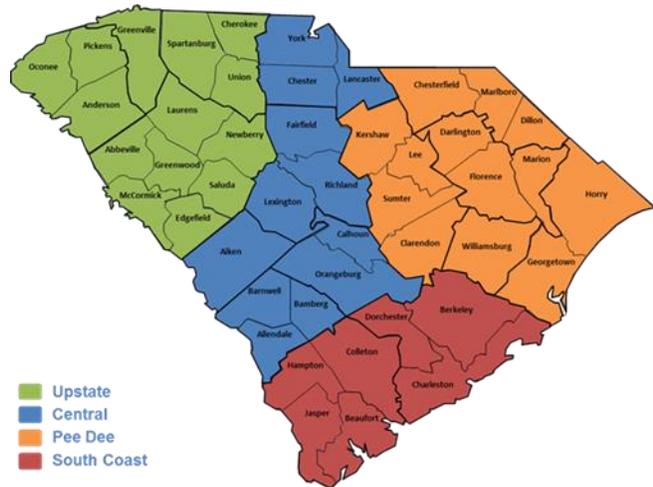


How Have Upstate Commuting Patterns Changed in the 21st Century?



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The Business Intelligence Department compiles and publishes employment statistics, job forecasts, wage data, demographics, and other labor market information to help public and private organizations, researchers, and others better understand today's complex workforce.

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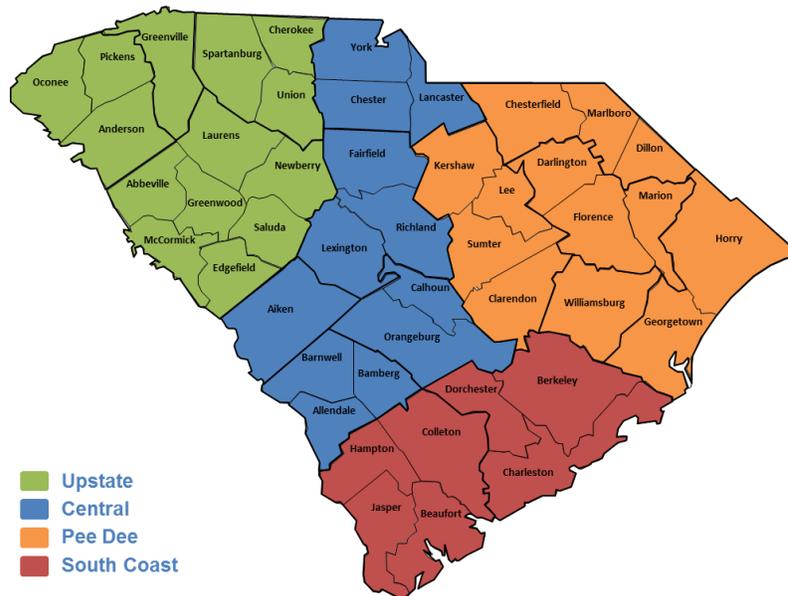
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How Have Upstate Commuting Patterns Changed in the 21st Century?

In the fall of 2015, the South Carolina Workforce Development Board approved a regional system for workforce planning in accordance with the federal law *Workforce Innovation and Opportunity Act of 2014 (WIOA)*. The Upstate was one of the four newly-created regions as shown in Figure 1.

Figure 1 – State WIOA Regions



Commuting patterns or the travel characteristics of workers from their homes to their jobs were one of the important elements in determining the regional system. Recently, the U.S. Census Bureau released an updated set of commuting information from the Longitudinal Employer-Household Dynamics (LEHD) program. This report analyzes that data from a historical perspective and answers the question “How have commuting patterns for the Upstate Region changed over time?”

