PROSPERITY FOR GREATER CHARLOTTE **2012 ~ 2017**

Appendix B: Asset Inventory, Centralina SWOT, Target Industries and Competencies

Project Supporters

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Project Consulting Team

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Introduction

Introduction to the Project

Creation of the **Prosperity for Greater Charlotte** Comprehensive Economic Development Strategy recognizes today's reality that economic dependencies and competencies require cross sector and jurisdictional collaboration, acknowledging that the Greater Charlotte region is a complex system with various subsystems. Based on this overarching and interconnected existence, this project updates the Centralina Economic Development Commission EDD CEDS with a comprehensive economic development planning approach that also analyzes and incorporates the systems and strategies that support the goal of the Greater Charlotte Region as a globally competitive, vibrant and resilient bi-state region of communities.

The primary three organizations that comprise this regional economic zone of influence are the US EDA Economic Development Districts of the Centralina Economic Development Commission in North Carolina and Catawba Regional Council of Governments in South Carolina, and, in cooperation with both North Carolina and South Carolina Departments of Commerce, the bi-state coverage of the Charlotte Regional Partnership.

WHY THIS PLAN?

This plan is premised on transcending traditional jurisdictional boundaries and barriers in a collaborative paradigm to assemble the most accurate and place based reality for the economic strategies and future of the entire Greater Charlotte Region.

Successful economic development today requires a plan to be in place. In fact, site selectors and companies now look to a region's plans as an indicator of where a community plans to be, how it plans to get there, and which institutions are accepting responsibility. Regions with cohesive and realistic plans will grow in a more organized fashion and better leverage the assets in each of the component counties or jurisdictions that comprise the area of economic influence.

This project provides the five year update to the 2007 Centralina Comprehensive Economic Development Strategy (CEDS) No Boundaries report and provides supporting research and data to the Catawba Regional Council of Government for their CEDS update in compliance with the requirements of the U.S. Department of Commerce Economic Development Administration, (EDA). The project is funded in part by the U.S. Department of Commerce, Economic Development Administration and "CONNECT Our Future", a $4.9 million HUD Sustainable Communities Regional Planning Grant through a federal HUD-DOT-EPA Partnership for Sustainable Communities coalition. The CEDS Update findings, regional strategies and related county community assessments will provide input and deliver crucial economic foundation and data to the "CONNECT Our Future" planning process and ultimate outcomes.

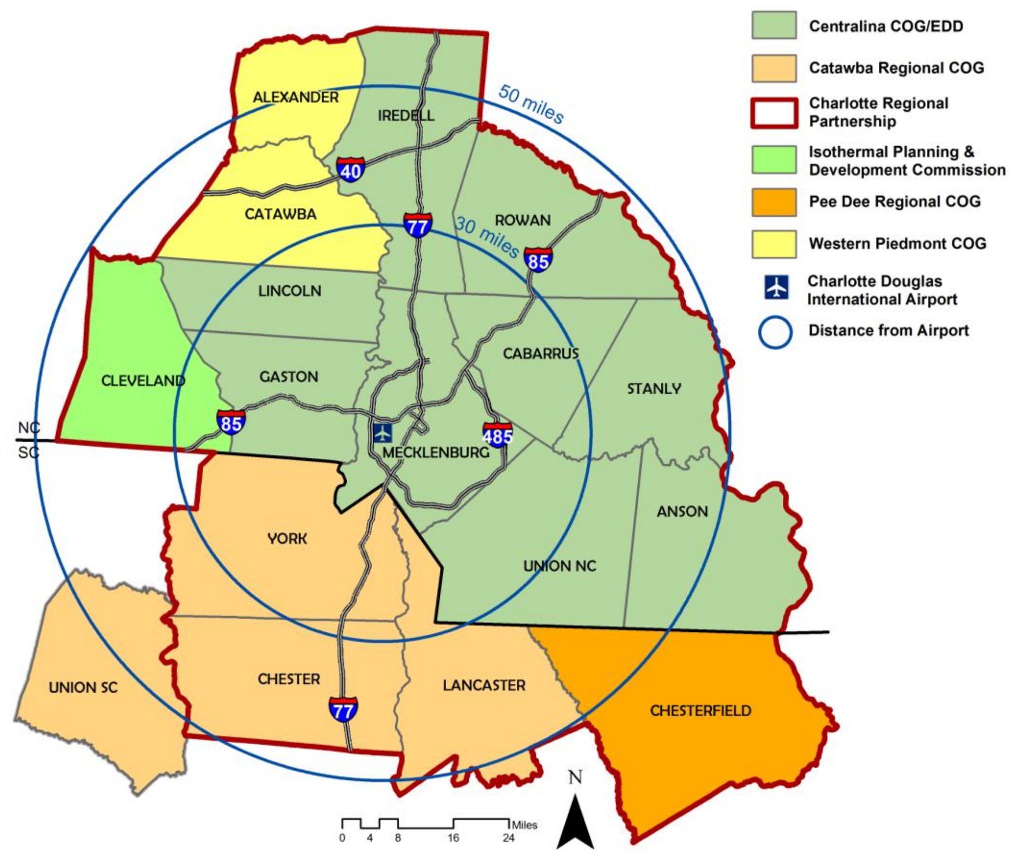
Rutherford Street in Wadesboro, NC

Greater Charlotte Region

The **Prosperity for Greater Charlotte** project and the HUD "CONNECT Our Future" Economic Development Group collaboratively partners the Centralina Council of Governments, Catawba Regional Council of Governments, Centralina Economic Development Commission, and the Charlotte Regional Partnership in an innovative, integrated approach that is essential to support the region's future growth and prosperity.

This Centralina EDD Comprehensive Economic Development Strategy outlines an approach to coordinate growth and prosperity that builds on the region's strengths, prioritizes key regional industry clusters, and emphasizes collaboration. A key component of this strategic planning process is to help the regional economy boost its job growth rate by linking the region's workforce skills and strengths, education assets, and infrastructure to the needs of high-growth and emerging industries. The strategy will support and guide priorities for economic development in the region in order to create jobs, build community, and strengthen the local economy.

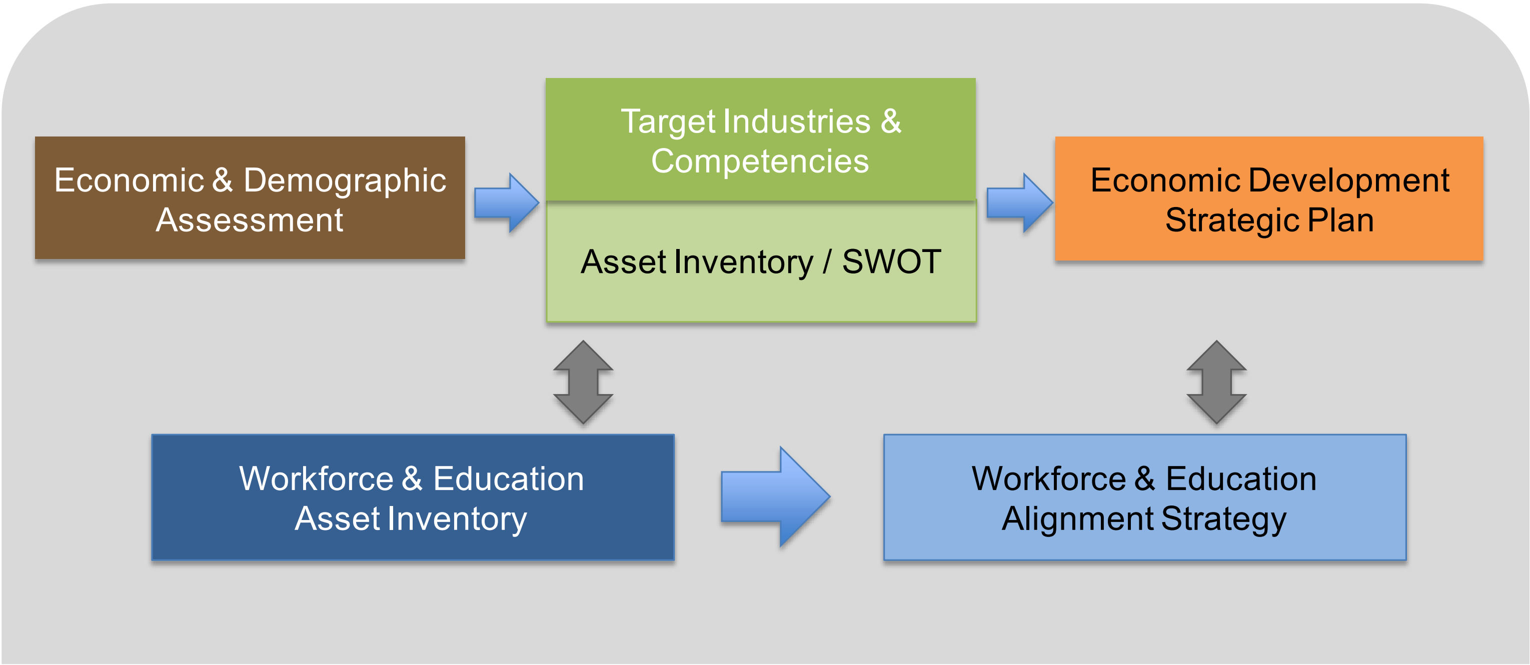
The use of "Greater Charlotte Region" in the language of this report is reflective of the larger collaborative analysis by the Centralina EDD and the additional inter-relational and centralized impacts of the 50 mile regional zone. However, all report findings and priorities with goals, objectives, and tactics are specifically endorsed and adopted only for the EDA approved nine county jurisdiction of the Centralina Economic Development Commission (EDD). This report in no way replaces or supplants adjacent EDD CEDS jurisdiction plans that share partial coverage within the economic zone of influence defined and analyzed for this report.



In anticipation of dynamic economics that will drive future global competitiveness; our innovative strategic plan design dictated inclusion of seventeen counties in the global competency analysis, parallel with the Charlotte USA footprint. This collaborative community network shown on the map illustrates the fifty mile radius economic zone that constitutes the Greater Charlotte 21st Century Global Region.

The diagram below shows the components and process of the Centralina Comprehensive Economic Development Strategy (CEDS):

Process Diagram
Comprehensive Economic Development Strategy



The first phase of the Comprehensive Economic Development Strategy has two primary components: the *Economic & Demographic Assessment* and the *Asset Inventory / SWOT*.

The *Economic & Demographic Assessment* examined historical growth trends in the Greater Charlotte Region and the individual counties. Economic datasets presented and discussed include overall jobs, employment by industry, unemployment, shift-share analysis of regional industries, payroll, average salaries, and gross regional product. Demographic data presented includes overall population trends, age distribution, and incomes.

The second component, *Asset Inventory / SWOT*, inventories and evaluates key economic development assets in the Greater Charlotte Region. The report identifies assets in several categories: Workforce & Education, Entrepreneurship & Innovation, Infrastructure, Business Climate, and Quality of Life. For each of these topics, the report includes a SWOT (Strengths, Weaknesses, Opportunities, & Threats) assessment summarizing the key takeaways for the Centralina Comprehensive Economic Development Strategy.

Charlotte Motor Speedway

Alongside these reports, the project team will complete a *Workforce & Education Asset Inventory*. This report inventories all college and K-12 educational programs; identifies existing workforce skills and competencies; and examines national and global workforce skill trends. This inventory provides an essential perspective for understanding regional strengths and industry objectives.

The second phase of the project builds on the previous reports, identifying and validating target industry clusters for the Greater Charlotte Region. The *Target Industries & Competencies* component includes a cluster analysis of regional industries, examining growth trends, location quotients, and employment bubble charts. The project team evaluated potential target industries by filtering candidates through numerous criteria, including the regional asset fit, national industry trends, and match to regional economic development goals. The *Target Industries & Competencies* report culminates in a list of target industry recommendations and profiles for each industry.

The project culminates in three strategic plans: the *Centralina Comprehensive Economic Development Strategy* and the integrally linked Greater Charlotte region *Workforce & Education Alignment Strategy* with the additionally linked, but independently completed, *Catawba Region Comprehensive Economic Development Strategy* of the Catawba Regional Council of Governments.

NC Research Campus, Kannapolis

The economic plan defines priorities and goals, objectives, and tactics to enhance the 9-county Centralina EDD region's overall business environment and maximize target cluster development. The workforce recommendations will be customized to match the 17-county region's target industries and competencies, specifically identifying future workforce skills needs for each target sub-cluster and planning to bridge gaps in the existing regional education and training pipeline to ensure each target is matched with a steady supply of qualified workers.

CEDS Centralina Economic Development District Committee

The CEDC EDD Committee is comprised of the Centralina Economic Development Commission Board (shown below) who has initiated and facilitated the project with support of an expanded CEDS Advisory Council (shown on next page).

Centralina Economic Development Commission (CEDC)

Chairman
George Dunlap
Mecklenburg County BOC

Vice-Chairman
Bill Thunberg
Alexander Zachary Jewelers

Treasurer/Secretary
Joel Randolph
Randolph & Son Builders

President/Ex-Officio
Mike Manis, CED Director
Centralina Council of Governments

Ex-Officio
Jim Prosser, Executive Director
Centralina Council of Governments

Local Government Representatives

Anson County
Jarvis Woodburn, Commissioner

City of Charlotte
LaWana Mayfield, Council Member

Gaston County
Joe Carpenter, Commissioner

Iredell County
Tracy Jackson, Deputy Manager

Lincoln County
George Arena, Commissioners

Town of Mooresville
Miles Atkins, Mayor

Rowan County
Jeanie Moore, Rowan-Cabarrus Community College
Robert Van Geons, Salisbury-Rowan Economic Development Commission

Stanly County
Tony Dennis, Commissioner
Paul Stratos, Stanly County Economic Development Commission

Business & Industry Representatives

Thomas R. Anderson, Mountain Island Fitness

Chuck Boyle, Boyle Consulting Engineers, PLLC

Chris Carney, NC Legislature

Mark Brady, First Trust Bank, Mooresville

Robby Carney, Mooresville-South Iredell Economic Development Corporation

Astrid Chirinos, Latin American Chamber of Commerce-Charlotte

Tim Gause, Duke Energy

Manuel Rey, Fifth Third Bank

Dan Ramirez, Nova Engineering

Fred Sparger, Retired South Piedmont Community College

CEDS Advisory Council (expanded members to EDD committee)

In addition to the CEDC EDD Committee, an additional group of regional community leaders contributed their added passion and expertise to the formation of a CEDS Advisory Council that led, advised and facilitated project activities throughout the duration of the CEDS update project:

Bill Anderson, Executive Director, Meck Ed

Jimmy Chancey, Director, Career & Technical Education, Charlotte-Mecklenburg Schools

Vanessa Goeschl, VP, Marketing & Research, Charlotte Regional Partnership

Stuart Hair, Existing Industry Coordinator, North Carolina Department of Commerce

Donny Hicks, Executive Director, Gaston County Economic Development Corporation

Brad Howard, Chairman, Mooresville-South Iredell Economic Developer Council

Jack Keiser, Director of Planning, City of Gastonia

Jonathan Marshall, Deputy County Manager, Cabarrus County

Samantha Moose, Existing Industry Services, Cabarrus Economic Development Corporation

Steve Partridge, Executive Director, Charlotte Works

Michael Realon, Career Development Coordinator, Olympic Community of Schools

Mary Vickers-Koch, Dean, Corporate & Continuing Education, Central Piedmont Community College

Paul Wetenhall, President, Ventureprise

Anna Lu Wilson, VP of Business Services, Cabarrus Economic Development Corporation

Richard Zollinger, VP for Learning, Central Piedmont Community College

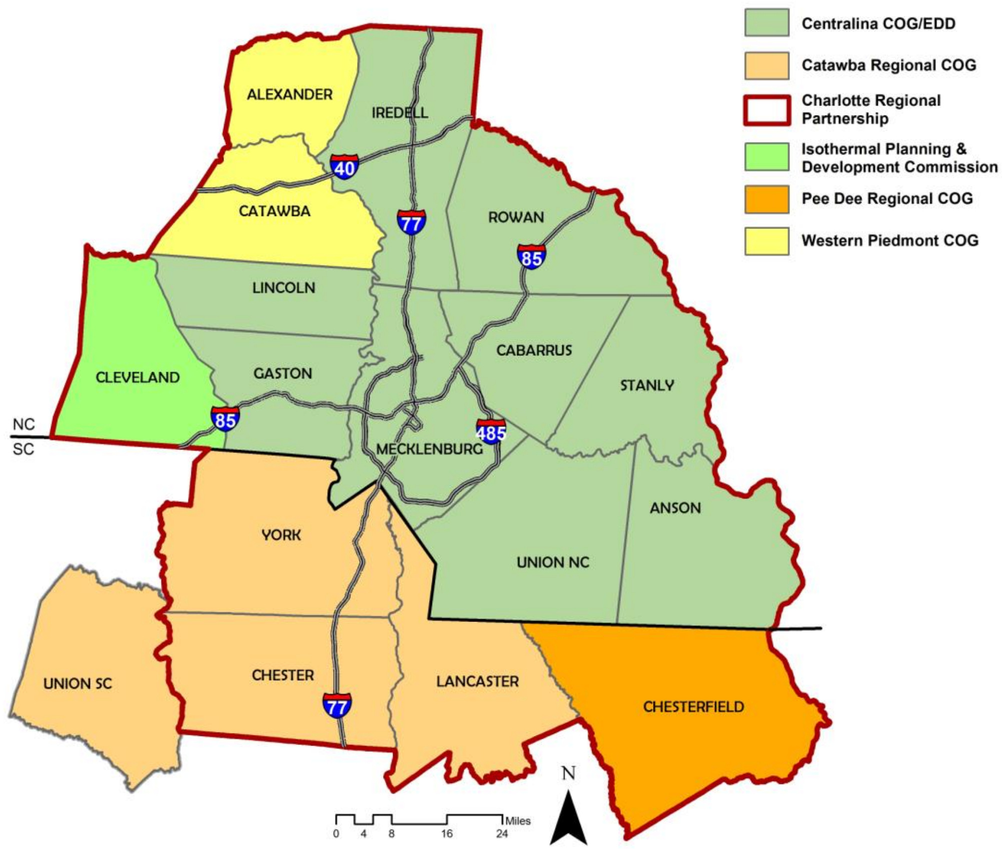
Geographic Area of Focus

For the purposes of this project, an established economic zone of influence was incorporated that is greater than the Centralina EDD\CEDS that covers nine NC counties centered on Charlotte, North Carolina. The Greater Charlotte Region encompasses 17 counties in North Carolina and South Carolina and multiple regional economic development organizations:

- Centralina Council of Governments (NC),
- Catawba Regional Council of Governments (SC)
- Charlotte Regional Partnership (Charlotte USA)
- Western Piedmont Council of Governments (NC)
- Isothermal Planning & Development Commission (NC)
- Pee Dee Regional Council of Government (SC)

The nationally and globally embraced "Charlotte USA" footprint recognizes the economic and demographic influences of the Combined Metropolitan Statistical Area (CBSA) of "Charlotte-Gastonia-Salisbury, NC" 13 regional counties and the additional 4 counties contiguous to this geographic US Census zone. This project examines the composite Greater Charlotte Region and also provides breakout sub-reports of trends in each individual county.

Greater Charlotte Region



The Greater Charlotte Region is comprised of the following counties:

North Carolina

- Alexander County
- Anson County
- Cabarrus County
- Catawba County
- Cleveland County
- Gaston County
- Iredell County
- Lincoln County
- Mecklenburg County
- Rowan County
- Stanly County
- Union County

South Carolina

- Chester County
- Chesterfield County
- Lancaster County
- Union County
- York County

Why Target?

Companies in the same industries often benefit from locating in close geographic proximity. Geographic clustering can increase productivity through shared access to clients and suppliers in other industries. Clustering also allows for access to a larger trained workforce and sharing of research and knowledge. These benefits make clustering a smart strategy for businesses, increasing efficiencies, and saving money and time.

Targeting specific industry clusters also allows a community to focus economic and workforce development resources on those that achieve local goals and generate the highest return on investment. Because organizations have limited funding and staff, they must prioritize activities. Targeting focuses a community's activities on those expanding industry clusters in which the community is most competitive. Economic development organizations commonly have up to six target industries, concentrating on supporting and attracting primary employers (see side bar).

To be most effective, target clusters must include detailed target sub-clusters that reflect knowledge of these industry needs and a community's matching assets. When well chosen, a target cluster strategy yields greater job creation results when aligned with local educational curricula, workforce development programs, public policy, and infrastructure investments.

Finally, targeting specific clusters over others does not imply that non-targeted clusters will remain stagnant. Instead, targeting increases overall economic growth and regional wealth, and all local businesses benefit from this increased economic activity and job creation.

What is a Primary Employer?

Primary employers are businesses that export goods and services outside of the local economy. These exports inject new dollars into the economy, resulting in increased wages and jobs as revenue earned by the business is spent on employee salaries and goods and services that it purchases from local suppliers. As this funding is earned, it is redistributed throughout the rest of the economy, multiplying in impact. Manufacturing and software companies are examples of primary employers.

What is a Secondary Employer?

Secondary employers serve the local community. A majority of the goods and services created by those organizations are consumed within the community. While these goods and services are important staples of a community, the multiplier effect of spending is less than that by primary employers. Retail and construction are examples of secondary employers.

Target Identification Process

Target identification is not a perfect science. Numerous factors inform business location decisions. As a result there is no single mathematical formula for determining the eligibility of potential target industries for a community. Instead, target identification is an iterative process that considers both quantitative and qualitative inputs. The process is further complicated because modern industry definitions are broad and traditional government terminology, including NAICS codes (North American Industry Classification System), do not always ideally describe industries as they exist today, particularly for marketing purposes. To develop a clear understanding of local dynamics, target clusters and sub-clusters must be tailored to a specific community through the identification and definition process.

The selection of the target industries and competencies for the Greater Charlotte Region follows an iterative process used by Avalanche Consulting. Individual target areas (industries and competencies) are examined:

- Does the cluster have a regional presence?
- Does the local asset base match the needs of the industry? Avalanche considers physical infrastructure, current businesses, workforce skills, and cost conditions.
- Is the industry growing at the national level and/or offer opportunities for communities to compete for corporate expansions?
- Does the local community exhibit areas of relative competitiveness, which would compel an industry to relocate or expand locally versus elsewhere in the US?
- Does the industry's "ROI" match the community's vision? We consider the impact on job creation and increasing the average salary.
- Is there adequate State support for the cluster?
- Does the target provide some type of "strategic" value to the community, such as creating synergies with assets or industries already found in the region?
- Do local economic development organizations have sufficient resources to recruit, expand, and support entrepreneurship of companies in the cluster?

A target list should consider that each audience will require a different mix of organizational efforts. Recruiting manufacturing companies may focus on an external marketing campaign, for example, while entrepreneurial targets require program development focused on the local community. Targets can be any combination of the following:

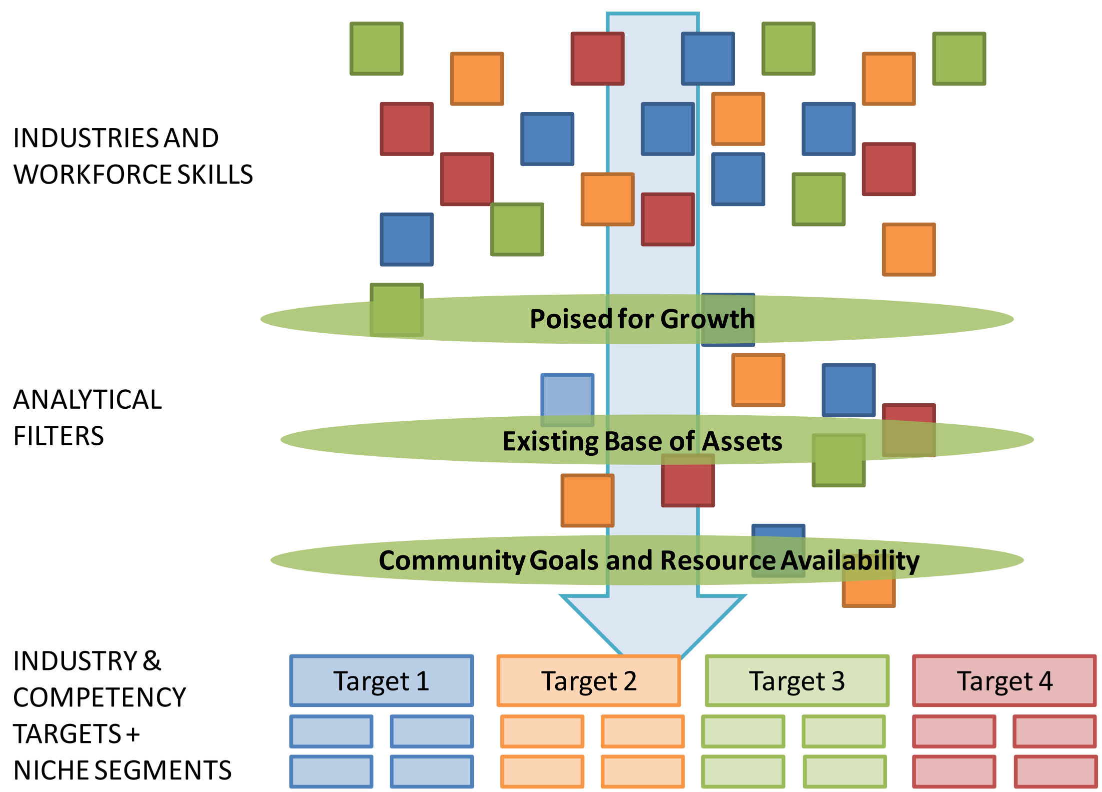
- Recruitment: These targets are typically the focus of economic developers, who conduct marketing campaigns, attend industry conferences, and respond to state information requests for their prospects.
- Retention: Most communities have a "BEAR" program (Business Expansion And Retention), which puts local ambassadors in front of a community's employers to hear their needs and identify companies at risk of closure.
- Expansion: We consider an expansion target to be different from retention activities. Providing expansion services includes helping a local company identify new hires for their growth plan, identify and pursue new markets for their goods/services, or innovate new products.
- Startup: Some industry sectors are ideally suited for entrepreneurship. Traditionally, incubators and SBDCs are the service providers that assist small businesses to expand. These companies sometimes need expansion services as described above, but also need structural assistance (corporate formation, partnership development, funding assistance) which requires a different set of services than traditional economic development organizations are prepared to deliver. Quite often, entrepreneurs benefit the most from organized (but informal) interactions with their peers and experienced mentors.

