

Appendix A

Target Cluster Opportunity Analysis

September 2021

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Project Overview

The Centralina Economic Development District (CEDD) hired EY's Economic Development Advisory Services team to assist with the development of this "Centralina Target Cluster Opportunity Analysis." EY was tasked with evaluating the performance of the region's existing target industries and clusters, identify county-level trends, show how disruptors and drivers are affecting industry clusters, and update the region's target clusters. In addition, an analysis of supply chains included a survey of employers across the region, and an examination of Al/automation impacts on workforce was included. Ultimately, this analysis will inform the region's upcoming Comprehensive Economic Development Strategy update in 2022.



About the Centralina EDD

In 2020, the Centralina Economic Development District (CEDD) was awarded funding from the Economic Development Administration (EDA) for a COVID-19 Economic Recovery Planning and Technical Assistance Grant under the Coronavirus Aid, Relief, and Economic Security (CARES) Act signed into law by President Trump on March 27, 2020. The primary project under this grant has a goal to develop strategic short-term and long-term economic recovery and resilience assessments tied to our 2017 Prosperity for Greater Charlotte CEDS.

The CEDD was formed in 2005 by the Centralina Regional Council to serve as the local U.S. Commerce Economic Development Administration (EDA) designated Economic Development District (EDD) for the nine-county region. The CEDD also has the responsibility as the local EDD to create, manage and implement the regional Comprehensive Economic Development Strategy (CEDS) initiated in 2004, renewed in 2007, 2012, and most recently 2017 in the series of required five-year updates. The CEDD also provides technical assistance and eligibility support to regional jurisdictions for grants from the EDA and other federal and state sources.

Centralina Regional Council is a State of North Carolina regional organization representing a nine-county area that includes Anson, Cabarrus, Gaston, Lincoln, Iredell, Mecklenburg, Rowan, Stanly, and Union. Centralina Regional Council is the second largest of 16 regional councils in the State of North Carolina and works with local governments, state, and federal agencies to meet the region's needs on a wide range of governance issues, including, local and regional land use, environmental and transportation planning, and administration, aging and workforce services, and economic and program development.

Executive Summary

The Centralina region last conducted a target industry analysis in 2016. In the years since, the regional economy has been characterized by both triumph and tumult. In the years leading up to the global pandemic, the Charlotte region boasted one of the country's most dynamic economies. The Charlotte metro, which includes most Centralina counties as well as several counties in South Carolina, ranked fourth in employment growth between 2014 and 2019 among US metros with at least 1 million jobs.



Source: EMSI

The strong employment growth enjoyed by the Centralina region reflects several important trends. Perhaps most importantly, prior to the pandemic, employment growth in the region was strikingly broad-based. In the five years leading up to 2019, virtually every industry cluster in Centralina experienced employment gains. While most clusters posted job gains during this period, however, the region's existing target industries played a disproportionately large role in Centralina's strong employment performance. Advanced Manufacturing, Financial Services, Health, Logistics & Distribution, and Information Technology collectively accounted for more than 40% of all jobs created in the Centralina region between 2014 and 2019.

The pandemic brought an abrupt end to global economic momentum. Centralina was no exception. Employment in the region fell 5% during the first 9 months of 2020, a slightly less severe decline relative to the national average. The pandemic's impact on the region's target clusters proved uneven. Both Financial Services and Logistics & Distribution managed to post employment gains despite strong recessionary pressures. Employment in other areas, however, proved less resilient; the Information Technology, Advanced Manufacturing, and Health clusters all suffered job losses in 2020.



Source: EMSI

Centralina's existing targets are all poised to post significant rebounds in the years ahead. Each of these clusters, for example, is well-positioned to leverage the region's assets in the face of economic, technological, and demographic changes. Centralina's leading Financial Services sector, for example, has an important role to play as emerging niches such as Fintech gather strength thanks to continued technological evolutions. The aging of the US population, combined with sustained population growth throughout Centralina, will boost the Health sector. The growing embrace of e-commerce among American consumers is expected to drive substantial growth in the Logistics & Distribution sector.



Looking beyond the region's five core target industries, the dynamics seen at the metro level show the stark changes that occurred in the economy in 2020. Leisure and Hospitality lost over 27,000 jobs from January to June; 23,000 jobs were regained over the next 12 months. Government employment lost over 13,000 jobs and only regained 7,000 jobs. Health Services lost nearly 12,000 jobs and regained just one-third of jobs lost. Similarly, Manufacturing regained only 32% of the 7,000 jobs lost. Overall, the metro had about a gap of 1.8% below January 2020 levels as of June 2021. Unemployment rates rose dramatically to 14% in April 2020 and have since fallen. Still, low unemployment rates are masked by the loss of available labor force that has since fallen out of the workforce.







Monthly unemployment rates, Jan. 2020 - June 2021



Sources: BLS

Looking more closely at county dynamics, significant variation has occurred. The following chart shows job losses from January 2020 for April 2020 and March 2021. Green highlights indicate growth above January levels. For example, Anson County lost 10% of its Construction employment by April 2020 and continued to lose jobs. In contrast, Iredell County lost only modest construction jobs and added an additional 5% new construction jobs since April 2020.

Job losses since Jan. 2020 for April 2020 and March 2021

	Anson		Cabarrus		Gaston		Iredell			Lincoln			
Total, all industries	-6.8%	-6.1%	-14	1.2%	0.2%		-13.5%	-1.3%	-12.5%	0.4%		-10.3%	-1.1%
Natural resources and mining	-1.7%	5.5%	1	.1%	2.9%		36.4%	11.4%	2.1%	9.2%		-3.8%	-3.0%
Construction	-10.3%	-11.1%	- 1		4.4%		-7.7%	12.4%	-1.6%	5.2%		-21.1%	-24.5%
Manufacturing	-7.6%	-13.0%	- 8	8.5%	-10.3%		-17.5%	-4.2%	-15.3%	-2.7%		-6.8%	4.3%
Trade, transportation, and utilities	-14.1%	-7.2%	-10).9%	13.2%		-8.2%	2.0%	-9.8%	2.1%		-2.2%	7.7%
Information	-5.6%	0.0%	-10).1%	-16.3%		-11.2%	-10.3%	-24.6%	-10.7%		-7.7%	2.2%
Financial activities	-5.6%	-9.3%	-6	5.5%	-3.0%		-5.8%	-3.0%	-2.9%	5.0%		-4.8%	-2.3%
Professional and business services	-4.8%	-4.0%	-13	8.5%	-2.3%		-17.8%	3.9%	-1.5%	7.1%		-12.3%	-2.1%
Health Services & Priv. Ed.	-7.0%	-9.2%	-17	7.0%	-0.1%		-7.2%	-0.6%	-14.9%	-2.4%		-23.5%	-4.3%
Leisure and hospitality	-20.1%	8.3%	-37	7. 8%	-11.4%		-39.4%	-10.3%	-36.9%	-5.8%		-23.3%	-7.0%
Other services	2.8%	-2.3%	-29	9.3%	-1.3%		-23.4%	-2.6%	-28.8%	3.4%		-19.4%	1.9%
Public administration	1.4%	-4.5%	- 1		1.9%		-2.1%	-0.4%	11.1%	-2.5%		1.6%	2.1%
	Meckler	nburg	Rov	wan			Stanly		Union			U.S.	
Total, all industries	Meckler	burg -2.8%	Rov -10	wan).5%	0.9%		Stanly -9.3%	-2.4%	Union -8.9%	-0.2%		U.S. -13.6%	-4.6%
Total, all industries Natural resources and mining	Meckler -11.2% 18.5%	burg -2.8% -11.0%	Rov -10	wan).5%	0.9%		Stanly -9.3% 10.2%	-2.4% -12.2%	Union -8.9% -1.1%	-0.2% -3.6%		U.S. -13.6% -0.7%	-4.6% -6.1%
Total, all industries Natural resources and mining Construction	Meckler -11.2% 18.5% -1.7%	-2.8% -11.0% 1.3%	Rov -10 11	wan).5% 5% 3.5%	0.9% -1.7% 9.7%		Stanly -9.3% 10.2% -1.5%	-2.4% -12.2% 3.5%	Union -8.9% -1.1% -1.6%	-0.2% -3.6% 4.4%		U.S. -13.6% -0.7% -10.1%	-4.6% -6.1% -1.0%
Total, all industries Natural resources and mining Construction Manufacturing	Meckler -11.2% 18.5% -1.7% -5.8%	-2.8% -11.0% 1.3% 2.8%	Rov -10 11 -25	wan).5% 5% 3.5% 5.3%	0.9% -1.7% 9.7% -6.1%		Stanly -9.3% 10.2% -1.5% -12.5%	-2.4% -12.2% 3.5% -6.8%	Union -8.9% -1.1% -1.6% -6.8%	-0.2% -3.6% 4.4% -4.2%		U.S. -13.6% -0.7% -10.1% -11.7%	-4.6% -6.1% -1.0% -3.7%
Total, all industries Natural resources and mining Construction Manufacturing Trade, transportation, and utilities	Meckler -11.2% 18.5% -1.7% -5.8% -10.6%	-2.8% -11.0% 1.3% 2.8% 0.5%	Rov -10 11 -25 -6	wan).5% (5%) (5%) (0.9% -1.7% 9.7% -6.1% 18.9%		Stanly -9.3% 10.2% -1.5% -12.5% -3.9%	-2.4% -12.2% 3.5% -6.8% 1.9%	Union -8.9% -1.1% -1.6% -6.8% -4.6%	-0.2% -3.6% 4.4% -4.2% 2.6%		U.S. -13.6% -0.7% -10.1% -11.7% -13.4%	-4.6% -6.1% -1.0% -3.7% -2.5%
Total, all industries Natural resources and mining Construction Manufacturing Trade, transportation, and utilities Information	Meckler -11.2% 18.5% -1.7% -5.8% -10.6% -3.4%	-2.8% -11.0% 1.3% 2.8% 0.5% 1.1%	Rov -10 11 -25 -6 -29	wan).5% 5% 3.5% 5.3% 5.2%	0.9% -1.7% 9.7% -6.1% 18.9% -35.8%		Stanly -9.3% 10.2% -1.5% -12.5% -3.9% 0.0%	-2.4% -12.2% 3.5% -6.8% 1.9% 10.9%	Union -8.9% -1.1% -1.6% -6.8% -4.6% -16.1%	-0.2% -3.6% 4.4% -4.2% 2.6% -2.3%		U.S. -13.6% -0.7% -10.1% -11.7% -13.4% -9.0%	-4.6% -6.1% -1.0% -3.7% -2.5% -3.9%
Total, all industries Natural resources and mining Construction Manufacturing Trade, transportation, and utilities Information Financial activities	Meckler -11.2% 18.5% -1.7% -5.8% -10.6% -3.4% 1.0%	-2.8% -11.0% 1.3% 2.8% 0.5% 1.1% 4.7%	Rov -10 11 -25 -6 -29 -0	wan).5% 3.5% 3.3% 5.3% 5.2% 9.8%	0.9% -1.7% 9.7% -6.1% 18.9% -35.8% -15.7%		Stanly -9.3% 10.2% -1.5% -12.5% -3.9% 0.0% -3.6%	-2.4% -12.2% 3.5% -6.8% 1.9% 10.9% 4.2%	Union -8.9% -1.1% -1.6% -6.8% -4.6% -16.1% -0.1%	-0.2% -3.6% 4.4% -4.2% 2.6% -2.3% 23.5%		U.S. -13.6% -0.7% -10.1% -11.7% -13.4% -9.0% -3.5%	-4.6% -6.1% -1.0% -3.7% -2.5% -3.9% -1.0%
Total, all industries Natural resources and mining Construction Manufacturing Trade, transportation, and utilities Information Financial activities Professional and business services	Meckler -11.2% 18.5% -1.7% -5.8% -10.6% -3.4% 1.0% -7.5%	-2.8% -11.0% 1.3% 2.8% 0.5% 1.1% 4.7% -2.7%	Rov -10 11 -25 -6 -29 -0 -0	wan).5% 3.5% 3.5% 5.3% 5.2% 9.8% 9.8% 0.8%	0.9% -1.7% 9.7% -6.1% 18.9% -35.8% -15.7% 10.4%		Stanly -9.3% 10.2% -1.5% -12.5% -3.9% 0.0% -3.6% -9.7%	-2.4% -12.2% 3.5% -6.8% 1.9% 10.9% 4.2% -1.5%	Union -8.9% -1.1% -1.6% -6.8% -4.6% -16.1% -0.1% -1.5%	-0.2% -3.6% 4.4% -4.2% 2.6% -2.3% 23.5% 10.3%		U.S. -13.6% -0.7% -10.1% -11.7% -13.4% -9.0% -3.5% -8.9%	-4.6% -6.1% -1.0% -3.7% -2.5% -3.9% -1.0% -1.4%
Total, all industries Natural resources and mining Construction Manufacturing Trade, transportation, and utilities Information Financial activities Professional and business services Health Services & Priv. Ed.	Meckler -11.2% 18.5% -1.7% -5.8% -10.6% -3.4% 1.0% -7.5% -14.1%	-2.8% -11.0% 1.3% 2.8% 0.5% 1.1% 4.7% -2.7% -0.2%	Rov -10 11 -25 -6 -29 -0 -0 -11	wan).5% 3.5% 3.3% 5.2% 9.8% 9.8% 0.8% 0.8%	0.9% -1.7% 9.7% -6.1% 18.9% -35.8% -15.7% 10.4% -13.7%		Stanly -9.3% 10.2% -1.5% -12.5% -3.9% 0.0% -3.6% -9.7% -9.9%	-2.4% -12.2% 3.5% -6.8% 1.9% 10.9% 4.2% -1.5% -4.8%	Union -8.9% -1.1% -1.6% -6.8% -4.6% -4.6% -16.1% -0.1% -1.5% -17.2%	-0.2% -3.6% 4.4% -4.2% 2.6% -2.3% 23.5% 10.3% -0.4%		U.S. -13.6% -0.7% -10.1% -11.7% -13.4% -9.0% -3.5% -8.9% -10.6%	-4.6% -6.1% -1.0% -3.7% -2.5% -3.9% -1.0% -1.4% -3.4%
Total, all industries Natural resources and mining Construction Manufacturing Trade, transportation, and utilities Information Financial activities Professional and business services Health Services & Priv. Ed. Leisure and hospitality	Meckler -11.2% 18.5% -1.7% -5.8% -10.6% -3.4% 1.0% -7.5% -14.1% -45.7%	aburg -2.8% -11.0% 1.3% 2.8% 0.5% 1.1% 4.7% -2.7% -0.2% -0.2%	Rov -10 11 -25 -6 -29 -0 -11 -11	wan).5% 3.5% 3.3% 5.2% 9.8% 9.8% 0.8% 0.8% 1.3%	0.9% -1.7% 9.7% -6.1% 18.9% -35.8% -15.7% 10.4% -13.7% -12.9%		Stanly -9.3% 10.2% -1.5% -12.5% -3.9% 0.0% -3.6% -9.7% -9.7% -9.9%	-2.4% -12.2% 3.5% -6.8% 1.9% 10.9% 4.2% -1.5% -4.8% -3.0%	Union -8.9% -1.1% -6.8% -4.6% -16.1% -0.1% -1.5% -1.5% -17.2%	-0.2% -3.6% 4.4% -4.2% 2.6% -2.3% 23.5% 10.3% -0.4% -9.2%		U.S. -13.6% -0.7% -10.1% -11.7% -13.4% -9.0% -3.5% -8.9% -10.6%	-4.6% -6.1% -1.0% -3.7% -2.5% -3.9% -1.0% -1.4% -3.4% -19.4%
Total, all industries Natural resources and mining Construction Manufacturing Trade, transportation, and utilities Information Financial activities Professional and business services Health Services & Priv. Ed. Leisure and hospitality Other services	Meckler -11.2% 18.5% -1.7% -5.8% -10.6% -3.4% 1.0% -7.5% -14.1% -45.7% -27.9%	-2.8% -11.0% 1.3% 2.8% 0.5% 1.1% 4.7% -2.7% -0.2% -0.2% -23.2%	Rov -10 11 -25 -6 -29 -0 -0 -11 -34 -22	wan).5% 3.5% 3.3% 5.2% 9.8% 9.8% 9.8% 9.8% 9.8% 9.8% 9.8% 9.8	0.9% -1.7% 9.7% -6.1% 18.9% -35.8% -15.7% 10.4% -13.7% -12.9% 4.4%		Stanly -9.3% 10.2% -1.5% -3.9% 0.0% -3.6% -9.7% -9.9% -28.0% -24.9%	-2.4% -12.2% 3.5% -6.8% 1.9% 10.9% 4.2% -1.5% -4.8% -3.0% 4.2%	Union -8.9% -1.1% -1.6% -6.8% -4.6% -4.6% -16.1% -0.1% -1.5% -1.5% -17.2% -34.6%	-0.2% -3.6% 4.4% -4.2% 2.6% -2.3% 23.5% 10.3% -0.4% -9.2% -2.1%		U.S. -13.6% -0.7% -10.1% -11.7% -13.4% -9.0% -3.5% -8.9% -10.6% -45.8% -29.4%	-4.6% -6.1% -1.0% -3.7% -2.5% -3.9% -1.0% -1.4% -3.4% -19.4% -10.3%

8 Target Cluster Opportunity Analysis

Against this backdrop, the following target cluster recommendations reflect a refinement rather than a revolution in regional economic development efforts:



Each target cluster is accompanied by a profile that provides an overview of the industry's regional historical performance; regional and national employment projections; an overview of industry needs and supporting niche sectors; a concise summary of how technological, demographic, and economic disruptors may impact the cluster; and a matrix highlighting each niche sector's geographic applicability by county within the Centralina region.