The dataset from the LEHD program highlights annual information from 2002 to 2014 and gives a view of the changing nature of commuter travel characteristics in the Upstate. A job in this context is the “primary” job or the highest paying job that a person holds if one is a multi-job holder. The information is derived from a partially synthetic dataset that describes geographic patterns of jobs by their employment locations and residential locations as well as the connections between the two locations. These data and marginal summaries are tabulated by several categorical variables.¹

Upstate Worker Inflow/Outflow

The Upstate has seen the number of jobs grow from 549,000 in 2002, reaching a peak of 577,000 in 2008, and falling during the Recession and early recovery (see Appendix 1). The region surpassed its previous high in 2014 with 583,000 jobs. The number of working Upstate residents followed a similar pattern as the number of jobs, in that, the number rose from 555,000 in 2002 to a peak of 587,000 in 2007 before falling and then finally surpassing its earlier peak in 2014 at 591,000.

The Upstate has had more working residents than jobs throughout the 2002-2014 period by a varying amount. The differential has fluctuated from 6,200 in 2002 to 12,600 in 2007 to 13,534 in 2011 and 8,000 in 2014 with declines and upswings in the interim periods. The area is adding working residents faster than jobs over time with a job gain of 34,000 from 2002 to 2014, while the worker gain was 36,000 over the same period. Thus, the net outflow is growing as the influx of working residents is outpacing the region's ability to create jobs.

Region Efficiency

An interesting aspect of the commuting pattern data is labor force and employment efficiencies for the region. The labor force element is shown by viewing the region's working residents, 591,000 in 2014, by their work location being inside or outside of the region. Of those 591,000 workers more than 492,000 or 83.4 percent hold a job within the region, while 98,000 or 16.6 percent work outside of the region. The within-region labor force efficiency measure has been falling from 88.4 percent in 2002 to the 83.4 percent figure stated above.

Meanwhile, the employment efficiency measure has been declining also. This statistic involves the jobs located in the region, 583,000 in 2014, and whether the workers' home locations are inside or outside of the region. The same 492,000 region workers, mentioned in the previous paragraph, who hold an Upstate job, represent 84.5 percent of all of the region's jobs. This figure has fallen from 89.4 percent in 2002. Fifteen and one-half percent of the region's jobs were filled by workers from outside of the region in 2014.

Taken together, these efficiency measures show that the area has become less efficient or self-sufficient over time even though the overall numbers of jobs and workers have increased. A higher percentage of residents live in the region but work out-of-area, and a higher percentage of the region's jobs are filled by out-of-area workers. This means there is more cross-regional commuting occurring as employers stretch out their employee networks farther from the worksite (to be analyzed further in a succeeding section).

Upstate Jobs by Industry and Worker Characteristics

The number of jobs in the Upstate region stood at 583,000 in 2014, rising from 549,000 in 2002 (see Appendix 2). The top three industries in 2014 were Manufacturing with 18.6 percent of the jobs, Health Care and Social Assistance with 12.5 percent, and Retail Trade with 11.7 percent. Manufacturing has fallen from 25.7 percent of region jobs in 2002, while Health Care and Social Assistance has grown from 9.9 percent in the same year. Retail Trade has increased over the period from 11.4 percent in 2002. The Administration & Support, Waste Management and Remediation sector, which includes Temporary Help Services, grew the fastest, increasing its share of overall industry employment by 3.5 percent from 2002 to 2014 to 8.9 percent.

The increase in the number of jobs is due to the gain of workers aged 55 and older as their numbers grew by 43,000 from 2002 to 2014. This group gained in percentage terms as well to compose 21.7 percent of the workforce in 2014 from 15.2 percent in 2002. The number of workers in the two categories under the age of 55 each fell in absolute as well as percentage terms.

In terms of worker race holding Upstate jobs, the *White Alone* category fell by 1.4 percent from 2009 to 2014 to 76.1 percent, while the *Black Alone* category gained by the same percentage to 21.4 in 2014. The *Hispanic* share of workers notched up 0.1 percent since 2009 to 3.5 percent in 2014. Males increased their majority share of the workforce from 50.4 percent to 51.2 percent over the same period.

