Personal services	93

Residents only. A person may operate several establishments.

Source: Garner Economics, US Census Bureau

TABLE 16: SELF-EMPLOYMENT BY INDUSTRY*

Chambers County

	Establishments			Receipts ($)		
	2012	Five Year Change	Five Year Change (%)	2012	Five Year Change	Five Year Change (%)
Total	**2,262**	**221**	**11%**	**$52,055,000**	**($8,558,000)**	**-14.1%**
Agriculture, forestry, fishing & hunting	22	(15)	-41%	$915,000	($1,527,000)	-62.5%
Construction	342	(82)	-19%	$10,201,000	($5,743,000)	-36.0%
Manufacturing	25	2	9%	$778,000	($490,000)	-38.6%
Wholesale trade	22	(12)	-35%	$1,937,000	($1,402,000)	-42.0%
Retail trade	248	66	36%	$6,128,000	($2,595,000)	-29.7%
Transportation & warehousing	101	9	10%	$8,471,000	$2,323,000	37.8%
Information	8	1	14%	$283,000	($203,000)	-41.8%
Finance and insurance	29	(3)	-9%	$685,000	$140,000	25.7%
Real estate	85	(12)	-12%	$3,850,000	$178,000	4.8%
Professional, scientific & technical services	143	6	4%	$2,391,000	($1,260,000)	-34.5%
Administrative support services	389	83	27%	$4,313,000	$749,000	21.0%
Educational services	21	(1)	-5%	$130,000	$23,000	21.5%
Health care	179	51	40%	$2,414,000	$60,000	2.5%
Arts, entertainment & recreation	58	(3)	-5%	$318,000	($158,000)	-33.2%
Accommodation & food services	78	38	95%	$935,000	$549,000	142.2%
Personal services	510	93	22%	$8,301,000	$819,000	10.9%

Residents only. A person may operate several establishments.
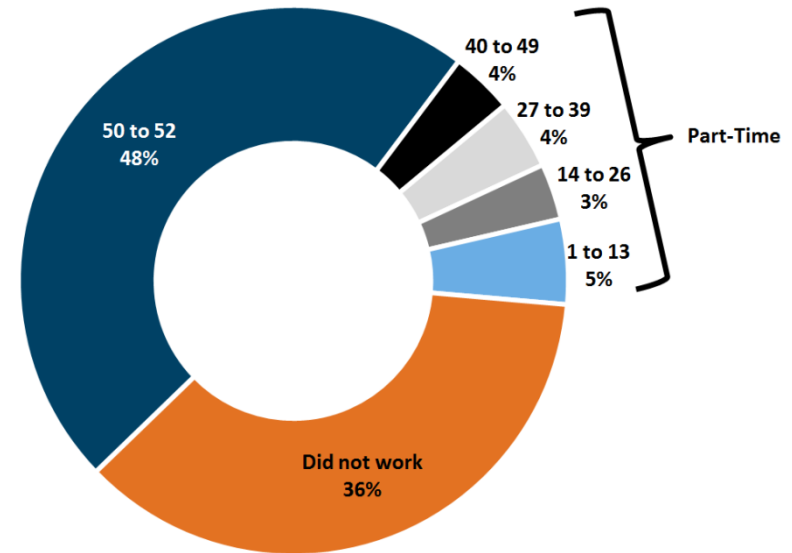*Source: Garner Economics, US Census Bureau*

WORKFORCE PARTICIPATION

Workforce participation data can offer insights into possibly untapped or undiscovered workers. Unfortunately the data does not indicate why a person is not in the labor force, nor if they plan to return.

According to the U.S. Census Bureau, 7,880 persons or 36.4 percent of Chambers County's population between the ages of 16 and 64 did not work in the previous 12 months (Figure 21 and Table 17). What may be of more interest to potential employers are the 3,485 persons or 16.1 percent of the population that worked less than 50 weeks in the previous 12 months. By demonstrating that they are able to work, these part-timers may present opportunities for additional employment.

There are several sizeable groups of persons not in the labor force in age groups 35-44 and 45-54; 1,000 and 1,664 persons, respectively (Figure 22 and Table 18). Among residents whose educational attainment is less than high school, 56 percent or 2,068 are not in the labor force (Figure 23 and Table 19). A targeted approach by employers, or a tightening labor market might incentivize either of these cohorts to enter the workforce.