While each cluster has its own needs and growth trajectory, all of the of clusters are projected to experience strong employment growth in Centralina in the years ahead. Notably, the anticipated rate of regional job growth for each cluster exceeds the national forecast. Additionally, robust regional employment growth in the clusters will create opportunities for every county in Centralina.

Despite the economic turmoil and uncertainly unleashed by the pandemic, the behaviors that often define economically vibrant regions remain unchanged. Regional collaboration, strong leadership, and a unified vision for the future, for example, remain just as relevant today as they were before COVID entered the stage. As the following *Target Cluster Opportunity Analysis* helps underscore, Centralina benefits from many years of cross-regional collaboration and investments in its community assets. While the past 18 months have created uncertainty and disruption, the Centralina region is well-positioned for greater achievements across its target industry clusters.

Target Industry Performance Review

The Target Cluster Opportunity Analysis begins with an examination of the Charlotte region's existing target industry clusters.

The examination includes an analysis of employment and wage data for the 9-county Centralina Region (CEDD). Analysis is also provided in the Appendix for the larger regions:

- 15-county Charlotte Business Alliance (CRBA) Region
- 13-county Charlotte-Concord CSA region.

Due to the economic turbulence associated with the global pandemic, the following Industry Cluster Performance Review includes data for two separate time periods-the five years immediately prior to the pandemic (2014 through 2019) as well as the first nine months of 2020 (January 2020 through September 2020, the most recent month for which detailed employment data is available).

Ultimately, the analysis will help assess the economic impacts of the COVID-19 pandemic on the Centralina region's target industries and ensure that the region is best positioned for growth during the subsequent recovery.



Existing target industry composition

In 2016, an analysis conducted jointly for the Charlotte Regional Partnership and the Charlotte Chamber identified five target cluster opportunities–Advanced Manufacturing, Financial Services, Health, Logistics & Distribution, and Information Technology. These five clusters were selected after an evaluation of the Charlotte Regional Partnership and the Charlotte Chamber's existing target industries and represented an effort to create a single, integrated list of target industries. The clusters were also the existing 2012-2017 Centralina EDD Comprehensive Economic Development Strategy (CEDS) designated targeted industries sectors. Evaluation criteria included critical factors such as local concentration, past growth performance, average salaries, occupational diversity, and geographic diversity.



Centralina Region -Target Cluster Pre-Pandemic Size

From an employment perspective, Centralina's target industries vary widely in size. Health is the largest target cluster, with nearly 110,000 workers in the region. Information Technology, on the other hand, employs just 23,000 workers in the Centralina region, though many IT workers are employed in other clusters. Advanced Manufacturing and Financial Services are nearly identical in size, with 75,000 and 78,000 workers respectively. The Logistics & Distribution cluster in Centralina employ nearly 54,000 workers.



Centralina Region -Target Cluster Pre-Pandemic Performance

Prior to the pandemic, the Centralina region enjoyed a remarkable rate of job growth. Between 2014 and 2019, total employment in the region increased by more than 15%. During this same period, overall US job growth was less than 9%. Employment growth in three of the region's existing target industries outpaced the regional average. The growth of the Logistics & Distribution and Financial Services clusters during this period were particularly impressive; between 2014 and 2019, employment in both clusters increased 30%. Information Technology employment in the Centralina region grew 23%.



Centralina CEDD region employment growth, 2014 - 2019

Centralina Region -Target Cluster Pandemic Performance

During the first 9 months of 2020 (the latest period for which detailed employment data is available), total employment in the Centralina region declined 5%. Nationally, employment fell 6%. During this period, the performance of individual target clusters in the Centralina region varied significantly. Both Financial Services and Logistics & Distribution employment rose, but Advanced Manufacturing, Health, and Information Technology all suffered employment declines.



Centralina CEDD region employment growth, January 2020 - September 2020

Centralina Region -Target Cluster Average Annual Wages

Average annual wages for target clusters in the Centralina region vary widely. Financial Services workers, for example, have an average annual salary of nearly \$130,000. On average, Centralina Information Technology workers make more than \$105,000 annually. Average annual salaries for Advanced Manufacturing and Health workers are approximately \$69,000 and \$63,000 respectively. Logistics & Distribution workers, on average, earn nearly \$54,000 annually in the Centralina region. The average annual salary for all workers in the Centralina region is nearly \$63,000, slightly higher than the US average.



Comprehensive Cluster Analysis and Target Selection

While the *Industry Cluster Performance Review* provides a portrait of the role played by the region's existing target clusters in fueling employment growth, its narrow scope may not fully encapsulate the dynamism of the regional economy. A more holistic review is needed to capture the part played by other clusters which may influence new target industry selection.

The following Comprehensive Cluster Analysis expands this analysis with a top-down view of industry performance at the national level and a detailed examination of industry clusters within the Centralina region. The analysis includes a breakdown of subsector performance by county. This Comprehensive Cluster Analysis will highlight emerging sectors experiencing rapid growth as well as clusters heavily concentrated within the Centralina region. As both characteristics typically reflect local competitive advantages, clusters with these dynamics will help inform the selection of target industries.

Like the preceding Target Industry Performance Assessment, the Comprehensive Cluster Analysis focuses on the the 9county Centralina (CEDD) region, with analysis provided in the Appendix for the CRBA mega-region and the Charlotte-Concord CSA. Following the cluster analysis, *Target Cluster Validation and Selection* profiles macro trends and disruptors that will drive change in the region's economy and ultimately the selection of targets. Target clusters are presented as a refinement rather than a revolution in regional economic development efforts. However, niche subsectors within each target are updated to reflect local trends, assets, and local priorities.

This Comprehensive Cluster Analysis and Target Selection is followed by profiles on each target clusters, including an exploration of the factors that influence regional industry growth. These factors typically include local assets for which Centralina possesses a competitive advantage that can be leveraged for additional employment growth and investment.

Ultimately, the selected clusters will contribute to the resiliency and growth of the Centralina economy.

Cluster evaluation and selection

Target selection is an iterative process that combines both quantitative and qualitative information. Through a process of data analysis and conversations within the community, target clusters and supporting niche sectors are identified and tailored to each community's needs and opportunities.

Target cluster selection is driven by four primary questions that serve as filters in the selection process:

Target selection process



1. What is the regional and national growth trajectory of the cluster?

Examining growth trends helps understand if the target cluster will continue to grow and create opportunities in the Centralina region.



2. What clusters have an existing local/regional presence?

Clusters with an existing concentration in the region reflect local competitive strengths and present some of the best opportunities for expansion, recruitment, and startup growth.



3. Which clusters are best positioned to leverage the region's assets in the face of industry change?

The ability of regional assets to support cluster ecosystems and expanded activity is a critical factor in the cluster selection process.



4. Which clusters align with the region's aspirations?

Cluster strategies can only be successful if they reflect local goals and values.

National Economic Overview

The pandemic has unleashed a period of significant turmoil in the US economy. In the early months of 2020, millions of American workers lost their jobs. By April, the national unemployment rate approached 15%. The downturn, however, proved relatively brief. The official arbiter of recessions-the National Bureau for Economic Research-determined that the 2020 recession was the shortest on record.

If most 2020 headlines regarding the American labor market highlighted mass unemployment, the story for 2021 is one of widespread talent shortages. From restaurants to manufacturers to IT firms, employers throughout the US have increasingly found it difficult to secure workers in a post-pandemic world. Millions of workers have left the available workforce for a variety of reasons, including health concerns, lack of childcare or a desire to find a new career. August registered more than 10 million job openings in the US-the highest level on record.

Given the dramatic ups and downs of the US economy during the past 18 months, the following analysis explores employment trends among individual clusters between 2014 and 2019. Ultimately, this longer-term examines emphasizes longer-term trends that are likely to continue in the years ahead over dynamics that might be more specific to an ongoing pandemic.



US unemployment rate and job openings

National Economic Overview

In the five years prior to the pandemic, just four clusters were responsible for nearly 60% of all US employment growth: Healthcare, Transportation & Logistics, Entertainment, and Construction. Healthcare alone, which increased saw employment rise by more than 2.2 million between 2014 and 2019, accounted for nearly 20% of national employment gains during this period. Transportation & Logistics firms added more than 1 million workers to their payrolls. Growth in Entertainment and Construction growth reflect the nation's economic prosperity and consumer strength. Other leading sources of job growth included Software/IT and Back Office, both of which added more than 700,000 workers between 2014 and 2019. The Finance sector saw employment increase by nearly 600,000. The smaller Research and Professional Services clusters experienced employment gains in excess of 350,000.

Notably, in recent years nearly all manufacturing clusters have posted job gains. In absolute terms, growth has been primarily driven by Agribusiness & Food, Automotive, and Industrial Machinery. Collectively, these three clusters were responsible for nearly half of all manufacturing job gains between 2015 and 2019. Other sources of manufacturing employment gains include Aerospace, Materials, and Consumer Goods.

Aerospace	Agribusiness & Food	Apparel & Textiles	Automotive	Back Office	Biomedical
Construction	Consumer Goods Mfg.	Creative Content	Education	Electronics	Energy
Entertainment	Finance	Furniture	Government	Healthcare	Higher Education
Industrial Machinery	Materials	Metalworking	Mining & Logging	Non-Profits	Professional Services
Research	Retail	Shipbuilding	Software/IT	Telecom Services	Transportation & Logistics
Growing natior	nally, export oriented, lo	Illy or locally serving or l	ocation specific		

Potential target industries

Industry cluster analysis

The chart on the following page combines location quotient (LQ), growth and relative size to illustrate a snapshot of the Centralina region's industry cluster performance. The analysis provides a more granular view of employment dynamics than traditional federal definitions. The horizontal axis displays employment growth of each cluster from 2014 through 2019. The vertical axis shows the location quotient (LQ). An LQ is the ratio of local share of industry employment relative to the national share of industry employment. For example, an LQ greater than 1 indicates that local industry employment density is greater than the US average. The size of each bubble indicates the number of local jobs in the cluster. Clusters can generally be grouped in four categories, as described in the map below.

Higher con	centration
Top left – strong but declining	Top right – strong and advancing
Contains clusters that are more concentrated in the region but are declining (negative employment growth). Over time, these clusters may fall to the bottom left as job losses eventually lead to a declining concentration.	Contains clusters that are more concentrated in the region and are growing. These clusters are usually built on highly competitive local assets and are also experiencing strong national and international growth.
Negative growth	Positive growth
Bottom left - weak and declining	Bottom right – weak but advancing
Contains clusters that are underrepresented in the region (low concentration) and are also losing jobs. In general, clusters in this quadrant reveal a lack of competitiveness.	Contains clusters that are underrepresented in the region but are growing. If growth continues, these clusters will eventually move into the top-right quadrant. These are generally considered "emerging" clusters.
Lower con	centration

Target Cluster Opportunity Analysis

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Centralina Region -Industry composition

The Centralina economy prior to the pandemic was characterized by broad-based growth. Between 2014 and 2019, virtually every industry cluster in the region experienced employment gains. Several of the fastest growing industry clusters in the Centralina region include those such as Transportation & Logistics, Finance, and Software/IT that closely align with existing target opportunities. Other clusters experiencing significant growth include Agribusiness & Food, Professional Services, and Research.



Source:

EMSI (only clusters with more than 7,500 jobs are shown).

Centralina CEDD -Industry composition, continued

From an employment perspective, the Centralina economy is markedly diverse and contributes as a noted resiliency factor for the region. The region's most relatively concentrated cluster, Apparel & Textiles, employs just 10,000 workers but has 2.7 times more local jobs than the US average. Centralina also has a relatively large Finance labor force, with 60% more Finance jobs compared to the national average. All other industry clusters in Centralina have a location quotient of less than 1.5. Still, the region is home to several other relatively concentrated clusters, including Back Office, Industrial Machinery, Materials, Transportation & Logistics, and Automotive.

Cluster	Employment (2019)	Employment growth (2014-2019)	Location quotient (2019)	Cluster	Employment (2019)	Employment growth (2014-2019)	Location quotient (2019)
Agribusiness & Food	15,069	16.8%	0.6	Government	140,956	5.3%	0.8
Apparel & Textiles	10,238	5.4%	2.7	Healthcare	94,266	15.4%	0.6
Automotive	12,907	9.4%	1.2	Industrial Machinery	32,878	11.5%	1.3
Back Office	119,515	10.6%	1.4	Materials	18,577	7.5%	1.3
Biomedical	5,235	27.1%	0.8	Metalworking	13,915	5.2%	1.0
Construction	86,816	26.8%	1.1	Mining & Logging	1,007	7.1%	0.6
Consumer Goods Mftg	4,882	11.7%	1.0	Non-Profits	4,110	-7.3%	0.4
Creative Content	13,409	8.4%	0.9	Professional Services	31,924	26.0%	0.9
Education	12,000	39.6%	1.0	Research	17,208	17.0%	1.0
Electronics	11,876	-18.6%	0.7	Retail	139,284	9.5%	1.0
Energy	5,419	7.8%	0.5	Software / Info. Tech.	23,225	23.4%	0.9
Entertainment	130,981	19.5%	1.0	Telecom Services	7,382	9.6%	1.4
Finance	90,732	30.5%	1.6	Transportation & Logistics	52,405	36.2%	1.3
Furniture	5,118	28.2%	1.4	Total	1,101,334	15.1%	1.0

Centralina CEDD industry cluster performance

As highlighted earlier, the strong levels of employment growth enjoyed in Centralina in recent years reflects broad-based gains across virtually every corner of the region. The specific industry clusters driving job creation, however, vary from county to county. The following tables emphasize some of the most notable engines of employment growth within each county in the Centralina region:

- Clusters designated with a green circle represent "Advancing" industries that are relatively concentrated and growing.
- Yellow circles reflect "Emerging" clusters that are growing but remain less concentrated locally relative to the national average.
- Blank circles indicate "Declining" clusters that remain relatively concentrated despite recent employment losses.

🛡 Relatively concentrated, growing employment 🛛 😑 Growing employment, relatively less concentrated 🔾 Relatively concentrated, declining employment

The analysis helps identify niche industries that may be present in some counties but not of sufficient size to be recognizable in regional aggregated data due to the size of the larger counties. To limit the analysis to clusters that meaningfully impact overall job growth, all sectors listed in the tables below encompass at least 0.25% of total county employment. For the smallest county, Anson, the threshold is approximately 20 jobs. For Mecklenburg County, the threshold was approximately 1,800 workers.

Ultimately, the following tables highlight two critical dynamics within the Centralina region. Perhaps most importantly, every county in the Centralina region enjoys strengths in multiple clusters. Secondly, while every place has its unique competitive advantages, there are some clusters which are performing well throughout the region.