The four categories of educational attainment showed minor changes over the six-year span to 2014. The *Less than High School* and *Some College* categories each increased their share of the workforce by less than one percent each, while the *High School* and *Bachelor's Degree and above* categories lost in overall proportion.

Home Counties of Upstate Workers

With 84.5 percent of the region's 583,000 jobs held by Upstate residents, it is not surprising that the top home counties of workers would also be in the Upstate (see Appendix 3). In fact, Greenville, Spartanburg, Anderson, Pickens, and Laurens were the top five home counties in 2014. Interestingly, only Greenville and Laurens increased in numbers and percentage from 2002 to 2014 of the top five. Greenville's growth of 11,000 workers represent fully one-third of the gain for the entire region over the 13-year period.

Another interesting phenomenon emerged upon analysis of the home counties of Upstate jobs over time. Residents in urban counties, located outside of the region, gained in numbers and percentage holding Upstate jobs, while those two measures for several of the rural counties within the Upstate dropped. The number of Richland, Charleston, York, Aiken, and Horry county residents grew in holders of Upstate jobs, while those statistics of workers from Oconee,

Greenwood, Cherokee, Newberry, and Union counties fell. This is another indication that commuters' aggregate travel distances were increasing over time.

Home Distance and Direction from Upstate Worksites

The proportion of workers whose homes were less than 10 miles from their Upstate work location fell by 8.7 percent or 32,500 people from 2002 to 2014 (see Appendix 4). The share of workers residing greater than 50 miles from their Upstate workplace grew by 29,000 or 4.4 percent to 14.6 percent of workers. The two categories of distance between the extremes, *10 to 24 miles* and *25 to 50 miles*, also saw increases in numbers and percentage share.

The number of workers whose homes were located to the north or northwest of their Upstate worksite fell, while the number of workers whose homes were in one of the six remaining primary directions from their worksites rose. In these six directions are located the more urban areas of the state from which an increasing number of workers reside.

Summary

This analysis shows the Upstate to be a growing and diversifying economy as six industries each employ over 8 percent of the workforce in 2014, transforming from a more manufacturing-dominated region in the past. Demographics have remained relatively stable, while the workforce has aged as a whole. Efficiency measures, at about 85 percent, still show the region to be nearly self-sufficient in terms of workforce even as commuter travel is lengthening over time.

Appendix 1

Inflow/Outflow Report

Selection Area Labor Market Size (Primary Jobs)

	2014		2013		2012		2011	
	Count	Share	Count	Share	Count	Share	Count	Share
Employed in the Selection Area	582,798	100.0%	561,905	100.0%	557,640	100.0%	548,376	100.0%
Living in the Selection Area	590,831	101.4%	572,145	101.8%	567,262	101.7%	561,910	102.5%
Net Job Inflow (+) or Outflow (-)	-8,033		-10,240		-9,622		-13,534	

In-Area Labor Force Efficiency (Primary Jobs)

	2014		2013		2012		2011	
	Count	Share	Count	Share	Count	Share	Count	Share
Living in the Selection Area	590,831	100.0%	572,145	100.0%	567,262	100.0%	561,910	100.0%
Living and Employed in the Selection Area	492,495	83.4%	477,110	83.4%	476,176	83.9%	468,236	83.3%
Living in the Selection Area but Employed Outside	98,336	16.6%	95,035	16.6%	91,086	16.1%	93,674	16.7%

In-Area Employment Efficiency (Primary Jobs)

	2014		2013		2012		2011	
	Count	Share	Count	Share	Count	Share	Count	Share
Employed in the Selection Area	582,798	100.0%	561,905	100.0%	557,640	100.0%	548,376	100.0%
Employed and Living in the Selection Area	492,495	84.5%	477,110	84.9%	476,176	85.4%	468,236	85.4%
Employed in the Selection Area but Living Outside	90,303	15.5%	84,795	15.1%	81,464	14.6%	80,140	14.6%