FIGURE 21: WEEKS WORKED IN THE PREVIOUS 12 MONTHS*

Data represents a multiyear "rolling" survey of all residents presented in annual terms.
Does not include workers who in-commute.
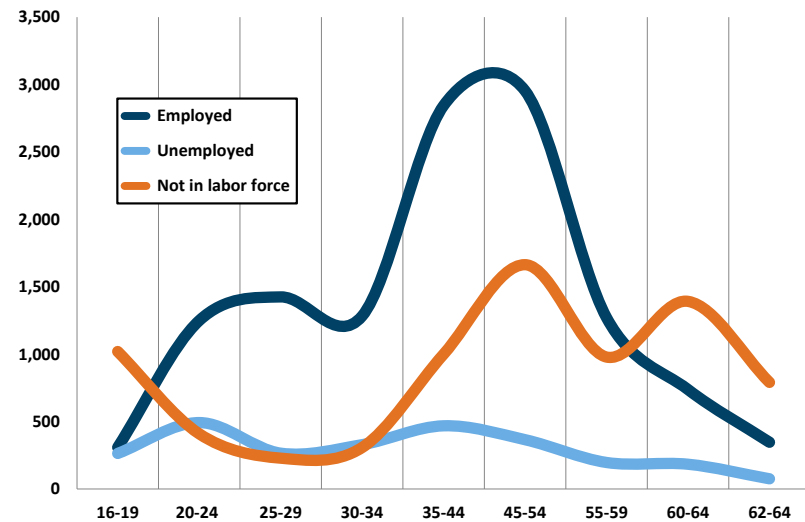*Source: Garner Economics, US Census Bureau*

TABLE 17: WEEKS WORKED IN THE PREVIOUS 12 MONTHS*

Weeks Worked	#	%
50 to 52	10,283	47.5%
40 to 49	801	3.7%
27 to 39	888	4.1%
14 to 26	714	3.3%
1 to 13	1,082	5.0%
Did not work	7,880	36.4%

Data represents a multiyear "rolling" survey of all residents presented in annual terms. Does not include workers who in-commute.
Source: Garner Economics, US Census Bureau

FIGURE 22: WORKFORCE PARTICIPATION BY AGE*

Data represents a multiyear "rolling" survey of all residents presented in annual terms. Does not include workers who in-commute.
Source: Garner Economics, US Census Bureau
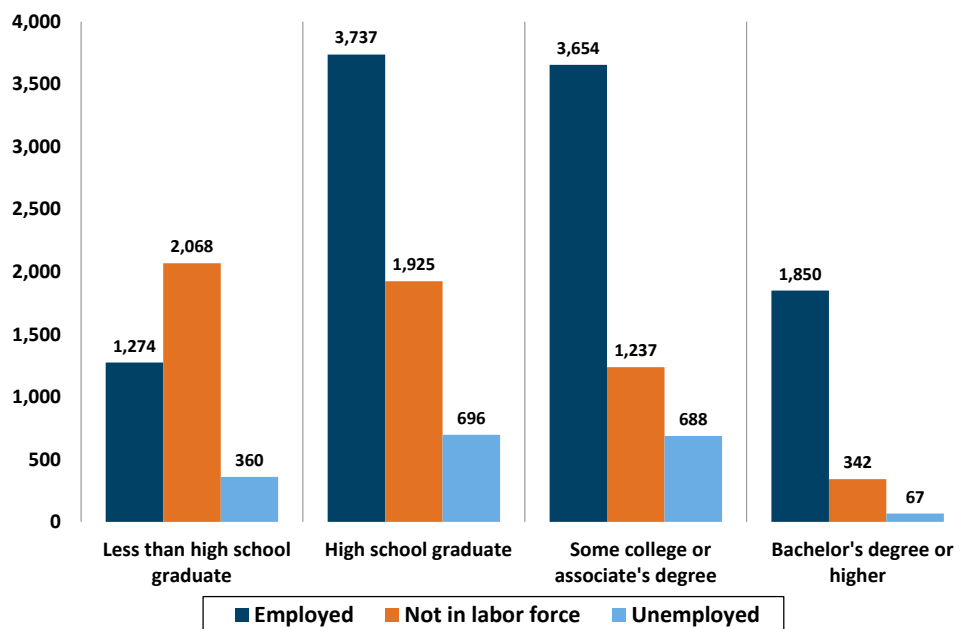
TABLE 18: WORKFORCE PARTICIPATION BY AGE*