In recent years, the momentum commanded by the Centralina region has created broad-based opportunities for a wide variety of target industry pursuits. Though Mecklenburg might often be viewed primarily as a center of Finance, it is also home to thriving manufacturing clusters such as Biomedical and Materials. Conversely, while outlying counties such as Iredell or Rowan are often best known as production hubs, they are also home to strengths in areas such as Back Office and Professional Services.

The county-level cluster analysis highlights several clusters that are performing well in nearly every community in Centralina. Healthcare and Transportation & Logistics provide the two most striking examples of this trend, a dynamic that mirrors broader national trends. While the composition and performance of these two clusters will vary from community to community, every county in the Centralina region can contribute to industry growth.

Agrit	Dusiness & Food	Regional Jobs '19	ANSON	CABARRUS	GASTON	IREDELL	RINCOLN	MECKLENBURG	ROWAN	STANLY	NOINU
1110	Crop Production	1,502	0						0		
1120	Animal Production	1,029	\circ			0				\circ	0
1151	Support Activities for Crop Production	350	\circ							\circ	0
1152	Support Activities for Animal Production	92	\circ								
3116	Animal Slaughtering and Processing	4,544	\circ	\bigcirc	\circ					\circ	\circ
3118	Bakeries and Tortilla Manufacturing	2,756									
3119	Other Food Manufacturing	1,975		0	0		\circ				
3121	Beverage Manufacturing	2,011				\odot					
Арра	arel & Textiles	Designed to be 20	ANSON	CABARRUS	GASTON	IREDELL	LINCOLN	MECKLENBURG	ROWAN	STANLY	NOINU
NAIC5	Description	Regional Jobs 19					0		0		
3131	Fiber, Tarn, and Inreda Mills Fabric Mille	2,337	0				ŏ		0		
2122	Table and Eabric Einiching and Eabric Coating Mills	2,400	0		ă		0				
2141	Textile Europhine Mills	544								0	
3140	Other Textile Product Mills	748								0	
3151	Apparel Knitting Mills	322				ŏ					
3152	Cut and Sex Apparel Manufacturing	382				0					
4243	Apparel. Piece Goods, and Nations Merchant Wholesalers	2,283	Ŭ.,								
Auto	motive		ANSON	CABARRUS	GASTON	REDELL	INCOLN	MECKLENBURG	ROWAN	STANLY	NOIND
NAICS	Description	Regional Jobs '19	-	-							
3361	Motor Vehicle Manufacturing	3,647		0	0	-	0				
3363	Motor Vehicle Parts Manufacturing	5,408		\bigcirc		0	0				
3369	Other Iransportation Equipment Manufacturing	502				0	0	•	0		
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	3,106				0	0				

🕒 Relatively concentrated, growing employment 🛛 😑 Growing employment, relatively less concentrated 🔾 Relatively concentrated, declining employment

Back	Office	Regional Jobs '19	ANSON	CABARRUS	GASTON	IREDELL	LINCOLN	MECKLENBURG	ROWAN	STANLY	NOINU
5511	Management of Companies and Enterprises	39,057	\bigcirc			\circ		0	0	0	
5611	Office Administrative Services	4,529	\bigcirc					\bigcirc			
5613	Employment Services	37,033		\bigcirc	\bigcirc		0	\circ	\bigcirc		
5614	Business Support Services	6,146		0				0			\bigcirc
5616	Investigation and Security Services	10,922				\bigcirc		\circ			
5617	Services to Buildings and Dwellings	16,785		\circ		\circ		\bigcirc	\bigcirc	\bigcirc	\circ
5619	Other Support Services	3,445		0	0	\circ	\circ	0	\circ	\circ	0
Biom	nedical	Pagional John '19	ANSON	CABARRUS	GASTON	IREDELL	LINCOLN	MECKLENBURG	ROWAN	STANLY	NOINU
10.100	Description	Regional Jobs 17									
3254	Pharmaceutical and Medicine Manufacturing	2 486									
3254 3391	Pharmaceutical and Medicine Manufacturing Medical Equipment and Supplies Manufacturina	2,486 1.573	0	•		•	•		•		
3254 3391 Finar NAICS	Pharmaceutical and Medicine Manufacturing Medical Equipment and Supplies Manufacturing	2,486 1,573 Regional Jobs '19	ANSON	CABARRUS	GASTON	IREDELL	IINCOLN	MECKLENBURG	ROWAN	STANLY	NOINU
3254 3391 Finar NAICS 5221	Pharmaceutical and Medicine Manufacturing Medical Equipment and Supplies Manufacturing NCE Description Depository Credit Intermediation	2,486 1,573 Regional Jobs '19 38,000	ANSON	CABARRUS	GASTON	IREDELL	FINCOLN	MECKLENBURG	ROWAN	STANLY	NOINU
3254 3391 Finar NAICS 5221 5222	Pharmaceutical and Medicine Manufacturing Medical Equipment and Supplies Manufacturing NCE Description Depository Credit Intermediation Nondepository Credit Intermediation	2,486 1,573 Regional Jobs '19 38,000 7,303	ANSON	CABARRUS	GASTON		FINCOLN	MECKLENBURG	ROWAN	STANLY	NONU
3254 3391 Finar NAICS 5221 5222 5223	Pharmaceutical and Medicine Manufacturing Medical Equipment and Supplies Manufacturing Description Depository Credit Intermediation Nondepository Credit Intermediation Activities Related to Credit Intermediation	2,486 1,573 Regional Jobs '19 38,000 7,303 2,377	ANSON	CABARRUS	GASTON	IREDELL	LINCOLN	MECKLENBURG	ROWAN	STANLY	NOINU
3254 3391 Finar NAICS 5221 5222 5223 5231	Pharmaceutical and Medicine Manufacturing Medical Equipment and Supplies Manufacturing Description Depository Credit Intermediation Nondepository Credit Intermediation Activities Related to Credit Intermediation Securities and Commodity Contracts Intermediation and Brokerage	2,486 1,573 Regional Jobs '19 38,000 7,303 2,377 4,144	ANSON	CABARRUS	GASTON	IREDELL	FINCOLN	O O O O O O O O O O O O O O O O O O O	ROWAN	STANLY	NOIN
3254 3391 Finar NAICS 5221 5222 5223 5231 5239	Pharmaceutical and Medicine Manufacturing Medical Equipment and Supplies Manufacturing Description Depository Credit Intermediation Nondepository Credit Intermediation Activities Related to Credit Intermediation Securities and Commodity Contracts Intermediation and Brokerage Other Financial Investment Activities	2,486 1,573 Regional Jobs '19 38,000 7,303 2,377 4,144 8,435	ANSON	CABARRUS	GASTON	IREDELL	TINCOLN	O O MECKLENBURG	Rowan	STANLY	NOIN
3254 3391 Finar NAICS 5221 5222 5223 5231 5239 5241	Pharmaceutical and Medicine Manufacturing Medical Equipment and Supplies Manufacturing Description Depository Credit Intermediation Nondepository Credit Intermediation Activities Related to Credit Intermediation Securities and Commodity Contracts Intermediation and Brokerage Other Financial Investment Activities Insurance Carriers	2,486 1,573 Regional Jobs '19 38,000 7,303 2,377 4,144 8,435 7,301	ANSON	CABARRUS	GASTON	IREDELL	TINCOLN	O O O MECKLENBURG	Rowan	STANLY	NOIN
3254 3391 Finar NAICS 5221 5222 5223 5231 5239 5241 5242	Pharmaceutical and Medicine Manufacturing Medical Equipment and Supplies Manufacturing DCC Description Depository Credit Intermediation Nondepository Credit Intermediation Activities Related to Credit Intermediation Securities and Commodity Contracts Intermediation and Brokerage Other Financial Investment Activities Insurance Carriers Agencies, Brokerages, and Other Insurance Related Activities	2,486 1,573 Regional Jobs '19 38,000 7,303 2,377 4,144 8,435 7,301 9,964	ANSON	CABARRUS	GASTON		TINCOLN	MECKLENBURG	Rowan	STANLY	NOIN
3254 3391 Finar NAICS 5221 5222 5223 5231 5239 5241 5242 5311	Pharmaceutical and Medicine Manufacturing Medical Equipment and Supplies Manufacturing DCC Description Depository Credit Intermediation Nondepository Credit Intermediation Activities Related to Credit Intermediation Securities and Commodity Contracts Intermediation and Brokerage Other Financial Investment Activities Insurance Carriers Agencies, Brokerages, and Other Insurance Related Activities Lessors of Real Estate	2,486 1,573 Regional Jobs '19 38,000 7,303 2,377 4,144 8,435 7,301 9,964 3,243	ANSON	O O CABARRUS	GASTON		TINCOLN	O O O O O O O O O O O O O O O O O O O	Rowan	STANLY	NOIN
3254 3391 Finar 5221 5222 5231 5239 5241 5242 5311 5312	Pharmaceutical and Medicine Manufacturing Medical Equipment and Supplies Manufacturing Description Depository Credit Intermediation Nondepository Credit Intermediation Activities Related to Credit Intermediation Securities and Commodity Contracts Intermediation and Brokerage Other Financial Investment Activities Insurance Carriers Agencies, Brokerages, and Other Insurance Related Activities Lessors of Real Estate Offices of Real Estate Agents and Brokers	2,486 1,573 Regional Jobs '19 38,000 7,303 2,377 4,144 8,435 7,301 9,964 3,243 3,638	ANSON	O O CABARRUS	GASTON		TINCOLN	MECKLENBURG	Rowan	STANLY	

Relatively concentrated, growing employment 🔘 Growing employment, relatively less concentrated 🔘 Relatively concentrated, declining employment

Healt NAICS	Description	Regional Jobs '19	ANSON	CABARRUS	GASTON	IREDELL	LINCOLN	MECKLENBURG	ROWAN	STANLY	NOINU
6211	Offices of Physicians	19,571		\circ	\circ	\circ		\circ	0		\circ
6212	Offices of Dentists	7,016		\circ	\circ	\bigcirc	\circ	\bigcirc	0	0	0
6213	Offices of Other Health Practitioners	5,602		\bigcirc	0	\bigcirc	\bigcirc	\bigcirc	\bigcirc		0
6214	Outpatient Care Centers	3,444	\bigcirc	\bigcirc				\bigcirc			
6215	Medical and Diagnostic Laboratories	1,175									\circ
6216	Home Health Care Services	7,672	\bigcirc	\bigcirc		\bigcirc	\bigcirc	\bigcirc		0	
6221	General Medical and Surgical Hospitals	12,294			\circ	\bigcirc		\bigcirc	\bigcirc		
6231	Nursing Care Facilities	8,175	\bigcirc		0		\bigcirc	\bigcirc	0	•	0
6232	Residential Mental Retardation, Mental Health and Substance Abuse Facilities	3,181	\circ	\bigcirc	\circ				\bigcirc	\circ	
6233	Community Care Facilities for the Elderly	6,438	\bigcirc	\bigcirc	0			\bigcirc	0	0	
6241	Individual and Family Services	7,888			0	\bigcirc		\bigcirc	0		0
6243	Vocational Rehabilitation Services	1,807								0	
90362	Hospitals (Local Government)	30,941		0	\bigcirc	\bigcirc	0	\circ		\circ	

Indus	strial Machinery		NSON	ABARRUS	ASTON	REDELL	NCOLN	AECKLENBURG	OWAN	TANLY	NOIN
NAICS	Description	Regional Jobs '19	<	0	0	=		<	R	S	ر
3332	Industrial Machinery Manufacturing	2,233			0	\circ					0
3336	Engine, Turbine, and Power Transmission Equipment Manufacturing	2,535					\bigcirc	0			
3339	Other General Purpose Machinery Manufacturing	3,353			\circ	0	0	\circ		\circ	\circ
3353	Electrical Equipment Manufacturing	1,227	\circ			0				•	
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	5,285		\bigcirc			\bigcirc	0			
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	11,330	\bigcirc	\bigcirc	0	0	\bigcirc				0
4239	Miscellaneous Durable Goods Merchant Wholesalers	1,738	\circ		0						\circ
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	1,365	0			\bigcirc					

Relatively concentrated, growing employment 🔘 Growing employment, relatively less concentrated 🔘 Relatively concentrated, declining employment

Sources: Bureau of Labor Statistics

Materials

mate				S				BU			
NAICS	Description	Regional Jobs '19	ANSON	CABARRU	GASTON	IREDELL	IINCOLN	MECKLEN	ROWAN	STANLY	NOINU
3221	Pulp, Paper, and Paperboard Mills	498				0					
3222	Converted Paper Product Manufacturing	2,929				Õ			0		0
3251	Basic Chemical Manufacturing	768			\circ						
3252	Resin, Synthetic Rubber, and Artificial Synthetic Fibers and Filaments Manufacturing	1,110	\circ								
3256	Soap, Cleaning Compound, and Toilet Preparation Manufacturing	881							\circ		
3259	Other Chemical Product and Preparation Manufacturing	763					0				
3261	Plastics Product Manufacturing	6,847		\circ	0	\circ	\bigcirc	\circ			\circ
3262	Rubber Product Manufacturing	1,716							0	\bigcirc	
Meta	alworking		ANSON	CABARRUS	GASTON	IREDELL	lincoln	MECKLENBURG	ROWAN	STANLY	NOINU
NAICS	Description	Regional Jobs '19		-	-			-			
3312	Steel Product Manufacturing from Purchased Steel	355				0			-		~
3314	Nonterrous Metal (except Aluminum) Production and Processing	1,153									0
3315	Foundries	948									0
3321	Forging and Stamping	558									
3322	Cutlery and Handfool Manufacturing	/34	~			0	0				
3323	Architectural and Structural Metals Manufacturing	3,017	0			0	<u> </u>				
3323	Hardware Manutacturing	1,100				0			0	0	0
3328	Coating Engraving Heat Tragting and Allied Activities	2,209				0	ă		0	ŏ	0
3320	Other Fabricated Motal Product Manufacturing	1 803					ŏ			0	
5527		1,003									
Profe	essional Services	Destand lake 20	ANSON	CABARRUS	GASTON	IREDELL	LINCOLN	MECKLENBURG	ROWAN	STANLY	NOINU
FALL	Description							0			0
5411	Legal Services	/,246		0			0		0	0	0
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	9,452		0		0	0			0	0
5413	Architectural, Engineering, and Kelated Services	10,990			0				0	-	
3419		4,230									

Relatively concentrated, growing employment 🔘 Growing employment, relatively less concentrated 🔘 Relatively concentrated, declining employment

Sources: Bureau of Labor Statistics

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Research				S				BURG			
NAICS	Description	Regional Jobs '19	ANSON	CABARRU	GASTON	IREDELL	LINCOLN	MECKLEN	ROWAN	STANLY	NOINN
5416	Management, Scientific, and Technical Consulting Services	15.828		0	0		0	0	0		0
5417	Scientific Research and Development Services	1,380				0					
Soft	ware/IT		NO	ARRUS	TON	ELL	NIO	KLENBURG	VAN	٨LY	Z
			NS	CAB/	GAS	(ED	N	VEC	ò	ITAN	UN
NAICS	Description	Regional Jobs '19	4	0	0	=	-	<	22	0	
5112	Software Publishers	3,911						0			
5182	Data Processing, Hosting, and Related Services	2,835						0			
5415	Computer Systems Design and Related Services	15,831		0		\bigcirc	0	0			\bigcirc
Tran	sportation & Logistics		NSON	ABARRUS	ASTON	EDELL	NCOLN	AECKLENBURG	OWAN	TANLY	NOIN
NAICS	Description	Regional Jobs '19	∢	0	Ö	R		2	Ň	ŝ	
4811	Scheduled Air Transportation	12,672					0	0			
4841	General Freight Trucking	12,207	\bigcirc	\bigcirc	\bigcirc			0		\bigcirc	\bigcirc
4842	Specialized Freight Trucking	3,662		\circ	\circ				\circ		\circ
4884	Support Activities for Road Transportation	1,141			\circ				\circ		
4885	Freight Transportation Arrangement	3,012	\circ					0			
4889	Other Support Activities for Transportation	983		\circ							
4921	Couriers and Express Delivery Services	5,129				\bigcirc		\circ	\circ		\bigcirc
4931	Warehousing and Storage	9,713		0				0			

Relatively concentrated, growing employment 🛛 😑 Growing employment, relatively less concentrated 🔾 Relatively concentrated, declining employment

Sources: Bureau of Labor Statistics

Macro forces and industry disruptors

In the years ahead, technological, economic, and demographic forces promise to transform our communities as well as the people and industries that power them. Increased federal spending, for example, may increase the competitiveness of aging places with antiquated infrastructure as well as fast-growing locales with overburdened roads, bridges, and ports. The aging of America will continue to contribute to sustained healthcare spending while potentially worsening the talent shortages that already plague many industries. Continued advancements in artificial intelligence, for example, may lead to another wave of automation.