Selection Area Labor Market Size (Primary Jobs)

	2010		2009		2008		2007	
	Count	Share	Count	Share	Count	Share	Count	Share
Employed in the Selection Area	535,795	100.0%	538,384	100.0%	576,997	100.0%	573,971	100.0%
Living in the Selection Area	544,008	101.5%	546,615	101.5%	583,344	101.1%	586,613	102.2%
Net Job Inflow (+) or Outflow (-)	-8,213		-8,231		-6,347		-12,642	

In-Area Labor Force Efficiency (Primary Jobs)

	2010		2009		2008		2007	
	Count	Share	Count	Share	Count	Share	Count	Share
Living in the Selection Area	544,008	100.0%	546,615	100.0%	583,344	100.0%	586,613	100.0%
Living and Employed in the Selection Area	452,222	83.1%	454,658	83.2%	491,315	84.2%	498,514	85.0%
Living in the Selection Area but Employed Outside	91,786	16.9%	91,957	16.8%	92,029	15.8%	88,099	15.0%

In-Area Employment Efficiency (Primary Jobs)

	2010		2009		2008		2007	
	Count	Share	Count	Share	Count	Share	Count	Share
Employed in the Selection Area	535,795	100.0%	538,384	100.0%	576,997	100.0%	573,971	100.0%
Employed and Living in the Selection Area	452,222	84.4%	454,658	84.4%	491,315	85.2%	498,514	86.9%
Employed in the Selection Area but Living Outside	83,573	15.6%	83,726	15.6%	85,682	14.8%	75,457	13.1%

Appendix 1 - continued

Inflow/Outflow Report

Selection Area Labor Market Size (Primary Jobs)

	2006		2005		2004	
	Count	Share	Count	Share	Count	Share
Employed in the Selection Area	566,871	100.0%	557,229	100.0%	544,461	100.0%
Living in the Selection Area	571,767	100.9%	559,531	100.4%	546,343	100.3%
Net Job Inflow (+) or Outflow (-)	-4,896	-	-2,302	-	-1,882	-

In-Area Labor Force Efficiency (Primary Jobs)

	2006		2005		2004	
	Count	Share	Count	Share	Count	Share
Living in the Selection Area	571,767	100.0%	559,531	100.0%	546,343	100.0%
Living and Employed in the Selection Area	497,361	87.0%	489,604	87.5%	479,435	87.8%
Living in the Selection Area but Employed Outside	74,406	13.0%	69,927	12.5%	66,908	12.2%

In-Area Employment Efficiency (Primary Jobs)

	2006		2005		2004	
	Count	Share	Count	Share	Count	Share
Employed in the Selection Area	566,871	100.0%	557,229	100.0%	544,461	100.0%
Employed and Living in the Selection Area	497,361	87.7%	489,604	87.9%	479,435	88.1%
Employed in the Selection Area but Living Outside	69,510	12.3%	67,625	12.1%	65,026	11.9%

Selection Area Labor Market Size (Primary Jobs)

	2003		2002	
	Count	Share	Count	Share
Employed in the Selection Area	544,765	100.0%	548,712	100.0%
Living in the Selection Area	548,322	100.7%	554,919	101.1%
Net Job Inflow (+) or Outflow (-)	-3,557	-	-6,207	-

In-Area Labor Force Efficiency (Primary Jobs)

	2003		2002	
	Count	Share	Count	Share
Living in the Selection Area	548,322	100.0%	554,919	100.0%
Living and Employed in the Selection Area	483,163	88.1%	490,469	88.4%
Living in the Selection Area but Employed Outside	65,159	11.9%	64,450	11.6%

In-Area Employment Efficiency (Primary Jobs)

	2003		2002	
	Count	Share	Count	Share
Employed in the Selection Area	544,765	100.0%	548,712	100.0%
Employed and Living in the Selection Area	483,163	88.7%	490,469	89.4%
Employed in the Selection Area but Living Outside	61,602	11.3%	58,243	10.6%