Age Group	Employed	Unemployed	Not in labor force
16-19	309	264	1,020
20-24	1,249	493	410
25-29	1,425	266	229
30-34	1,283	329	308
35-44	2,844	469	1,000
45-54	2,954	366	1,664
55-59	1,271	197	979
60-64	738	184	1,392
62-64	347	76	791

Data represents a multiyear "rolling" survey of all residents presented in annual terms. Does not include workers who in-commute.
Source: Garner Economics, US Census Bureau

FIGURE 23: WORKFORCE PARTICIPATION BY EDUCATION*

Data represents a multiyear "rolling" survey of all residents presented in annual terms. Does not include workers who in-commute.
Source: Garner Economics, US Census Bureau

TABLE 19: WORKFORCE PARTICIPATION BY EDUCATION*
Chambers County 2009-2013 (Ages 25 to 64 Years)

	Less than high school graduate	High school graduate	Some college or associate's degree	Bachelor's degree or higher
Total	3,702	6,363	5,579	2,259
In labor force	1,634	4,438	4,342	1,917
Employed	1,274	3,737	3,654	1,850
Unemployed	360	696	688	67
Not in labor force	2,068	1,925	1,237	342

Data represents a multiyear "rolling" survey of all residents presented in annual terms. Does not include workers who in-commute.
Source: Garner Economics, US Census Bureau

SUMMARY

Chambers County has a particularly unique challenge in that the majority of its resident workers commute outside the county for employment. This makes it especially difficult for the Authority to present a truly comprehensive workforce assessment to current and potential employers. Most statistical databases only record workers at the location they are employed. The above analysis seeks to go beyond merely the workers employed at locations within Chambers County and to look at the entirety of the county's workforce.

The preceding pages sought to look at Chambers County's workforce in a holistic manner, looking at its complete workforce (in- and out-commuters), as well as that workforce's skills and knowledge. Additionally, the above analysis looks to the occupations, education levels, age, level of self-employment and workforce participation to best understand the various dynamics underway.

By better understanding these nuances and trends, the Authority can better market its workforce assets and uncover strengths and gaps that can be addressed and leveraged to better the county's competitive position.

Complete Workforce

- Accounting for commuting, Chambers County's complete workforce totals 20,265. More than twice the size reported by standard Federal and state sources (8,102).
- Over the previous three years, 71 percent of the additional job growth occurred to workers commuting outside the County for employment.
- The regional labor pool, counties within 45 minutes of Chambers County, equal 331,166 workers currently employed, and another 41,875 potential workers who are presently unemployed.

Workforce Skills

- Chambers County's workforce is locally strong in eight individual worker skills. All of these strong worker skills are within the Technical skills group.
- For recruitment and expansion efforts, Chambers County's strong Technical skills match 30.2 percent of Manufacturing's high-skilled worker demand, and 27.6 percent of Transportation & Warehousing's high-skilled worker demand.
- Among Chambers County's optimal targets; the Truck Transportation subsector has a highest demand for high-skill technical workers, who encompass 43.3 percent of its workers. All four subsectors in the Diversified-Demand Manufacturing target group have relatively high demand for high-skill technical workers; averaging 30.3 percent of its workers. The results indicate Chambers County offers a competitive advantage in satisfying critical workforce demand for these targets.
- In terms of education, the highest level of educational attainment for the majority of Technical skill workers is a High School Diploma, accounting for 62 percent of the total. Some College or Associate's Degree accounts for another 20 percent. The results challenge the perception that valued high-skilled workers hold upper levels of formal education.
- One-third of the County's Technical skills workers are currently in Production occupations.

Workforce Knowledge

- Chambers County's workforce is strong in six individual areas of knowledge; clustered in Engineering & Technology. Within the group there are 4,799 workers with high-knowledge of Production and Processing.
- Chambers County's strong workforce knowledge in Engineering & Technology matches 32.1 percent of Manufacturing's high-knowledge worker demand, and 17.4 percent of Professional, Scientific and Technical Service's high-knowledge worker demand.
- Among Chambers County's optimal targets; all four subsectors in the Diversified-Demand Manufacturing target group have a high demand for high-knowledge engineering & technology workers; ranging from 41 percent of Chemical Mfg. workers to 29.8 percent of Furniture and Related Product Mfg. The results indicate Chambers County offers a competitive advantage in satisfying critical workforce demand for these targets.