The nine macro forces and industry disruptors examined in the following pages are deeply intertwined. Mass deployment of autonomous vehicles, for example, will require investments in "smart" infrastructure. Talent shortages in fast-growing sectors such as transportation and logistics may increase the race to automate warehousing operations. In turn, the push towards automation will likely involve the maturation of the IoT technologies that produce new efficiencies.

In some instances, the macro forces and disruptors pose risks for existing market leaders as well as individual industries. In other areas, a rapidly evolving competitive environment will create new market opportunities. Communities that can help firms navigate these macro forces and industry disruptors will be well-positioned to thrive in the years ahead.



Macro forces and industry disruptors - Economic

ECONOMIC

Federal Spending Boost - The unprecedented nature of the global health pandemic-combined with a change in US political leadershiphas helped usher in a period of substantial federal spending. The proposed trillion-dollar infrastructure bill, for example, represents a generational investment in vital systems such as roadways, bridges, and internet access. Other notable spending programs, such as the US Innovation and Competition Act, may provide hundreds of billion of dollars in new funding for technologies critical to national security including semiconductor manufacturing and artificial intelligence. Collectively, the new federal spending programs promise to not only boost the economic competitiveness of communities throughout the US but will also serve as engines of local job growth.

The Retail Revolution - In many respects, the pandemic has simply accelerated pre-existing trends toward virtualization of the economy. This dynamic is perhaps best personified by the performance of the retail sector during the past 18 months. Although e-commerce has steadily increased in recent years, online sales surged at the outset of the global health crisis. Despite these gains, the online retail sector has tremendous room for growth-more than 85% of all retail sales still occur at physical locations. The continued migration of retail dollars online has helped fuel a dramatic rise in warehousing and transportation employment. As the same time, the decline of traditional shopping behavior threatens the viability of much of the country's retail real estate infrastructure. Repurposing old enclosed malls, for example, is likely to become a more frequent topic of local redevelopment activities.

US federal government outlays (in trillions)





Online sales as share of total retail sales

Macro forces & industry disruptors - Economic, continued

ECONOMIC

The New Globalization - Over the past several decades, globalization helped sustain increasingly complex supply chains. In recent years, however, global trade has stalled as a growing number of producers in a growing number of countries look to lessen their dependence on foreign suppliers. The pandemic, for example, has forced many companies to reexamine the resiliency of their supply chains. During the early months of the pandemic, exercise equipment maker Peloton was unable to quickly meet the explosion in demand for its products due to global shipping delays. It has since announced its first manufacturing facility in the US. Similarly, many automakers have been unable to meet production goals due to a lack of available computer chips. In response, the federal government allocated funds to help spur the development of new semiconductor factories in the US. The on-shoring of production is unlikely to end once the pandemic fades. Rising wages abroad, continued shipping delays worldwide, and concerns over intellectual property are all likely to push more production back to American shores.

\$30 \$25 \$20 \$22.6 \$15 \$10 \$5 \$2.3 \$0 1980 1990 200 2010 2020 Source: The World Bank

Global exports of goods and services (trillions)

Macro forces & industry disruptors - Demographic

DEMOGRAPHIC

Help Wanted - In the first few months of the pandemic, employers in the US shed millions of jobs as demand for many products and services collapsed. As the economy gradually reopened during the first half of 2021, finding workers has proven to be among the most difficult tasks for companies looking to resume normal operations. In June 2021, for example, there were a record 10 million job openings in the US. In the short-term, the acute labor shortages experienced by many employers are likely to recede as school resumes, daycare becomes more widely available/dependable and enhanced unemployment benefits end. In the longer-term, however, labor availability may continue to be a challenge for many employers. Labor force participation rates (the share of working-age adults in the labor force), which have steadily fallen for decades, declined further during the pandemic. The exodus of the Baby Boomer generation from the labor market is likely to further exacerbate this trend.

A Silver Tsunami - More than 10,000 Baby Boomers turn 65 every day, a dynamic that reflect the overall aging of the US population. As the average lifespan of Americans continues to rise, spending on health care is expected to reach unprecedented heights. According to estimates from the Centers for Medicare & Medicaid Services, health care spending will approach nearly \$1 of every \$5 spent in the US within ten years time. The need for support services for a growing elderly population is likely to strain the public coffers while simultaneously fueling demand in specific health care occupations. An increased elderly population, for example, will require more nurse practitioners, personal care aides, and physician assistances. Already, healthcare professions represent 6 of the 10 occupations projected to experience the greatest levels of growth by the Bureau of Labor Statistics.

Monthly job openings (in millions, seasonally adjusted)





Projections of US population age 65 and older

Appendix A

Macro forces & industry disruptors - Demographic, continued

DEMOGRAPHIC

On the Move - As has been widely noted, the pandemic largely accelerated pre-existing trends. One possible exception may be internal migration patterns. Immediately before the outbreak of the COVID-19, the percentage of Americans who moved during the preceding year hit a record low. This figure has steadily declined for nearly 40 years. During the pandemic, however, many Americans moved out of urban cores. While it remains too early to tell if this trend will prove durable, it seems likely that at least some workers will take advantage of the geographic flexibility enabled by the rise of remote work. This trend may have the largest impact on exurban communities that provide both room and geographic relative proximity to traditional urban employment hubs. We may also soon witness a wave of migration among younger Americans. According to a Pew Research Center analysis of US Census Bureau data, in May 2020 more than half of all young adults aged 18 to 29 lived with at least one parent, a 10% increase relative to pre-pandemic levels. As the pandemic fades, many of these younger workers are likely to go out on their own. While younger Americans have often flocked to cities, rising housing prices may push them to less central destinations.

For the Charlotte metro, CRBE reports that move-ins accelerated in 2020. High-cost states topped the list of postal service address changes in terms of percentage growth: NY, CA, MD, and WA. Movers shifted toward suburban and rural locations – a trend seen across the US.



Percentage of Americans who moved during the previous year

Macro forces & industry disruptors - Technological

TECHNOLOGICAL

The Internet of Everything - As digitally connected devices become ubiquitous, the world will witness the emergence of an increasingly powerful Internet of Things (IoT) ecosystem. Perhaps most immediately, this ecosystem will generate vast amounts of information and contribute to the continued growth of data center operations. In an era in which nearly any activity can be measured, advances in predictive analytics, machine learning, artificial intelligence, and cybersecurity will advance to help us make sense of the data generated by our environment and securely store it. IoT technologies are also likely to assume a more prominent role in innovations across a host of industries from manufacturing to logistics. Mass deployment of autonomous vehicles, for example, may require that cars communicate with other vehicles and the built environment to enhance safety.

Accelerating Change - Approximately 100 years after Henry Ford revolutionized personal transportation with the introduction of the assembly line, the automobile industry is on the verge of a seismic change-electrification. While electric vehicles currently represent just 2 percent of car sales, this figure is expected to rise substantially in the coming decade. Toyota, the world's largest automaker, expects electrified (including hybrids) vehicles to represent 70% of US sales by 2030. The transition towards electric drivetrains has enormous implications for the automobile supply chain, which is a massive market in its own right. Electric vehicles, for example, have far fewer parts than traditional automobiles powered by an internal combustion engine. At the same time, increased demand for batteries and other electric motor technologies may help offset these declines. Navigating this transition, however, is likely to prove a difficult task for many suppliers.

Internet of things venture capital funding



Projected electric vehicle production

Source: International Energy Agency

0

'20



'30

Macro forces & industry disruptors - Technological, continued

TECHNOLOGICAL

Artificial Intelligence & Automation - Technologies that automate functions currently performed by humans promise to fundamentally transform the labor market. This includes physical devices such as advanced robotics as well as sophisticated digital processes such as artificial intelligence and machine learning. While the media often emphasizes the risk that automation will eliminate many jobs, less attention is often paid to the new occupations that are likely to arise due to new automating technologies. The history of manufacturing in the US during the past 25 years illustrates the potential negative consequences automation poses to employment. While domestic production output has increased by more than 80% since 1987, for example, manufacturers have shed 5 million jobs during this period. At the same time, automation is also helping fuel substantial growth in aligned occupations. The Bureau of Labor Statistics, for example, projects that statisticians and data scientists will be among the 10 fastest growing jobs through the end of the decade. Ultimately, the most successful regions will be those that assist workers with updating their skills to be productive in a more automated world.

0.30% 0.20% 0.10% 0.00% 2010 2019

AI Job Postings as Share of Total Online Job Postings

Source: Stanford Artificial Intelligence Index, Burning Glass



Cluster evaluation and selection

The following five target clusters are recommended for the Centralina Region–Advanced Manufacturing, Financial & Professional Services, Life Sciences & Healthcare, Information Technology, and Logistics & Distribution. Nationally, all five clusters are growing, and these clusters have also performed well regionally. While the niche sectors on the following pages highlight some new opportunities, these targets represent a further evolution of the region's existing target industries. The Centralina region is well-positioned to capture growth in these clusters in an age of disruption. Finally, the selected clusters align with local values, which typically emphasize high-growth industries characterized by healthy wages and capital investment.


Target cluster selection

Following the review and selection process outlined in this report, the following five unified target clusters are recommended for future economic development efforts in the entire Centralina region. These targets provide high-growth opportunities for a variety of residents and communities within the broader region.



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Appendix A

Target Cluster Profiles

The following *Target Cluster Profiles* provides an overview of Centralina's target industries. Each profile includes a description of the sector with an emphasis on factors that typically inform location considerations. The profiles also include data on each clusters' recent performance in the Centralina region, as well as employment forecast for both Centralina and the US as a whole. The profiles also feature a description of supporting niche sectors as well as a concise summary of how technological, demographic, and economic disruptors may impact the cluster. Each profile concludes with a matrix highlighting each niche sector's geographic applicability by county within the Centralina region.

Advanced Manufacturing

About the industry

Advanced Manufacturing is the transformation of raw materials into components and finished products using complex machinery. With communities throughout the US looking to boost tax revenues via capital-intensive development and promote high-wage employment opportunities, Advanced Manufacturing is among the most heavily recruited industrial sectors. As a result, large-scale Advanced Manufacturing projects often command substantial incentive packages when exploring new locations.

While Advanced Manufacturing operations generate significant economic impacts for their communities, they also require substantial site infrastructure and labor requirements. Access to abundant, competitively priced labor is crucial. Proximity to infrastructure such as interstates, seaport, cargo airports, and/or rail line can be critical in connecting Advanced Manufacturing firms to customers, suppliers, and raw materials. Given the energy intensive nature of many Advanced Manufacturing operations, access to reliable and affordable energy supplies may be key. Specific niche sectors may also require sizable water and wastewater capacity.

US employment dynamics

The Advanced Manufacturing cluster employs slightly more than 2 million workers. Though China's production prowess is more widely heralded, the US remains the world's second leading manufacturer. During the past years, Advanced Manufacturing employment has risen 5%. These gains have been disproportionately located in the Southeast.

Centralina Advanced Manufacturing employment growth







Advanced Manufacturing, continued

Industry Disruptors

Economic - The increased role of the federal government in the US economy will provide a boost to the domestic manufacturing sector. Substantial investments in infrastructure, for example, will ultimately support increased spending on everything from transportation equipment to industrial machinery. Advanced manufacturing is also likely to benefit from a renewed emphasis on supply chain resiliency as companies look to bring critical production operations back to the US.

Demographic - For years, manufacturers have struggled with acute labor shortages. The situation has become even more dire in the wake of the pandemic. In May 2021, the Bureau of Labor Statistics reported more than 850,000 Manufacturing job openings-a 20 year high. The talent shortage may become even more pronounced in the years ahead due to the industry's aging workforce: More than a quarter of all manufacturing workers in the US, for example, are age 55 or an older.

Technological - Automation has arguably had a greater impact on domestic manufacturing more than any other sector. Despite associated job losses, automation has helped maintain the industry's competitiveness globally. Automation pressures are likely to accelerate in the years ahead, a dynamic that create additional demand for skilled workers. Advanced Manufacturing will also be transformed by the changing nature of transportation. The ascent of electric vehicles, for example, will create new opportunities in areas such as battery development.

Disruptors impact on Advanced Manufacturing



Advanced Manufacturing, continued

Niche Sectors

Aerospace & Defense - The Aerospace & Defense clusters involve the production of traditional aircraft, drones, engines, weapon systems, and parts that serve either commercial or governmental clients. Despite the current decline in air travel, the sector is projected by IAIA to benefit from a substantial rise in global air travel in the coming decades after the pandemic recovery.

Advanced Materials & Packaging - The cluster includes the manufacturing of materials with highly engineered properties developed through specialized processes. Examples include advanced chemicals, plastics, and paper products.

Automotive Manufacturing – Automotive Manufacturing cluster involves the development and fabrication of entire automobiles as well as the production of individual components. New technologies in areas such as batteries and smart sensors will require a significant transformation in the industry's existing supply chain.

Food Processing & Beverage Manufacturing - The Food Processing & Beverage Manufacturing cluster involves the production, processing, and development of agricultural and related products. In recent years, growth in the industry has been fueled by consumer interest in healthy items as well as functional products that deliver a specific benefit, such as improved concentration or health.

Machinery Manufacturing - Machinery Manufacturing involves the transformation of raw materials into component parts and final large-scale equipment that serves other industries such as agriculture, construction, and mining. The industry is projected to benefit from strong post-pandemic construction and industrial activity.

Textiles & Apparel - The Apparel & Textiles sector involves the production of unfinished fabrics as well as finished clothes for consumers. After suffering significant domestic employment declines in previous decades, the niche sector has stabilized thanks to the development of increasingly advanced textiles as well as a limited increase in demand for made in the US apparel.

Niche Sectors by County



Financial Services

About the industry

The Financial Services industry facilitates financial transactions such as taking deposits, issuing securities, and incurring liabilities. The Financial Services industry serves consumers, businesses, and governments. The overall performance of the Financial Services industry is heavily influenced by the broader economic environment, prevailing regulatory trends, and technological innovations in areas such as payment processing and security. Despite historically low interest rates and a significant decline in consumer debt during the pandemic, the Financial Services industry has proven remarkably resilient in recent years.

Historically, location decisions among the Financial Services industry were largely determined by talent availability. Financial Services firms often concentrate in expensive locales such as New York and San Francisco. More recently, however, many Financial Services firms have expanded operations in lower cost environments with a high quality of life capable of attracting skilled workers. The focus on talent reflects the sector's relatively minimal hard infrastructure requirements. Financial Services firms typically require little beyond Class A office space and fast, reliable internet. Proximity to a major airport is also a plus.

US employment dynamics

The Financial cluster employs more than 8 million workers. In recent years, the industry has experienced steady gains nationally. In the Centralina region, however, Financial Services employment has increased at an especially impressive clip. Current projections anticipate this strong growth will continue in the years ahead, with the regional employment growth expected to outpace the national average by a significant margin.

Centralina Financial Services employment growth







Financial Services, continued

Industry Disruptors

Economic - In the early days of the pandemic, the Financial Services industry appeared especially vulnerable. Instead, many banks ended 2021 with record profits. Increased government spending, combined with overall federal monetary policy and the gradual opening of the economy, is likely to benefit the Financial Services sector in the years ahead.

Demographic - Although automation may contribute to job losses in Financial Services in the decades to come, the industry is more likely to face labor shortages. In early 2021, for example, the number of job openings in Financial Activities approached a 20-year high. Additionally, the Financial Services sector has a relatively old workforce. Half of all bookkeepers, accountants, and auditing clerks, for example, are older than 50. The rise of remote work, however, may help alleviate concerns by allowing for a more geographically distributed labor force.