Furthermore, target selection should consider the stage of a target's development, as some targets will take longer to develop than others. We qualify each target's potential as being immediate, mid-term, or long-term:

- Immediate Opportunity: The region has adequate assets and industry presence to immediately begin marketing to these clusters. Examples include the expansion of a strong existing cluster or clusters that could likely expand with simple improvements to the region's assets.
- Mid-Term Opportunity: These clusters are forecasted for future growth and have roots in the region. However, the region currently lacks one or more assets necessary to strongly compete for projects. The project team will suggest ways for the Alliance and its partners to strengthen its competitive position so that the cluster may be marketed to within three to five years.
- Long-Term Opportunity: These emerging clusters are forecasted for strong growth, but currently have limited to no presence in the region. The region is either lacking in one or more major areas necessary to compete, or the cluster is small and emerging at present. The project team will suggest long term investments that position the region for cluster growth on the long-term horizon.

Research and a stakeholder/employer input process were conducted as part of our review and the broader list of potential targets was narrowed down to a final "best list" for the region. "Niche" targets are identified under a smaller set of macro targets. The following diagram demonstrates our target selection process.

TARGET SELECTION PROCESS



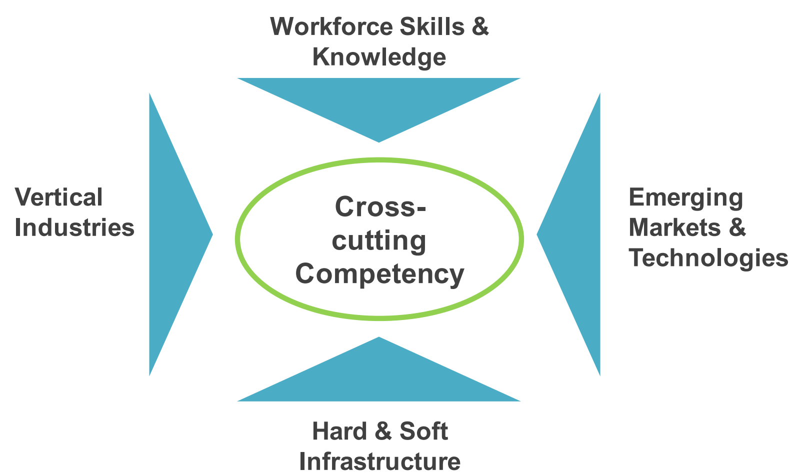
What Are "Competencies" and Why Include Them as Targets?

Avalanche Consulting believes that the concept of "target industries" is no longer sufficient to guide economic development alone. I n fact, many "industries" that we discuss are actually end-consumer markets (e.g. the defense industry sells any kind of product to the military; the tourism industry include the hotel and restaurant industries that serve tourists). Sometimes industries are products, as in the case of the Energy industry, which includes any combination of supply chain activities such as extracting inputs to feed into specially designed equipment which make energy products that are ultimately distributed to energy consumers. We can also move in the other direction away from the end-market and toward the worker that creates a product. Is "Information Technology" an industry or a worker skill?

For these reasons, we encourage communities to embrace 21st Century language about the value-add within their community. In fact, communities are the unique combination of their workforce skills, technology and product knowledge, ability to produce and manufacture, and ability to market and deliver products to their consumers. Globally-oriented companies know they must do all of these things well; communities must now do the same under a highly coordinated and collaborative effort across organizations, workers, and industry clusters.

Today's challenge for communities is to build multiple competencies that spark new industries and products – to not work just to protect what you have, but to focus on the new products and markets that will create new jobs. This is the future of globally competitive communities in the US.

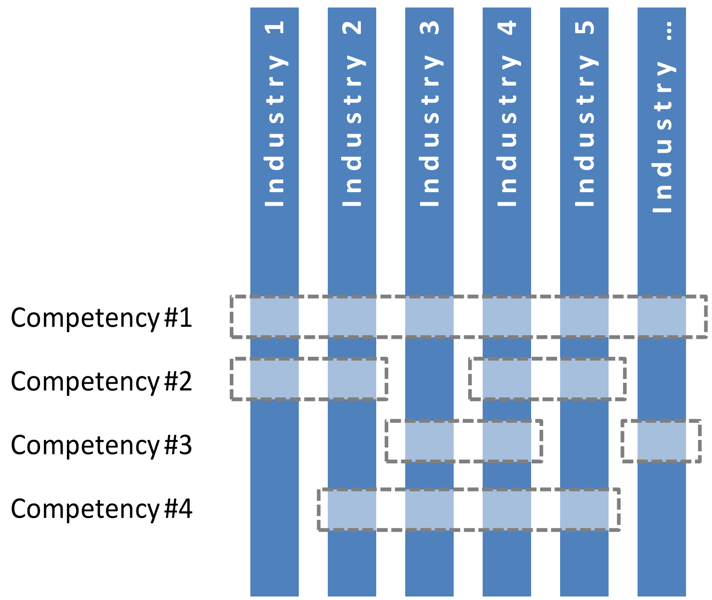
Competencies Form at the Nexus of Industry, Workforce, Technology and Infrastructure



A **vertical industry** is one that is focused on a specific market or product, such as aerospace, automotive, and biomedical. These are the "industries" that usually comprise a target industry plan, and are usually listed on an economic development website as the region's focus.

A **horizontal (or platform) competency** can consist of a unique technology, workforce skill, or physical asset that supports numerous vertical industries. A multimodal transportation network (port-rail-highway) is one example, as it can serve any number of industries that might manufacture, test, or distribute their goods locally. Competencies are also workforce-specific, such as skills in machining, IT, advanced materials, or design. Competencies can influence some or all industry targets in a region.

As shown in the diagram to the right, the combination of industries and competencies form a lattice of connections that make a region unique. The Greater Charlotte Region's future economic development activities should focus both on its vertical target industries and its horizontal competencies that support target and other industry success.



Outline of This Report

To explain our target selection process in a straightforward, easy-to-read manner, we have organized the various research steps into the following sections.

Section 1: Industry Cluster Dynamics

Section 2: Asset Inventory

Section 3: SWOT Tables

Section 4: Community Feedback on Targets

Section 5: Target Recommendations

Appendix A: County Industry Cluster Snapshots

Appendix B: County Detailed Industry Clusters Trends

Section 1:

Industry Cluster Dynamics

Location Quotient and Growth Analysis of Industry Clusters

This section illustrates the region's industry cluster dynamics. The bubble chart shows three variables for each industry depicted: total size of employment, 2006-2011 growth rate, and location quotient (concentration of employment in each industry in the region compared to the US average).

- Greater Charlotte's three largest clusters by employment size are Retail (141,720 employees), Culture & Entertainment (121,990 employees), and Healthcare (108,750 employees).
- The region's three fastest growing clusters of the past five years (2007 to 2012) were Research (32%, 3,660 new jobs), Education (23% growth, 2,880 new jobs), and Aerospace (13% growth, 80 new jobs.)
- The three fastest forecasted growth clusters (2012 to 2017) for the region are: Research (36% forecast growth), Healthcare (19%), and Back Office (17%). [Note: Forecasts from EconomicModeling.com]

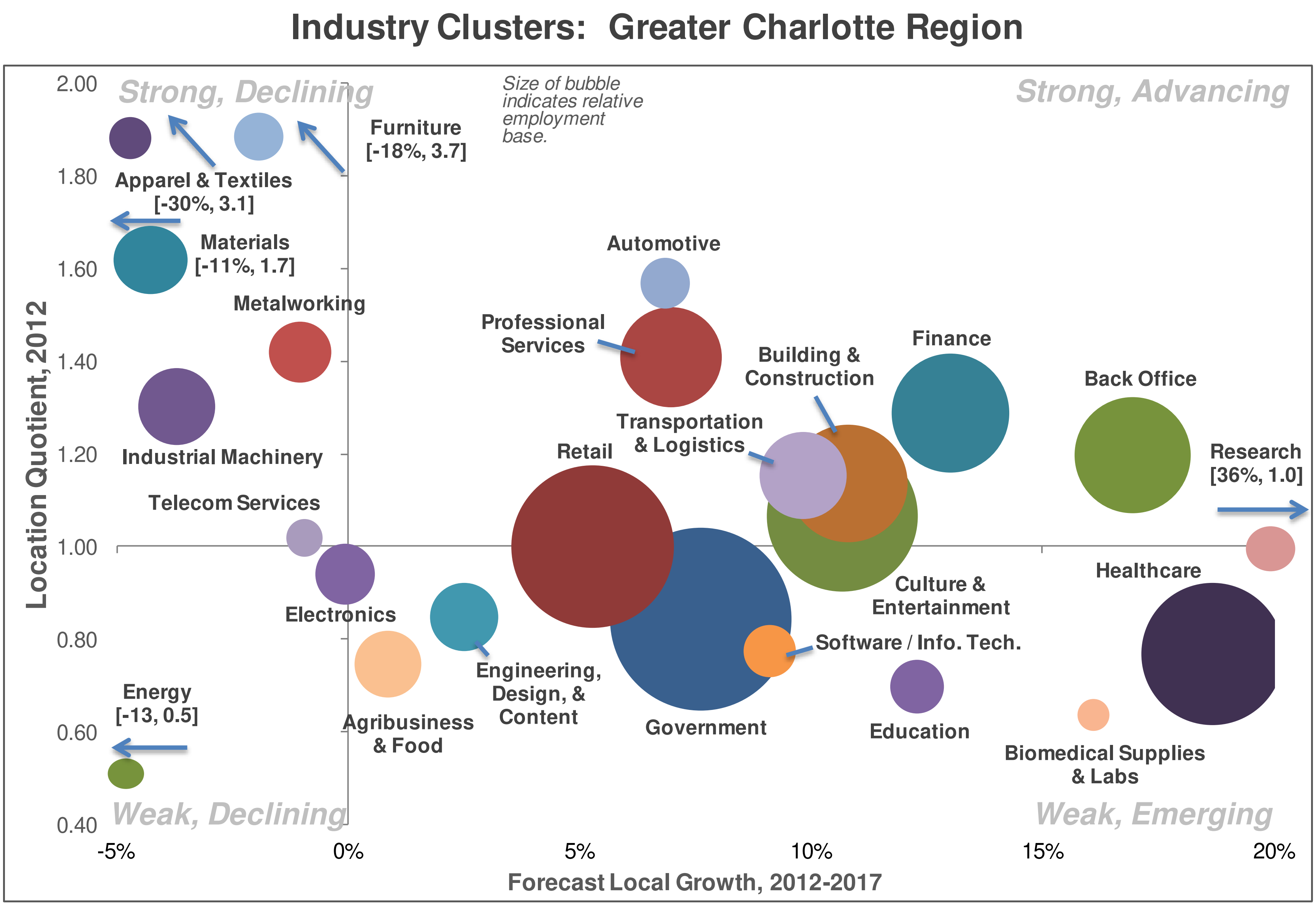
First, we provide a description of the industry clusters as a reference, followed by the cluster charts and tables.

Industry Cluster Definitions

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.
Building & 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.
Culture & 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.
Education	Operations engaged in *private* education, including elementary and secondary schools, colleges, universities, professional schools, trade schools, and educational support services.
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.
Engineering, Design, & Content	Operations engaged in highly specialized technical sectors including architecture, advertising, engineering, and design as well as creative and information sectors such as movie and music production, radio and television programming, newspaper and magazine production, and internet publishing.
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.
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.
Logging & Mining	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.
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 technical consulting services for businesses, including legal, accounting, management, and other technical work such as environmental management.
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.



Source: Avalanche Consulting using data from EMSI

Greater Charlotte Region
Industry Cluster Competitiveness

Cluster	2012 Employment	2012 LQ	2007-2012 Job Creation		Forecast, '12-'17 Growth		
			Growth	New Jobs	New Jobs	Local %	US %
Aerospace	754	0.18	12.5%	84	(26)	-3.4%	0.2%
Agribusiness & Food	23,166	0.74	-12.0%	(3,147)	200	0.9%	1.9%
Apparel & Textiles	13,194	3.09	-46.6%	(11,506)	(3,928)	-29.8%	-20.1%
Automotive	13,289	1.57	-19.2%	(3,159)	913	6.9%	-6.0%
Back Office	71,964	1.20	-2.2%	(1,631)	12,211	17.0%	8.3%
Biomedical Supplies & Labs	5,492	0.64	7.7%	393	886	16.1%	8.0%
Building & Construction	74,433	1.14	-31.5%	(34,178)	8,053	10.8%	5.3%
Consumer Goods Mftg	4,967	0.93	-18.7%	(1,146)	(165)	-3.3%	-0.6%
Culture & Entertainment	121,988	1.07	5.9%	6,752	13,030	10.7%	6.2%
Education	15,372	0.70	23.1%	2,880	1,892	12.3%	13.2%
Electronics	19,311	0.94	-8.6%	(1,810)	(12)	-0.1%	1.3%
Energy	6,675	0.54	-9.6%	(707)	(862)	-12.9%	-1.5%
Engineering, Design, & Content	24,343	0.85	-16.8%	(4,933)	614	2.5%	2.0%
Finance	74,617	1.29	-6.3%	(4,999)	9,725	13.0%	3.2%
Furniture	13,175	3.68	-38.2%	(8,138)	(2,418)	-18.4%	-3.5%
Government	176,400	0.84	4.1%	7,008	13,469	7.6%	4.0%
Healthcare	108,750	0.77	11.1%	10,890	20,332	18.7%	11.8%
Industrial Machinery	31,529	1.30	-8.8%	(3,061)	(1,170)	-3.7%	-1.2%
Logging & Metal/Mineral Mining	1,414	0.88	-23.7%	(440)	(58)	-4.1%	-2.2%
Materials	23,306	1.65	-15.2%	(4,166)	(2,630)	-11.3%	-7.2%
Metalworking	20,054	1.42	-17.9%	(4,381)	(207)	-1.0%	-5.1%
Non-Profits	5,383	0.48	-38.1%	(3,315)	482	9.0%	6.3%
Professional Services	54,245	1.41	5.8%	2,990	3,790	7.0%	5.5%
Research	15,175	0.99	31.8%	3,658	5,421	35.7%	21.5%
Retail	141,718	1.00	-3.2%	(4,755)	7,492	5.3%	3.3%
Shipbuilding	14	0.01	-48.1%	(13)	(9)	-64.3%	-6.0%
Software / Info. Tech.	14,724	0.77	8.3%	1,129	1,345	9.1%	16.5%
Telecom Services	7,167	1.02	-1.9%	(141)	(67)	-0.9%	-2.0%
Transportation & Logistics	40,590	1.15	-8.9%	(3,944)	3,996	9.8%	4.6%
Total	1,123,206	1.00	-5.7%	(68,238)	92,289	8.2%	5.2%

Source: Avalanche Consulting using data from EMSI

Avalanche Consulting also examined the counties surrounding Mecklenburg County in order to see the dynamics of clusters outside the urban core.

The counties surrounding Mecklenburg County exhibit these three largest clusters by employment size: Retail (79,310 employees), Healthcare (64,060 employees), and Culture and Entertainment (60,030 employees).

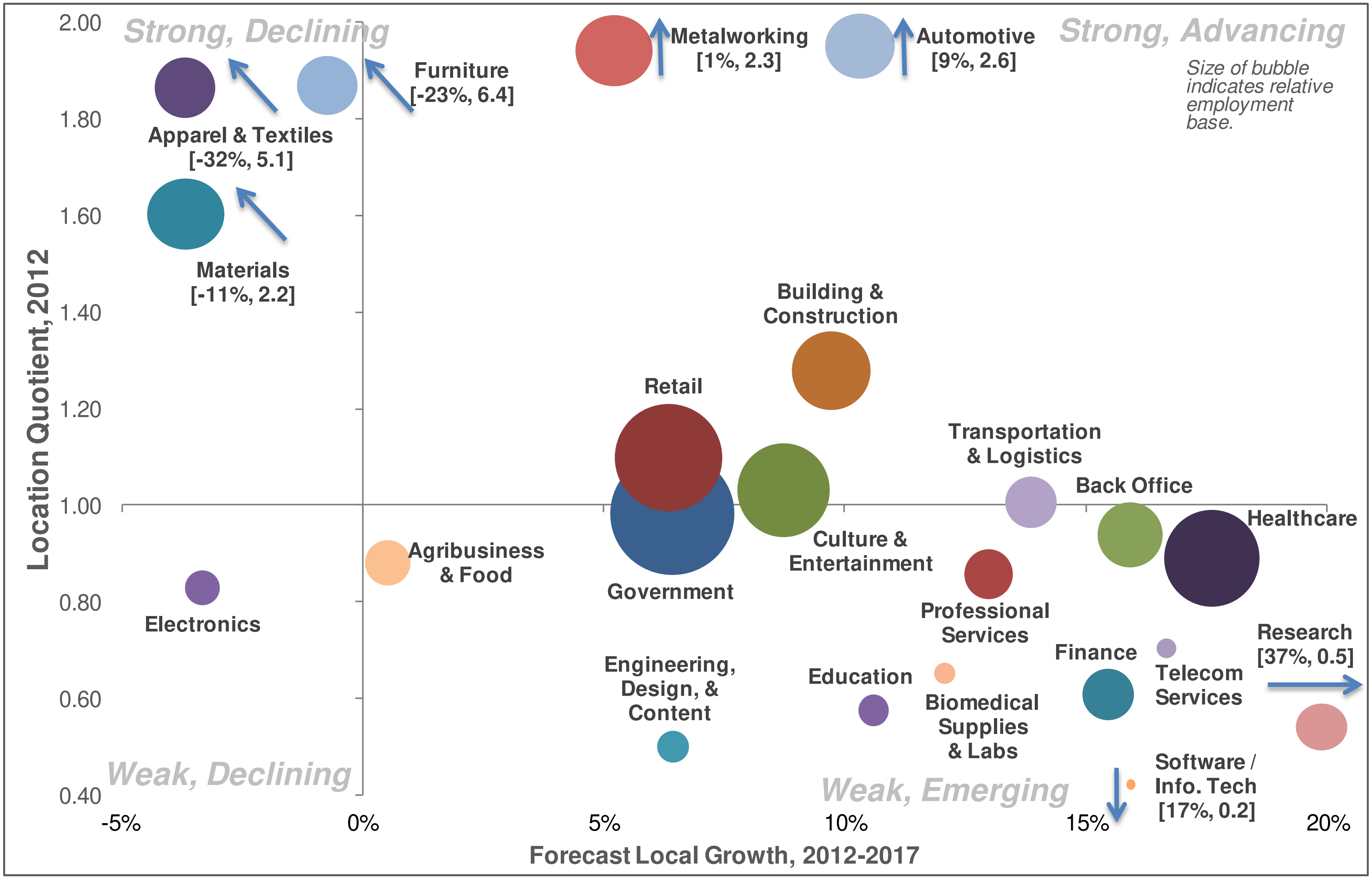
- The Non-Mecklenburg region's three fastest growing clusters of the past five years (2007 to 2012) were Healthcare (6%, 3,370 new jobs), Professional Services (12% growth, 1,830 new jobs), and Research (51% growth, 1,430 new jobs.)

- The three fastest forecasted growth clusters (2012 to 2017) for the Non-Mecklenburg region are: Research (37% forecast growth), Healthcare (18%), and Software/Info. Tech (17%). [Note: Forecasts from EconomicModeling.com]

- The Non-Mecklenburg region's clusters with the highest concentration (highest Location Quotient) are Furniture (LQ=6.40), Apparel & Textiles (5.11), and Automotive (2.63). These clusters represent the areas of greatest specialization and competitiveness for the region.

Declining clusters in the Non-Mecklenburg region include Building & Construction, which employs 42,610 workers, has an LQ of 1.8, and lost 31% of its employment base (18,740 jobs) in the last five years. Apparel & Textiles employs 11,100, LQ=5.11, and lost 50% (11,210 jobs). Furniture employs 11,670, LQ=6.40, and lost 41% (8,150 jobs).

Industry Clusters: Regional Counties with Mecklenburg Exclusion



Source: Avalanche Consulting using data from EMSI

Regional Counties with Mecklenberg Exclusion
Industry Cluster Competitiveness

Cluster	2012 Employment	2012 LQ	2007-2012 Job Creation		Forecast, '12-'17 Growth		
			Growth	New Jobs	New Jobs	Local %	US %
Aerospace	575	0.28	7.5%	40	(33)	-5.7%	0.2%
Agribusiness & Food	13,920	0.88	-14.1%	(2,288)	74	0.5%	1.9%
Apparel & Textiles	11,093	5.11	-50.3%	(11,209)	(3,542)	-31.9%	-20.1%
Automotive	11,339	2.63	-20.4%	(2,902)	1,044	9.2%	-6.0%
Back Office	28,668	0.94	-0.9%	(247)	4,566	15.9%	8.3%
Biomedical Supplies & Labs	2,865	0.65	2.2%	63	346	12.1%	8.0%
Building & Construction	42,608	1.28	-30.5%	(18,742)	4,135	9.7%	5.3%
Consumer Goods Mftg	3,012	1.11	-22.9%	(896)	(304)	-10.1%	-0.6%
Culture & Entertainment	60,025	1.03	0.3%	199	5,242	8.7%	6.2%
Education	6,440	0.57	15.9%	884	682	10.6%	13.2%
Electronics	8,654	0.83	-14.5%	(1,472)	(287)	-3.3%	1.3%
Energy	4,106	0.65	-4.6%	(198)	(316)	-7.7%	-1.5%
Engineering, Design, & Content	7,306	0.50	-13.1%	(1,105)	471	6.4%	2.0%
Finance	17,886	0.61	-2.3%	(415)	2,765	15.5%	3.2%
Furniture	11,656	6.40	-41.1%	(8,146)	(2,672)	-22.9%	-3.5%
Government	104,723	0.98	1.1%	1,160	6,723	6.4%	4.0%
Healthcare	64,060	0.89	5.6%	3,371	11,281	17.6%	11.8%
Industrial Machinery	13,926	1.13	-14.8%	(2,418)	(797)	-5.7%	-1.2%
Logging & Metal/Mineral Mining	1,199	1.47	-22.7%	(352)	(71)	-5.9%	-2.2%
Materials	15,654	2.18	-13.9%	(2,524)	(1,663)	-10.6%	-7.2%
Metalworking	16,588	2.31	-17.0%	(3,388)	190	1.1%	-5.1%
Non-Profits	2,688	0.47	-24.7%	(884)	328	12.2%	6.3%
Professional Services	16,773	0.86	12.2%	1,830	2,177	13.0%	5.5%
Research	4,212	0.54	51.2%	1,427	1,575	37.4%	21.5%
Retail	79,309	1.10	0.8%	619	5,025	6.3%	3.3%
Shipbuilding	14	0.03	-48.1%	(13)	(9)	-64.3%	-6.0%
Software / Info. Tech.	1,650	0.17	10.7%	160	282	17.1%	16.5%
Telecom Services	2,519	0.70	6.7%	158	420	16.7%	-2.0%
Transportation & Logistics	17,985	1.00	-3.4%	(641)	2,495	13.9%	4.6%
Total	571,499	1.00	-8.0%	(49,922)	40,139	7.0%	5.2%

Source: Avalanche Consulting using data from EMSI

Section 2:

Asset Inventory

Introduction

This section of the report examines the Greater Charlotte Region's economic development assets and evaluates the region's competitiveness through a SWOT (Strengths, Weaknesses, Opportunities, and Threats) assessment of four major categories: Workforce & Education, Infrastructure, Entrepreneurship & Innovation, and Quality of Life. Each of the following categories is particularly important to economic development:

Workforce & Education

Access to talent is the number one need of modern companies. In this section, we provide a high-level view of the region's workforce strengths and demographic components that would support target industry growth. Much of this information is a preview of a more detailed evaluation in the forthcoming Workforce & Education Asset Inventory. This section includes data on education levels, young professional population characteristics, college enrollment, and wages, highlighting the characteristics and size of the labor pool and workforce pipeline in the Greater Charlotte Region.

Infrastructure

A robust system of multimodal infrastructure provides the foundation upon which economic activity can occur in any community. Functioning and affordable roads, rail, airports, and utilities allow workers to reach their employers, goods and materials to be delivered to clients and factories, and machinery to operate. In this section, we examine road and rail access, commute patterns, airport traffic, electrical utility rates, and site availability.

Entrepreneurship & Innovation

Entrepreneurship and innovation are significant components of an economic system, producing new products and startup companies that are essential to a sustainable and growing community and major sources of new wealth generation. Major innovation hubs tend to integrate a range of economic activities, including university research, patenting, venture capital investment, commercialization, and startup formation. This section examines research activities, patents, startup growth, and the technology workforce in the Greater Charlotte Region.

Quality of Life

Maintaining and recruiting a quality workforce are important elements of economic development, as high-skill workers help attract companies to a region. Additionally, existing companies' ability to retain and recruit workers is strongly influenced by the quality of life and cost of living within a region. This section includes data on cost of living, housing affordability, and crime. These are all important factors used by companies and workers to evaluate the quality of life in a community.

For some data points, we provide benchmark comparisons with other regions in the US: Phoenix, Chicago, Minneapolis - St. Paul, Denver, Atlanta, Dallas – Ft. Worth, and Kansas City. We also provide a US benchmark.

We pulled data for the largest geographic area available in each dataset. In some cases this was the Combined Statistical Area (an aggregation of Core-Based Statistical Areas (CBSA), which include Metropolitan Statistical Areas (MSAs) and Micropolitan Statistical Areas (MicroSAs)); others used the MSA (US Census defined urban regions based on counties); and a few datasets are only available for Principal City (the primary city in a MSA).

A list of geographies examined for every dataset can be found below, followed by definitions of benchmark geographies on the next page.