Occupations

- Among major occupations, Production has the highest degree of local specialization in Chambers County, nearly double the concentration seen nationwide. The Construction & Extraction group follows closely, with a concentration level roughly 50 percent greater than nationwide. The local strengths among occupational groups mirror the findings in workforce skills and workforce knowledge.

Workforce Education

- Workers whose highest level of educational attainment is High school comprise the largest number and proportion of workers in Chambers County. Although at 28.3 percent, workers with Some college or Associate degree comprise just one percentage point less. Over the last ten years, the number of workers with Some college or Associate degree has grown the most, adding 975 workers; outpacing all other education levels.
- In a survey of Chambers County residents that hold a Bachelor's Degree; the field with largest number is Business; 784 degree holders or 26.6 percent of the total.
- Among all education levels, workers with Some college or Associate degree rebounded strongest from the most recent recession.

Workforce Age

- Prime-age workers, those between the ages of 25 and 54, comprised 66 percent of Chambers County's workforce in 2014. In spite of the most recent national recession, all age groups currently exceed their pre-recession employment totals.

Self-Employment

- The number of Sole Proprietorships in Chambers County totaled 4,335 in 2013, up 48.4 percent in ten years. Except for a decrease in 2009, the number has increased each year; averaging 143 more establishments yearly, a 4.3 percent increase annually.
- Annual surveys show that Personal services account for 23 percent of self-employment business establishments in Chambers County.
- Three business types; Personal services, Administrative support services and Accommodation & food services have each demonstrated strong establishment and receipt growth among the self-employed in Chambers County.

Workforce Participation

Chambers County has several potentially untapped populations with low labor force participation:

- 3,485 persons worked less than 50 weeks in the previous 12 months.
- 2,664 workers aged 35-54 are not in the labor force.
- Among residents whose educational attainment is less than high school, 56 percent or 2,068 are not in the labor force.

TABLE 1: OUT-COMMUTING EMPLOYMENT BY INDUSTRY CHAMBERS COUNTY 2014

NAICS	Industry Sector	Employment	Percent Total
31	Manufacturing	2,730	22.3%
72	Accommodation & food services	1,514	12.4%
92	Public administration	1,435	11.7%
23	Construction	1,131	9.2%
44	Retail trade	1,014	8.3%
62	Health care & social assistance	790	6.4%
56	Administrative services	757	6.2%
48	Transportation & warehousing	397	3.2%
21	Mining & Quarrying	353	2.9%
52	Finance & insurance	342	2.8%
54	Professional, scientific & technical services	337	2.8%
51	Information	330	2.7%
11	Agriculture, forestry, fishing & hunting	226	1.8%
42	Wholesale trade	190	1.6%
53	Real estate	184	1.5%
61	Education services	176	1.4%
71	Arts, entertainment, and recreation	162	1.3%
55	Management of companies	109	0.9%
22	Utilities	74	0.6%

Source: Garner Economics, US Census Bureau

TABLE 2: SKILLS GROUPS & DETAILED DEFINITIONS
Locally Strong Skills Highlighted

Skill Group	Individual Skills	Detail
Complex Problem Solving Skills	Complex Problem Solving	Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
Resource Management Skills	Management of Financial Resources	Determining how money will be spent to get the work done, and accounting for these expenditures.
	Management of Material Resources	Obtaining and seeing to the appropriate use of equipment, facilities, and materials needed to do certain work.
	Management of Personnel Resources	Motivating, developing, and directing people as they work, identifying the best people for the job.
	Time Management	Managing one's own time and the time of others.
Social Skills	Coordination	Adjusting actions in relation to others' actions.
	Instructing	Teaching others how to do something.
	Negotiation	Bringing others together and trying to reconcile differences.
	Persuasion	Persuading others to change their minds or behavior.
	Service Orientation	Actively looking for ways to help people.
	Social Perceptiveness	Being aware of others' reactions and understanding why they react as they do.
Systems Skills	Judgment and Decision Making	Considering the relative costs and benefits of potential actions to choose the most appropriate one.
	Systems Analysis	Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.
	Systems Evaluation	Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.
Technical Skills	Equipment Maintenance	Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.
	Equipment Selection	Determining the kind of tools and equipment needed to do a job.
	Installation	Installing equipment, machines, wiring, or programs to meet specifications.
	Operation and Control	Controlling operations of equipment or systems.
	Operation Monitoring	Watching gauges, dials, or other indicators to make sure a machine is working properly.
	Operations Analysis	Analyzing needs and product requirements to create a design.
	Programming	Writing computer programs for various purposes.
	Quality Control Analysis	Conducting tests and inspections of products, services, or processes to evaluate quality or performance.
	Repairing	Repairing machines or systems using the needed tools.
	Technology Design	Generating or adapting equipment and technology to serve user needs.
	Troubleshooting	Determining causes of operating errors and deciding what to do about it.