Technological - Advances in data analytics and artificial intelligence (AI) promise to revamp current lending and insurance practices. In the years ahead, these technologies are likely to help automate underwriting and claims processes. Powerful data analytical capabilities may allow insurance companies to better calculate risk. Both trends may also imperil many Financial Services jobs. Among the occupations most at risk for automation in the years ahead, many are in the Finance Services sector. Additionally, the rise of autonomous vehicles is likely to spur gains in the mobility-as-aservice market as consumers forgo purchasing a car in favor of renting on as needed. While self-driving technology may reduce claims, fewer cars sold may ultimately translate into fewer insurance policies. Disruptors impact on Advanced Manufacturing



Financial Services, continued

Niche Sectors

Banking & Insurance - The Banking and Insurance sector facilitates financial transactions between consumers, businesses and government agencies. The sector include companies that provide insurance products to both businesses and consumers; firms that offer borrowing and depository services needed to finance new projects and hold funds; and investment entities that secure and enhance investors' assets.

Back Office - The Back Office niche sector includes business operations such as customer service, shared service, insurance claims processing, accounting, and other functions that do not involve face-to-face client interactions. Over the past decade, companies have been relocating their back office and other support services to less-established finance markets for reasons of security and cost savings. This niche sector seeks locations with an abundance of skilled labor, lower overall business costs, and low risk of natural disasters or terror attacks. In some instances, this may involve central US locations in relatively affordable metropolitan areas. In other cases, Financial Services firms invest in suburban and even exurban submarkets located within more expensive and established finance hubs.

Fintech - The Financial Technology "FinTech" sector provides services that integrate technology with finance in order to provide new or improved services to businesses and consumers. Many of the services offered by nascent Fintech firms are also provided by traditional financial institutions such as banks. Advanced analytical capabilities, for example, may help a Fintech insurance company more accurately calculate risk and thus offer especially competitive rates. Other growth areas where Fintech firms look to disrupt the market include alternative lending (such as peer-to-peer), digital payment systems, and consumer finance. As growth in the sector often requires significant thirdparty financing, the availability of capital is often crucial in supporting a regional Fintech ecosystem. The niche sector is projected to experience continued growth in the years ahead as growing public awareness helps drive increased demand.

Banking & Back Office Anson Cabarrus Gaston Iredell Lincoln Mecklenburg Rowan Stanly Union

Niche Sectors by County

Life Sciences & Healthcare

About the industry

The Life Sciences & Healthcare cluster involves the protection and improvement of human health. It encompasses a variety of individual sectors, including the provision of services, pharmaceuticals development and production, medical device manufacturing, and scientific research.

Hospitals, doctor offices, and specialty clinics-the primary providers of healthcare services-are typically located near substantial patient populations. Other Life Sciences & Health Sciences functions such as drug development and clinical trials, are typically located in communities with a large hospital network and/or major university with extensive research infrastructure. The presence of a university can also help ensure a community can meet the talent needs of Life Sciences & Health Sciences employers.

US employment dynamics

With more approximately 17 million workers, Life Sciences & Healthcare is one of the largest clusters in the US. In Centralina, sustained population growth has helped fuel consistent Life Sciences & Healthcare employment gains throughout the region. The cluster is expected to fuel additional employment growth in the years ahead. Current forecasts anticipate a 15% increase in Centralina's Life Sciences & Healthcare cluster through 2030. The recently announced Wake Forest School of Medicine, to be located in downtown Charlotte, may further boost employment growth. The projected employment growth rate for the region slightly exceeds the anticipated national growth rate.

Centralina Life Sciences & Healthcare employment growth



Life Sciences & Healthcare projected employment growth, 2020 - 2030



Life Sciences & Healthcare, continued

Industry Disruptors

Economic - As the federal government is the single largest purchaser of Life Sciences & Healthcare services, increased government spending is likely to boost investment in the sector. In the aftermath of the pandemic, Life Sciences & Healthcare companies are also likely to explore how to increase the resiliency of their supply chains. Recent federal legislation reflects both trends-a recent legislation proposed by Senator Lindsey Graham, for example, would encourage domestic production of personal protective equipment.

Demographic - In the years ahead, the Life Sciences & Healthcare cluster will be profoundly impacted by demographic trends. The aging of the US population will continue to fuel significant demand for Life Sciences & Healthcare services. A growing workforce will be necessary to meet this demand; according to the Bureau of Labor Services, the US will need an additional half million registered nurses, nurse anesthetists, and nurse practitioners through 2029. Notably, these projections were published prior to the pandemic and thus don't account for exodus of workers from the healthcare sector during the past 18 months.

Technological - Advances in artificial intelligence and the internet of things will both contribute to growth in the Life Sciences & Healthcare cluster. As demonstrated by products such as the Apple Watch, digitally connected consumer items are increasingly integrating health capabilities. This trend is expected to accelerate due to continued advances in components such as sensors and batteries. Artificial intelligence and data analytics, on the other hand, promise to revolutionize the notoriously expensive process of drug development. Data science, for example, may help companies more quickly discover promising chemical compounds or identify biomarkers that serve as the precursor to disease.



Disruptors impact on Life Sciences

Life Sciences & Healthcare, continued

Niche Sectors

Biomedical Research - Companies and organizations in the Biomedical Research sector are involved the exploration and refinement of medical products and therapeutic treatments. The sector includes both entities whose primary purpose is research as well as companies that may undertake R&D to support their primary operations.

Healthcare Services - The Healthcare Services sector focuses on the delivery of therapeutic treatments to individual patients. The sector includes hospitals, ambulatory services, inpatient and outpatient care, nursing and residential care facilities, and diagnostic and medical laboratory services. Growth in this sector typically reflects overall population gains, the presence of an aging population, and the availability of healthcare coverage.

Health IT - Health IT encompasses information technology applications that serve the broader healthcare industry. The Health IT market includes individual patient populations as well as broader healthcare delivery systems. Telehealth, which enjoyed a boost during the pandemic, is likely to experience additional adoption in the years ahead. Growth is also likely to be fueled by the development of new consumer-oriented mobile software, devices, and services.

Pharmaceutical & Medical Device Manufacturing - The Pharmaceutical & Medical Device Manufacturing sector is engaged in the manufacturing of biological and pharmaceutical products as well as the production of medical and therapeutic devices. Historically, demand for Pharmaceutical & Medical Device Manufacturing has been driven by the same trends that contribute to the overall growth of the Life Sciences & Healthcare sector-a growing, aging population and technological innovation. Looking ahead, the niche sector may also benefit from a renewed emphasis greater domestic production of critical medical devices.

Biomedical Healthcare Pharmaceutical & County Health IT Research Services Medical Device Mfg. Anson Cabarrus Gaston Iredell Lincoln Mecklenburg Rowan Stanly Union

Niche Sectors by County

Information Technology

About the industry

Information Technology includes companies engaged in software production, internet application development, computer hardware production, and data security. The industry has enjoyed extraordinarily strong growth during the past decade as technology becomes increasingly embedded in other industries such as manufacturing, finance, and retail.

With tech talent in short supply nationally, access to labor is a primary driver of Information Technology location decisions. Communities with an existing concentration of talent are especially competitive. The hard infrastructure needs of Information Technology firms are comparatively modest. Fast, reliable infrastructure is a must. In recent years, regions have leveraged innovative districts to help promote local Information Technology growth. Innovation districts anchored by a large research university, especially ones capable of delivering a sustained pipeline of aligned talent with the latest skills, can provide a region with a significant competitive advantage.

US employment dynamics

IT companies employ approximately 3.5 million workers nationally, in addition to the millions of IT workers in other industries. During the next decade, Information Technology employment is projected to post strong gains both within the Centralina region as well as the US as a whole. Between 2020 and 2030, Information Technology firms' employment in Centralina is expected to increase by nearly 30%, slightly outpacing the anticipated national growth rate.

Centralina Information Technology employment growth



Information Technology projected employment growth, 2020 - 2030



Information Technology, continued

Industry Disruptors

Economic - From an economic perspective, the Information Technology sector is expected to be especially impacted by increased government spending. A more proactive government, however, may present policy risks to the industry such as increased enforcement of antitrust laws. Regulatory headwinds aside, the industry is expected to continue to benefit from the growth of ecommerce and more IT investments by businesses and governments.

Demographic - The explosive growth of Information Technology employment continues to fuel significant demand for labor, from entry-level talent to more experienced professionals. Information Technology employment has increased by more than 50% nationally during the past decade, creating a scramble among many employers for recent graduates with the latest technology IT skills. At the same time, the relative youth of the Information Technology workforce can make it difficult to recruit and hire more experienced workers who can effectively lead product teams. The rise of remote work, however, may ameliorate some of the industry's difficulty in securing labor. As IT work can often be performed anywhere, the rise of remote work may allow companies to hire workers in communities beyond the traditional tech hubs.

Technological - Unsurprisingly, the Information Technology industry will play a central role in leading technological disruptors. Mass deployment of Artificial Intelligence will only be possible thanks to continued advancements in areas such as Big Data. Autonomous and electric vehicles could emerge as the biggest digital platform since the rise of mobile phones. The Internet of Everything promises to embed Information Technology into many more parts of our lives. Entirely new markets are likely to arise in the process. Disruptors impact on Information Technology



Information Technology, continued

Niche Sectors

Big Data | AI | Analytics - Big Data, AI, and Analytics involves the development and deployment of powerful analytical tools capable of examining vast amounts of data. In some instances, these tools may help boost efficiency by automating tasks previous done by humans and/or computers. Other tools may help identify past trends and/or future dynamics, thus providing valuable business intelligence. As Big Data, AI, and Analytics all become more powerful, these technologies are likely to become a core competency for many IT firms and the industries they serve.

Cybersecurity - Cybersecurity encompasses firms involved in the development, integration, and management of security software and systems designed to protect the data of businesses and consumers. The growth of increasingly sensitive information stored on the cloud-combined with major data breaches that have occurred with regularity during the past several years-continues to drive cybersecurity growth.

Data Centers - Data Centers are a centralized facility for the storage, processing, and dissemination of information. They are the backbone of our digital world. Continued increases in the production of information from both businesses and consumers are expected to buoy the growth of Data Centers in the years ahead. Political factors such as GDPR are affecting the location and security policies of data centers.

Software - Software involves the creation and/or distribution of digital programs and associated supporting services. In recent years, growth has been largely fueled by the rise of mobile computing and the rise of innovative IoT devices. Due to the sector's relatively low barriers to entry, large companies often target innovative start-ups for mergers and acquisitions. The digitization of the economy in the coming years is expected to support robust growth in the Software sector.

Niche Sectors by County



Logistics & Distribution

About the industry

The Logistics & Distribution sector facilitates the transport of goods via rail, road, water, and air. Logistics & Distribution is a vital link in the complex global supply chains that characterize a variety of industries. This critical role has become even more important in an era characterized by rapid growth of e-commerce that only continues to grow in sales.

Location decisions among Logistics & Distribution companies are largely driven by three primary factors-access to labor, available infrastructure, and proximity to customers. Typical warehousing operations, for example, require a significant number of workers. As a result, access to abundant, competitively priced labor is crucial. The presence of infrastructure such as interstates, seaport, cargo airports, and/or rail lines ensures Logistics & Distribution firms can efficiently transport goods to consumers, suppliers, and OEMs. As warehouse facilities have expanded to accommodate an ever-larger inventory of items, the availably of large sites is also an important consideration.

US employment dynamics

The Logistics and Distribution cluster employs approximately 4 million workers. The industry has experienced rapid growth in recent years. Logistics and Distribution employment, for example, increased by more than 25% between 2014 and 2019. The Centralina region posted even more impressive growth during this period. Local Logistics and Distribution employers added nearly 13,000 additional workers to their payrolls between 2014 and 2019, an increase of nearly 40%. In the years ahead, Logistics and Distribution employment at both the national and regional level is forecast to experience continued strong growth.

Centralina Logistics & Distribution growth







Logistics & Distribution, continued

Industry Disruptors

Economic - The domestic Logistics & Distribution sector will continue to benefit from broader dynamics in the retail sector as well as the evolution of global trade. Once established, consumer habits can be difficult to change. As a result, the embrace of e-commerce options among many shoppers during the past 18 months is unlikely to completely reverse itself once the pandemic fades. Additionally, the industry is also likely to experience additional investment as firms look to boost the resiliency of their supply chains.

Demographic - The Logistics & Distribution workforce is relatively young and the nature of the work itself largely precludes telecommuting. As such, Logistics & Distribution operations require a substantial number of workers. Industry pay can be modest and many industry occupations can be physically demanding. As the demand for workers has soared, many Logistics & Distribution firms have especially acute difficulties in securing labor. From warehouse workers to long-distance truck drivers to local delivery personnel, the shortage of labor has impacted virtually every aspect of the industry.

Technological - From a technological perspective, the Logistics & Distribution industry is likely to be impacted most by continued advances in robotics as well as the digitalization of the supply chain. Amazon's distribution system for example, already incorporates 350,000 robots. Current labor shortages are likely to further increase the need of Logistics & Distribution firms to incorporate robotics into their operations. Additionally, the incorporation of IoT technologies in the Logistics & Distribution industry remains limited. According to a survey of industry professionals by EY, just 25% of distribution companies have either autonomous or full digitally networked supply chains. Disruptors impact on Logistics & Distribution



Logistics & Distribution, continued

Niche Sectors

Fulfillment Centers - Fulfillment centers store, package, and ship goods from large web-based retailers straight to customers door. The growth of e-commerce has contributed to a dramatic increase in fulfillment centers throughout the country. Amazon is a market leader in this sector and operates more than 110 fulfillment centers across the country.

Supply Chain Management & Consulting - This sector provides a variety of logistics and distribution support to an assortment of business sectors such as manufacturing, wholesale, retail, healthcare, agriculture and construction. Advisory services include operations optimization, supply chain management, production planning, quality control, warehousing, and transportation.

Third Party Logistics - Establishments offer third-party inventory storage warehouses for the retail, manufacturing, and wholesale sectors. The industry is projected to continue growing with elevated online consumer spending. While the e-commerce boom has provided greater demand for this sector, it also brings new challenges as the products are processed, stored, and shipping individually rather than traditional bulk storage.

Warehousing - The warehousing niche sector involves the storage of inventory and typically involves business to business transactions. Warehouse operations may simply secure bulk goods or provide a climate-controlled environment for perishable goods. Historically, many retailers owned and operated their own warehouses. In recent years however, there has been significant growth in ondemand facilities that allow companies to more flexibly store inventory without significant capital investment. Niche Sectors by County



Appendix: CRBA and CSA Region Comparisons



Charlotte Regional Business Alliance (CRBA) Region -Target Cluster Pre-Pandemic Performance

In the immediate years before the the pandemic, the Charlotte Regional Business Alliance (CBRA) region enjoyed especially strong job growth. Between 2014 and 2019, total employment in the region increased by more than 15%. During this same period, overall US job growth was less than 9%. Employment growth in three of the region's existing target industries outpaced the regional average. Logistics & Distribution soared nearly 36%. Financial Services employment rose 28%. Information Technology employment in the CBRA region approached 27%. Advanced manufacturing employment rose 15% and the number of Health jobs increased nearly 11%.



Charlotte Regional Business Alliance region employment growth, 2014 - 2019

Charlotte Regional Business Alliance (CRBA) Region -Target Cluster Pandemic Performance

During the first 9 months of 2020 (the latest period for which detailed employment data is available), total employment in the CRBA region declined approximately 5%. Nationally, employment fell approximately 6%. Despite the significant economic headwinds associated with the global pandemic, however, several of the CRBA region's target clusters posted job gains. This include both the Financial Services and Logistics & Distribution sectors. Other clusters proved less resilient. Advanced Manufacturing, Health, and Information Technology all experienced job losses in the CRBA region during the pandemic.



Charlotte Regional Business Alliance region employment growth, January 2020 - September 2020

Charlotte Regional Business Alliance (CRBA) Region -Target Cluster Average Annual Wages

Average annual wages for target clusters in the Charlotte Regional Business Alliance region vary widely. Financial Services workers, for example, have an average annual salary of more than \$125,000. On average, Information Technology workers in the Charlotte Regional Business Alliance region make more than \$100,000 annually. Average annual salaries for Advanced Manufacturing and Health workers is approximately \$63,000 and \$61,000 respectively. Logistics & Distribution workers, on average, earn nearly \$52,000 annually in the Charlotte Regional Business Alliance region. The average annual salary for all workers in the Charlotte Regional Business Alliance region is nearly \$66,000, approximately \$2,000 less than than the US average.