Geographic Availability of Data

Dataset	Geography Used
Educational Attainment	Combined Statistical Area
Young Professionals	Combined Statistical Area
College Enrollment	Combined Statistical Area
Wage Competitiveness	Greater Charlotte Region
Race & Ethnicity	Combined Statistical Area
Foreign-Born Population	Combined Statistical Area
Traffic Congestion	Metropolitan Statistical Area
Electric Costs	Principal City
Small Business Growth	Combined Statistical Area
Technology Workforce	Metropolitan Statistical Area
Patents	Combined Statistical Area
Quality of Life	Principal City
Cost of Living	Principal City
Crime	Principal City

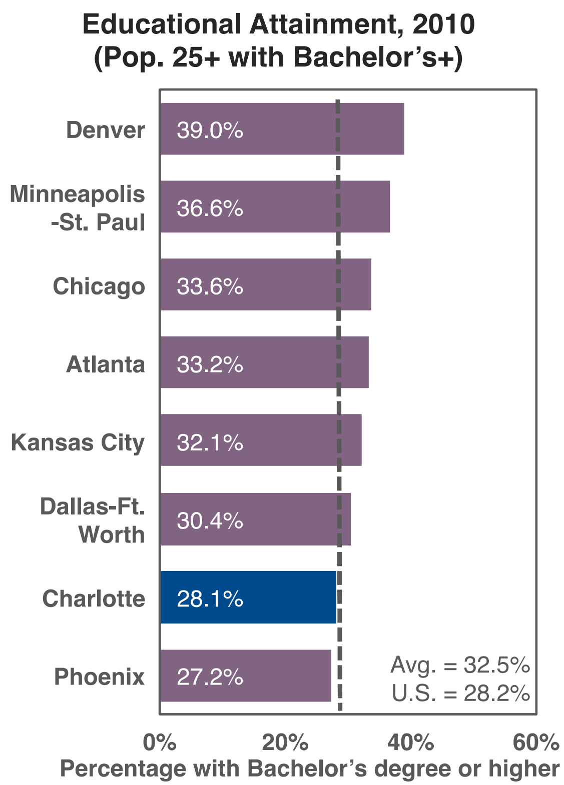
Official Definitions of Benchmark Geographies

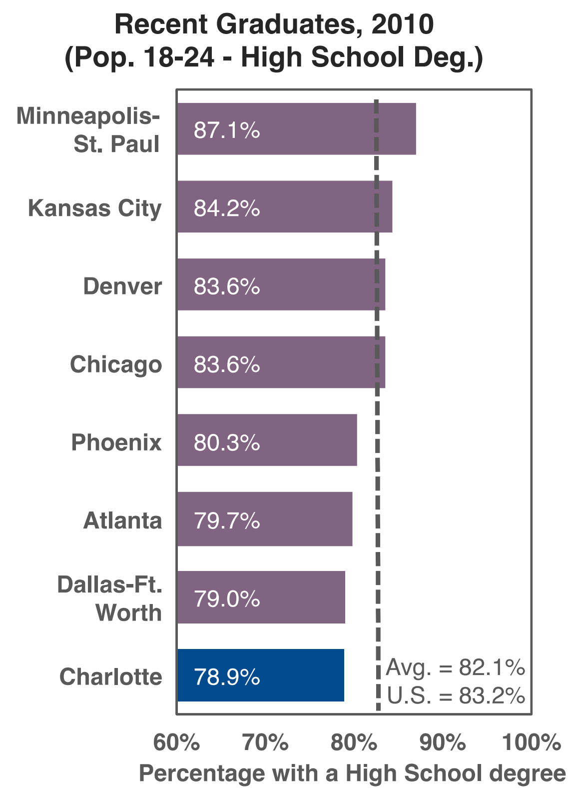
CSA Code	CSA Name	CBSA Code	CBSA Name	Principal City
122	Atlanta-Sandy Springs-Gainesville, GA-AL CSA	12060	Atlanta-Sandy Springs-Marietta, GA MSA	Atlanta, GA
		16340	Cedartown, GA MicroSA	
		23580	Gainesville, GA MSA	
		29300	LaGrange, GA MicroSA	
		45580	Thomaston, GA MicroSA	
		46740	Valley, AL MicroSA	
172	Charlotte-Gastonia-Salisbury, NC-SC CSA	16740	Charlotte-Gastonia-Rock Hill, NC-SC MSA	Charlotte, NC
		16900	Chester, SC MicroSA	
		29580	Lancaster, SC MicroSA	
		30740	Lincolnton, NC MicroSA	
		41580	Salisbury, NC MicroSA	
		43140	Shelby, NC MicroSA	
		44380	Statesville-Mooresville, NC MicroSA	
176	Chicago-Naperville-Michigan City, IL-IN-WI CSA	16980	Chicago-Joliet-Naperville, IL-IN-WI MSA	Chicago, IL
		28100	Kanakee-Bradley, IL MSA	
		33140	Michigan City-La Porte, IN MSA	
206	Dallas-Fort Worth, TX CSA	19100	Dallas-Fort Worth-Arlington, TX MSA	Dallas, TX
		11980	Athens, TX MicroSA	
		14300	Bonham, TX MicroSA	
		23620	Gainesville, TX MicroSA	
		24180	Granbury, TX MicroSA	
		33420	Mineral Wells, TX MicroSA	
		43300	Sherman-Denison, TX MicroSA	
216	Denver-Aurora-Boulder, CO CSA	19740	Denver-Aurora-Broomfield, CO MSA	Denver, CO
		14500	Boulder, CO MSA	
		24540	Greeley, CO MSA	
312	Kansas City-Overland Park-Kansas City, MO-KS CSA	28140	Kansas City, MO-KS	Kansas City, MO
		11860	Atchison, KS MicroSA	
		47660	Warrensburg, MO MicroSA	
378	Minneapolis-St. Paul-St. Cloud, MN-WI CSA	33460	Minneapolis-St. Paul-Bloomington, MN-WI MSA	Minneapolis, MN
		22060	Fairbault-Northfield, MN MicroSA	
		26780	Hutchinson, MN MicroSA	
		39860	Red Wing, MN MicroSA	
		41060	St. Cloud, MN MSA	
n/a	n/a	38060	Phoenix-Mesa-Glendale, AZ MSA	Phoenix, AZ

Workforce & Education

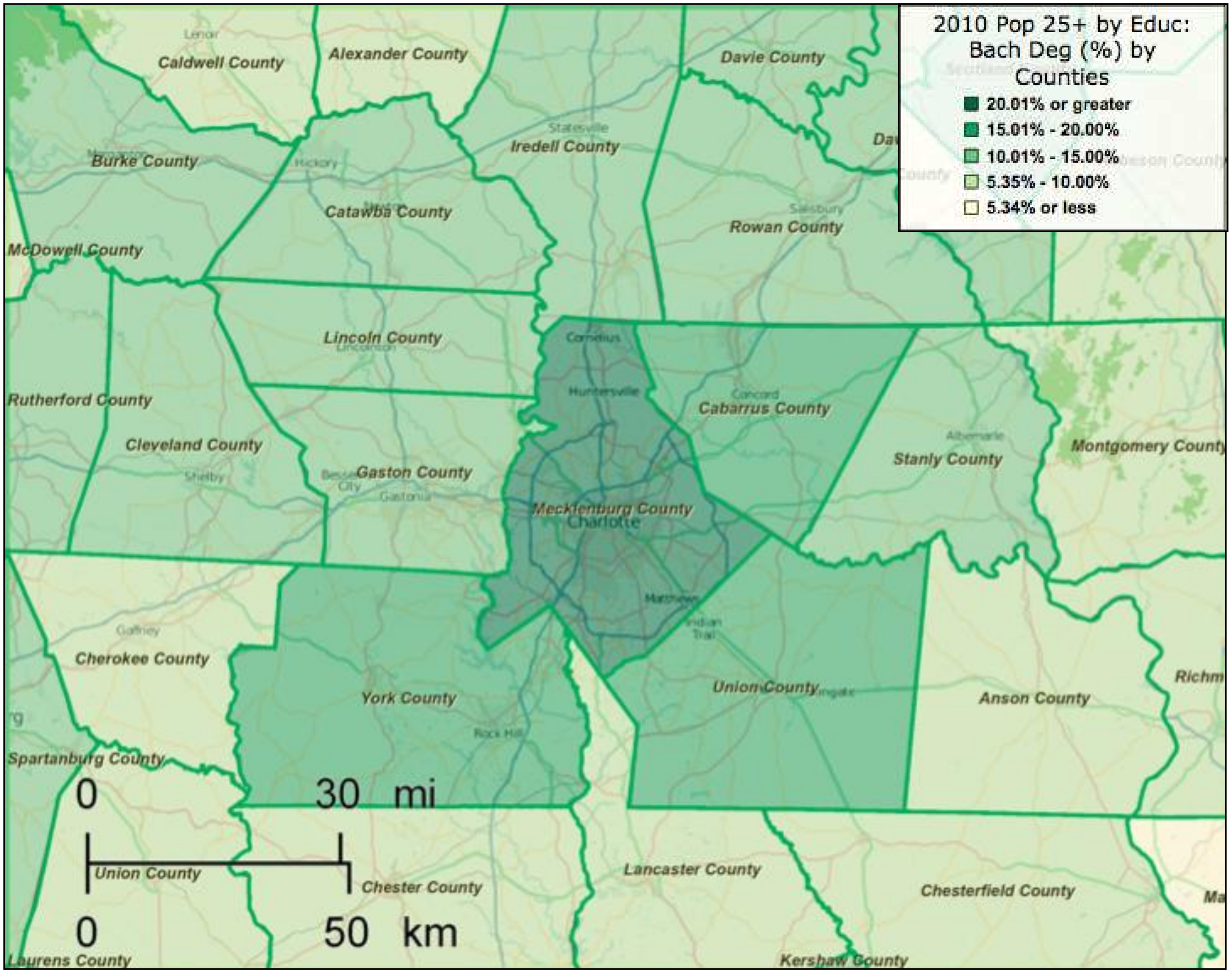
Educational Attainment

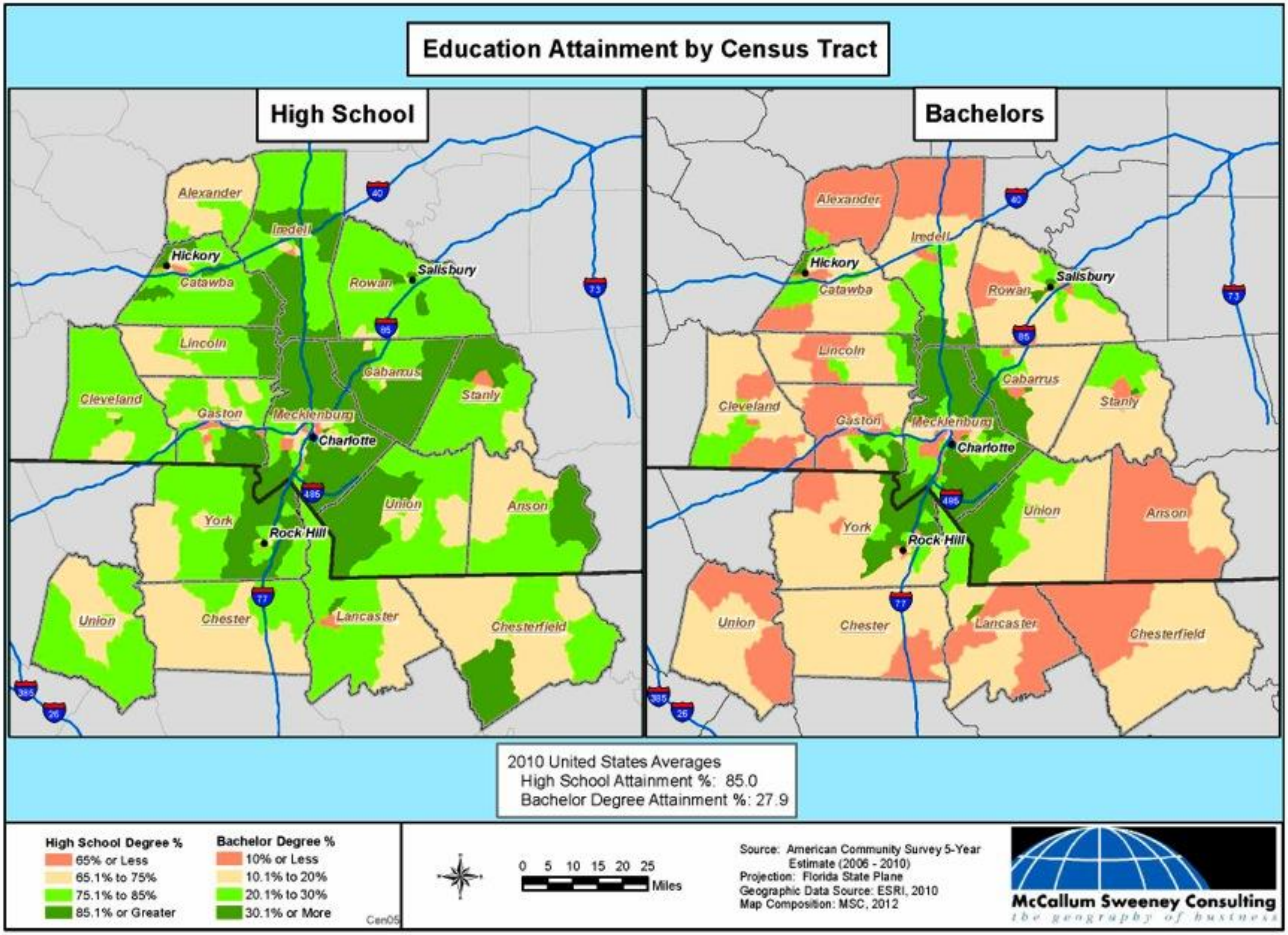
The Charlotte CSA has education levels on par with the US average but below the benchmark average. 28% of Charlotte adult residents have a bachelor's degree or higher compared to 28% in the US and 33% on average among benchmark cities. Only 79% of residents aged 18 to 24 in Charlotte have a high school degree or equivalent, less than the US average of 83% and the benchmark average of 82%.





Greater Charlotte Region - Residents with a Bachelor's Degree

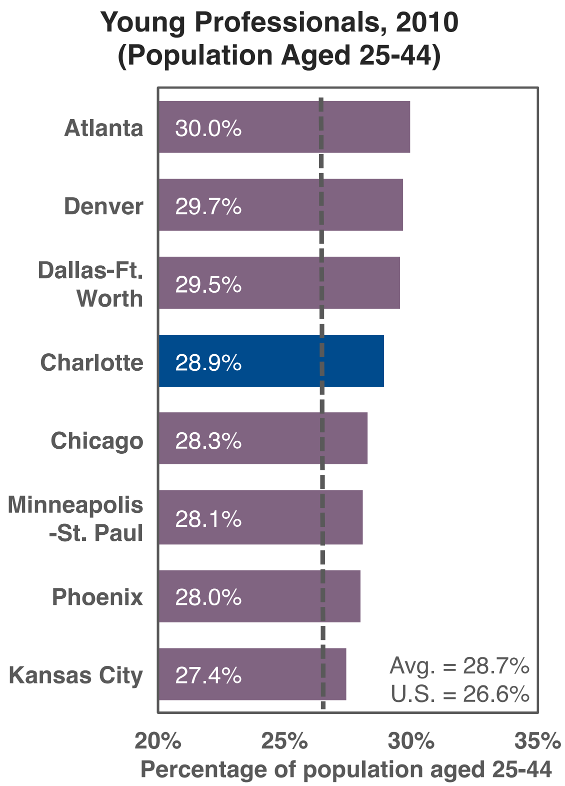


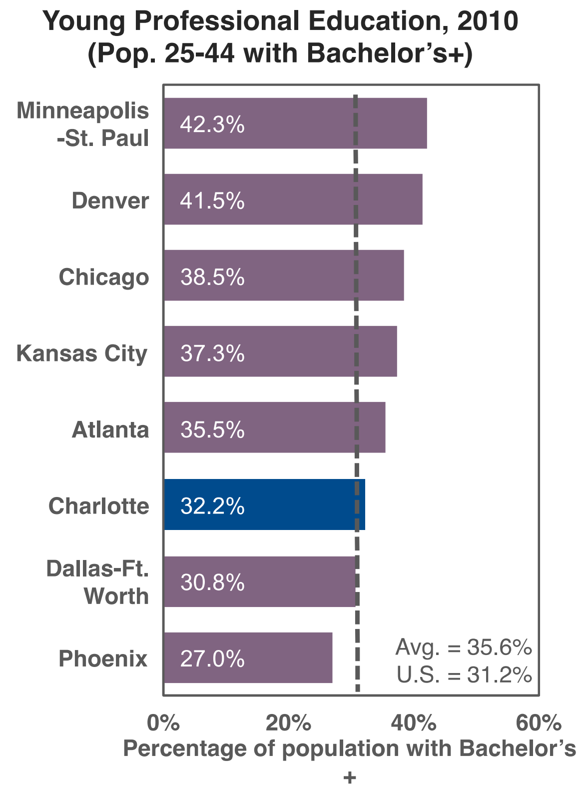

Education Attainment by Census Tract
High School
Bachelors
Alexander
Iredell
Hickory
Catawba
Rowan
Salisbury
Lincoln
Cabarrus
Stanly
Cleveland
Gaston
Mecklenburg
Charlotte
York
Rock Hill
Union
Anson
Chester
Lancaster
Chesterfield
2010 United States Averages
High School Attainment %: 85.0
Bachelor Degree Attainment %: 27.9
High School Degree %
65% or Less
65.1% to 75%
75.1% to 85%
85.1% or Greater
Bachelor Degree %
10% or Less
10.1% to 20%
20.1% to 30%
30.1% or More
0 5 10 15 20 25 Miles
Source: American Community Survey 5-Year Estimate (2006 - 2010)
Projection: Florida State Plane
Geographic Data Source: ESRI, 2010
Map Composition: MSC, 2012
McCallum Sweeney Consulting
the geography of business

Young Professionals

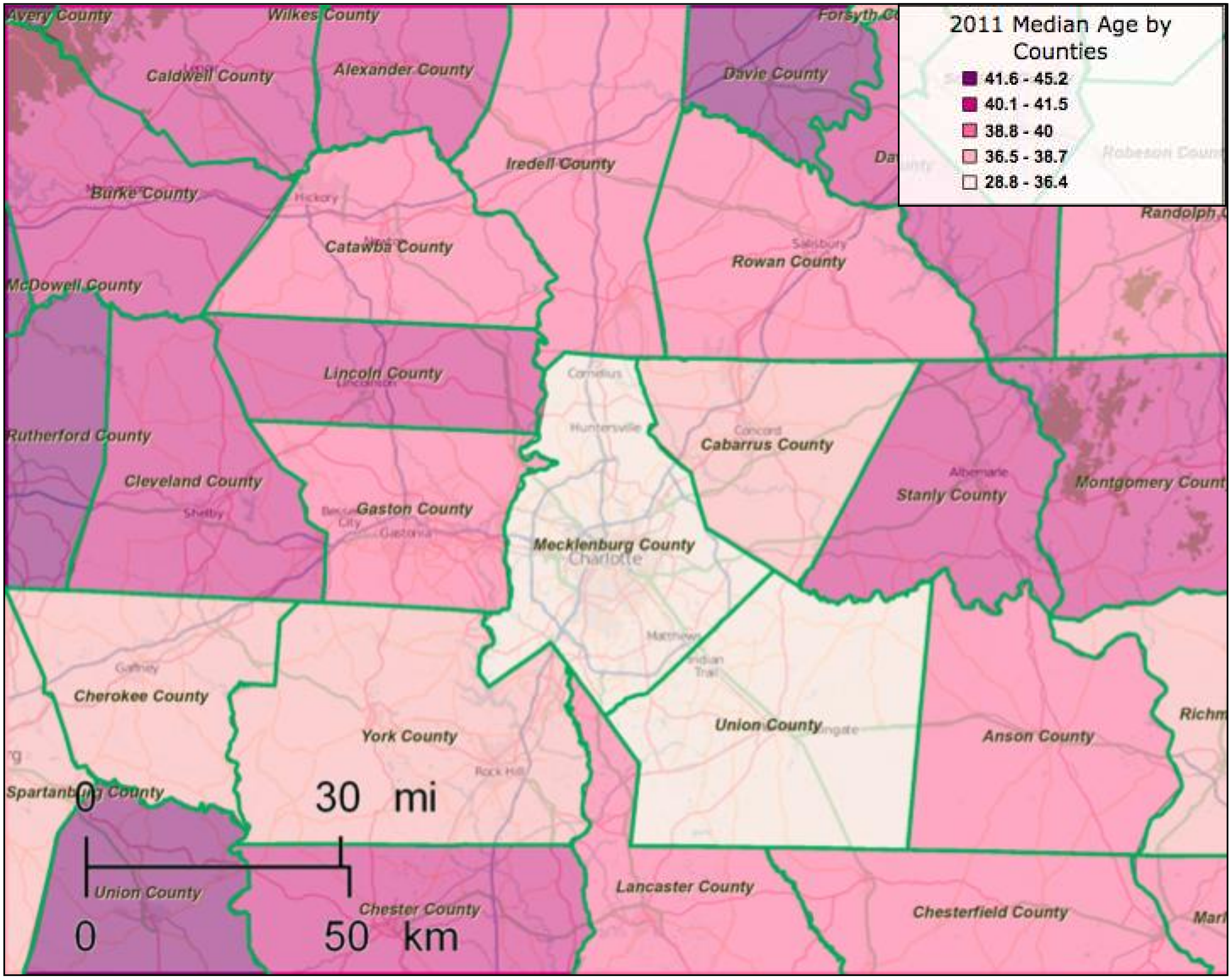
Young professionals, residents aged 25 to 44, make up a relatively large share of Charlotte's population (29%). Among the benchmark cities, only Atlanta, Dallas-Ft. Worth, and Denver have a larger share of young professionals than Charlotte. The US and benchmark averages are 27% and 29%, respectively.

The young professional population in Charlotte is better educated than the US average but less than the benchmark average. Among young professionals in Charlotte, 32% have a bachelor's degree or higher, compared to 31% in the US and 36% among benchmarks.





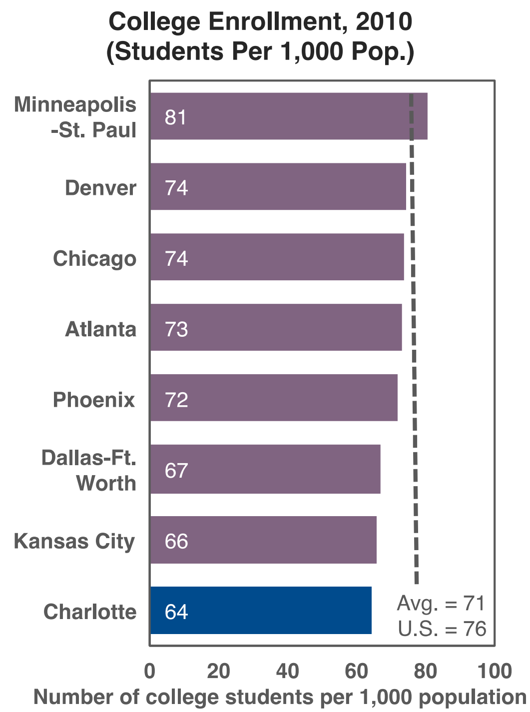
Greater Charlotte Region – Median Age

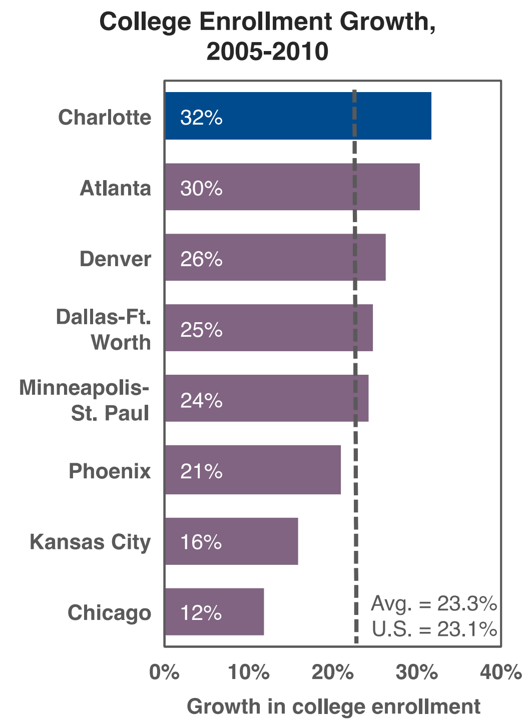


College Enrollment

The Charlotte CSA has a smaller college student population than benchmark cities, but the number of college students is growing more rapidly. With 64 out of 1,000 residents enrolled in college, Charlotte has the smallest college student population among benchmarks.

The number of enrolled college students in Charlotte grew 32% between 2005 and 2010, faster than 23% growth in college students nationally.