Appendix 2

Work Area Profile Report

Total Primary Jobs

	2014		2002	
	Count	Share	Count	Share
Total Primary Jobs	582,798	100.0%	548,712	100.0%

Jobs by Worker Age

	2014		2002	
	Count	Share	Count	Share
Age 29 or younger	133,947	23.0%	137,604	25.1%
Age 30 to 54	322,215	55.3%	327,815	59.7%
Age 55 or older	126,636	21.7%	83,293	15.2%

Jobs by Earnings

	2014		2002	
	Count	Share	Count	Share
\$1,250 per month or less	128,446	22.0%	149,828	27.3%
\$1,251 to \$3,333 per month	237,163	40.7%	266,278	48.5%
More than \$3,333 per month	217,189	37.3%	132,606	24.2%

Jobs by NAICS Industry Sector

	2014		2002	
	Count	Share	Count	Share
Agriculture, Forestry, Fishing and Hunting	2,319	0.4%	2,685	0.5%
Mining, Quarrying, and Oil and Gas Extraction	313	0.1%	586	0.1%
Utilities	5,023	0.9%	5,779	1.1%
Construction	24,933	4.3%	30,077	5.5%
Manufacturing	108,388	18.6%	140,768	25.7%
Wholesale Trade	26,795	4.6%	24,354	4.4%
Retail Trade	67,904	11.7%	62,737	11.4%
Transportation and Warehousing	18,026	3.1%	18,083	3.3%
Information	9,940	1.7%	9,919	1.8%
Finance and Insurance	16,790	2.9%	14,115	2.6%
Real Estate and Rental and Leasing	5,578	1.0%	5,446	1.0%
Professional, Scientific, and Technical Services	24,017	4.1%	20,041	3.7%
Management of Companies and Enterprises	8,001	1.4%	5,614	1.0%
Administration & Support, Waste Management and Remediation	51,798	8.9%	29,553	5.4%
Educational Services	53,440	9.2%	48,371	8.8%
Health Care and Social Assistance	72,892	12.5%	54,478	9.9%
Arts, Entertainment, and Recreation	5,560	1.0%	4,760	0.9%
Accommodation and Food Services	48,614	8.3%	41,105	7.5%
Other Services (excluding Public Administration)	12,829	2.2%	13,615	2.5%
Public Administration	19,638	3.4%	16,626	3.0%

Appendix 2 – continued

Work Area Profile Report

Jobs by Worker Race

	2014		2009	
	Count	Share	Count	Share
White Alone	443,461	76.1%	417,237	77.5%
Black or African American Alone	124,859	21.4%	107,660	20.0%
American Indian or Alaska Native Alone	1,532	0.3%	1,454	0.3%
Asian Alone	8,539	1.5%	8,136	1.5%
Native Hawaiian or Other Pacific Islander Alone	314	0.1%	320	0.1%
Two or More Race Groups	4,093	0.7%	3,577	0.7%

Jobs by Worker Ethnicity

	2014		2009	
	Count	Share	Count	Share
Not Hispanic or Latino	562,300	96.5%	520,066	96.6%
Hispanic or Latino	20,498	3.5%	18,318	3.4%

Jobs by Worker Educational Attainment

	2014		2009	
	Count	Share	Count	Share
Less than high school	53,527	9.2%	46,439	8.6%
High school or equivalent, no college	141,112	24.2%	132,490	24.6%
Some college or Associate degree	147,835	25.4%	134,330	25.0%
Bachelor's degree or advanced degree	106,377	18.3%	99,260	18.4%
Educational attainment not available (workers aged 29 or younger)	133,947	23.0%	125,865	23.4%

Jobs by Worker Sex

	2014		2009	
	Count	Share	Count	Share
Male	298,498	51.2%	271,164	50.4%
Female	284,300	48.8%	267,220	49.6%