*Source: Occupational Information Network (O*NET)*

TABLE 3: KNOWLEDGE GROUPS & DETAILED DEFINITIONS

Locally Strong Areas of Knowledge Highlighted

Knowledge Group	Individual Knowledge Area	Detail
Arts and Humanities	English Language	Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
	Fine Arts	Knowledge of the theory and techniques required to compose, produce, and perform works of music, dance, visual arts, drama, and sculpture.
	Foreign Language	Knowledge of the structure and content of a foreign (non-English) language including the meaning and spelling of words, rules of composition and grammar, and pronunciation.
	History and Archeology	Knowledge of historical events and their causes, indicators, and effects on civilizations and cultures.
	Philosophy and Theology	Knowledge of different philosophical systems and religions. This includes their basic principles, values, ethics, ways of thinking, customs, practices, and their impact on human culture.
Business and Management	Administration and Management	Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
	Clerical	Knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.
	Customer and Personal Service	Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
	Economics and Accounting	Knowledge of economic and accounting principles and practices, the financial markets, banking and the analysis and reporting of financial data.
	Personnel and Human Resources	Knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems.
	Sales and Marketing	Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.
Communications	Communications and Media	Knowledge of media production, communication, and dissemination techniques and methods. This includes alternative ways to inform and entertain via written, oral, and visual media.
	Telecommunications	Knowledge of transmission, broadcasting, switching, control, and operation of telecommunications systems.
Education and Training	Education and Training	Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.

Table 22, continued

Knowledge Group	Individual Knowledge Area	Detail
Engineering and Technology	Building and Construction	Knowledge of materials, methods, and the tools involved in the construction or repair of houses, buildings, or other structures such as highways and roads.
	Computers and Electronics	Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
	Design	Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.
	Engineering and Technology	Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.
	Mechanical	Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
Health Services	Medicine and Dentistry	Knowledge of the information and techniques needed to diagnose and treat human injuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties and interactions, and preventive health-care measures.
	Therapy and Counseling	Knowledge of principles, methods, and procedures for diagnosis, treatment, and rehabilitation of physical and mental dysfunctions, and for career counseling and guidance.
Law and Public Safety	Law and Government	Knowledge of laws, legal codes, court procedures, precedents, government regulations, executive orders, agency rules, and the democratic political process.
	Public Safety and Security	Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.
Manufacturing and Production	Food Production	Knowledge of techniques and equipment for planting, growing, and harvesting food products (both plant and animal) for consumption, including storage/handling techniques.
	Production and Processing	Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.

Table 22, continued

Knowledge Group	Individual Knowledge Area	Detail
Mathematics and Science	Biology	Knowledge of plant and animal organisms, their tissues, cells, functions, interdependencies, and interactions with each other and the environment.
	Chemistry	Knowledge of the chemical composition, structure, and properties of substances and of the chemical processes and transformations that they undergo. This includes uses of chemicals and their interactions, danger signs, production techniques, and disposal methods.
	Geography	Knowledge of principles and methods for describing the features of land, sea, and air masses, including their physical characteristics, locations, interrelationships, and distribution of plant, animal, and human life.
	Mathematics	Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.
	Physics	Knowledge and prediction of physical principles, laws, their interrelationships, and applications to understanding fluid, material, and atmospheric dynamics, and mechanical, electrical, atomic and sub-atomic structures and processes.
	Psychology	Knowledge of human behavior and performance; individual differences in ability, personality, and interests; learning and motivation; psychological research methods; and the assessment and treatment of behavioral and affective disorders.
	Sociology and Anthropology	Knowledge of group behavior and dynamics, societal trends and influences, human migrations, ethnicity, cultures and their history and origins.
Transportation	Transportation	Knowledge of principles and methods for moving people or goods by air, rail, sea, or road, including the relative costs and benefits.

*Source: Occupational Information Network (O*NET)*