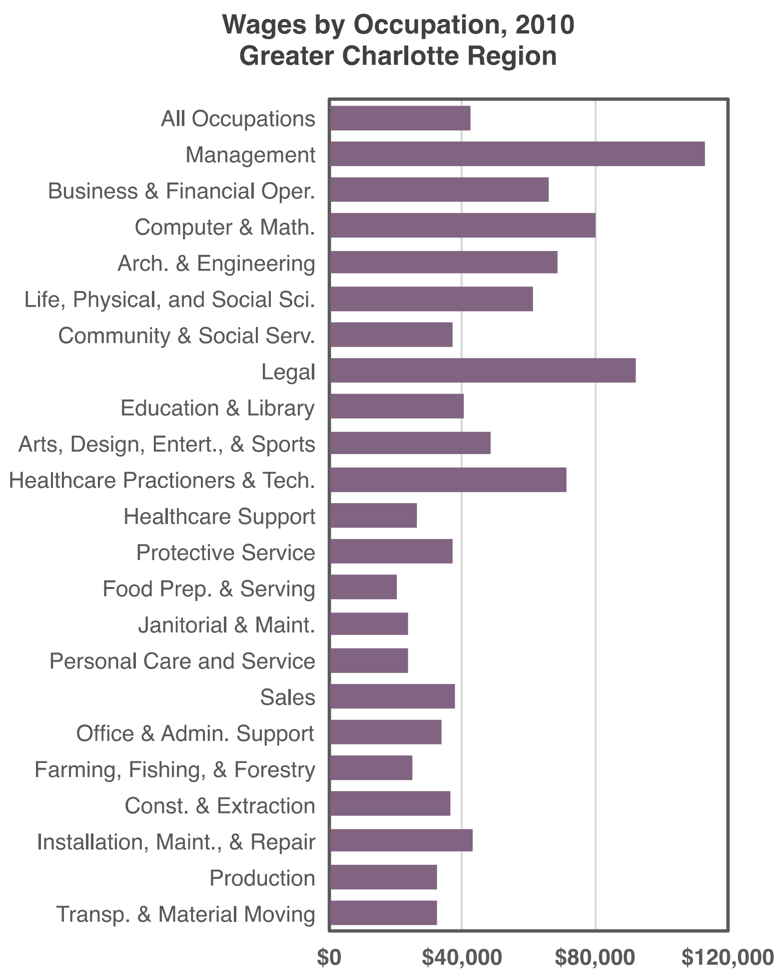


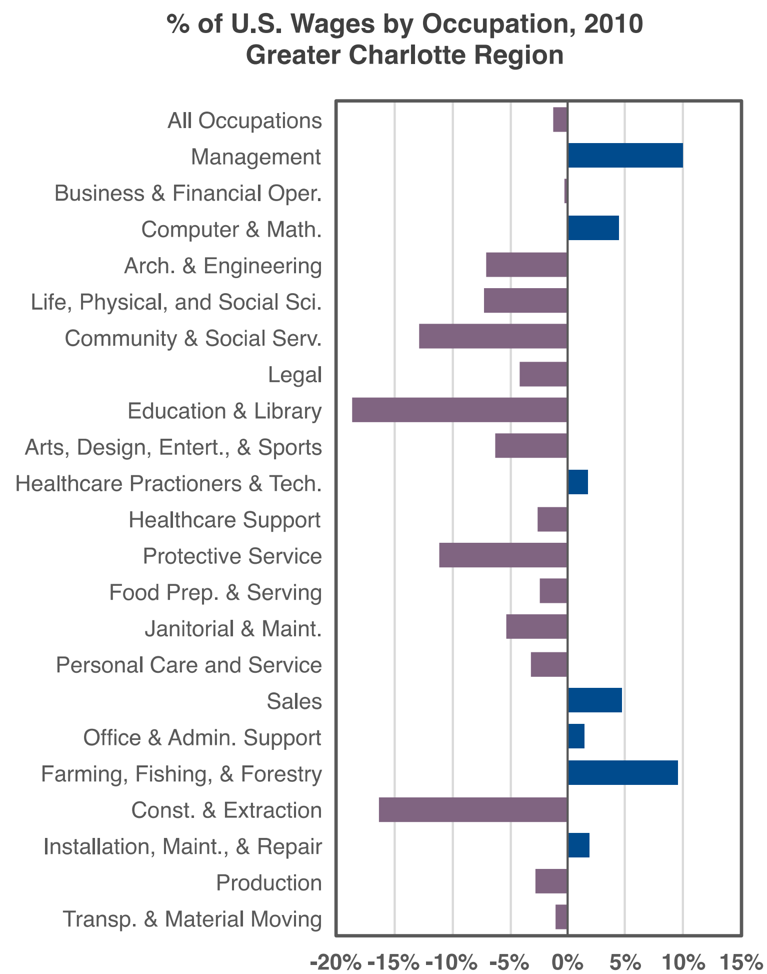


Wage Competitiveness

Overall wage levels in Charlotte are only slightly below US levels, but wage levels are higher in management, computers, sales, and office positions. The average wage of $42,800 for all occupations is only 1% less than the US. The occupations with wages above US levels are Management (+10%); Computer and Math (+4%); Healthcare Practitioners and Technicians (+2%); Sales (+5%); Office and Administrative Support (+1%); Farming, Fishing, and Forestry (+10%); and Installation, Maintenance, and Repair (+2%).

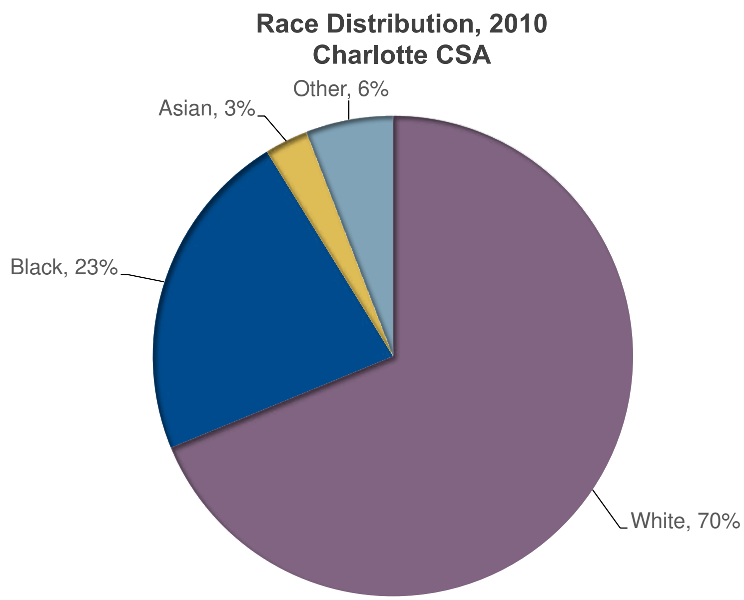
Wages are most significantly below US levels in Education and Library occupations (-19%) and Construction and Extraction occupations (-16%). Business and Financial occupations in Charlotte have the same average wages as the US.

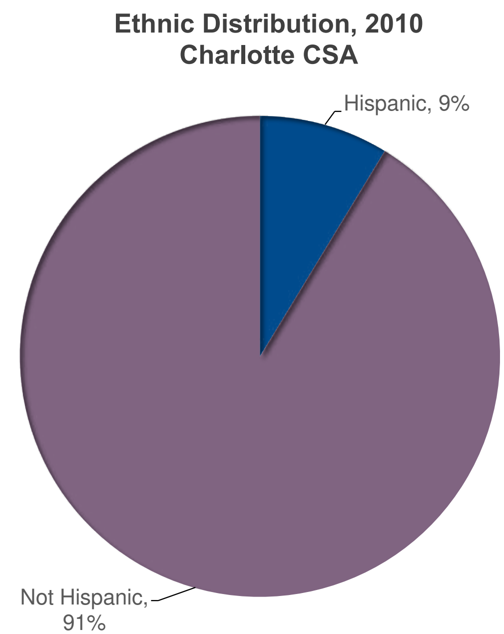

Wages by Occupation, 2010
Greater Charlotte Region
All Occupations
Management
Business & Financial Oper.
Computer & Math.
Arch. & Engineering
Life, Physical, and Social Sci.
Community & Social Serv.
Legal
Education & Library
Arts, Design, Entert., & Sports
Healthcare Practioners & Tech.
Healthcare Support
Protective Service
Food Prep. & Serving
Janitorial & Maint.
Personal Care and Service
Sales
Office & Admin. Support
Farming, Fishing, & Forestry
Const. & Extraction
Installation, Maint., & Repair
Production
Transp. & Material Moving
$0
$40,000
$80,000
$120,000


% of U.S. Wages by Occupation, 2010
Greater Charlotte Region
All Occupations
Management
Business & Financial Oper.
Computer & Math.
Arch. & Engineering
Life, Physical, and Social Sci.
Community & Social Serv.
Legal
Education & Library
Arts, Design, Entert., & Sports
Healthcare Practioners & Tech.
Healthcare Support
Protective Service
Food Prep. & Serving
Janitorial & Maint.
Personal Care and Service
Sales
Office & Admin. Support
Farming, Fishing, & Forestry
Const. & Extraction
Installation, Maint., & Repair
Production
Transp. & Material Moving
-20%
-15%
-10%
-5%
0%
5%
10%
15%

Race and Ethnicity

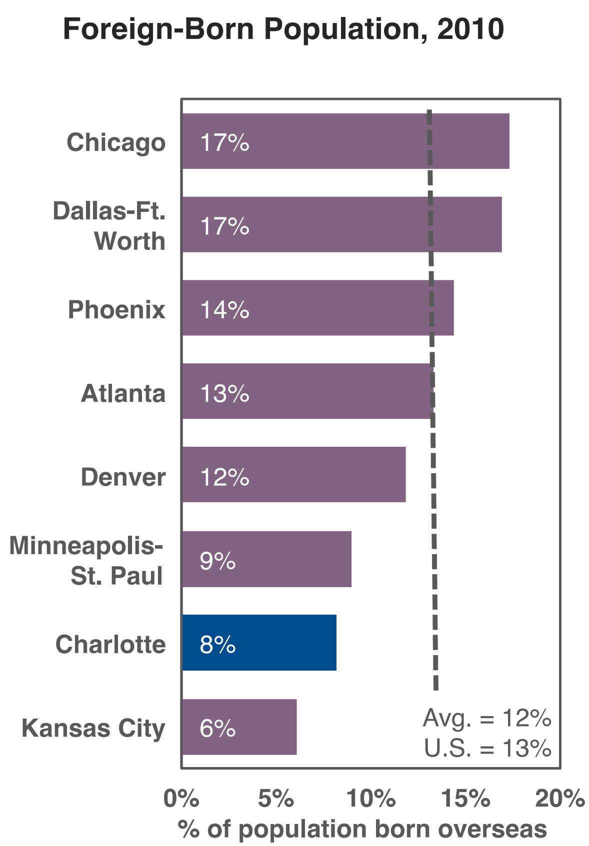
In 2010, the Charlotte CSA's population was 70% white, 23% black, 3% Asian, and 6% other races. The white population percentage declined slightly from 74% of the population in 2005. During the same time period, the Hispanic population increased from 1% of the total population to 9%.

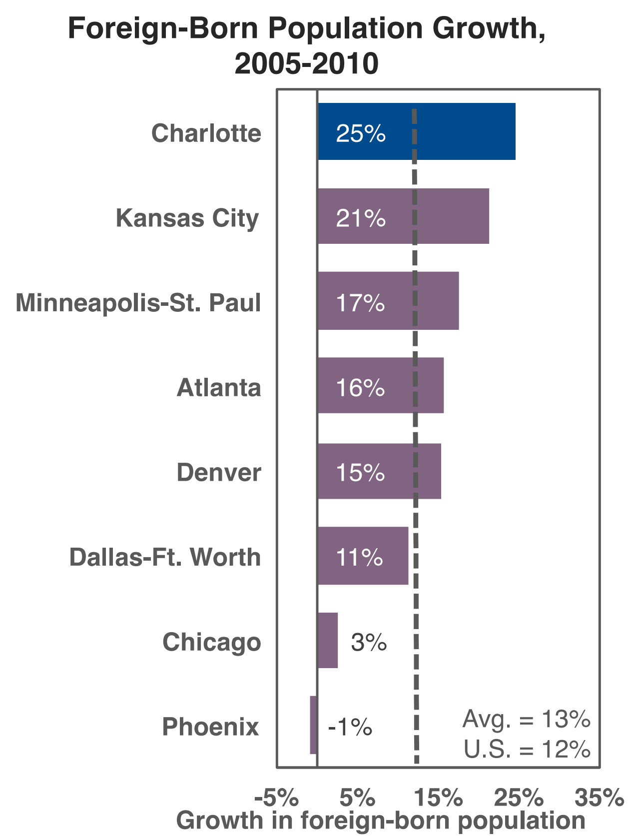




Foreign-Born Population

The Charlotte CSA has a smaller foreign-born population than benchmark cities and the US average, but this population is growing more quickly than other cities. Foreign-born residents comprise 8% of the Charlotte population, compared to 13% of the US. This population grew 25% in Charlotte from 2005 to 2010.





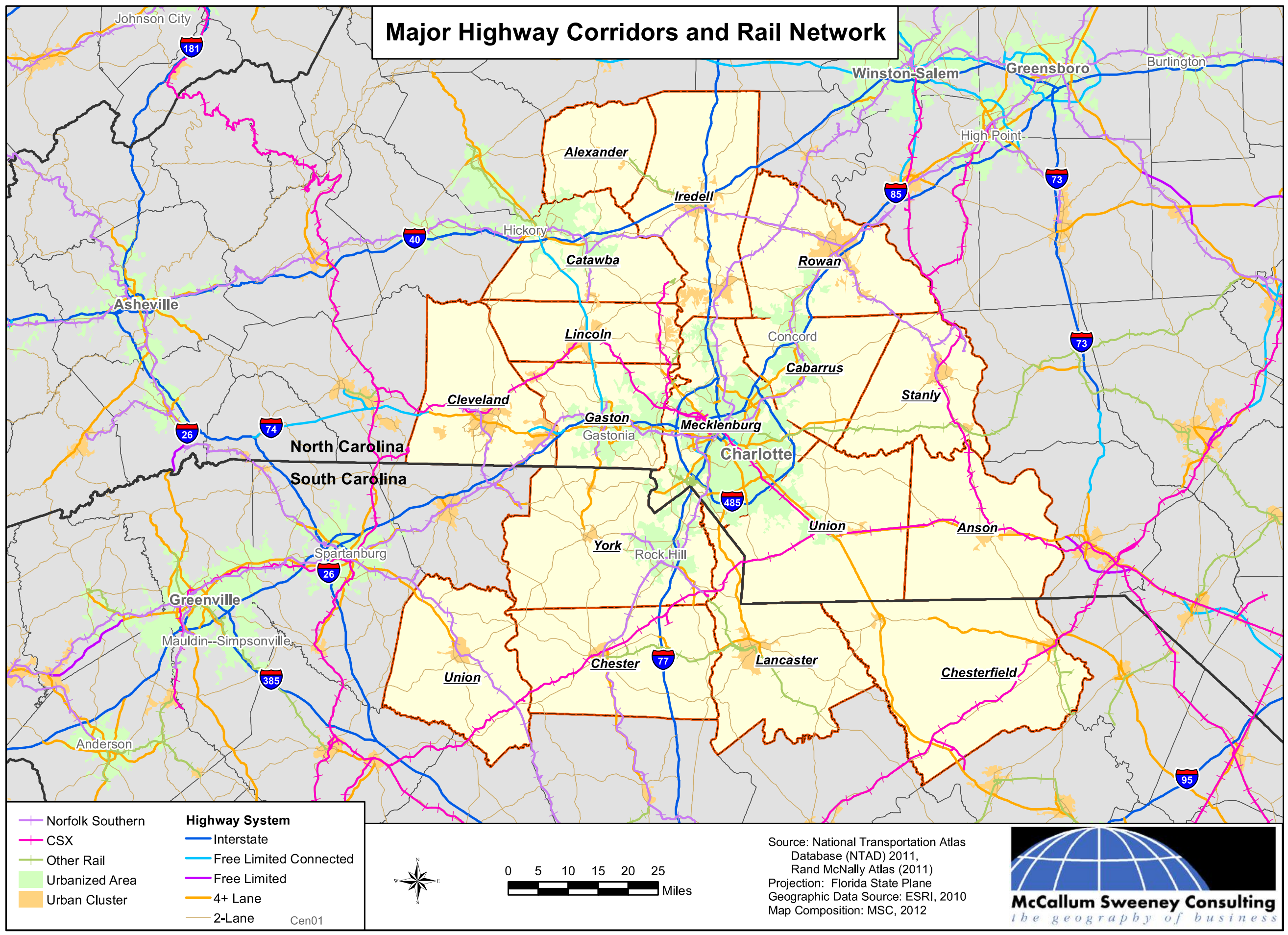
Infrastructure

Highways and Rail

Charlotte sits at the intersection of three interstate highways and six rail lines, providing land distribution access in all directions. Interstates I-77, I-84, and I-40 all move through the region, supporting over 300 trucking firms.

CSX and Norfolk Southern are the primary rail service providers in the region, but lines are also maintained by Alexander, Winston Salem Southbound, Lancaster & Chester, and Aberdeen Carolina & Western railways.

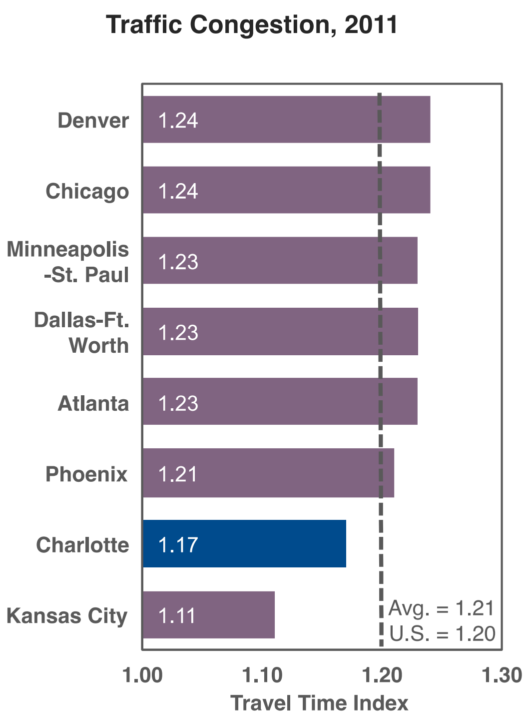
The region's current intermodal facility is being relocated and expanded by Norfolk Southern at Charlotte Douglas International Airport. The $92 million facility will significantly expand capacity for distribution and the transfer of goods between rail, highways, air, and connected seaports in Charleston, Savannah, and Norfolk.

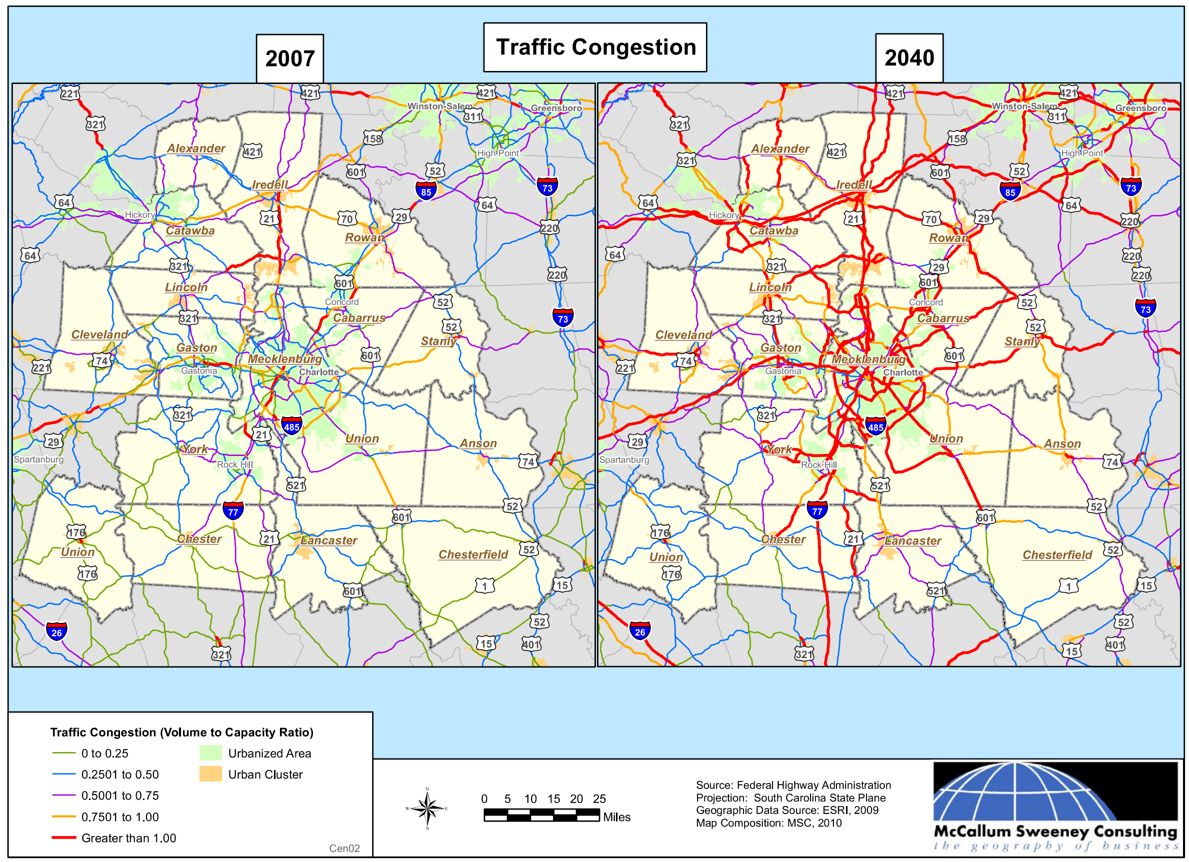


Traffic Congestion

Charlotte has relatively low traffic congestion. The Travel Time Index measures the relative length of commutes during peak traffic hours versus off-peak hours (for example, a Travel Time Index of 1.3 indicates that a drive of 10 minutes during off-peak hours will take 13 minutes during peak traffic). Charlotte received a Travel Time Index rating of 1.17, below the average for all US urban areas of 1.20 and the benchmark average of 1.21.

Traffic congestion in the region is expected to get worse as high population growth forecasts will further boost commuter traffic (see map below).





Commute Patterns

Over half of all workers in the Greater Charlotte Region commute to a different county for work every day. The overall region has a resident workforce of 1,005,000 workers and a daytime workforce of 1,007,000.

Only two counties in the region have a larger daytime workforce than resident workforce: Mecklenburg County and Cabarrus County, which see a 39% and a 20% change in their worker population daily.

All other counties are net exporters of workers, with Chester County and Lincoln County sending the largest share of their residents to other counties for work at 72% and 75%, respectively.

Commute Patterns

Greater Charlotte Region

County	Resident Workforce	Daytime Workforce	Net Change	Net % Change	Workers Commuting In	% of Daytime Workforce	Residents Commuting Out	% of Resident Workforce
Alexander County, NC	14,437	7,978	-6,459	-45%	3,605	45%	10,064	70%
Anson County, NC	9,032	6,023	-3,009	-33%	3,056	51%	6,065	67%
Cabarrus County, NC	67,927	54,961	-12,966	-19%	33,468	61%	46,434	68%
Catawba County, NC	59,765	71,979	12,214	20%	38,452	53%	26,238	44%
Cleveland County, NC	35,687	30,049	-5,638	-16%	14,060	47%	19,698	55%
Gaston County, NC	85,974	62,150	-23,824	-28%	29,389	47%	53,213	62%
Iredell County, NC	60,224	54,980	-5,244	-9%	27,866	51%	33,110	55%
Lincoln County, NC	29,416	17,878	-11,538	-39%	10,409	58%	21,947	75%
Mecklenburg County, NC	344,015	479,400	135,385	39%	244,676	51%	109,291	32%
Rowan County, NC	51,108	41,621	-9,487	-19%	20,694	50%	30,181	59%
Stanly County, NC	23,909	16,161	-7,748	-32%	6,732	42%	14,480	61%
Union County, NC	70,997	48,873	-22,124	-31%	25,839	53%	47,963	68%
Chester County, SC	12,565	7,455	-5,110	-41%	3,933	53%	9,043	72%
Chesterfield County, SC	16,190	13,332	-2,858	-18%	6,405	48%	9,263	57%
Lancaster County, SC	25,356	15,492	-9,864	-39%	7,841	51%	17,705	70%
Union County, SC	11,215	6,646	-4,569	-41%	2,883	43%	7,452	66%
York County, SC	87,194	72,142	-15,052	-17%	32,708	45%	47,760	55%
Greater Charlotte Region	**1,005,011**	**1,007,120**	**2,109**	**0%**	**512,016**	**51%**	**509,907**	**51%**

Source: US Census, LEHD

The table below compares worker's place of residence to place of employment. Each box indicates the number of workers that live in the county listed on the left (Place of Residence) and work in the county above (Place of Employment).

For example, in the first column and row, we see that 4,373 workers live in Alexander County and also work in Alexander County. The box to the right shows that 9 workers live in Alexander County and work in Anson County.

The Greater Charlotte Region has over 802,000 workers who both live and work in the region. Because we know the region's resident workforce and daytime workforce are both over 1,000,000, this indicates that approximately 200,000 residents commute to jobs outside the Greater Charlotte Region every day, and another 200,000 workers commute from outside the region to local jobs.

Where Residents Work

Greater Charlotte Region

Place of Residence ↓ / Place of Employment →	*Alexander County*	*Anson County*	*Cabarrus County*	*Catawba County*	*Cleveland County*	*Gaston County*	*Iredell County*	*Lincoln County*	*Mecklenburg County*	*Rowan County*	*Stanly County*	*Union County*	*Chester County*	*Chesterfield County*	*Lancaster County*	*Union County, SC*	*York County*	***Greater Charlotte***
Alexander County	4,373	9	59	4,012	77	105	1,518	106	520	88	20	64	-	-	-	-	12	**10,963**
Anson County	1	2,967	183	24	20	34	49	18	995	127	252	1,557	1	133	6	-	11	**6,378**
Cabarrus County	22	93	21,493	517	261	762	1,378	181	26,453	3,013	847	1,358	13	14	43	3	195	**56,646**
Catawba County	1,049	14	506	33,527	316	818	2,598	1,895	4,703	485	77	271	5	5	3	5	65	**46,342**
Cleveland County	40	12	222	979	15,989	4,507	228	632	2,482	225	63	273	7	2	7	18	263	**25,949**
Gaston County	59	68	1,215	1,750	2,878	32,761	991	2,045	25,757	776	142	748	14	27	86	3	2,077	**71,397**
Iredell County	545	28	1,808	2,357	206	588	27,114	494	11,111	1,864	84	374	2	3	15	3	100	**46,696**
Lincoln County	17	27	419	3,355	638	2,736	754	7,469	8,455	262	39	218	2	9	12	1	227	**24,640**
Mecklenburg County	58	288	9,767	2,024	1,264	6,542	4,887	1,394	234,724	2,142	693	8,011	105	134	1,385	18	7,781	**281,217**
Rowan County	32	35	5,662	459	229	574	2,693	209	6,856	20,927	638	358	2	8	11	1	58	**38,752**
Stanly County	4	315	1,994	67	45	76	116	51	3,921	871	9,429	1,027	2	43	22	-	35	**18,018**
Union County	11	531	1,418	377	252	621	502	130	31,013	364	357	23,034	39	347	516	1	1,011	**60,524**
Chester County	-	5	22	20	49	133	13	19	1,230	14	1	53	3,522	29	609	127	2,935	**8,781**
Chesterfield County	-	225	42	12	4	48	30	7	741	7	16	1,168	49	6,927	309	14	461	**10,060**
Lancaster County	1	55	65	18	14	48	36	7	5,000	19	26	1,146	743	463	7,651	19	3,281	**18,592**
Union County, SC	-	5	17	14	49	85	16	17	337	7	4	30	125	26	79	3,763	291	**4,865**
York County	6	30	406	258	450	2,497	250	113	24,490	124	17	900	1,222	168	1,911	138	39,434	**72,414**
Greater Charlotte	**6,218**	**4,707**	**45,298**	**49,770**	**22,741**	**52,935**	**43,173**	**14,787**	**388,788**	**31,315**	**12,705**	**40,590**	**5,853**	**8,338**	**12,665**	**4,114**	**58,237**	**802,234**

Source: US Census, LEHD

Air Service

Charlotte Douglas International Airport is one of the nation's largest and busiest airports, offering nonstop service to over 130 destinations and over 700 daily flights. The construction of a new intermodal distribution facility adjacent to the airport will serve to further increase the cargo traffic and better integrate the regional distribution network of rail, highway, and air with regional seaports.