Appendix 3

Home Destination Report - Where Workers Live Who are Employed in the Selection Area - by Counties

Total Primary Jobs

	2014		2002	
	Count	Share	Count	Share
Total Primary Jobs	582,798	100.0%	548,712	100.0%

Jobs Counts by Counties Where Workers Live - Primary Jobs

	2014		2002	
	Count	Share	Count	Share
Greenville County, SC	169,447	29.1%	158,029	28.8%
Spartanburg County, SC	97,490	16.7%	98,287	17.9%
Anderson County, SC	66,522	11.4%	68,155	12.4%
Pickens County, SC	39,818	6.8%	39,933	7.3%
Laurens County, SC	22,884	3.9%	20,549	3.7%
Oconee County, SC	22,496	3.9%	23,919	4.4%
Greenwood County, SC	21,801	3.7%	24,796	4.5%
Cherokee County, SC	16,880	2.9%	17,546	3.2%
Richland County, SC	9,992	1.7%	8,803	1.6%
Newberry County, SC	9,229	1.6%	11,001	2.0%
Union County, SC	8,654	1.5%	10,533	1.9%
Lexington County, SC	7,983	1.4%	7,711	1.4%
Abbeville County, SC	7,524	1.3%	8,561	1.6%
Charleston County, SC	5,621	1.0%	3,001	0.5%
York County, SC	5,504	0.9%	4,367	0.8%
Aiken County, SC	5,123	0.9%	4,505	0.8%
Saluda County, SC	4,083	0.7%	3,731	0.7%
Edgefield County, SC	3,897	0.7%	3,938	0.7%
Horry County, SC	3,275	0.6%	1,300	0.2%
Berkeley County, SC	2,705	0.5%	1,934	0.4%
Cleveland County, NC	2,565	0.4%	1,095	0.2%
Beaufort County, SC	2,206	0.4%	812	0.1%
Chester County, SC	2,121	0.4%	1,375	0.3%
Rutherford County, NC	1,981	0.3%	997	0.2%
Dorchester County, SC	1,923	0.3%	1,136	0.2%
All Other Locations	41,074	7.0%	22,698	4.1%

Appendix 4

Distance/Direction Report - Work Census Block to Home Census Block

Job Counts in Home Blocks by Distance Only

	2014		2002	
	Count	Share	Count	Share
Total Primary Jobs	582,798	100.0%	548,712	100.0%
Less than 10 miles	259,790	44.6%	292,315	53.3%
10 to 24 miles	166,530	28.6%	150,369	27.4%
25 to 50 miles	71,434	12.3%	50,181	9.1%
Greater than 50 miles	85,044	14.6%	55,847	10.2%

Job Counts in Home Blocks to the Northeast of Work Blocks by Distance

	2014		2002	
	Count	Share	Count	Share
Total Primary Jobs	74,436	100.0%	69,113	100.0%
Less than 10 miles	32,978	44.3%	37,468	54.2%
10 to 24 miles	24,377	32.7%	20,034	29.0%
25 to 50 miles	11,001	14.8%	7,880	11.4%
Greater than 50 miles	6,080	8.2%	3,731	5.4%

Job Counts in Home Blocks to the Northwest of Work Blocks by Distance

	2014		2002	
	Count	Share	Count	Share
Total Primary Jobs	58,476	100.0%	60,591	100.0%
Less than 10 miles	32,889	56.2%	37,325	61.6%
10 to 24 miles	17,868	30.6%	17,821	29.4%
25 to 50 miles	5,284	9.0%	3,851	6.4%
Greater than 50 miles	2,435	4.2%	1,594	2.6%

Job Counts in Home Blocks to the East of Work Blocks by Distance

	2014		2002	
	Count	Share	Count	Share
Total Primary Jobs	85,795	100.0%	77,165	100.0%
Less than 10 miles	34,703	40.4%	38,353	49.7%
10 to 24 miles	20,404	23.8%	17,815	23.1%
25 to 50 miles	10,028	11.7%	7,874	10.2%
Greater than 50 miles	20,660	24.1%	13,123	17.0%