Charlotte-Concord Combined Statistical Area -Target Cluster Pre-Pandemic Performance

Prior to the pandemic, the Charlotte-Concord Combined Statistical Area posted very strong employment growth. Between 2014 and 2019, total employment in the region increased by more than 15%. During this same period, overall US job growth was less than 9%. Employment growth in most of the region's existing target industries outpaced the regional average. The growth of Logistics & Distribution employment was especially striking; between 2014 and 2019, the number of Logistics & Distribution jobs rose nearly 38%. Employment in both the Financial Service and Information Technology increased approximately 28%.



Charlotte-Concord Combined Statistical Area employment growth, 2014 - 2019

Charlotte-Concord Combined Statistical Area -Target Cluster Pandemic Performance

Between January and September 2020 (the latest period for which detailed employment data is available), total employment in the Charlotte-Concord Combined Statistical Area declined approximately 5%. Nationally, employment fell approximately 6%. Despite the broad employment declines experienced both regionally and nationally, several target clusters managed to post job growth during the pandemic. Both Financial Services and Logistics & Distribution, for example, added jobs in the Charlotte-Concord Combined Statistical Area during the first nine months of 2020. Other target clusters proved less insulated from the economic turmoil that characterized much of 2020. Advanced Manufacturing, Health, and Information Technology all experienced job losses during 2020.



Charlotte-Concord Combined Statistical Area region employment growth, January 2020 - September 2020

Charlotte-Concord Combined Statistical Area -Target Cluster Average Annual Wages

There is significant variance in average annual wages in the Charlotte-Concord Combined Statistical Area by target cluster. Financial Services workers, for example, have an average salary exceeding \$125,000.On average, Information Technology workers in the Charlotte-Concord Combined Statistical Area earn more than than \$105,000 annually. Average annual salaries for Advanced Manufacturing and Health workers is approximately \$66,600 and \$61,500 respectively. Logistics & Distribution workers, on average, earn less than \$53,000 annually in the Charlotte-Concord Combined Statistical Area is nearly \$63,000, slightly higher than the US average.



Charlotte Regional Business Alliance (CRBA) Region -Industry composition

Although the Charlotte Regional Business Alliance (CRBA) region encompasses several counties that are not part of the Centralina CEDD region, the employment dynamics of the two geographies are very similar. In recent years, all but one major industry cluster in the CRBA region posted positive job growth. Especially fast-growing clusters include Transportation & Logistics, Software/IT, and Finance. Other clusters enjoyed strong employment growth in the CRBA region include Education and Construction.



Source:

EMSI (only clusters with more than 7,500 jobs are shown).

Charlotte Regional Business Alliance (CRBA) Region -Industry composition, continued

The employment composition of the Charlotte Regional Business Alliance reflects the region's economic diversity. Apparel & Textiles and Furniture manufacturing are the two most relatively concentrated clusters in the CRBA region. The 15-county CRBA region is home to more than three times as many Apparel & Textiles and Furniture manufacturing workers relative to the US average. Other clusters which employ a disproportionately large number of workers in the CRBA region include Materials, Back Office, and Finance. The Automotive, Industrial Machinery, Transportation & Logistics, and Metalworking clusters are also relatively concentrated.

Cluster	Employment (2019)	Employment growth (2014-2019)	Location quotient (2019)	Cluster	Employment (2019)	Employment growth (2014-2019)	Location quotient (2019)
Agribusiness & Food	18,247	18.3%	0.6	Government	179,539	6.7%	0.9
Apparel & Textiles	15,982	9.5%	3.3	Healthcare	119,707	11.3%	0.6
Automotive	17,100	12.2%	1.3	Industrial Machinery	39,709	11.1%	1.3
Back Office	142,304	12.3%	1.4	Materials	29,386	16.5%	1.7
Biomedical	6,171	20.6%	0.7	Metalworking	22,348	6.0%	1.3
Construction	106,129	26.9%	1.1	Mining & Logging	1,708	48.1%	0.9
Consumer Goods Mftg	6,688	13.7%	1.0	Non-Profits	4,597	-16.1%	0.3
Creative Content	16,032	7.9%	0.8	Professional Services	36,705	26.3%	0.9
Education	13,437	45.4%	0.9	Research	21,170	20.4%	1.0
Electronics	17,937	-12.9%	0.9	Retail	177,398	9.9%	1.0
Energy	7,428	3.3%	0.5	Software / Info. Tech.	26,426	28.0%	0.8
Entertainment	160,712	20.7%	1.0	Telecom Services	8,369	6.9%	1.2
Finance	99,084	27.6%	1.4	Transportation & Logistics	64,938	36.0%	1.3
Furniture	17,372	12.2%	3.7	Total	1,376,625	15.1%	1.0

Charlotte Regional Business Alliance region industry cluster performance

Charlotte-Concord Combined Statistical Area -Industry composition

The strong employment growth of the Centralina region extends to the broader 13-county Charlotte-Concord Combined Statistical Area (Charlotte CSA). With the exception of Electronics, all major industry clusters in the Charlotte CSA experienced employment gains between 2014 and 2019. Some of the fastest growing clusters include Transportation & Logistics, Software & IT, and Finance.



Source:

EMSI (only clusters with more than 7,500 jobs are shown).

Charlotte-Concord Combined Statistical Area -Industry composition, continued

The Charlotte CSA is also characterized by a diversity of industrial composition. The broader region is home to approximately three times as much Apparel & Textiles employment relative to the US average. This cluster, however, employs fewer than 15,000 workers in the region. No other industry cluster in the Charlotte CSA is 50% more concentrated regionally relative to the national average. Other relatively concentrated clusters in the region include Materials, Finance, and Back Office. Furniture Manufacturing and Industrial Machinery are also more concentrated in the Charlottes CSA compared to the US average.

Cluster	Employment (2019)	Employment growth (2014-2019)	Location quotient (2019)	Cluster	Employment (2019)	Employment growth (2014-2019)	Location quotient (2019)
Agribusiness & Food	16,544	20.2%	0.6	Government	167,593	6.9%	0.9
Apparel & Textiles	13,258	10.6%	3.0	Healthcare	109,820	12.0%	0.6
Automotive	15,106	7.8%	1.2	Industrial Machinery	38,286	10.8%	1.4
Back Office	134,816	13.4%	1.4	Materials	24,615	15.8%	1.5
Biomedical	5,954	22.5%	0.7	Metalworking	18,131	5.9%	1.1
Construction	99,998	27.1%	1.1	Mining & Logging	1,679	49.4%	0.9
Consumer Goods Mftg	5,810	10.8%	1.0	Non-Profits	4,428	-11.9%	0.4
Creative Content	15,307	9.1%	0.9	Professional Services	35,366	26.0%	0.9
Education	13,172	43.6%	0.9	Research	20,512	21.9%	1.0
Electronics	14,253	-17.7%	0.7	Retail	162,796	9.8%	1.0
Energy	6,816	2.2%	0.5	Software / Info. Tech.	25,531	28.6%	0.9
Entertainment	150,758	21.1%	1.0	Telecom Services	8,081	6.9%	1.3
Finance	97,220	28.1%	1.4	Transportation & Logistics	59,193	38.3%	1.3
Furniture	6,041	30.0%	1.4	Total	1,271,091	15.9%	1.0

Charlotte-Concord Combined Statistical Area industry cluster performance



Appendix: Industry Cluster Definitions

Appendix A

Industry Cluster Descriptions

Aerospace: Operations engaged in research, design, and manufacturing aerospace and space technology, products, and parts, including commercial aircraft, military craft, and unmanned aerial vehicles (UAVs).

Agribusiness & Food: Operations engaged in raising, harvesting, processing, and manufacturing crops, food, and beverage products. Operations include farming, dairy, ranching, hunting, fishing, and all support activities, such as pesticide manufacturing. Also includes manufacture of tobacco and processed food products, such as sugar, flour, and canned goods.

Apparel & Textiles: Operations engaged in processing natural products such as cotton and leather into consumer textiles and apparel products. These include fabric mills, textile mills, and cut and sew apparel manufacturing.

Back Office: Operations engaged in support activities for the day-to-day operations of other businesses, including office administration, facilities support, employment services, and business support.

Biomedical Supplies & Labs: Operations engaged in manufacture and wholesale of medicine, pharmaceuticals, and medical equipment. Also includes medical and diagnostics laboratories.

Construction: Operations engaged in construction of buildings and engineering projects, such as highways and utility systems. Also includes operations manufacturing products related to construction, such as lumber, clay, glass, cement, and lime.

Consumer Goods Mfg.: Operations engaged in manufacture of household appliances and other miscellaneous nondurable goods for consumers.

Creative Content: Operations engaged in creative and information sectors such as movie and music production, radio and television programming, newspaper and magazine production, and internet publishing.

Education: Operations engaged in education institutions, including elementary and secondary schools (government and private), colleges, universities, professional schools, trade schools, and educational support services.

Industry Cluster Descriptions

Electronics: Operations engaged in manufacture, wholesale, and repair of electronic equipment, including computers, televisions, semiconductors, and other electronic components.

Energy: Operations engaged in all vertically aligned elements of the energy sector, including oil extraction, coal mining, pipeline transportation of oil and gas, and electric power generation, transmission, and distribution.

Entertainment: Operations engaged in leisure and accommodation, including hotels, restaurants, bars, casinos, museums, performing arts, and sporting facilities. Also includes independent performers, artists, and direct tourist activities.

Finance: Operations engaged in financial, insurance, and real estate activities, such as banks, insurance carriers, and real estate brokers.

Furniture: Operations engaged in manufacture and wholesale of household, office, and commercial furniture and cabinets.

Government: Operations of federal, state, and local government agencies, waste collection and management, and water treatment. Military employment is not included in these numbers.

Healthcare: Operations engaged in direct provision of healthcare and social services, including private hospitals, doctor offices, elderly care, child day care, family services, and home nursing care.

Industrial Machinery: Operations engaged in manufacture and wholesale of industrial application machinery, including agricultural and mining equipment, HVAC systems, metalworking machinery, turbines, lighting, and other equipment.

Mining & Logging: Operations engaged in forestry, logging, and mining: not including oil, gas, and coal extraction.

Materials: Operations engaged in design, wholesale, and manufacture of traditional and complex materials, including paper, chemicals, plastics, rubber, and other advanced materials.

Industry Cluster Descriptions

Metalworking: Operations engaged in processing minerals into metal products and manufacture of components and products from metal. This includes steel mills, foundries, fabricated metal and structural metal manufacturing, and hand-tool manufacturing.

Non-Profits: Operations engaged in non-profit activities, including churches, social advocacy, and civic and professional associations.

Professional Services: Operations engaged in architecture, engineering, legal, accounting, management, and other technical services.

Research: Operations engaged in scientific research and development and scientific consulting services.

Retail: Operations engaged in retail sale of goods and services to consumers, including car dealers, grocery stores, clothing stores, gas stations, auto repair, personal care, and equipment rental.

Shipbuilding: Operations engaged in construction of ships and boats.

Software / Information Technology: Operations engaged in information technology sectors, including software publishing, internet service providers, computer system design, data processing and hosting, and other information services.

Telecom Services: Operations engaged in wired, wireless, and satellite telecommunications, including cell phone and cable providers.

Transportation & Logistics: Operations engaged in transportation of goods and individuals; warehousing and storage of goods; and delivery of post and packages. This includes commercial, personal, and tourism transportation on air, rail, water, and roads.



Target Cluster Opportunity Analysis: Anson County, NC

August 2021

Target Cluster Opportunity Analysis

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Anson County: Industry Cluster Profiles

- Healthcare
- Industrial Machinery
- Transportation and Logistics
- Materials and Metalworking



Anson County, NC Healthcare cluster

Employment by 4-digit NAICS

Residential Intellectual and Developmental I	D Continuing Care Retirement	Communities and Assis	Home Health Ca Outpatient Care	re Services Centers	Individual and Fa	Offices of Physic
					Offices of D Hosp	itals (M Of Other A
	Employment, 2019	New Jobs, 2014	- 2019 %	Growth, 2014 - 2019	Location Que	otient, 2019
Residential Intellectual and Develop	128.6		112.3	690.4%		4.01
Continuing Care Retirement Comm	74.7		70.7	1766.9%	1.57	
Nursing Care Facilities (Skilled Nursi	71.8		67.8	1694.3%	0.91	
Home Health Care Services	62.5	1	3.6	27.7%	0.83	
Outpatient Care Centers	51.2		28.7	127.4%	1.07	
Individual and Family Services	33.0	-79.2	-70.6%		0.26	
Offices of Physicians	32.3	-69.8	-68.4%		0.24	
Offices of Dentists	15.0	1.1		7.6%	0.31	
Hospitals (Local Government)	14.1	-141. <mark>9</mark>	-91.0%	Constant, Brotes	0.41	
Medical and Diagnostic Laboratories	4.0	0.0		0.0%	0.29	
Offices of Other Health Practitioners	4.0	-19.6	-83.0%		0.08	
Other Ambulatory Health Care Servi	4.0	0.0		0.0%	0.26	

Source: EMSI; EY analysis
Anson County, NC Industrial Machinery cluster

Employment by 4-digit NAICS



Source: EMSI; EY analysis

EY

Anson County, NC Transportation and Logistics cluster





Anson County, NC Materials and Metalworking cluster

Employment by 4-digit NAICS







Target Cluster Opportunity Analysis: Cabarrus County, NC

August 2021

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Cabarrus County: Industry Cluster Profiles

- Agribusiness and Food
- Back Office and Finance
- Healthcare
- Transportation and Logistics



Cabarrus County, NC Agribusiness and Food cluster

Employment by 4-digit NAICS





Cabarrus County, NC Back Office and Finance cluster

Employment by 4-digit NAICS Services to Buildings and Dwellings **Management of Companies and Enterprises** Depository Credit Inte... Agencies, Bro... Activities ... Other Su... **Employment Services** Offices of Real E... Office Admi... Secur... **Lessors of Real Estate Business Support Services** O... I... Nondeposit... Investigation an... Facilities Su... Acti... % Growth, 2014 - 2019 **Employment**, 2019 New Jobs, 2014 - 2019 Location Quotient, 2019 Services to Buildings and Dwellings 1200.1 0.3K 39.2% 1.06 **Employment Services** 0.4K 1187.7 51.2% 0.64 Management of Companies and Ent... -0.2K 1068.9 0.86 -14.7% **Business Support Services** -2.1K 683.8 -75.5% 1.51 **Depository Credit Intermediation** 0.1K 12.9% 0.51 468.2 0.0K Lessors of Real Estate 410.8 -0.8% 1.29 0.0K Agencies, Brokerages, and Other Ins... 305.7 19.3% 0.49 0.1K **Activities Related to Real Estate** 227.7 39.9% 0.59 -0.1K **Other Support Services** -37.6% 216.9 1.26 0.1K Offices of Real Estate Agents and Br... 181.2 86.0% 1.04



Cabarrus County, NC Healthcare cluster

Employment by 4-digit NAICS





Cabarrus County, NC Transportation and Logistics cluster







Target Cluster Opportunity Analysis: Centralina EDD, NC

August 2021

Target Cluster Opportunity Analysis

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Centralina EDD: Industry Cluster Profiles

- Agribusiness and Food
- Healthcare
- Industrial Machinery
- Transportation and Logistics
- Materials and Metalworking