CHARLOTTE DOUGLAS INTERNATIONAL AIRPORT (CLT)

Key Statistics, 2011:

Annual Air Traffic:	540,000
Air Traffic Rank:	6th
Passengers:	39 mil.
Passenger Airport Rank:	11th
Landed Cargo:	398 mil. lbs.
Cargo Airport Rank:	54th
Daily Flights:	700+
Nonstop Destinations:	130+

Key Nonstop Int'l Destinations:

- Frankfurt
- London
- Paris
- Rome
- Munich
- Toronto
- Mexico City
- Rio de Janeiro

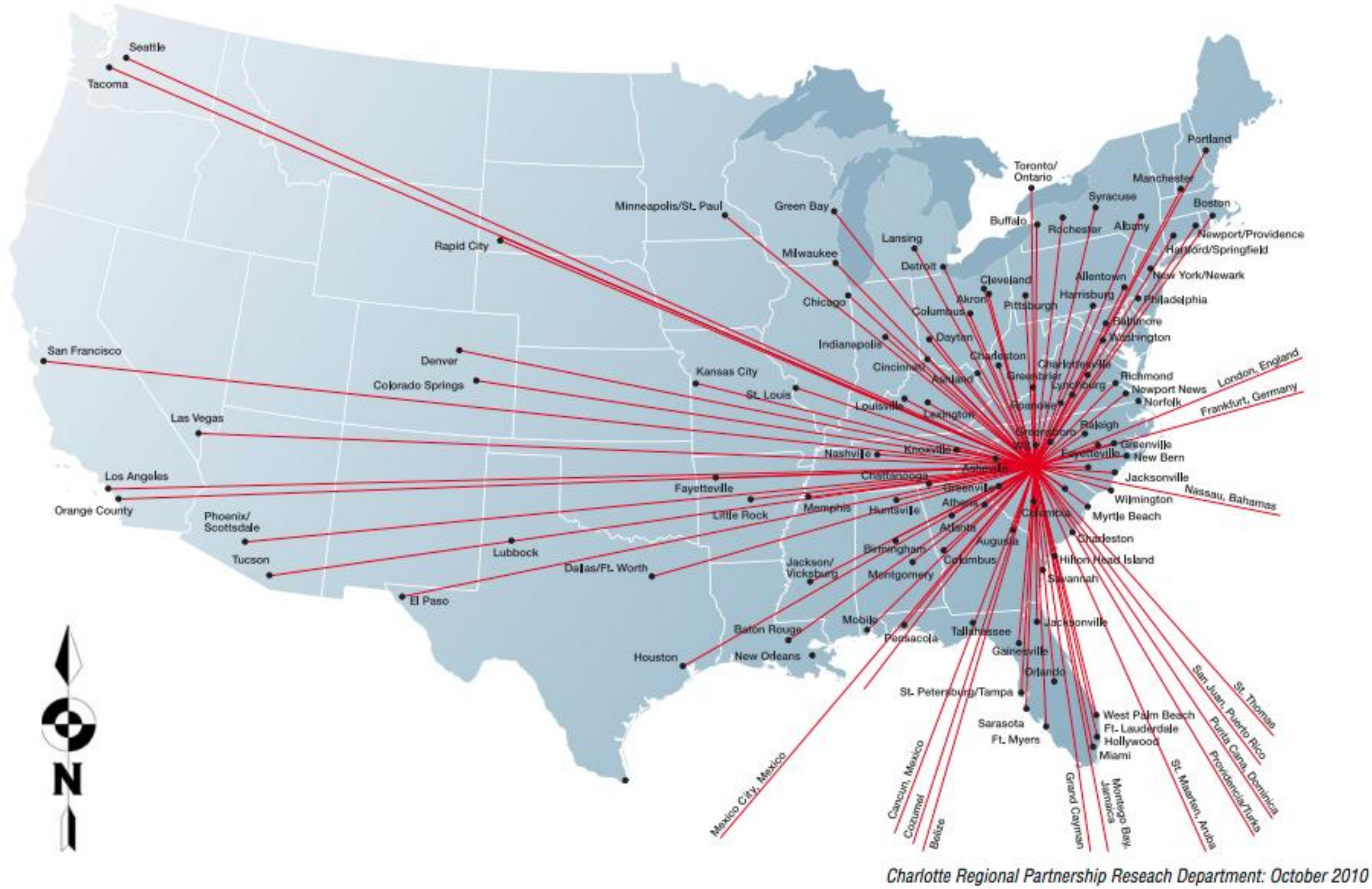
Major Airlines:

- US Airways
- American Airlines
- Air Canada
- AirTran Airways
- Continental Airlines
- Delta Airlines
- Jetblue Airways
- Lufthansa German Airlines
- Northwest Airlines
- United Airlines

Key Airport Features:

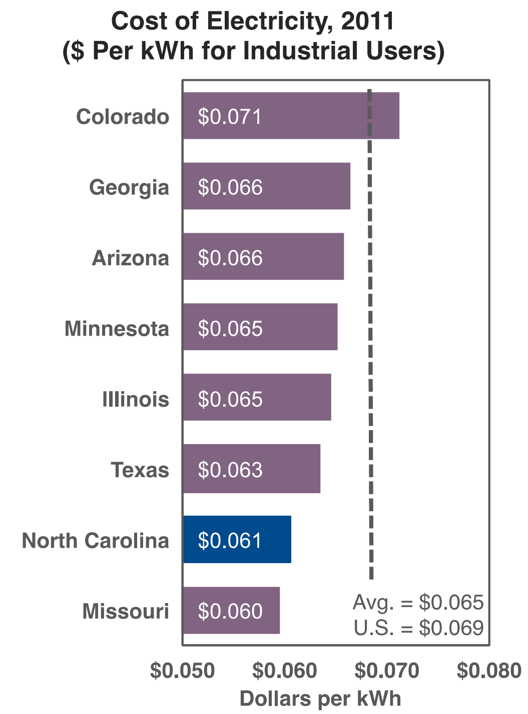
- **2010 Eagle Award:** This award from the International Air Transport Association recognizes the Best Airport. Charlotte Douglas International Airport was recognized for quality service and value for customers.
- **CLT 2015 Plan:** This expansion plan includes 7,000 new parking spaces, expansion of the departures and arrivals areas, and a new terminal roadway.
- **US Airways Hub**: Charlotte Douglas International Airport is US Airways' largest hub and is the second largest airport on the east coast.
- **Intermodal Facility:** Norfolk Southern is working to complete a new $92 million intermodal facility adjacent to the airport that will allow for increased distribution of goods along rail, highway, air, and sea lines.

Charlotte Douglas International Airport – Nonstop Destinations, 2010



Electric Costs

North Carolina has electricity rates significantly below US and benchmark state averages. The average cost of electricity in North Carolina is $0.061 per kWh, compared to $0.069 in the US and $0.065 among benchmark states. Only Missouri had electricity rates below North Carolina among benchmarked states.



Industrial Site Availability

According to McCallum Sweeney Consulting, "One of the fastest growing trends in the site location business is the demand for project-ready industrial sites. The reason for this is simple: The location decision process demands available sites and those sites need to be ready for development. Companies looking to build new facilities want sites that are served with adequate infrastructure, properly zoned, and relatively risk free. Today, industry site decision time frames are shrinking. Many companies have been delaying much-needed expansions, waiting for signs of economic recovery. That moment is beginning to emerge, and demand is increasing for project-ready sites and ready-to-lease buildings. Companies are not willing to wait for a community to find an appropriate site and determine its suitability for development – that due diligence needs to be done before the prospect comes calling." (McCallum Sweeney Consulting, 2012)

In terms of shovel-ready sites in the region (see box on next page on what a shovel-ready site is), as well as existing buildings, there are notably good examples, but it is relegated to a few regions and offers a limited range of choices for would-be industrial prospects. More to the point, the available shovel-ready sites are very good, but there are simply not enough of them. Building availability, regardless of the region, is never diverse enough. This is not a strategic flaw on the part of the various economic development organizations in the region; instead, it is function of two factors. It is either a lack funding for spec buildings, or the appropriateness of existing real estate stock. So, the community is faced with a decision that is difficult to assess and certainly not simple: to build or not to build a spec building. Today, prospects will consider looking at an existing building due to project scheduling constraints regardless of whether the community is a good fit or not. In short, the community is sometimes included by default; and, but for having an existing building, they would have never been considered. A trend that has been tried by some communities that has been successful is the idea of a "virtual spec building" (VSB). A VSB is one where the design has been completed for a specific use (or multiple uses), with cost and scheduling already in place, coupled with a debottlenecking exercise to significantly reduce construction time. If done correctly, the schedule for a VSB should be fairly close to the schedule of a retrofit of an existing building or up-fit of a partially completed spec building.

What is "Shovel Ready"?

There is no one single definition of a project-ready site, and there are varying degrees of readiness. In addition, what one industry may require in a site might not be relevant for another industry. Generally speaking, however, a project-ready site must have the following characteristics:

1. The site is available.

This means that the site is truly for sale, preferably with established terms and conditions. This does not necessarily mean that communities should expend their capital buying pieces of property to ensure that they are available for prospects, although that is the most ideal situation. An acceptable alternative would be long-term, renewable, assignable option agreements with landowners on key parcels.

2. The site is fully-served.

Ideally all utilities (water, sewer, electric, natural gas, etc.) are at the site with appropriate sizes and capacities. Short of that, the community should have developed detailed plans with service providers to extend and/or upgrade utilities. These plans should include appropriate rights-of-way studies and detailed cost and schedule estimates.

3. The site is developable.

Sites that are developable have no significant easements or right-of-ways impinging on the development, and they have all necessary due diligence (i.e. environmental assessments) completed; and any necessary mitigation completed. If there are utility easements on site, the community should be prepared to present detailed plans on the ability and willingness to move those utilities, providing details on cost and schedule.

Incentives

In general, the incentives in North Carolina are considered neither aggressive nor ineffective; instead, they are considered about middle of the road – with two notable exceptions. The first is an Achilles heel in the State of North Carolina – the size of the closing fund, currently in the $54-60 million range. Competitor states are simple better positioned to compete for large projects: Georgia has $100 million and Texas routinely has upwards of $200 million.

The second issue is the inability of the Department of Commerce to sign Non-Disclosure agreements for highly confidential projects. This factor alone is a non-starter for virtually every major industry that wants to maintain a competitive advantage in the marketplace. McCallum Sweeney has personally witnessed literally billions of dollars in capital investment and multiple thousands of jobs look elsewhere for this reason alone. These two factors alone create a severe, almost impossible to overcome, disadvantage for rural regions of the state – which most of North Carolina is.

The tax climate in North Carolina is another factor that should be of concern for the Charlotte region. In the Tax Foundation's "State Business Climate Index" the state does not fare well. North Carolina was ranked 44th in the Nation. Rankings of note are as follows:

State Business Tax Climate Ranking

Corporate Tax		29
Individual Income Tax		43
Sales Tax		47
Unemployment Insurance Tax		7
Property Tax		35

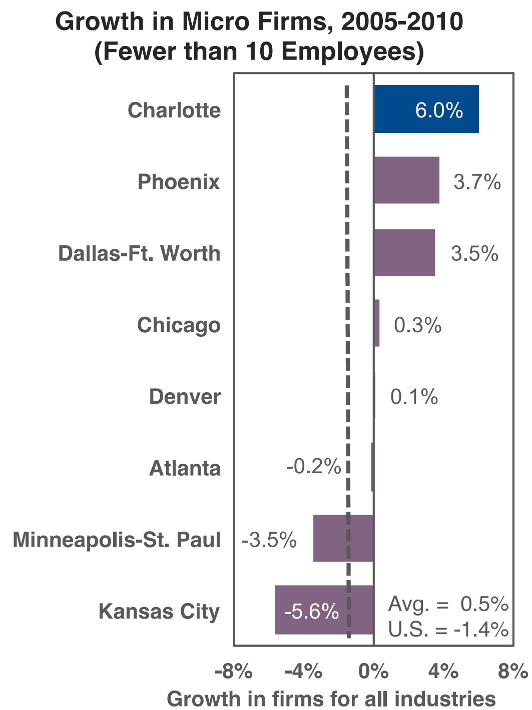
In our opinion this ranking is unfair and overstates the dramatic difference of North Carolina compared to other regions. Nevertheless, the data is in the Public Domain and is widely circulated and accepted. The region can best counter this by making sure that actual pro-forma analyses are run with each and every project and constantly challenge the veracity of this information not only in project execution but also proactive marketing.

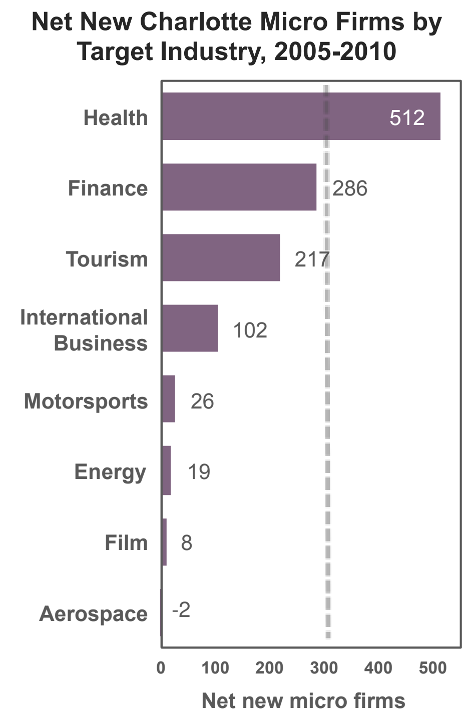
Entrepreneurship & Innovation

Small Business Growth Trends

Micro firms (companies that employ less than 10 individuals) grew more quickly in the Charlotte Metro than all benchmark metros from 2005 to 2010. Charlotte created 1,800 net new micro firms during this period, growing 6%, while the number of micro firms in the benchmark cities grew only 0.5% and US micro firms declined -1.4%.

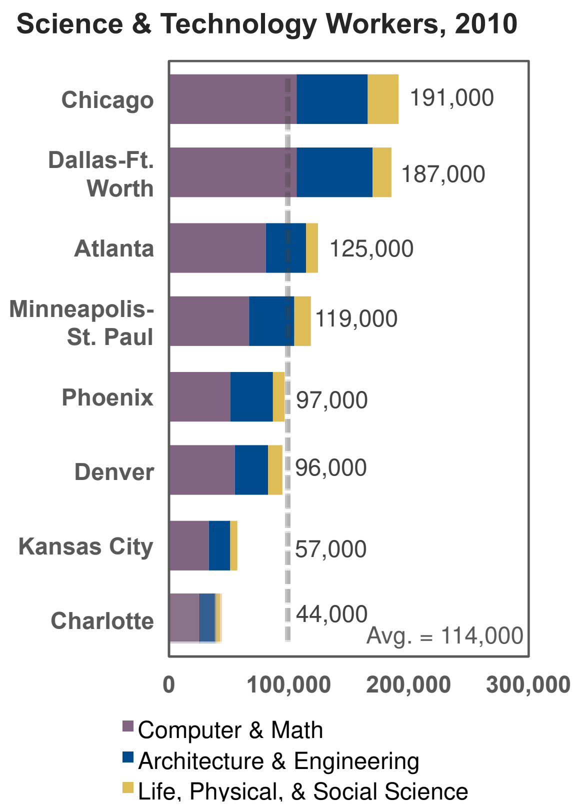
In Charlotte, many new micro firms were in targeted industries. The Health industry saw the net creation of 512 new small businesses in Charlotte. Finance had 286, Tourism had 212, and International Business (management and business firms) had 102. Only Aerospace saw a decrease in micro firms, but as an industry primarily comprised of large companies, this reflects a relatively small share of employment.

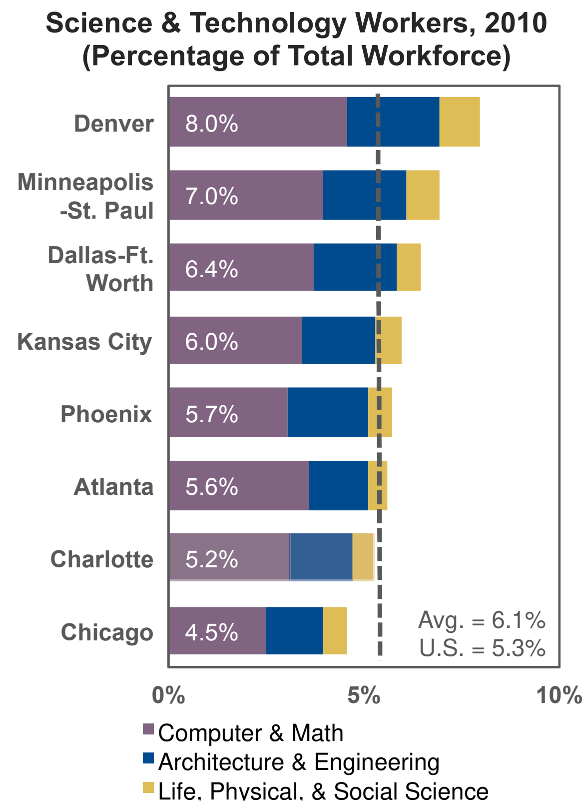




Technology Workforce

Charlotte has a relatively low total number and concentration of Science and Technology Workers. In this context, Science and Technology Workers are defined as those employed in Computer and Math; Architecture and Engineering; and Life, Physical, and Social Science occupations. With only 57,000 Science and Technology Workers, Charlotte has a concentration of 5.2%, just below the US average of 5.3% and the benchmark metro average of 6.1%.



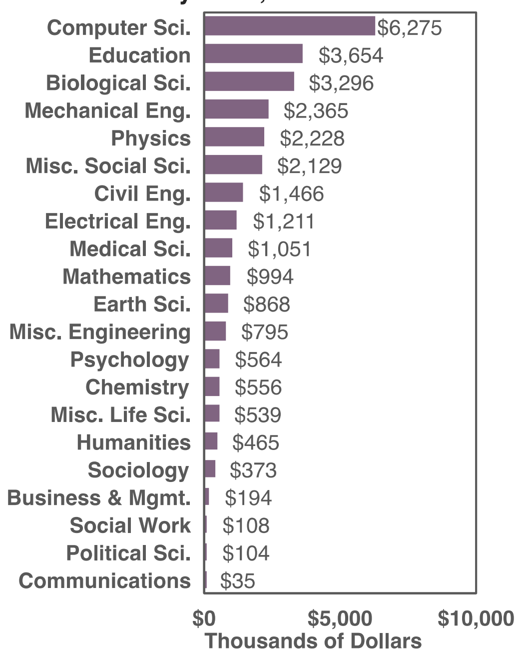


University R&D

Charlotte received a total of $26,687,000 in university research funding in 2009 through Davidson College and UNC Charlotte, which received 93% of these funds. These overall research expenditures are well below many benchmark metros but have grown very rapidly, with funding rising 51% from 2004 to 2009.

Research funding at UNC Charlotte was distributed across 21 fields, with Computer Science receiving 21% of all funds, followed by Education with 12% and Biological Sciences with 11%.

UNC Charlotte - Research Funding by Field, 2009



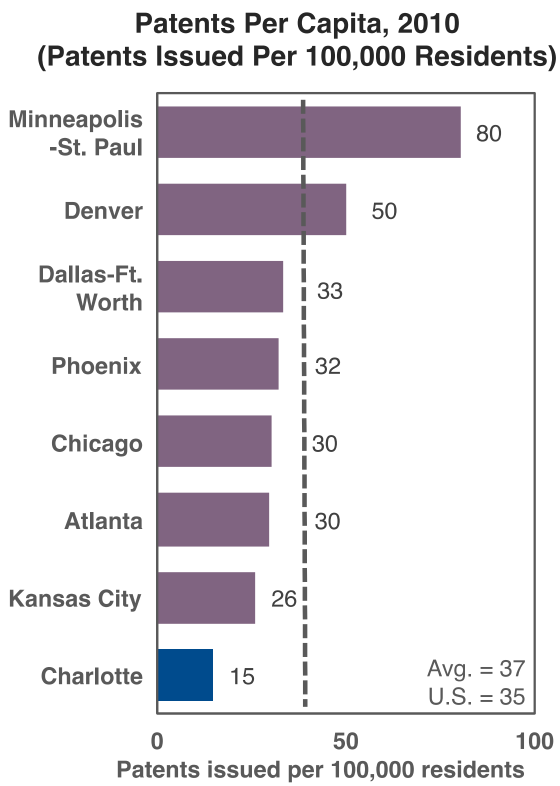
RESEARCH STRENGTHS **UNIVERSITY OF NORTH CAROLINA-CHARLOTTE**

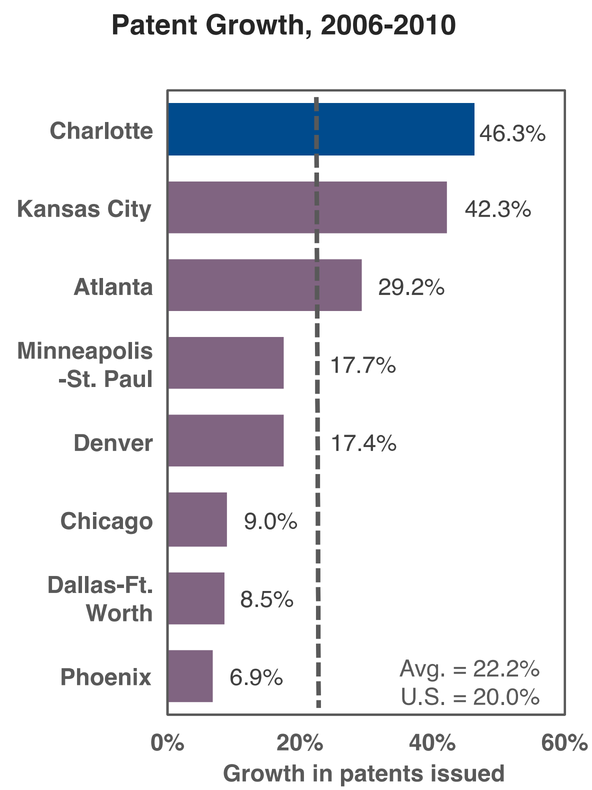
Key Statistics:	Key Strengths:	Corporate Partners:
Research Institutes: 14 Non-Faculty Staff: 100 Total Awards: $ 31.0 M NSF Awards: $ 4.3 M NIH Awards: $ 1.1 M	• Biotechnology • Manufacturing • Motorsports Engineering • Optics • Healthcare	• Bank of America • US Army • National Institute of Health • National Science Foundation • Cummins • Caterpillar • General Electric

Patents

Charlotte had the lowest number of patents issues per capita in 2010, but patents grew more quickly in Charlotte from 2006 to 2010 than the US and all benchmark cities. In 2010, Charlotte was issued only 15 patents per 100,000 residents, below the US and benchmark averages of 35 and 37.

The number of patents issued in Charlotte grew 46% from 2006 to 2010 compared to 20% patent growth across the US and an average of 22% among benchmarked metros.





RESEARCH & BUSINESS ORGANIZATIONS UNCC AND THE GREATER CHARLOTTE REGION

Key Research Institutes:

- **Charlotte Research Institute (CRI):** The purpose of CRI is to help form partnerships between UNCC and private industry. CRI focuses on research in Precision Metrology, Visualization and Optoelectronics. CRI is building the $37 Million PORTAL building.
- **Center for Optoelectronics and Optical Communications:** Provides infrastructure for student, faculty and industrial research in the fields of Optoelectronics and Optical Communications.
- **Center for Precision Metrology:** Association of faculty, students and industry that innovate within the field of Precision Metrology. Have received funding from multiple industry sources, as well as being initially funded by the National Science Foundation.
- **Charlotte Visualization Center:** Study is carried out on Interactive Visualization and Visual Analytics to solve a number of complex problems. Funding has been received from a number of government agencies as well as private sector parties.
- **Urban Institute:** Applied research and community outreach center, serving the Charlotte region by providing technical assistance and training related to urban issues.
- **Center for Transportation Policy Studies:** Research and study of transportation issues and transportation related policy.
- **Center for Biomedical Engineering Systems:** Provides infrastructure to enable biomedical faculty, researchers, clinicians, practitioners and students to collaborate on solving biomedical issues.