Job Counts in Home Blocks to the North of Work Blocks by Distance

	2014		2002	
	Count	Share	Count	Share
Total Primary Jobs	57,602	100.0%	59,575	100.0%
Less than 10 miles	32,685	56.7%	37,618	63.1%
10 to 24 miles	17,091	29.7%	16,739	28.1%
25 to 50 miles	4,973	8.6%	3,481	5.8%
Greater than 50 miles	2,853	5.0%	1,737	2.9%

Job Counts in Home Blocks to the Southeast of Work Blocks by Distance

	2014		2002	
	Count	Share	Count	Share
Total Primary Jobs	100,744	100.0%	90,009	100.0%
Less than 10 miles	34,490	34.2%	37,963	42.2%
10 to 24 miles	20,274	20.1%	19,001	21.1%
25 to 50 miles	8,511	8.4%	6,371	7.1%
Greater than 50 miles	37,469	37.2%	26,674	29.6%

Appendix 4 - continued

Distance/Direction Report - Work Census Block to Home Census Block

Job Counts in Home Blocks to the South of Work Blocks by Distance

	2014		2002	
	Count	Share	Count	Share
Total Primary Jobs	61,815	100.0%	58,147	100.0%
Less than 10 miles	30,156	48.8%	32,938	56.6%
10 to 24 miles	17,012	27.5%	16,179	27.8%
25 to 50 miles	7,312	11.8%	4,482	7.7%
Greater than 50 miles	7,335	11.9%	4,548	7.8%

Job Counts in Home Blocks to the West of Work Blocks by Distance

	2014		2002	
	Count	Share	Count	Share
Total Primary Jobs	73,047	100.0%	68,910	100.0%
Less than 10 miles	32,297	44.2%	37,054	53.8%
10 to 24 miles	26,541	36.3%	22,694	32.9%
25 to 50 miles	10,553	14.4%	7,069	10.3%
Greater than 50 miles	3,656	5.0%	2,093	3.0%

Job Counts in Home Blocks to the Southwest of Work Blocks by Distance

	2014		2002	
	Count	Share	Count	Share
Total Primary Jobs	70,883	100.0%	65,202	100.0%
Less than 10 miles	29,592	41.7%	33,596	51.5%
10 to 24 miles	22,963	32.4%	20,086	30.8%
25 to 50 miles	13,772	19.4%	9,173	14.1%
Greater than 50 miles	4,556	6.4%	2,347	3.6%

Appendix 5

Data Source and Notes

Data Source: U. S. Census Bureau, 2016. *OnTheMap* Application. Longitudinal-Employer Household Dynamics (LEHD) Program. <http://onthemap.ces.census.gov/>

¹ U. S. Census Bureau, 2016, from the *OnTheMap* Data Overview document at: <http://lehd.ces.census.gov/doc/help/onthemap/OnTheMapDataOverview.pdf>

The LEHD data infrastructure is based upon several core datasets provided by state partners. These datasets include Unemployment Insurance (UI) wage data and the Quarterly Census of Employment and Wages (QCEW) as well as federal civilian workers. Coverage currently excludes several groups of workers: uniformed military, self-employed workers, and informally employed workers.

For the purposes of *OnTheMap*, LEHD defines a job as a link between a worker and a firm at which the worker has been employed during the reference quarter (Quarter 2 [April-June] 2014) and during the quarter prior to the reference quarter. This definition of "job" is sometimes called a "Beginning of Quarter" job because it is assumed that the worker was employed at that firm on the first day of the reference quarter. Jobs are associated with both a home census block for the worker and a jobsite census block in an origin-destination format.

This report uses the "primary job" variable. A primary job is the highest paying job for an individual worker for the year. The count of primary jobs is the same as the count of workers.

Required Language

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Appendix 5 – continued

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