CEDD, NC Agribusiness and Food Cluster

Employment by 4-digit NAICS

Animal Slaughtering and Processing		Bakeries and Tortilla	a Manufactur	ing	Other Food N	lanufacturing		Animal Productio	on	
			Value - Magine (Crop Product	ion		Support Activi	Su	Su
		Beverage Manufact	uring		crop Product	ion			Eru	D
								Animal Food	riu	F
								Grain and Oils	Dai	S
	Emplo	wment 2019	Now	obs 2014 - 2019	% Growth	2014 - 2019	Loca	tion Quotient 2	Far	
Animal Slaughtering and Processing	Emplo	syment, 2013	, New J				LUCA	tion Quotient, 2	10 5	
		4.5K		1400.4		44.5%	_		19.51	
Bakeries and Tortilla Manufacturing		2.8K		341.7		14.1%			20.0	5
Beverage Manufacturing		2.0K		981.3		<mark>9</mark> 5.4%		16.	52	
Other Food Manufacturing		2.0K	-346. <mark>0</mark>		-14.9%				19.7	6
Crop Production	1.5	К		324.9		27.6%		6.25		
Animal Production	1.0K			64.7		6.7%		8.83		
Support Activities for Crop Producti	0.4K			17.6		5.2%	2.37			
Animal Food Manufacturing	0.2K			61.4		38.4%		7.92		
Grain and Oilseed Milling	0.2К		-110.0		-34.5%			7.71		
Sugar and Confectionery Product M	0.1K		-262.5		-74.4 <mark>%</mark>		2.68			



CEDD, NC Healthcare Cluster

Hospitals (Local Government)	Offices of Physicians	Offices of Physicians		Home Health Care Services		Offices of Oth	e Outpati.	
	General Medical and Surgica	l Hospitals	Individual and Family	Offices of Dentists	1	Residential	Com Oth	1
				Continuing Care Retirem	ient C	Vocational	Medi Oth. Spe.	
	Employment, 2019	New Jobs, 20	14 - 2019 % 0	Frowth, 2014 - 2019	Loca	ation Quotier	nt, 2019	
Hospitals (Local Government)	30.9K		3.7K	13.6%			102.84	
Offices of Physicians	19.6K		4.2K	27.1%	16.	.65		
General Medical and Surgical Hospi	12.3K	0.8К		6.8%	5.87			
Nursing Care Facilities (Skilled Nursi	8.2K	0.4K		5.3%	11.6	8		
Individual and Family Services	7.9К	1.38		20.3%	6.94			
Home Health Care Services	7.7К	1.0K		14.3%	11.5	1		
Offices of Dentists	7.0K	1.2K		20.5%	16.	39		
Continuing Care Retirement Comm	6.4K	-0.1K	-1.9%		15.2	26		
Offices of Other Health Practitioners	5.6K	1.7	γк	41.9%	13.1	16		
Outpatient Care Centers	3.4K	0.5К		17.7%	8.13			



CEDD, NC Industrial Machinery Cluster

Employment by 4-digit NAICS



CEDD, NC Transportation and Logistics Cluster

Employment by 4-digit NAICS

Scheduled Air Transportation	General Freight Trucking	Warehousing and Storage	e Couriers and Express Delive	er Freight Transporta Suppor
			Specialized Freight Truckin	Support Ac Local Inter.
				Other Supp Other T S
				Chart Sc
	Employment, 2019	New Jobs, 2014 - 2019	% Growth, 2014 - 2019	Location Quotient, 2019
Scheduled Air Transportation	12.7К	2.5K	24.7%	62.76
General Freight Trucking	12.2K	2.0K	19.0%	26.26
Warehousing and Storage	9.7К	<mark>4.7К</mark>	91.9%	17.68
Couriers and Express Delivery Servi	5.1K	1.3K	32.6%	16.50



CEDD, NC Materials and Metalworking Cluster

Employment by 4-digit NAICS										
Plastics Product Manufacturing	ufacturing Architectural and Structural M.		Machine Shops; Turned Produ Ru		Rubber Product Ma Harc		Basic Ch	Other Ch	Pape	r an
	Converted Paper Product Man	Other Fabricated N Chemical and Allie	Aetal Produ d Products	Nonferrous Me Resin, Synthetic	tal (c Ru	Foundries Soap, Cleaning Co Coating, Engravin	Cutlery and Forging and Paint, Coati	H Pulp S Iron	and I Pro	oiler Sp
	Employment, 2019	New Job	s, 2014 - 201	9 % G	rowth,	2014 - 2019	Location (Quotient	, 2019	
Plastics Product Manufacturing	6	5.9K	5	56.1	8.8%		26.24			
Architectural and Structural Metals	3.0К		313.5		11.6%	5	17.35			
Converted Paper Product Manufact	2.9K			609.7	26.3	%	24.72			
Machine Shops; Turned Product; an	2.3K		15.7		0.7%		14.13			
Other Fabricated Metal Product Ma	1.8K	-346. <mark>9</mark>		-16.1%			14.72			
Chemical and Allied Products Merch	1.8K		187.6		12.0%	5	27.00			
Rubber Product Manufacturing	1.7K		286.0		20.09	%	28.44			
Nonferrous Metal (except Aluminu	1.2K	-257.4		-18.2%			42	2.40		
Resin, Synthetic Rubber, and Artifici	1.1K		16.5		1.5%		26.50			
Hardware Manufacturing	1.1K			<mark>6</mark> 90.4		<mark>1</mark> 68.6%			<mark>99.</mark>	74



Target Cluster Opportunity Analysis: Gaston County, NC

August 2021

Target Cluster Opportunity Analysis

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Gaston County: Industry Cluster Profiles

- Agribusiness and Food
- Apparel
- Healthcare
- Transportation and Logistics
- Materials and Metalworking



Gaston County, NC Agribusiness and Food cluster

Employment by 4-digit NAICS



Gaston County, NC Apparel cluster

Employment by 4-digit NAICS



Apparel, Piece Goods, and Notions ... Cut and Sew Apparel Manufacturing

Other Leather and Allied Product M...

Other Textile Product Mills

707.8 658.2 66.1 38.1

14.3

4.0



10.3% 0.86 16.2% 0.87 0.45

0.72

0.0%

Gaston County, NC Healthcare cluster

Employment by 4-digit NAICS

General Medical and Surgical Hospitals	Offices of Phys	icians	Individual and Family Services	Continuing Care Re	etirement C	Offices of Den Off	ices of Oth
			Nursing Care Facilities (Skill	nome nearth care	Services	Outpatient Care Cen	Comm
				Residential Intellec	tual and D	Hospitals (Local Gov	Ot V Me
	Employment, 20 ^o	19 New .	Jobs, 2014 - 2019	% Growth, 2014 - 2	2019	Location Quotient,	2019
General Medical and Surgical Hospi		3.1K	<mark>2</mark> 90.9		10.2%	1.	30
Offices of Physicians	2.1K		249.7		13.3%		1.57
Individual and Family Services	0.9K		101.0		11.9%	0.72	
Nursing Care Facilities (Skilled Nursi	0.9К	-46.1		-4.7%		1.16	
Continuing Care Retirement Comm	0.8K	-99.9		-11.1%			1.65
Home Health Care Services	0.6К	-21	.1	-3.3%		0.81	
Residential Intellectual and Develop	0.6K		34.8	e	5.6%		1.72
Offices of Dentists	0.5K		36.2	;	7.2%	1.10	
Offices of Other Health Practitioners	0.5K	-1	1.8	-0.3%		1.07	
Outpatient Care Centers	0.5K	-121. <mark>2</mark>	-20.8	3%		0.95	

Source: EMSI; EY analysis

EY

Gaston County, NC Transportation and Logistics cluster



Source: EMSI; EY analysis

EY

Gaston County, NC Materials and Metalworking cluster

Employment by 4-digit NAICS

Architectural and Structural Metals Manufa	Machine Shops; Turned Product;	Plastics Product Manufacturi	ng	Other Fabricated Met	tal Pro Soap	, Clean (Converted
		Basic Chemical Manufacturin	ıg	Coating, Engraving, H	leat Tr Othe	r Che Pa	int,
	Employment, 2019	New Jobs, 2014 - 2019	% Growt	th, 2014 - 2019	Location G	Quotient,	2019
Architectural and Structural Metals	1021.2	<mark>2</mark> 94.8		40.6%			5.11
Machine Shops; Turned Product; an	809.2	108.8	15	5.5%			4.39
Plastics Product Manufacturing	596.3 -	42.2	-6.6%		1.9	9	
Basic Chemical Manufacturing	393.9	62.3	1	8.8%			5.15
Other Fabricated Metal Product Ma	336.1	25.2	8.1	1%	2	.39	
Resin, Synthetic Rubber, and Artifici	175.8	175.8				3.65	;
Coating, Engraving, Heat Treating, a	163.7	7.8	5.0	0%	2	.29	
Soap, Cleaning Compound, and Toil	159.3	106.8		<mark>2</mark> 03.0%		2.84	
Converted Paper Product Manufact	147.3	31.8	2	27.6%	1.08		
Chemical and Allied Products Merch	80.1	55. <mark>3</mark>	-40.9 <mark>%</mark>	1	1.07		



Target Cluster Opportunity Analysis: Iredell County, NC

August 2021

Target Cluster Opportunity Analysis

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Iredell County: Industry Cluster Profiles

- Apparel
- Back Office and Finance
- Healthcare
- Industrial Machinery
- Transportation and Logistics
- Materials and Metalworking



Iredell County, NC Apparel and Textiles cluster

Employment by 4-digit NAICS



Textile and Fabric Finishing and Fab... Apparel, Piece Goods, and Notions ...

Other Leather and Allied Product M...

Source: EMSI; EY analysis

1.50

0.05

0.71

22.6

4.0

4.0

4.0

-73.3%

-91.2%

-61.8

-41.7



Iredell County, NC Back Office cluster





Iredell County, NC Healthcare cluster





Iredell County, NC Industrial Machinery cluster





Iredell County, NC Transportation and Logistics cluster

Employment by 4-digit NAICS





Iredell County, NC Materials and Metalworking cluster

Employment by 4-digit NAICS

Plastics Product Manufacturing		Pulp, Paper, and Paperboar	Architectural and Stru	Machine Shops; Tu	Iron and Ste (Coating, Engravi Forging and Sta	Chemical an Cutlery a i Resin, Sy Paint, C Soap, C Pap R Basi
	Employment,	2019 New Jobs, 2	.014 - 2019 %	Growth, 2014 - 2019	Locati	on Quotient, 2019
Plastics Product Manufacturing		1302.2	179.4	16.0%		4.29
Pulp, Paper, and Paperboard Mills	340.5		126.1	58.8%		7.00
Converted Paper Product Manufact	272.4	-217. <mark>7</mark>	-44.4%	5	1.9	98
Architectural and Structural Metals	263.3	-32.9	-11.1%		1.30	
Other Fabricated Metal Product Ma	234.5		<mark>1</mark> 93.7	<mark>4</mark> 74	1.6	5
Machine Shops; Turned Product; an	223.4	-35.1	-13.6%		1.20	
Steel Product Manufacturing from	223.1	-0.8	-0.4%			7.47
Iron and Steel Mills and Ferroalloy	149.7		24.9	19.9%		3.42
Chemical and Allied Products Merch	147.8		14.1	10.5%	1.9	96
Cutlery and Handtool Manufacturing	118.6		85.8	262.4%		6.21



Target Cluster Opportunity Analysis: Lincoln County, NC

August 2021
Target Cluster Opportunity Analysis

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Lincoln County: Industry Cluster Profiles

- Back Office and Finance
- Furniture
- Healthcare
- Industrial Machinery
- Transportation and Logistics
- Materials and Metalworking



Lincoln County, NC Back Office and Finance cluster

Employment by 4-digit NAICS

Employment Services		Service	es to Buildings and	d Dwellings		Agencies, Brokerages, an.	Investigat N	lanag (Office
		Deposi	itory Credit Intern	nediation		Other Support Services	Offices of Re Facilities Sup Nondeposito	Activi Busines Securiti	Lesso
	Employment, 2019		New Jobs, 20	14 - 2019	% Gr	owth, 2014 - 2019	Location Quo	tient, 201	19
Employment Services	8	36.7	-122.2		-12.7%		1.4	2	
Services to Buildings and Dwellings	348.2		-145. <mark>3</mark>		-29.4 <mark>%</mark>		0.98		
Depository Credit Intermediation	242.7		-9.8		-3.9%		0.83		
Agencies, Brokerages, and Other Ins	185.5			117.9		1 <mark>74.1%</mark>	0.95		
Other Support Services	150.3			29.7		24.7%			2.76
Investigation and Security Services	58.7		-4.7		-7.4%		0.37		
Management of Companies and Ent	46.4			7.2		18.2%	0.12		
Office Administrative Services	46.3			28.6		161.8%	0.53		
Offices of Real Estate Agents and Br	39.3			22.0	i i	127.5%	0.71		
Facilities Support Services	38.1			23.1		153.6%	1.4	3	



Lincoln County, NC Furniture cluster

Employment by 4-digit NAICS

Household and Institutional Furniture and Kitchen Cabinet Manufacturing





Lincoln County, NC Healthcare cluster

Employment by 4-digit NAICS Hospitals (Local Government) Nursing Care Facilities (Skilled Nursing Facilit... Offices of Physicians Home Health Car... Offices of Othe ... **Continuing Care Retirement ...** Individual and Fam... Other ... Out... **Offices of Dentists** Vocational Rehabili... Medi... Co... ... Ot... New Jobs, 2014 - 2019 Employment, 2019 % Growth, 2014 - 2019 Location Quotient, 2019 Hospitals (Local Government) 725.1 -2.5 -0.3% 6.46 Nursing Care Facilities (Skilled Nursi... 14.7 316.8 4.9% 1.21 **Offices of Dentists** 69.3 50.5% 206.5 1.29 **Offices of Physicians** -12.7 186.8 -6.4% 0.43 **Continuing Care Retirement Comm...** -27.7 150.7 -15.5% 0.96 Home Health Care Services 83.5 193.8% 126.6 0.51 27.2 **Offices of Other Health Practitioners** 116.0 30.7% 0.73 5.9 Individual and Family Services 58.1 11.3% 0.14 14.9 **Vocational Rehabilitation Services** 40.6 57.9% 0.76 16.0 **Other Residential Care Facilities** 31.0 107.2% 1.14



Lincoln County, NC Industrial Machinery cluster

Employment by 4-digit NAICS

Professional and Commercial Equipment	and Supplies Merch	Engine, Turbine, and Powe	r Transmission Equipment N	1anuf Machinery, Equipme	nt, and Supplies	Commerci	ial a
				Other General Purpo	ose Machinery Ma	Agricul	Mis
						Ventil C	I Metal
	Employment,	2019 New Job	s, 2014 - 2019 %	Growth, 2014 - 2019	Location Quot	ient, 2019	,
Professional and Commercial Equip		395.3	<mark>3</mark> 61.8	1080.1%	3.52		
Engine, Turbine, and Power Transmi		382.1	<mark>3</mark> 69.2	2853.1%		23	3.50
Machinery, Equipment, and Supplie	132.5		57.7	77.1%	1.13		
Other General Purpose Machinery	120.8	-35.9	-22.9	%	2.67		
Commercial and Industrial Machine	36.3	-4.8	-11.89	%	1.03		
Agriculture, Construction, and Mini	28.0	-191. <mark>4</mark>	-87.29	<mark>%</mark>	0.77		
Miscellaneous Durable Goods Merc	19.2		1.8	10.6%	0.39		
Ventilation, Heating, Air-Conditioni	12.3		8.3	207.1%	0.55		
Commercial and Service Industry M	4.0		0.0	0.0%	0.26		
Industrial Machinery Manufacturing	4.0	-37.0	-90.29	<mark>%</mark>	0.20		
Metalworking Machinery Manufact	4.0		4.0		0.14		



Lincoln County, NC Transportation and Logistics cluster



Lincoln County, NC Materials and Metalworking cluster

Employment by 4-digit NAICS

Hardware Manufacturing	Other Fabricated Metal Product	Architectural and Structu	Machine Sho	Plastics Pr	Coating,
		Other Chaminal Deviluat			
		Other Chemical Product	Converted Paper	r Produ So	ap, Iron
			Resin, Synthetic	Rubber	
E	New Jake 0044 0040	N/ Carrielle 2011 2010	1		2040