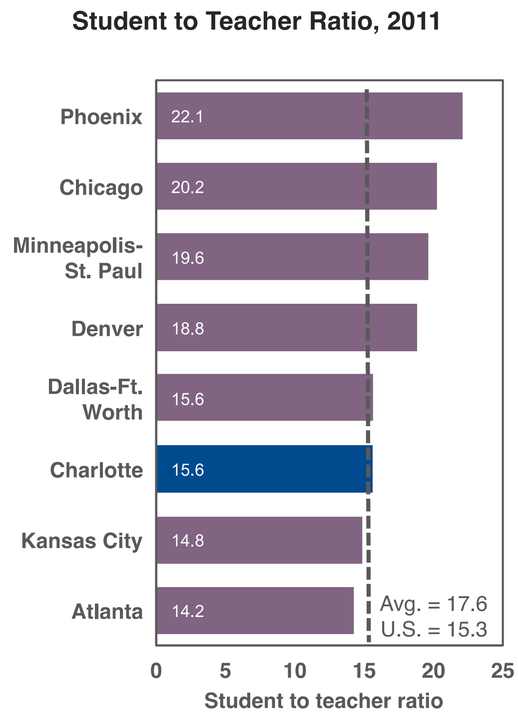
Key Entrepreneurship Organizations:

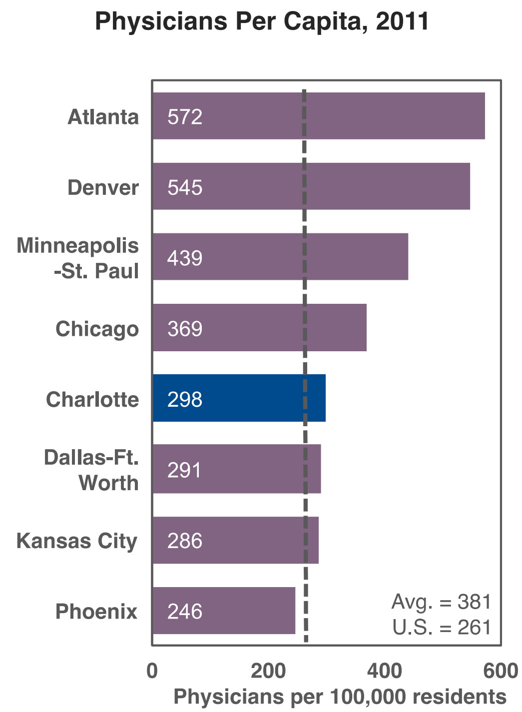
- **Business Link NC:** North Carolina Chamber of Commerce program to support small businesses.
- **Charlotte Business Resources**: Web-portal providing information to help new, existing, and relocating businesses.
- **Institute for Entrepreneurship:** Offers courses, seminars and business counseling through Central Piedmont Community College.
- **Packard Place:** Provides leasing and meeting space for startups and entrepreneurs.
- **Queen City Forward:** Provides resources and support for social ventures and entrepreneurs.
- **Business Innovation & Growth (BIG):** Member organization providing entrepreneurial support.
- **Charlotte Angel Fund:** Angel investment and mentorship opportunities for tech companies.
- **Ben Craig Center:** Business incubator providing space and support for entrepreneurs.
- **Inception Micro Angel Fund:** Angel investment fund that offers advisory services.
- **Project for Incubation, Energy, and Sustainability:** Business incubator focused on green businesses.
- **Area Fifteen:** Small business incubator focused on artistic endeavors.

Quality of Life

The Greater Charlotte Region boasts numerous recreation opportunities, from professional sports to NASCAR to outdoor recreation. School systems are also strong, with a relatively low student to teacher ratio of 16 to 1, just above the US average of 15 and below the benchmark average of 18.

The number of physicians per capita in Charlotte is slightly above the US average, with 300 physicians per 100,000 residents.



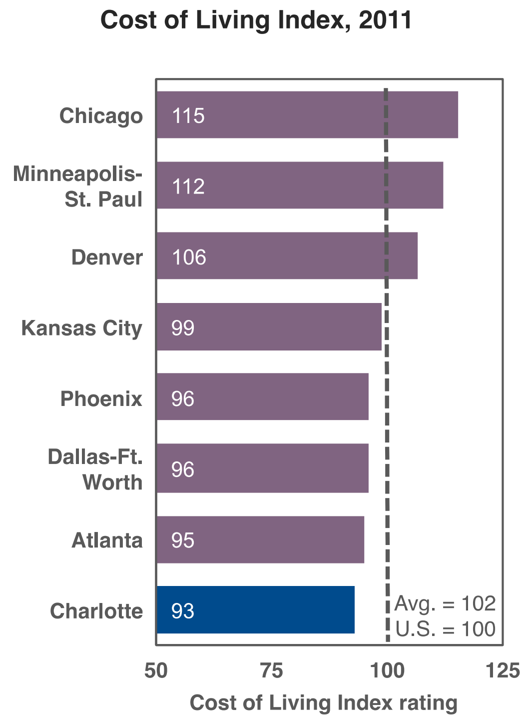


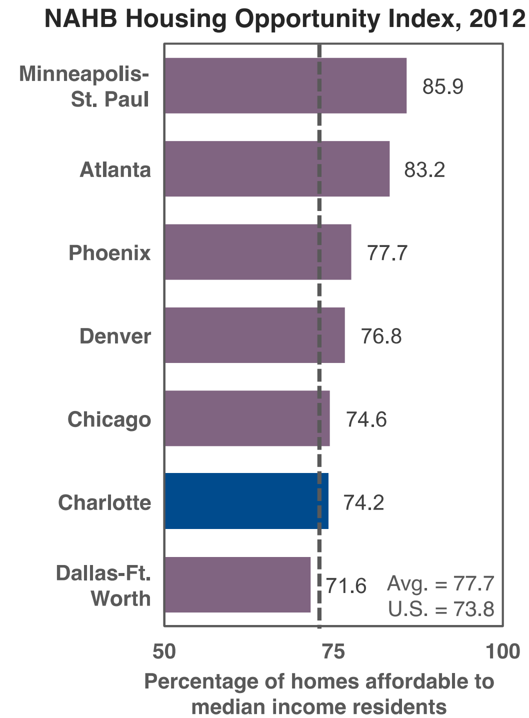
Cost of Living

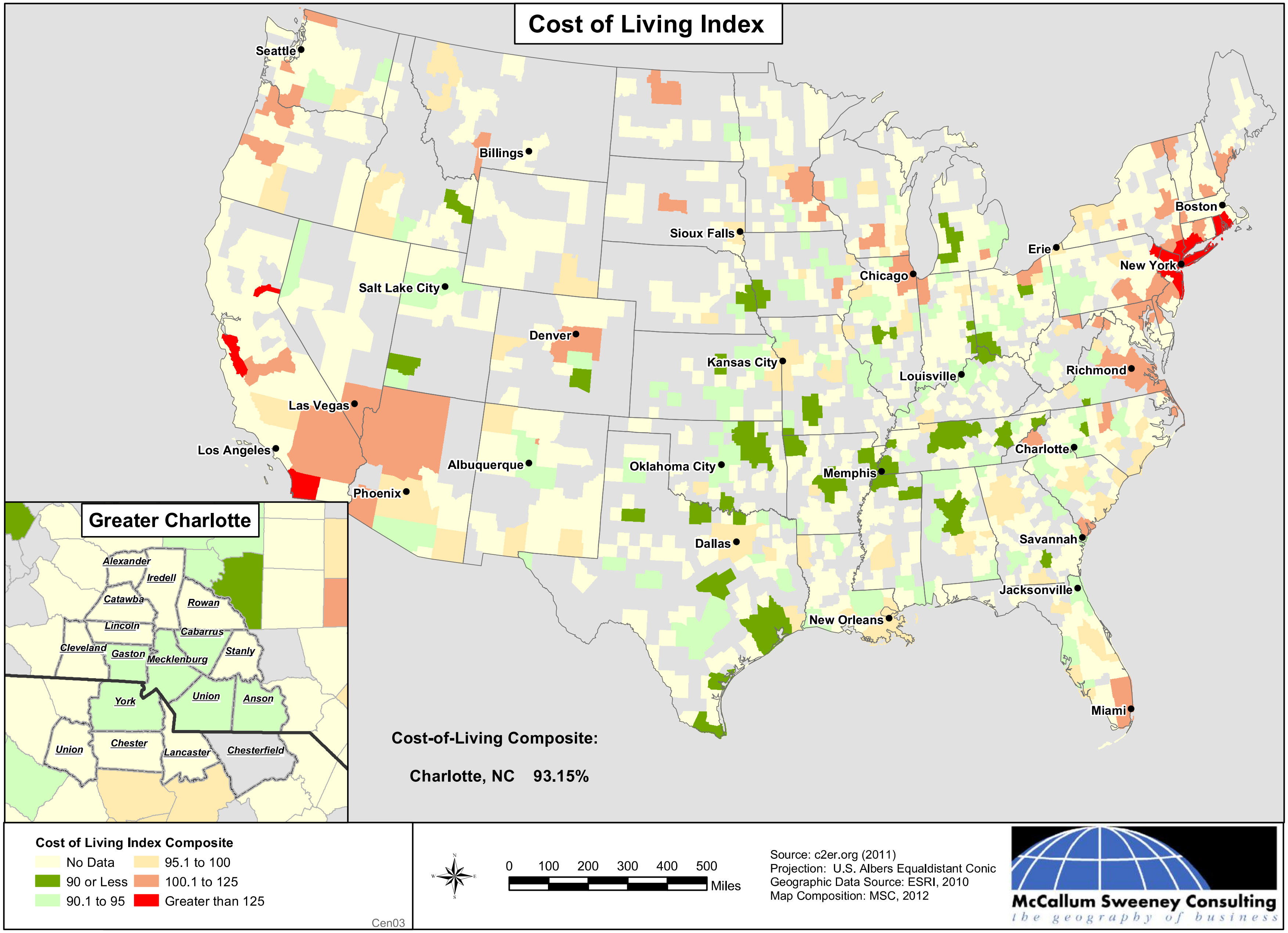
The Greater Charlotte Region's cost of living is relatively low. Charlotte received an overall score of 93 in the Cost of Living Index, below the US baseline of 100 and the lowest among benchmark metros, which had an average of 102.

Charlotte received a National Association of Home Builders Housing Opportunity Index score of 74, which means that 74% of homes are affordable to median income residents. This is second lowest rating among benchmarks, but is just above the US average of 73.8.

Median home prices reached $140,000 in Charlotte in 2012, the third lowest among benchmarks. When viewed alongside the Housing Opportunity Index rating, this indicates that although actual home values are relatively low among major metros, median incomes are also relatively low. Nonetheless, housing in Charlotte remains as affordable as US averages and well below many large metropolitan areas.



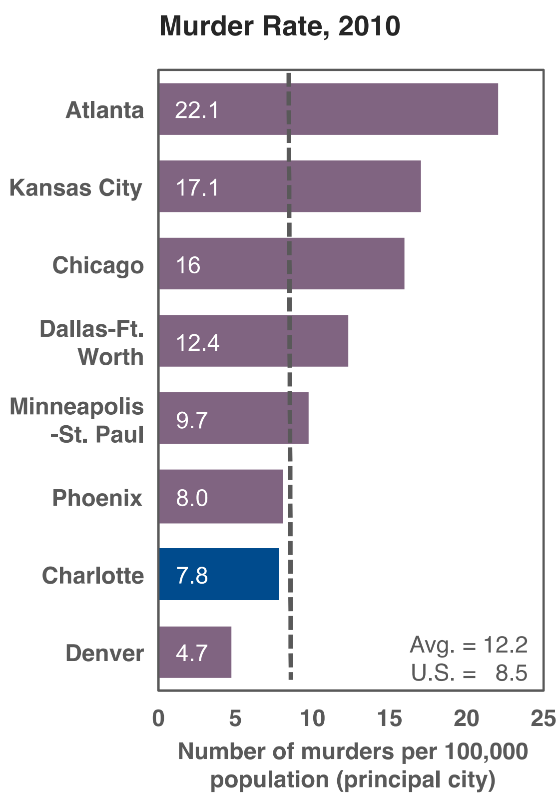


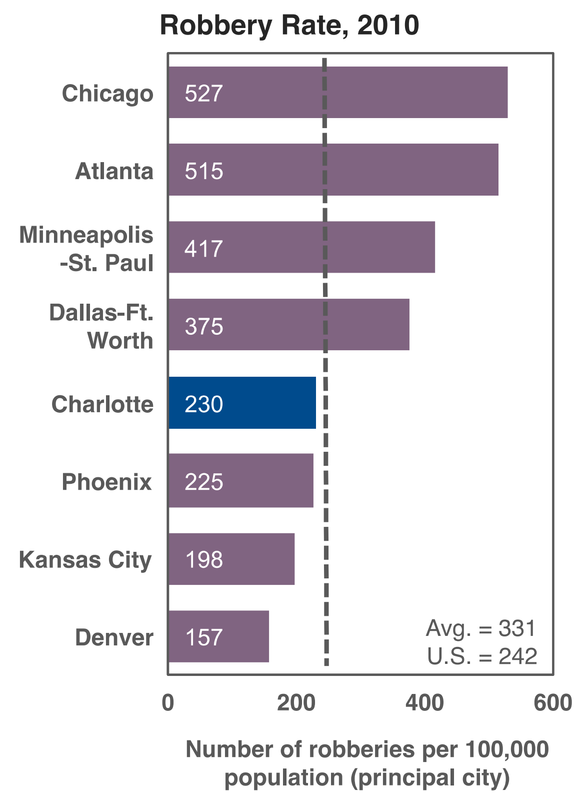

Cost of Living Index
Seattle
Billings
Sioux Falls
Salt Lake City
Denver
Kansas City
Chicago
Erie
Boston
New York
Richmond
Louisville
Las Vegas
Los Angeles
Albuquerque
Oklahoma City
Memphis
Charlotte
Phoenix
Dallas
Savannah
Jacksonville
New Orleans
Miami
Greater Charlotte
Alexander
Iredell
Catawba
Rowan
Lincoln
Cabarrus
Cleveland
Gaston
Mecklenburg
Stanly
York
Union
Anson
Chester
Union
Lancaster
Chesterfield
Cost-of-Living Composite:
Charlotte, NC 93.15%
Cost of Living Index Composite
No Data
95.1 to 100
90 or Less
100.1 to 125
90.1 to 95
Greater than 125
Cen03
0 100 200 300 400 500
Miles
Source: c2er.org (2011)
Projection: U.S. Albers Equaldistant Conic
Geographic Data Source: ESRI, 2010
Map Composition: MSC, 2012
McCallum Sweeney Consulting
the geography of business

Crime

Crime is very low in Charlotte. With a murder rate of 8 per 100,000 residents in 2010, Charlotte was well below the benchmark average of 12 and the US urban average of 9. Only Denver had a lower murder rate among benchmark metros.

Robberies were also relatively low in 2010, with 230 per 100,000 residents in Charlotte, below the US average of 240 and the benchmark average of 330.





Section 3:

Community Feedback on Targets

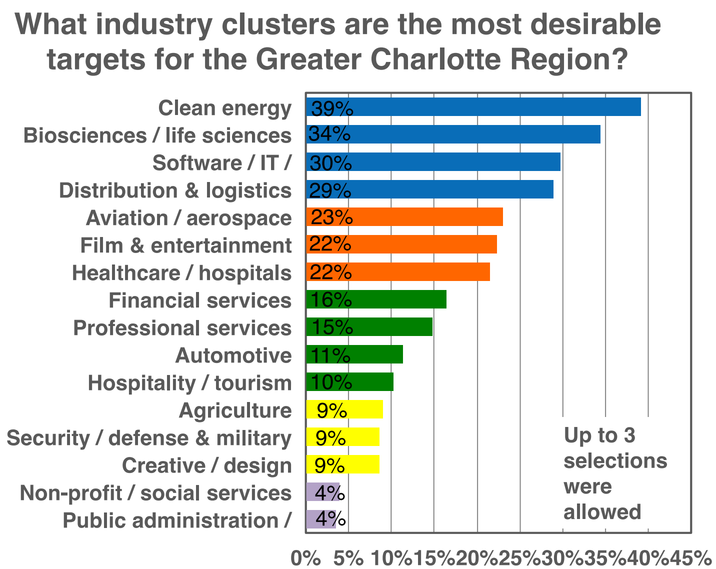
Feedback on Targets

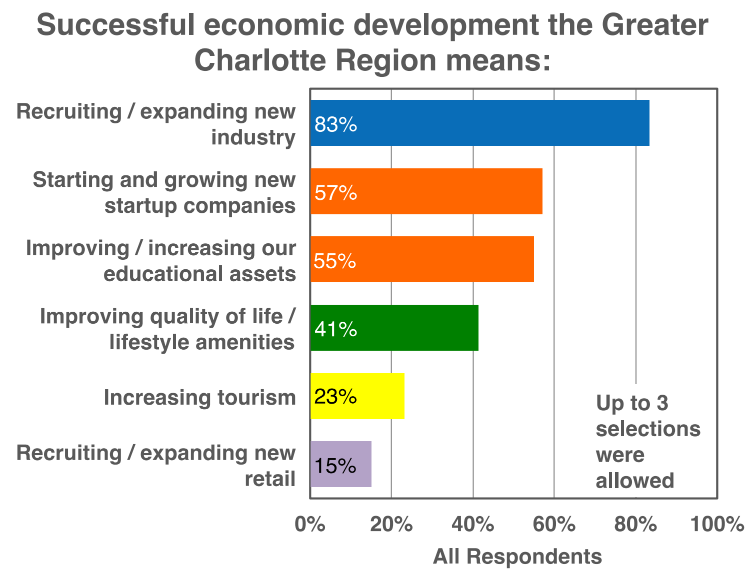
To expand our understanding of citizens' desires for targeted industry growth in the future, we asked several questions as part of our online citizen survey. We also conducted numerous focus groups and interviews with local business and economic development leaders to hear their opinions on which industries and technologies are the best targets for the region. By combining local input via surveys and interviews with our own analytical evaluation, we can better identify target that are both desired and realistic for the region. Combining qualitative analysis (input) with quantitative analysis (data) also alerts us to misalignments that may exist – for example, when the public is more eager to pursue an industry that may be too emerging to have a large numeric impact on job creation. Conversely, the public may be holding on to a declining industry. In these cases, a communications campaign can bring alignment between perceptions, desires, and realities.

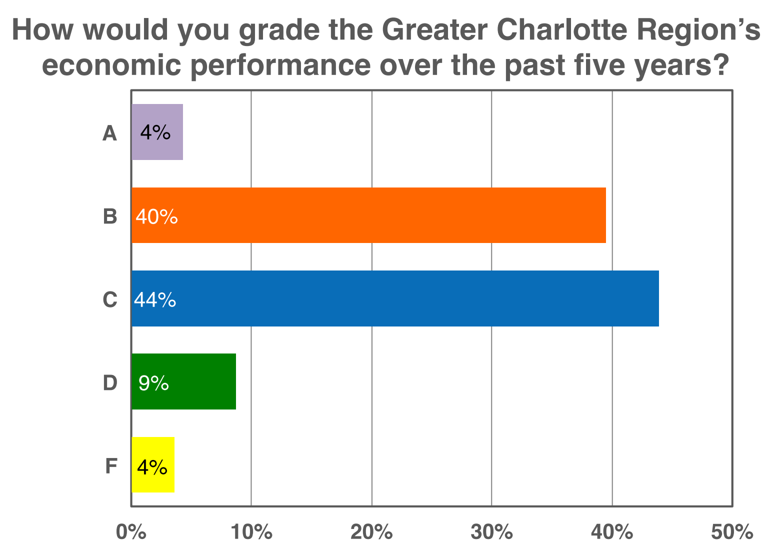
Citizen Survey Methodology

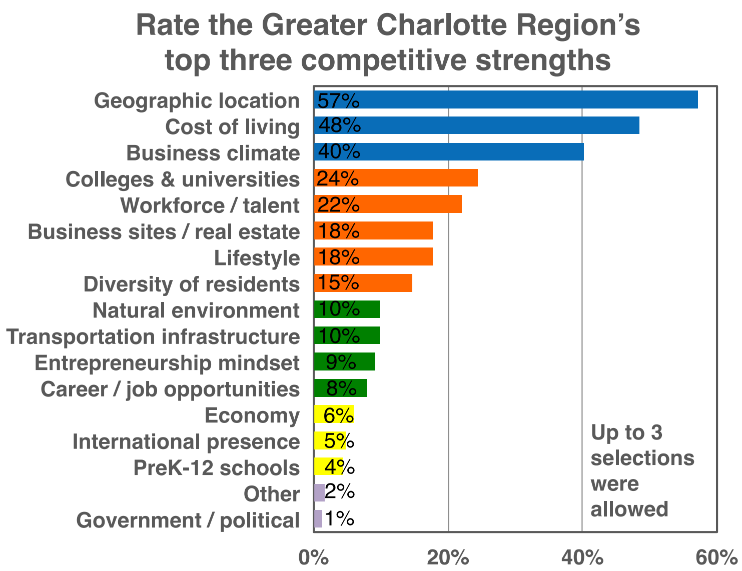
From July through September 2012, the consulting team conducted a survey of citizens across the region. The survey contains questions about the strengths and weaknesses of the region and which industries are the best opportunities for growth. In this section, we show the survey responses.

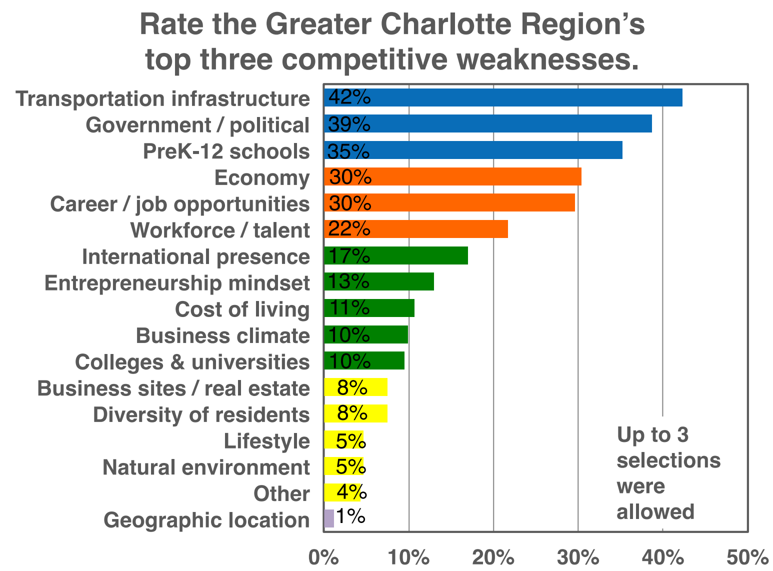
Following the survey, we provide leadership feedback from the Global Competitiveness Summit at Central Piedmont Community College on August 10, 2012.

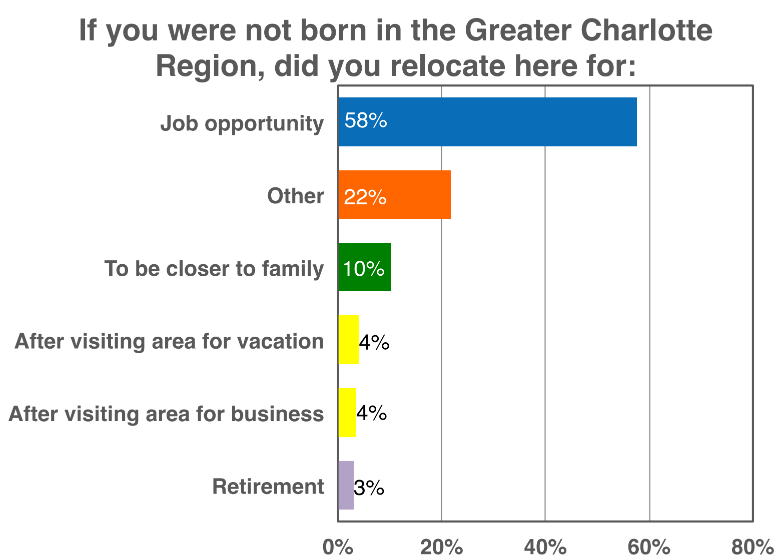

What industry clusters are the most desirable targets for the Greater Charlotte Region?
Clean energy 39%
Biosciences / life sciences 34%
Software / IT / 30%
Distribution & logistics 29%
Aviation / aerospace 23%
Film & entertainment 22%
Healthcare / hospitals 22%
Financial services 16%
Professional services 15%
Automotive 11%
Hospitality / tourism 10%
Agriculture 9%
Security / defense & military 9%
Creative / design 9%
Non-profit / social services 4%
Public administration / 4%
Up to 3 selections were allowed
0% 5% 10% 15% 20% 25% 30% 35% 40% 45%

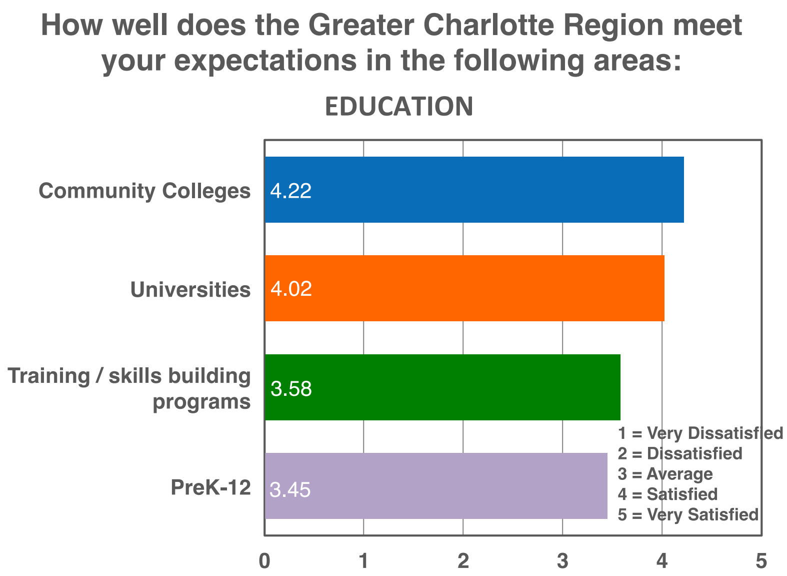

Successful economic development the Greater Charlotte Region means:
Recruiting / expanding new industry 83%
Starting and growing new startup companies 57%
Improving / increasing our educational assets 55%
Improving quality of life / lifestyle amenities 41%
Increasing tourism 23%
Recruiting / expanding new retail 15%
Up to 3 selections were allowed
0% 20% 40% 60% 80% 100%
All Respondents

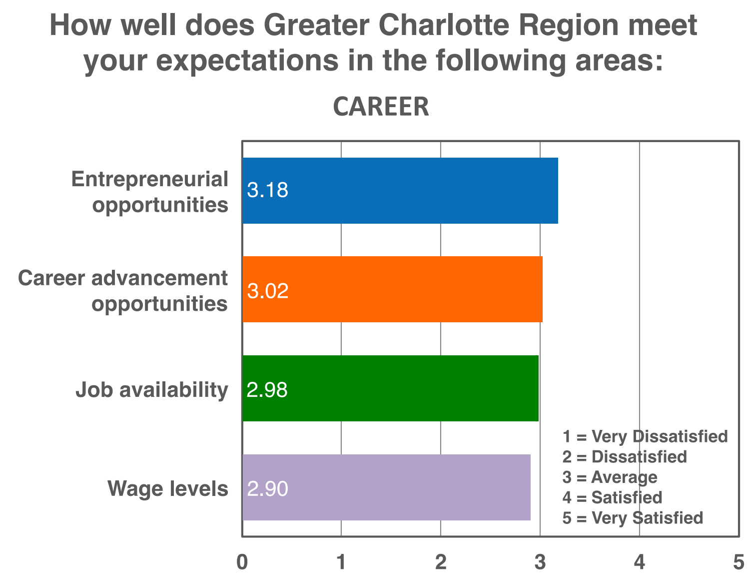

How would you grade the Greater Charlotte Region's economic performance over the past five years?
A 4%
B 40%
C 44%
D 9%
F 4%
0% 10% 20% 30% 40% 50%

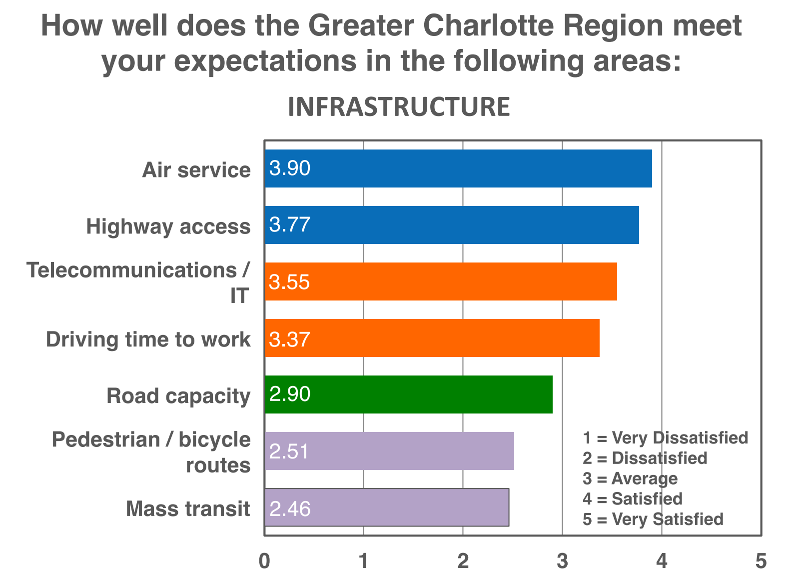

Rate the Greater Charlotte Region's top three competitive strengths
Geographic location 57%
Cost of living 48%
Business climate 40%
Colleges & universities 24%
Workforce / talent 22%
Business sites / real estate 18%
Lifestyle 18%
Diversity of residents 15%
Natural environment 10%
Transportation infrastructure 10%
Entrepreneurship mindset 9%
Career / job opportunities 8%
Economy 6%
International presence 5%
PreK-12 schools 4%
Other 2%
Government / political 1%
Up to 3 selections were allowed
0% 20% 40% 60%

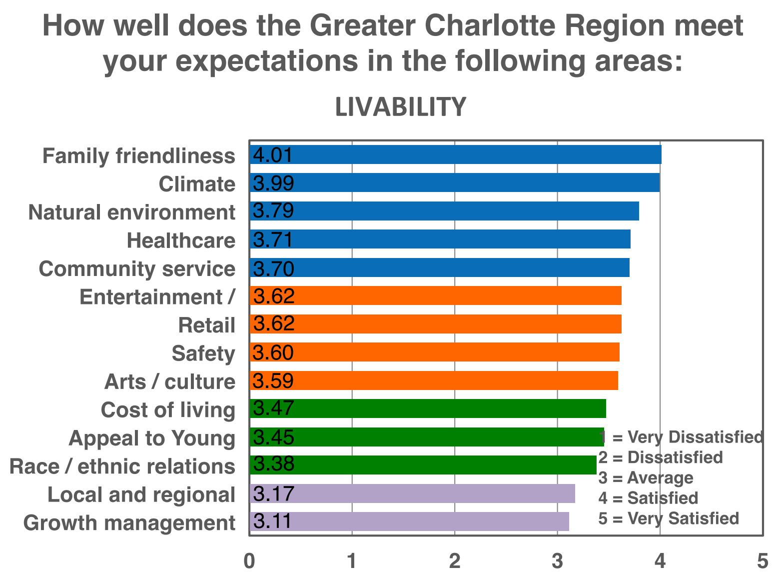

Rate the Greater Charlotte Region's top three competitive weaknesses.
Transportation infrastructure 42%
Government / political 39%
PreK-12 schools 35%
Economy 30%
Career / job opportunities 30%
Workforce / talent 22%
International presence 17%
Entrepreneurship mindset 13%
Cost of living 11%
Business climate 10%
Colleges & universities 10%
Business sites / real estate 8%
Diversity of residents 8%
Lifestyle 5%
Natural environment 5%
Other 4%
Geographic location 1%
Up to 3 selections were allowed
0% 10% 20% 30% 40% 50%

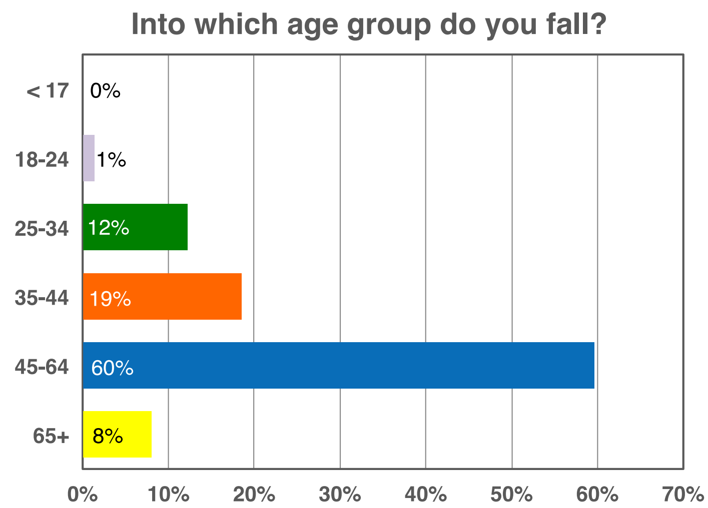

If you were not born in the Greater Charlotte Region, did you relocate here for:
Job opportunity 58%
Other 22%
To be closer to family 10%
After visiting area for vacation 4%
After visiting area for business 4%
Retirement 3%
0% 20% 40% 60% 80%

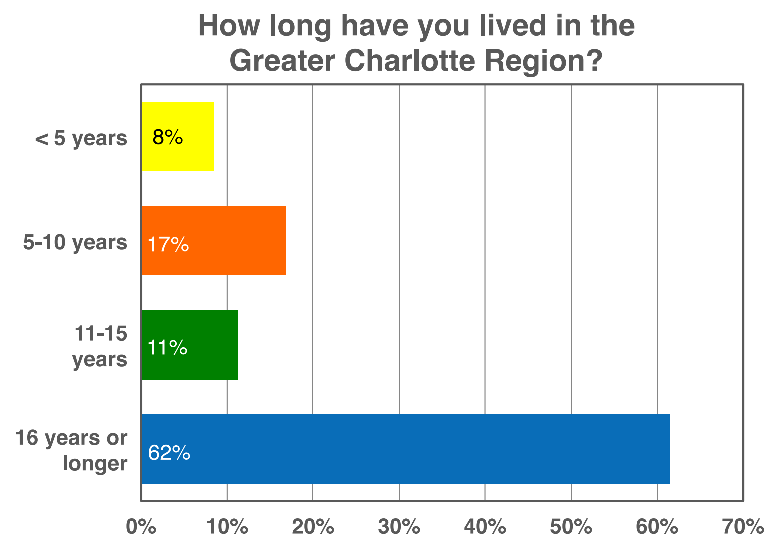

How well does the Greater Charlotte Region meet your expectations in the following areas:
EDUCATION
Community Colleges
4.22
Universities
4.02
Training / skills building programs
3.58
PreK-12
3.45
1 = Very Dissatisfied
2 = Dissatisfied
3 = Average
4 = Satisfied
5 = Very Satisfied
0
1
2
3
4
5


How well does Greater Charlotte Region meet your expectations in the following areas:
CAREER
Entrepreneurial opportunities
3.18
Career advancement opportunities
3.02
Job availability
2.98
Wage levels
2.90
1 = Very Dissatisfied
2 = Dissatisfied
3 = Average
4 = Satisfied
5 = Very Satisfied
0
1
2
3
4
5


How well does the Greater Charlotte Region meet your expectations in the following areas:
INFRASTRUCTURE
Air service
3.90
Highway access
3.77
Telecommunications / IT
3.55
Driving time to work
3.37
Road capacity
2.90
Pedestrian / bicycle routes
2.51
Mass transit
2.46
1 = Very Dissatisfied
2 = Dissatisfied
3 = Average
4 = Satisfied
5 = Very Satisfied
0
1
2
3
4
5

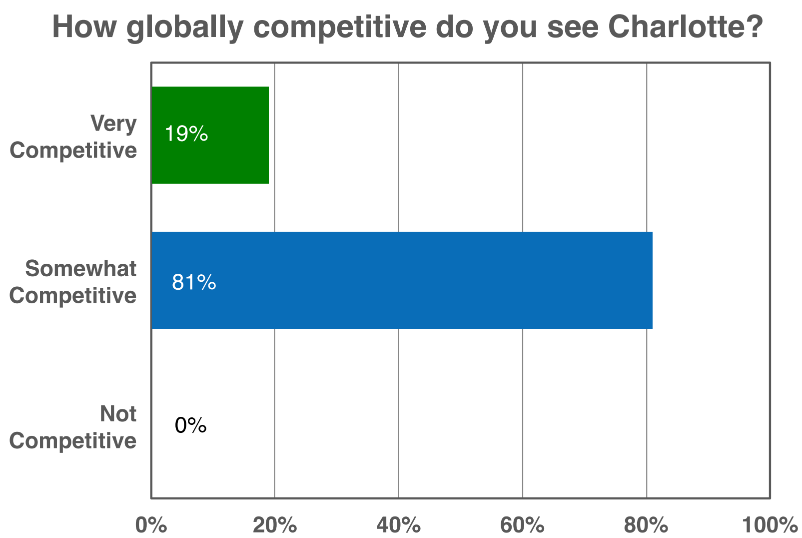

How well does the Greater Charlotte Region meet your expectations in the following areas:
LIVABILITY
Family friendliness
4.01
Climate
3.99
Natural environment
3.79
Healthcare
3.71
Community service
3.70
Entertainment /
3.62
Retail
3.62
Safety
3.60
Arts / culture
3.59
Cost of living
3.47
Appeal to Young
3.45
Race / ethnic relations
3.38
Local and regional
3.17
Growth management
3.11
= Very Dissatisfied
2 = Dissatisfied
3 = Average
4 = Satisfied
5 = Very Satisfied
0
1
2
3
4
5

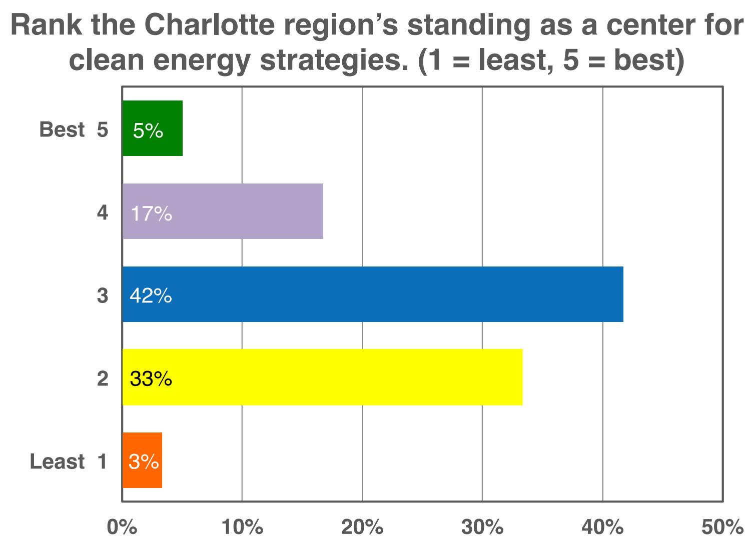

Into which age group do you fall?
< 17
18-24
25-34
35-44
45-64
65+
0%
1%
12%
19%
60%
8%
0%
10%
20%
30%
40%
50%
60%
70%


How long have you lived in the Greater Charlotte Region?
< 5 years
5-10 years
11-15 years
16 years or longer
8%
17%
11%
62%
0%
10%
20%
30%
40%
50%
60%
70%

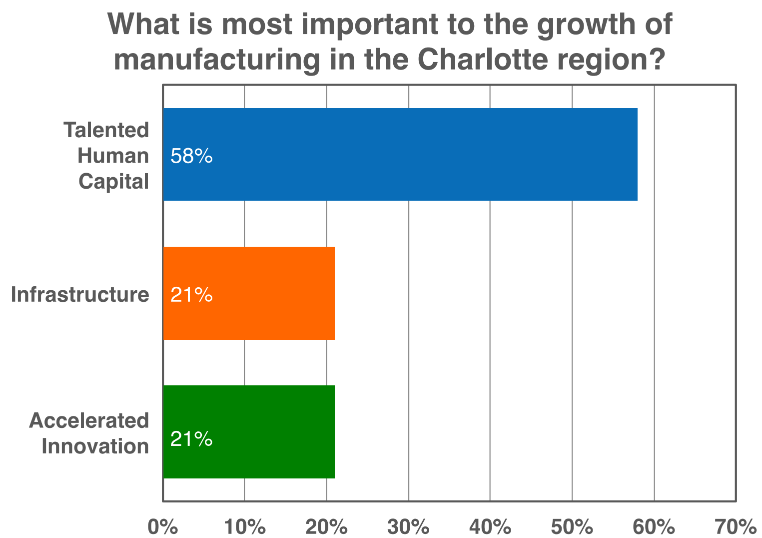
Global Competitiveness Summit

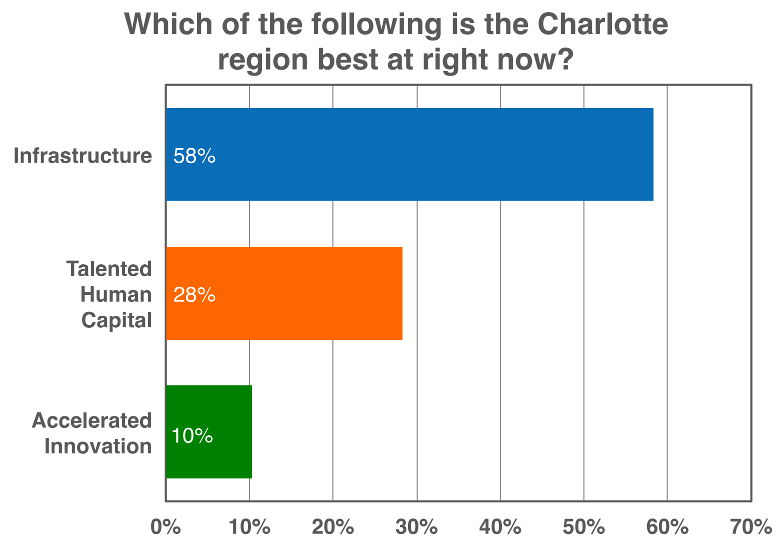
In addition to the online survey, Avalanche Consulting participated in the Global Competitiveness Summit at Central Piedmont Community College on August 10, 2012. During speaker presentations, a poll of the audience was conducted on the community's readiness to compete, future growth opportunities, and collaboration. We present these poll results as valuable contribution to the identification of industry opportunities and growth strategies for the region.

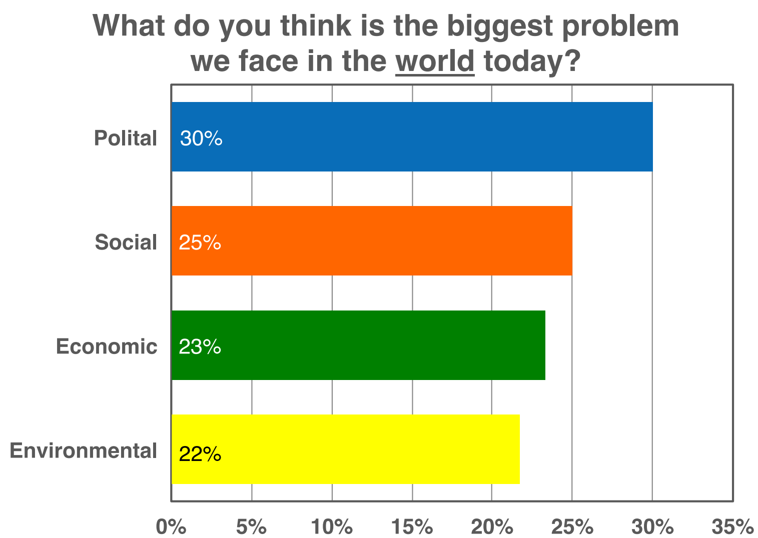


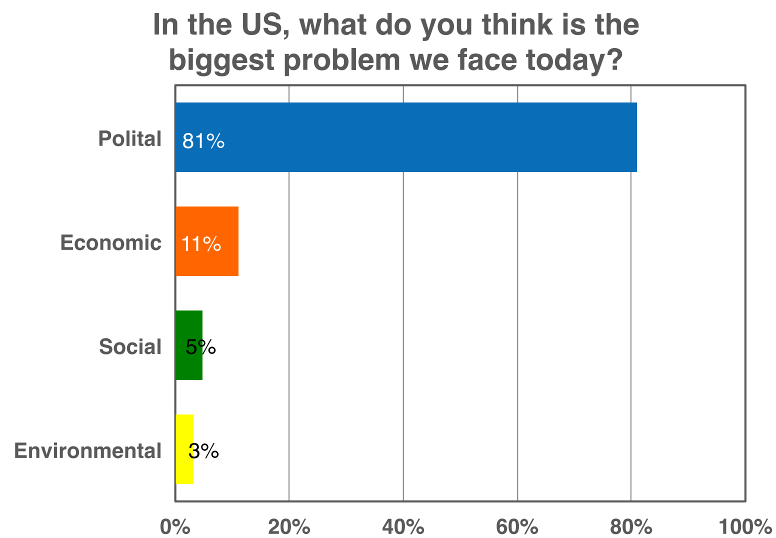


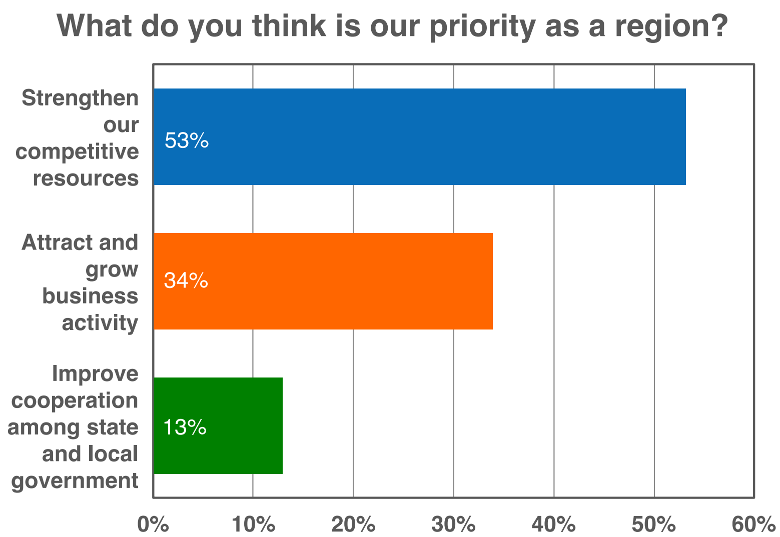
Source: Global Competitiveness Summit at Central Piedmont Community College on August 10, 2012

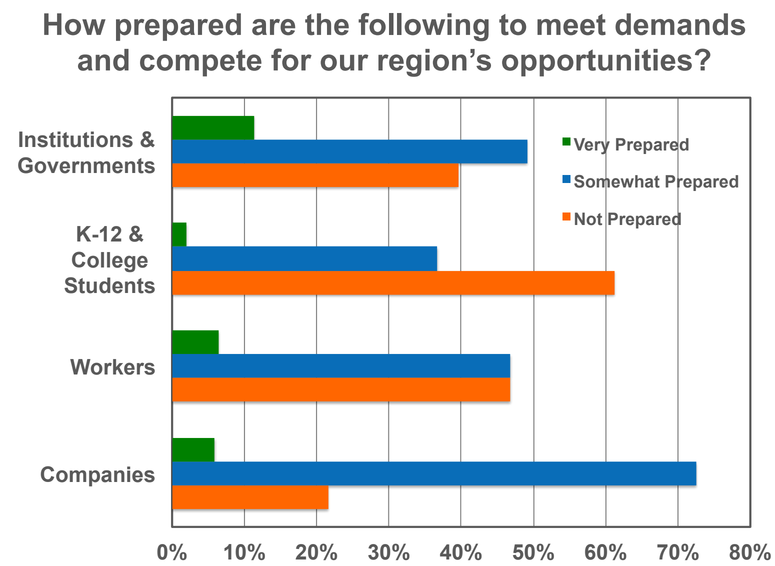

What is most important to the growth of manufacturing in the Charlotte region?
Talented Human Capital
58%
Infrastructure
21%
Accelerated Innovation
21%
0%
10%
20%
30%
40%
50%
60%
70%

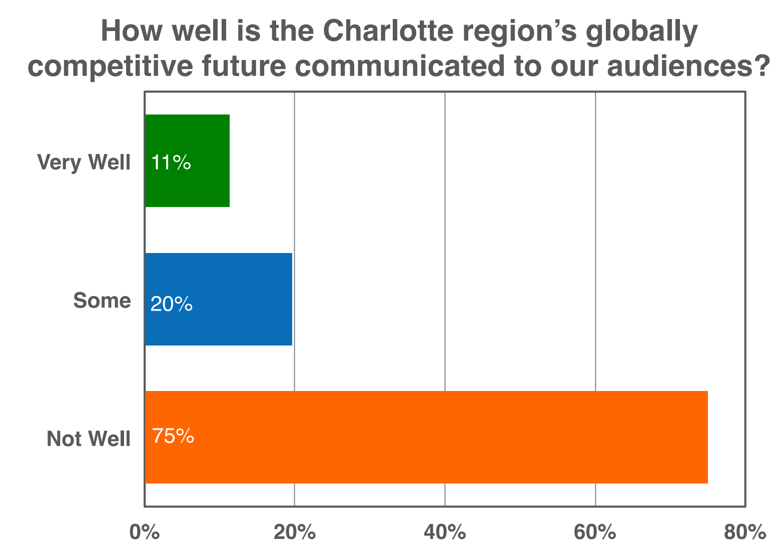

Which of the following is the Charlotte region best at right now?
Infrastructure
58%
Talented Human Capital
28%
Accelerated Innovation
10%
0%
10%
20%
30%
40%
50%
60%
70%

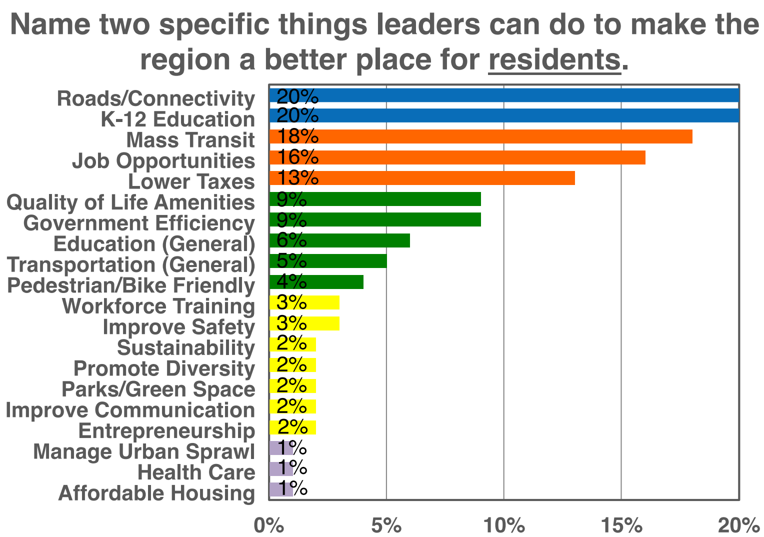

What do you think is the biggest problem we face in the world today?
Polital
30%
Social
25%
Economic
23%
Environmental
22%
0%
5%
10%
15%
20%
25%
30%
35%

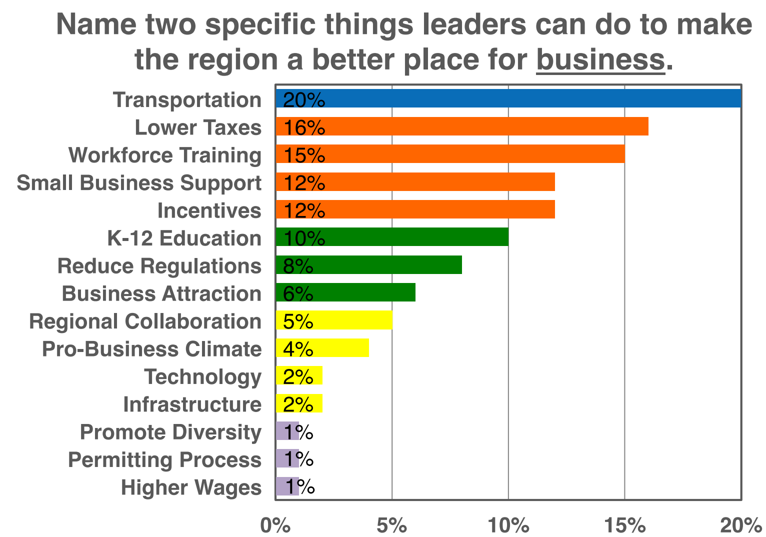

In the US, what do you think is the biggest problem we face today?
Polital
81%
Economic
11%
Social
5%
Environmental
3%
0%
20%
40%
60%
80%
100%


What do you think is our priority as a region?
Strengthen our competitive resources
53%
Attract and grow business activity
34%
Improve cooperation among state and local government
13%
0%
10%
20%
30%
40%
50%
60%


How prepared are the following to meet demands and compete for our region's opportunities?
Institutions & Governments
K-12 & College Students
Workers
Companies
Very Prepared
Somewhat Prepared
Not Prepared
0%
10%
20%
30%
40%
50%
60%
70%
80%


How well is the Charlotte region's globally competitive future communicated to our audiences?
Very Well
11%
Some
20%
Not Well
75%
0%
20%
40%
60%
80%


Name two specific things leaders can do to make the region a better place for residents.
Roads/Connectivity 20%
K-12 Education 20%
Mass Transit 18%
Job Opportunities 16%
Lower Taxes 13%
Quality of Life Amenities 9%
Government Efficiency 9%
Education (General) 6%
Transportation (General) 5%
Pedestrian/Bike Friendly 4%
Workforce Training 3%
Improve Safety 3%
Sustainability 2%
Promote Diversity 2%
Parks/Green Space 2%
Improve Communication 2%
Entrepreneurship 2%
Manage Urban Sprawl 1%
Health Care 1%
Affordable Housing 1%
0% 5% 10% 15% 20%


Name two specific things leaders can do to make the region a better place for business.
Transportation 20%
Lower Taxes 16%
Workforce Training 15%
Small Business Support 12%
Incentives 12%
K-12 Education 10%
Reduce Regulations 8%
Business Attraction 6%
Regional Collaboration 5%
Pro-Business Climate 4%
Technology 2%
Infrastructure 2%
Promote Diversity 1%
Permitting Process 1%
Higher Wages 1%
0% 5% 10% 15% 20%

Section 4:

Strengths, Weaknesses, Opportunities, and Threats

Strengths, Weaknesses, Opportunities, and Threats

The use of the SWOT concept is a traditional but highly effective method to facilitate meetings with stakeholders. A SWOT discussion brings structure to a group discussion and helps participants consider where their opinions should be grouped and prioritized. Listing Strengths allows the group to come to consensus about what should be celebrated in the region. Participants voice their concerns as either weaknesses (present, having negative effects on people or businesses) or threats (if we don't fix this soon, things will get much worse). Opportunities usually reflect the hopes and ambitions of the region, either building on strengths or turning weaknesses into strengths.