	Employment, 2019	New Jobs,	2014 - 2019 %	Growth, 2014 - 2019	Location Quotient, 2019
Hardware Manufacturing		791.6	<mark>7</mark> 19.3	<mark>9</mark> 94.6%	192.52
Other Fabricated Metal Product Ma	347.6	-508. <mark>2</mark>	-59.4 <mark>%</mark>		7.61
Architectural and Structural Metals	158.8	-97.5	-38.0%		2.45
Other Chemical Product and Prepar	117.2	-64.2	-35.4%		8.49
Machine Shops; Turned Product; an	97.3		33.4	52.3%	1.63
Plastics Product Manufacturing	80.2		21.2	35.9%	0.82
Coating, Engraving, Heat Treating, a	69.8		24.9	55.6%	3.02
Converted Paper Product Manufact	55.7		15.7	39.2%	1.26
Resin, Synthetic Rubber, and Artifici	51.9	-16.6	-24.2%		3.32
Soap, Cleaning Compound, and Toil	30.7	-4.3	-12.4%		1.69



Target Cluster Opportunity Analysis: Mecklenburg County, NC

August 2021

Target Cluster Opportunity Analysis

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Mecklenburg County: Industry Cluster Profiles

- Back Office and Finance
- Healthcare
- Industrial Machinery
- Software and Research
- Transportation and Logistics



Mecklenburg County, NC Back Office and Finance cluster

Employment by 4-digit NAICS											
Depository Credit Intermediation	Managen	nent of Comp	oanies and Enterpri	ses	Services to Investigati	Buildings and D on and Security	Other Financial Ir	s	Activitie	Busines	Secur
	Employm	ent Services							Office Ad	Activi	Lesso
					Agencies, I	Brokerages, and	Nondepository C	red	Offices of	. Other	Facili
		Employme	ent, 2019	New Jobs, 2014	2019	% Growth, 2	014 - 2019	Loc	cation Quo	tient, 201	9
Depository Credit Intermediation			35.5K		11.1K		45.8%				4.14
Management of Companies and Ent			31.4K	4.0K		14.4%				2.70	
Employment Services			28.9K	5.2K		22.0	%		1.66		
Services to Buildings and Dwellings		10.3K		1.2K		12.9%			0.98		
Investigation and Security Services		10.0K		2.8K			39.5%		2.1	7	
Agencies, Brokerages, and Other Ins		8.3K		2.7K			<mark>48.5</mark> %		1.43		
Other Financial Investment Activities		8.0K		2.4K			42.6%			3.37	
Insurance Carriers		7.1K		0.3К		4.0%			1.23		
Nondepository Credit Intermediation		6.8K		1.5K		2	.8.9%		2	.47	
Activities Related to Real Estate		5.3K		1.1K		27	7.2%		1.50		

Mecklenburg County, NC Healthcare cluster

Employment by 4-digit NAICS

Hospitals (Local Government)	Offices of Physicians	Offices of Physicians			Offices of Other Health		Outpatie	Vocati
			nome ne		Nursing Ca	re Facilities (Resident	Commu
	General Medical and Su	ırgical Hospitals	Offices of	Dentists	Continuing	Care Retire	Other Amb	u Oth
							Medical and	d ^{Spe}
	Employment, 2019	New Jobs, 2014 - 2	2019	% Growth, 2014 -	2019	Location (Quotient, 20	019
Hospitals (Local Government)	21.7К		3.4K	18.5%				6.57
Offices of Physicians	13.5К		3.7K	37.2	.%	1.04		
General Medical and Surgical Hospi	6.7K	0.9K		14.6%		0.29		
Individual and Family Services	4.7K	1.0K		27.1%		0.37		
Home Health Care Services	4.5K	0.7K		19.8%		0.62		
Offices of Dentists	4.3K	0.7K		20.3%		0.91		
Offices of Other Health Practitioners	3.8K	1.4K			<mark>56.0%</mark>	0.82		
Nursing Care Facilities (Skilled Nursi	3.5К	0.4K		12.0%		0.46		
Continuing Care Retirement Comm	3.4К	0.2K		6.6%		0.74		
Outpatient Care Centers	2.0K	0.6K			45.5%	0.43		

Mecklenburg County, NC Industrial Machinery cluster

Employment by 4-digit NAICS



Mecklenburg County, NC Software and Research cluster

Employment by 4-digit NAICS



Mecklenburg County, NC Transportation and Logistics cluster

Scheduled Air Transportation		General Freight Tro	ucking	Couriers and Exp	ress Delivery Servi	Freight Transportat	ion Spec	cialized
				Warehousing and	Storage	Support Activitie	Local M	Ot C
						Interurban and R	Support	
	Employmen	t, 2019	New Jobs, 2014 - 2	019 % Gro	owth, 2014 - 2019	Location Q	uotient, 20)19
Scheduled Air Transportation		12.6K		2.4K	23.9%		5.68	
General Freight Trucking		8.7K	0.9К		12.1%	1.70		
Couriers and Express Delivery Servi	4.0K		1.0K		32.3%	1.17		
Warehousing and Storage	3.8K		1	I.8K	<mark>8</mark> 9.7	0.63		
Freight Transportation Arrangement	2.8K		1.1K		63.8%	2.44		
Specialized Freight Trucking	1.6K		0.3K		22.7%	0.70		
Support Activities for Air Transport	1.2K		0.5K		68.8%	1.09		
Interurban and Rural Bus Transport	0.7K	-0).3К	-26.9 <mark>%</mark>				7.54
Local Messengers and Local Delivery	0.5K		0.2K		56.3%	0.97		
Support Activities for Road Transpo	0.5K		0.1K		10.8%	1.01		

Employment by 4-digit NAICS



Target Cluster Opportunity Analysis: Rowan County, NC

August 2021

Target Cluster Opportunity Analysis

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Rowan County: Industry Cluster Profiles

- Healthcare
- Industrial Machinery
- Transportation and Logistics



Rowan County, NC Healthcare cluster

Employment by 4-digit NAICS

General Medical and Surgical Hospitals Nursing Care Facilities (Skilled Nursing Facilities)			Individual and Famil	y Services	Offices of Phys	icians	Residential I	ntellectu
	Home Health Care Services		Continuing Care Ret	irement C	Offices of Den	tists	Offices of O. Other A C	Outp
	Employment, 2019	New Jobs, 2014	l - 2019 % (Growth, 201	4 - 2019	Location	Quotient, 2	019
General Medical and Surgical Hospi	1409.7		259.6	22.6%			0.90	
Nursing Care Facilities (Skilled Nursi	901.0	-34.9	-3.7%					1.72
Home Health Care Services	873.1		178.5	25.7%				1.75
Individual and Family Services	546.8		<mark>2</mark> 85.9		<mark>1</mark> 09.6%	0.0	54	
Continuing Care Retirement Comm	511.7	-70. <mark>1</mark>	-12.0 <mark>%</mark>					1.62
Offices of Physicians	490.4	37.2		8.2%		0.56	5	
Offices of Dentists	411.3	73.8		21.9%			1.28	
Residential Intellectual and Develop	312.9	65.0		26.2%			1.	47
Offices of Other Health Practitioners	168.3	26.0		18.3%		0.53		
Outpatient Care Centers	97.9	14.5		17.4%		0.31		

Rowan County, NC Industrial Machinery cluster

Employment by 4-digit NAICS





Rowan County, NC Transportation and Logistics cluster

Employment by 4-digit NAICS

Warehousing and Storage		General I	Freight Trucking		Specialized Freight True	cking	Other Support A	.ctivi
					Couriers and Express D	elivery Serv	Support Activi	Ot
							Sup Freigh Urban	Та
	Employment, 2019	Ne	w Jobs, 2014 - 2019	% Gro	owth, 2014 - 2019	Location	Quotient, 2019	i
Warehousing and Storage	1424.3		284.2	2	24.9%	3.46		
General Freight Trucking	894.3		80.0		9.8%	2.57		
Specialized Freight Trucking	415.3		169.8		69.1%	2.68		
Couriers and Express Delivery Servi	282.7		48.4		20.7%	1.21		
Other Support Activities for Transp	205.0		47.0		29.7%		18	.12
Support Activities for Road Transpo	128.1		50.1		64.1%	3.68		
Other Transit and Ground Passenger	46.4		1.5		3.3%	1.25		
Support Activities for Air Transport	20.1	-14.0		-41.1%		0.26		
Freight Transportation Arrangement	13.8	-13.9		-50.1%		0.17		
Urban Transit Systems	12.6		8.6		<mark>2</mark> 13.9%	0.78		



Target Cluster Opportunity Analysis: Stanly County, NC

August 2021

Target Cluster Opportunity Analysis

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Stanly County: Industry Cluster Profiles

- Back Office and Finance
- Healthcare
- Transportation and Logistics
- Materials and Metalworking



Stanly County, NC Back Office and Finance cluster

Employment by 4-digit NAICS

Employment Services	Management of Companies and Ent	Depository of Services to E	Credit Intermediatio	ings	Office Admini	istrative Se	Agencies, Bro. Nondepos /	Inve
					Other Suppor	t Services	Offices of Other Fina F	3u
	Employment, 2019	New Jobs	. 2014 - 2019	% Growth. 2	014 - 2019	Locatio	ا 1 Quotient. 20	ns
Employment Services	346.2	-36.0	,	-9.4%		0.	73	
Management of Companies and Ent	318.0		13.3	4.4	1%		1.01	
Depository Credit Intermediation	227.4	-21.4		-8.6%			0.98	
Services to Buildings and Dwellings	213.1		46.9	- î	28.2%	0.	75	
Office Administrative Services	152.2		67.8		80.3%			2.20
Other Support Services	72.0		22.5		45.5%		1.65	
Agencies, Brokerages, and Other Ins	64.4	-17.8		-21.6%		0.41		
Investigation and Security Services	27.2	-22.5		-45.2%		0.22		
Nondepository Credit Intermediation	22.2	-8.8		-28.4%		0.30		
Offices of Real Estate Agents and Br	19.7		6.7		51.3%	0.45		



Stanly County, NC Healthcare cluster

Employment by 4-digit NAICS Hospitals (Local Government) Nursing Care Facilities (Skilled Nursing Facilities) Home Health Care Services Individual and Family S... Offices of Denti... Vocational Rehabilitati... Outpat... Offic... **Continuing Care Retirement Com... Residential Intellectual and Developmental Disability,... Offices of Physicians** Community •••• **Employment**, 2019 New Jobs, 2014 - 2019 % Growth, 2014 - 2019 Location Quotient, 2019 Hospitals (Local Government) 550.3 550.3 6.14 Nursing Care Facilities (Skilled Nursi... 32.0 404.9 8.6% 1.94 **Residential Intellectual and Develop...** 44.3 246.7 2.92 21.9% **Home Health Care Services** -42.1 235.5 -15.2% 1.19 Continuing Care Retirement Comm... -120.0 194.3 -38.2% 1.55 **Individual and Family Services** -55.2 103.2 -34.8% 0.30 98.3 2456.7% **Vocational Rehabilitation Services** 102.3 2.41 -122.7 **Offices of Physicians** 101.6 -54.7% 0.29 18.9 **Offices of Dentists** 97.1 0.76 24.2% -25.6 **Outpatient Care Centers** 42.5 -37.6% 0.34



Stanly County, NC Transportation and Logistics cluster

Employment by 4-digit NAICS





Stanly County, NC Materials and Metalworking cluster

Employment by 4-digit NAICS Rubber Product Manufacturing Machine Shops; Turned Prod... Forging a... Coating, ... Architectural and Structural ... Other Fabric... Paper a... Che... ... Plas... Employment, 2019 New Jobs, 2014 - 2019 % Growth, 2014 - 2019 **Location Quotient, 2019 Rubber Product Manufacturing** 952.2 281.9 42.0% 53.01 Machine Shops; Turned Product; an... 134.5 -6.9 -4.9% 2.81 Architectural and Structural Metals ... 61.9 150.7% 103.0 1.99 Forging and Stamping 13.4 64.4 26.2% 4.89 Coating, Engraving, Heat Treating, a... -15.5 61.7 -20.1% 3.34 35.9 **Other Fabricated Metal Product Ma...** 896.8% 39.9 1.09 12.0 Paper and Paper Product Merchant ... 16.0 299.4% 0.95 4.0 Chemical and Allied Products Merch... 4.0 0.21 -155.8 **Plastics Product Manufacturing** -97.5% 4.0 0.05 -39.3 Steel Product Manufacturing from ... -90.8% 0.52 4.0





Target Cluster Opportunity Analysis: Union County, NC

August 2021

Target Cluster Opportunity Analysis

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Union County: Industry Cluster Profiles

- Agribusiness and Food
- Healthcare
- Industrial Machinery
- Transportation and Logistics
- Materials and Metalworking



Union County, NC Agribusiness and Food cluster

Employment by 4-digit NAICS



Union County, NC Healthcare cluster

Employment by 4-digit NAICS



Union County, NC Industrial Machinery cluster

Employment by 4-digit NAICS

Machinery, Equipment, and Supplies Merc	Other General Purpose Machinery Manufacturing		a Electrical Equipment	Industrial Machinery Manufact		Professional and Com Metalworking Machin		Agricu	ltu
							Electric Li	Comm	E
	Employment, 2019	New Jobs,	2014 - 2019 %	Growth, 20	14 - 2019	Locat	tion Quotien	t, 2019	
Machinery, Equipment, and Supplie	450.3	-26.7	-5.6%				1.43		
Other General Purpose Machinery	278.8		33.0	13.4%			2.30		
Miscellaneous Durable Goods Merc	232.5		73.6	46.3%			1.76		
Industrial Machinery Manufacturing	197.9	7	.5	3.9%				3.7	7
Electrical Equipment Manufacturing	145.1	9	9.3	6.9%	1		2.27		
Professional and Commercial Equip	130.3	8	.0	6.5%	1	0.43			
Metalworking Machinery Manufact	122.8	-25.5	-17.29	6			1.56		
Commercial and Industrial Machine	121.3	-25.0	-17.19	6	Î		1.28		
Agriculture, Construction, and Mini	94.9	-4.2	-4.3%			0	.98		
Electric Lighting Equipment Manufa	25.6		21.6		540.4%		1.29		



Union County, NC Transportation and Logistics cluster

Employment by 4-digit NAICS Specialized Freight Trucking Warehousing and Storage **General Freight Trucking** Support Ac... Fre... Suppor... Local ... **Couriers and Express Delivery Services** Schedul... Oth... Other S... •••• Employment, 2019 New Jobs, 2014 - 2019 % Growth, 2014 - 2019 Location Quotient, 2019 **Specialized Freight Trucking** 889.2 559.4 169.7% 4.29 Warehousing and Storage 150.2 617.2 32.1% 1.12 **General Freight Trucking** 43.4 322.0 15.6% 0.69 Couriers and Express Delivery Servi... 87.9 283.2 45.0% 0.91 Support Activities for Air Transport... 40.4 86.7 87.4% 0.85 -2.7 **Freight Transportation Arrangement** 37.7 -6.6% 0.36 14.6 Support Activities for Road Transpo... 34.6 73.2% 0.74 28.8 Local Messengers and Local Delivery 32.8 720.9% 0.67 14.9 **Scheduled Air Transportation** 371.8% 18.9 0.09 3.3 **Other Support Activities for Transp...** 18.3 21.8% 1.21


Union County, NC Materials and Metalworking cluster

Employment by 4-digit NAICS Plastics Product Manufacturing Nonferrous Metal (except Aluminum) Production and Proc... Architectural and Structural Me... Machine Shop... Soap, Cl... Other ... Foundries **Converted Paper Product Manufacturing** Steel Product ... Paint, C... Iron a... Hardware Manufacturing Chemical and ... Other ... Coat... Resi.... New Jobs, 2014 - 2019 Employment, 2019 % Growth, 2014 - 2019 Location Quotient, 2019 **Plastics Product Manufacturing** 1346.5 61.2 4.8% 5.16 Nonferrous Metal (except Aluminu... -577.1 815.3 -41.4% 29.92 Converted Paper Product Manufact... 2654.5% 780.0 809.4 6.83 Architectural and Structural Metals ... 126.7 341.7 59.0% 1.96 Foundries 79.2 5.49 289.1 37.7% Hardware Manufacturing 110.3 277.2 66.0% 25.14 -22.8 Machine Shops; Turned Product; an... 242.5 -8.6% 1.51 Soap, Cleaning Compound, and Toil... 1.2 154.8 0.8% 3.17 -2.1 **Other Fabricated Metal Product Ma...** -1.5% 133.4 1.09 106.1 Steel Product Manufacturing from ... 126.7 514.8% 4.92

Source: EMSI; EY analysis