The SWOT discussions where backed by detailed data produced by the consulting team. The *Economic & Demographic Assessment* provided an update on the conditions for the region's citizens, businesses, and students. The *Asset Inventory, SWOT, & Target Industries and Competencies* report provided highlights of the strongest assets and actors affecting the region's economic development. Finally, the online survey of residents in the Centralina region provided further public input to the consulting team for their analysis.

On the following pages, we present the summary "SWOT Boxes" for five focus areas:

- Workforce & Education
- Entrepreneurship & Innovation
- Infrastructure
- Business Climate
- Quality of Life

While these summary boxes reflect the focus groups, interviews, research, and survey, they are fundamentally formed from the consulting team's own assessment. The SWOT findings are written by the consulting team based on the best available information and our own expertise working with communities across the US. Many of the observations are focused on the region as a whole; some counties may determine that the findings do not apply; some observations may be specific to a single or multiple counties.

SWOTs are intended to be high-level summaries so that the community and its leadership can understand the key priorities for action in the coming years. We encourage SWOTs to be used as big picture guides, with future workgroups and activities to further define the extent of each issue.

WORKFORCE & EDUCATION

Strengths: • Large, educated and growing young professional population • UNC Charlotte • Good work ethic and low unionization rate • Focus on up-skilling of workforce has occurred in manufacturing • Strong community colleges in every county • Strong technical institutes and private colleges • Downtown Executive MBA programs (Wake Forest University and Northeastern University) • Apprenticeship programs (Apprenticeship 2000 with Siemens) and industry-education collaboration are world-class • Competitive Workforce Alliance and Charlotte Regional Workforce Development Partnership ensures a workforce and college platform for unified collaboration with industry • Emerging collection of Career Academies	Weaknesses: • Some inefficiencies of alignment between education, workforce development, and business community • Disconnect between needed real time workforce skills and immediate industry talent demand • Soft skills lacking for some industries • Low educational attainment levels and adult literacy rates in some counties • K-12 performance varies across counties • Basic skills lacking for high school graduates • Limited medical school presence • No Chemical Engineering program at UNC Charlotte • Difficulty in transferring credits across institutions and across the state line • Limited success in focus on Adult Learners
Opportunities: • Improve communication and collaboration across education, workforce development, economic dev., and business • Align education and workforce development with target industry needs • Collaborate on legislative issues related to education funding • Build on K-12 programs that focus on basic skills development and workforce preparedness • Ensure ongoing technology upgrades in the classrooms will occur with industry support (hardware and software) • Continue to strengthen transitioning of military to civilian careers	Threats: • Over focus on 4-year degrees will create further imbalance in workforce and discourage students from 2-year degree options ("middle skills gap" and K-12 Career path barrier) • Lack of interest in students for apprenticeship programs and technical careers • Teachers and students don't understand which industries and occupations are growing in the region; concerns that technology being taught is already outdated • Retiring manufacturing workers mean that younger workers will need to learn adv. mfg. techniques, automation/robotics • Inadequate/threatened funding for education/workforce dev.

ENTREPRENEURSHIP & INNOVATION

Strengths:	Weaknesses:
• Small Business Development Centers at community colleges • Ventureprise and Packard Place resources and incubators • Growing small business sector • Increased R&D university funding with institutes in medicine, bioinformatics, optics, motorsports, visualization, software • North Carolina Research Campus in Kannapolis • UNCC Charlotte Research Institute • UNCC EPIC – Energy Production and Infrastructure Center • Entrepreneurs are attracted to the region's lifestyle, amenities, and international airport • Historical innovation and industrial entrepreneur heritage	• Fragmented entrepreneurial efforts across counties • New small business formation and growth of small firms has decreased in some surrounding counties • Incentives for entrepreneurs are lacking • Angel investment, venture capital, and micro lending opportunities are significantly lacking • Relatively low concentration of S&T workers for population • R&D assets are not well known or leveraged • Lack of a Tier 1 research university • No clear success stories of modern entrepreneurs that have gone public
Opportunities:	**Threats:**
• Increase collaboration and align entrepreneurial resources across counties for larger impact through the new Charlotte Entrepreneurial Alliance; extend services across counties • Maximize utilization of Charlotte Research Institute and NC Research Campus with entrepreneurship organizations • Collaborate with education and community leaders to build an incubator/accelerator or innovation spaces • Expand entrepreneurship education into all levels of education • Tap mentor expertise; large companies for startup contracts • Widely recognized need to invest in entrepreneurship and innovation across the region	• ED focus on large industries may eclipse public support for programs for small, high-growth • Banking brand for the region will hamper the region's entrepreneurship brand development • Nationally, VC-backed startups are gravitating to a handful of regions; successful startups may be moved out of Charlotte when they are funded by VC's • Charlotte region is historically risk-averse and financially conservative • Concern that state research dollars will not come to the region versus established research locations.

INFRASTRUCTURE

Strengths:	Weaknesses:
• Highly connected road and rail network to first tier markets • Relatively low traffic congestion versus peers • Low electric costs • Accessible geographic location • Excellent air service (domestic and international) Charlotte/Douglas International Airport • Commuter rail • Key location on freight rail of NFS and CSX railroads • Successful initial Light Rail project with funded extension to UNCC that will double size of system	• Many industrial sites not currently certified by the State Department of Commerce (though some are) • Dwindling number of land sites and buildings suitable for industry use means the region could decline in prospect opportunities • Traffic congestion beginning to make mobility within the region difficult • Telecommunications outside of Charlotte can be lacking • Adequate funding of cost for water/sewer needs • Alignment of efficient utility services within the counties • Lack of Fiber Cable access in some rural counties
Opportunities: • Support new intermodal facility and significantly enhance the capacity and integration of the regional distribution network of rail, highway, air, and seaports • Become a "multimodal" region for passengers: rail, highways, bikes, shared vehicles, streetcars, walkable streets • Increase the availability of shovel-ready sites and business parks • Support the expansion of commuter rail lines in congested corridors (such as Charlotte to Mooresville) • Continue to invest in transportation and basic infrastructure to support population and business growth • Good regional planning will mean more efficient (read: lesser cost) financial investment in roads will occur over time • Complete the Freight Mobility Study	Threats: • Traffic congestion is projected to be a significant problem as the region grows (over 50% of workers cross a county line to get to their job); "preferred growth corridors" in the region are also where most congestion exists • Inter-basin transfer of water will continue to be an issue • Lack of a single regional Metropolitan Planning Organization (MPO) means that prioritizing regional transportation investments will require significant government collaboration and citizen participation • Some concern that counties will duplicate facility / industrial park investments – need a strategic regional product mix • Lack of diversified housing in some counties means workers are forced to commute more and industries rate it a negative • Some counties are hesitant and restrictive of growth due to lack of water

BUSINESS CLIMATE

Strengths:	Weaknesses:
• Pro-business environment • Long history of a "Can Do" attitude of region • Relatively low property taxes • Low unionization rate • Local jurisdictions use business investment grant programs • The Charlotte Regional Partnership, Charlotte Chamber of Commerce, and 16 EDC organizations comprise one of the leading and awarded mega-region ED partnerships in the country • Greater Statesville EDC and Mooresville - South Iredell EDC are the national No.1 Micropolitan Site Location Award winner for multiple years including 2012. • Collaboration by all Economic Development Organizations across region	• High state corporate income tax rates • Some reduced and misaligned state incentives inhibit competing effectively • Inability to offer local property tax abatements • Regulatory environment can still be a burden
Opportunities:	**Threats:**
• Streamline government processes across all counties • Identify and expand the availability of competitive incentives throughout the region • Continue to explore local incentives options; consider the benefits of voter-approved ED sales tax in cities • Affirm and support perception that strong political leadership will be required to carry the region forward • Support collective visioning and align initiatives such as the Advantage Charlotte, "Create It, Make It, Move It" strategy, and CONNECT Consortium	• The state loses relocation prospects due to the state's inability to keep project information confidential, e.g. Freedom of Information Act (FOIA) • Local incentives should aim to grow jobs with above-average wages • A bi-state jurisdiction region brings various governmental and collaborative challenges • Potential failure of urban and rural communities to achieve collaborative solutions

QUALITY OF LIFE

Strengths:	Weaknesses:
• Relatively low cost of living, affordable home values for average and upper income residents, Low crime rates • Plentiful recreational amenities • Open spaces, greenways, and bike trails are expanding • Positive recognition of Carolina Thread Trail program in counties • NASCAR and professional sports teams • Thriving arts and culture community in Charlotte • Diverse, open, and progressive community • Uptown Charlotte has been strengthened/modernized and growing downtown population has brought new retail • Small town charm remains throughout region • Close driving distance to both mountains and beach • Region remains a great place to raise a family	• K-12 education is improving but still considered a weakness affecting quality of life and the attractiveness of the region to outsiders; “depends on where you live” is not an acceptable answer when asked about K-12 quality • Limited public access to lake • Lack of connectivity in some towns and counties via sidewalks, bike trails, etc. is lacking • Air quality – nonattainment • Affordable housing issues remain in many jurisdictions • Nightlife for young professionals is improved but still lacking • New edgy districts are emerging but still lacking to meet demands of younger growing demographic (22-44 age range)
Opportunities:	**Threats:**
• Collaborate on regional tourism marketing campaign • Expand convention tourism and junior sports competitions • Embrace growing ethnic diversity from incoming populations to make the region more globally-oriented (incl. tourism) • Generally agreed upon viewpoint (consensus) to avoid the mistakes made by other large metros (transportation planning, extreme commutes, misalignment of work-live-play assets) • Consensus that the next generation of community leaders exists but needs to be better engaged; reenergized leadership plan is needed	• Tourism marketing is often fragmented and inefficient • External perceptions are that Charlotte doesn’t have cultural amenities or nightlife • Growing non-profit community competes for funding and experienced board leadership • Limited local jurisdiction authority limits local funding control and potential future investment • Lack of local funding mechanism make public-private partnership difficult for medium and small cities

Section 5:

Target Recommendations and Profiles

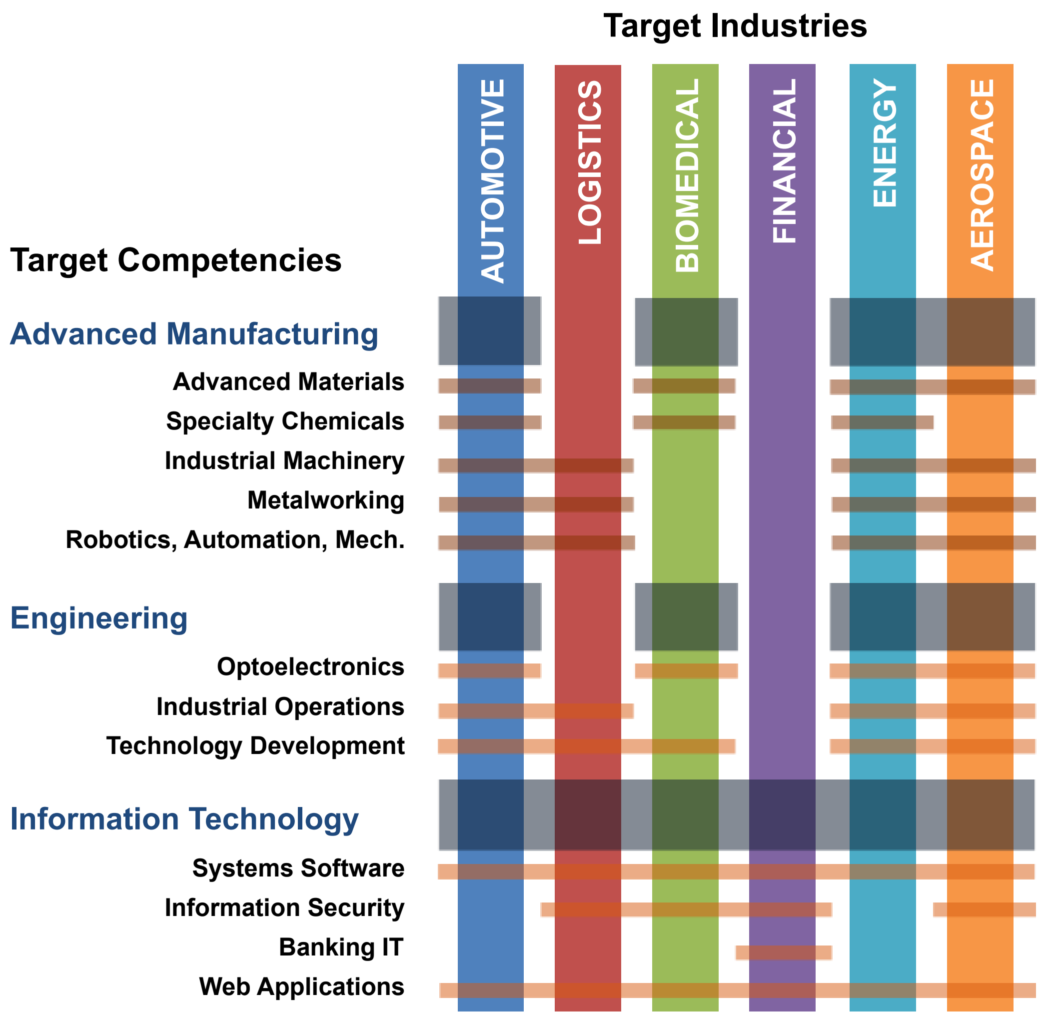
Recommended Targets

The Greater Charlotte Region has numerous Competencies supporting industry growth, from specializations in Advanced Materials and Robotics to Engineering expertise in Optoelectronics and Industrial Operations. The diagram to the right illustrates the identified and recommended Target Industries and Target Competencies for the Greater Charlotte Region and how they intersect.

On the following page, a detailed matrix indicates the specific niche industries within the six major industries to be targeted. Emerging industries are identified in italics.

Target profiles for each industry and competency follow.

Target Competency Matrix – Greater Charlotte Region



Target Industries

Italics = emerging

Automotive	Logistics & Global Commerce	Biomedical & Health
Motorsports	Intermodal Distribution	Biomedical Supplies & Labs
Battery Technology	Warehousing	Regional Health Care
Automotive OEMs	International Logistics HQs	Medical Device Mfg
Auto Suppliers, incl. Plastics	Food Processing & Distribution	*Bioinformatics & Genomics*
Electronic Components	Paper & Wood Product Mfg/Dist.	*Nutritional Sciences*
Financial Services	**Energy**	**Aerospace & Defense**
International & Domestic Banking	Nuclear Components	Aircraft parts suppliers
Investment Banking	Energy Equipment & Components	UAVs
Insurance	Energy Generation & Dist.	Defense Contractors
Back Office	*Clean Energy*	Defense Research
Financial IT		
Corporate Headquarters	**Tourism**	**Film**

Target Competencies

Advanced Manufacturing	Engineering	Information Technology
Advanced Materials	Optoelectronics	Data Centers
Specialty Chemicals	Industrial Operations	Systems Software
Industrial Machinery	Technology Development	Information Security
Metalworking		Banking IT
Chemicals		*Web applications*
Robotics, Automation, Mechatronics		

Aspirational Targets

Software	Health Care	Financial Services
Logistics IT	Clinical Testing	Mobile Banking IT
Data Visualization	Health Care IT	

Automotive

GREATER CHARLOTTE REGION

Industry Definition

The Automotive industry includes automobile manufacturers and their part suppliers, complex internal electronic components, advanced material developers, and alternative fuel researchers.

Niche Subsectors

- Motorsports
- Battery Technology
- Automotive OEMs
- Auto Suppliers, incl. Plastics
- Electronic Components

Strategic Assets

- NASCAR R&D Institute
- NASCAR Technical Institute
- UNCC Charlotte Motorsports Lab and Water Tunnel
- Polymers Center of Excellence
- Manufacturing base
- Numerous motor speedways
- Motorsports educational programs

Key Statistics

- 2,800 motor vehicle manufacturing employees
- 6,700 motor vehicle parts manufacturing employees
- Over $2.25 million in vehicle technology research at UNCC
- 300 engineering graduates a year at UNCC

Why Greater Charlotte?

The Greater Charlotte Region has a long history in motorsports, with numerous racing locales, technical institutions, and motor vehicle and motor vehicle part manufacturers. These assets combined with local materials and electronic components specialties present numerous opportunities in the region.

Logistics & Global Commerce

GREATER CHARLOTTE REGION

Industry Definition

Logistics & Global Commerce includes services related to the storage and transportation of goods, including the local production of goods with regional and global distribution networks such as food and paper products.

Niche Subsectors

- Intermodal Distribution
- Warehousing
- International Logistics HQs
- Food Processing & Distribution
- Paper & Wood Product Mfg./Dis.

Strategic Assets

- Charlotte Douglas International Airport
- Diverse, international industry presence
- Foreign Trade Zone
- New intermodal facility at airport
- Multi-directional rail network
- Seaport access

Key Statistics

- Nearly 700 nonstop flights, including international destinations
- Over 100 distribution centers
- Over 850 foreign-owned firms
- Over 40 languages spoken
- 226,000 employees at foreign US affiliates

Why Greater Charlotte?

The Greater Charlotte Region is a truly international community, with one of the nation's busiest airports, a cutting-edge intermodal distribution facility, rail and seaport access, a Foreign Trade Zone, and a large international business presence. These assets and the high-skill workforce and pro-business environment support continued growth of Logistics & Global Commerce operations.

Biomedical & Health

GREATER CHARLOTTE REGION

Industry Definition

The Biomedical & Health industry includes a range of services and goods related to human health, including production of biomedical supplies, manufacturing of medical devices, research of genetics, provision of health care, and all related support services.

Niche Subsectors

- Biomedical Supplies & Labs
- Regional Health Care
- Medical Device Manufacturing
- Bioinformatics & Genomics
- Nutritional Sciences

Aspirational Targets

- Clinical Testing
- Health Care IT

Strategic Assets

- Carolinas HealthCare System: 3rd largest public healthcare
- US Dept. of Agriculture Human Nutrition Center
- NC Research Campus
- UNCC Bioinformatics Research Center and new medical center
- Diverse training options
- Large patient base

Key Statistics

- 114,000 biomedical and health workers
- Over 14 schools with biotechnology and related programs
- $35 million investment in the Bioinformatics Research Center at UNCC

Why Greater Charlotte?

The Biomedical and Health industry is a rapidly rising star of the Greater Charlotte Region's economy, with the Carolinas Medical Center opening at UNCC, the new Bioinformatics Research Center, nutritional and other research at the NC Research Campus, and a large medical device manufacturing sector. Strong workforce training help support and grow these assets.

Financial Services

GREATER CHARLOTTE REGION

Industry Definition

The Financial Services industry includes operations engaged in financial and insurance activities and support services, including banks, insurance carriers, and back office.

Niche Subsectors

- International & Domestic Banking
- Investment Banking
- Insurance
- Back Office
- Financial IT

Aspirational Targets

- Mobile Banking IT

Strategic Assets

- Large banking sector, including headquarters of Bank of America
- Below-average operating costs
- Large and experienced financial services workforce
- High quality of life and urban amenities at costs lower than other financial centers

Key Statistics

- 14 Fortune 1000 companies HQed
- 2nd largest banking center in US
- $2.13 trillion in assets held
- Over 67,000 financial services employees

Why Greater Charlotte?

Financial Services have played a significant role in the Greater Charlotte Region as the home to Bank of America, and this industry continues to grow as one of the nation's largest banking and insurance centers. The region offers a well-trained workforce, international connectivity, and diverse quality of life amenities, while remaining well below the cost of other large US financial centers.

Energy

GREATER CHARLOTTE REGION

Industry Definition

The Energy sector includes operations vertically engaged in the production of power, including energy equipment and parts manufacturing, electricity generation and distribution, clean energy technology research, and the deployment of energy technologies.

Niche Subsectors

- Nuclear Components
- Energy Equipment & Components
- Energy Generation & Distribution
- Clean Energy

Strategic Assets

- Duke Energy headquarters
- Duke Energy solar initiative
- Nuclear engineering specialties
- Electric Power Research Institute R&D facility
- Proximity to numerous Clean Energy research centers throughout North Carolina

Key Statistics

- Over 4,000 energy related businesses
- Nearly 38,000 energy workers
- Over 4,500 utility workers, primarily in electric power generation, transmission, and distribution
- 39 power plants in the region

Why Greater Charlotte?

The Greater Charlotte Region is committed to becoming the New Energy Capital, supporting the significant regional Energy industry through public support for clean energy, numerous research institutions, strong workforce training programs, and a commitment to developing and manufacturing the new technologies essential to this industry.

Aerospace & Defense

GREATER CHARLOTTE REGION

Industry Definition

Aerospace & Defense includes a broad range of technology manufacturing and research related to aircraft, aircraft parts, propulsion technologies, and other military technologies and equipment.

Niche Subsectors

- Aircraft Parts Suppliers
- UAVs
- Defense Contractors
- Defense Research

Strategic Assets

- Proximity to numerous major aerospace OEM's in Carolinas
- Charlotte Research Institute (CRI) at UNCC
- Center for Optoelectronics
- Advanced materials specialties; Polymers Center of Excellence
- Diverse defense contractor presence

Key Statistics

- Over 1,000 Dept. of Defense contractor firms
- Over 7,200 military employees
- Over 100 aerospace firms
- Nearly 800 aerospace manufacturing employees
- Over 8,000 engineers in the region
- Defense & Security sector employs over 21,000

Why Greater Charlotte?

Aerospace and Defense activities have long played a major role in the Carolinas, with over 15 military installations throughout North and South Carolina and numerous aerospace OEMs and parts manufacturers. The Greater Charlotte Region has a significant presence in this industry, including a large manufacturing workforce and over 1,000 existing contractors.

Corporate Headquarters

GREATER CHARLOTTE REGION

Industry Definition

Corporate Headquarters are the highest level office for a company, hosting executive and executive support staff, responsible for the operations of all branches of the company throughout the country and world.

Major Headquarters

- Bank of America
- Lowe's
- Nucor
- Duke Energy
- Family Dollar
- Sonic Automotive
- Domtar
- SPX

Strategic Assets

- Home to numerous international firms
- Diverse cultural, urban, entertainment, and recreational assets
- Strong school and healthcare systems
- Professional sports and NASCAR
- Relatively low-cost of living

Key Statistics

- 14 Fortune 1000 companies HQed
- 9 Fortune 500 firms HQed
- 2nd largest banking center in US
- 2 professional sports teams
- 93.9 Composite Cost of Living Index (Relative to 100 for US and 226 for Manhattan)

Why Greater Charlotte?

The Greater Charlotte Region is one of the nations largest homes of Fortune 500 firms. The Greater Charlotte Region continues to attract Corporate Headquarters operations from throughout the world due to the region's robust business community, numerous lifestyle assets, including professional sports and outdoor recreation, relatively low-cost of living, and overall quality of life.

Target Competencies

GREATER CHARLOTTE REGION

Advanced Manufacturing

Advanced Manufacturing involves operations engaged in the production of complex equipment, chemicals, and other materials, including industrial machinery manufacturing, fabricated metalworking, and robotic systems.

Niche Subsectors

- Advanced Materials
- Specialty Chemicals
- Industrial Machinery
- Metalworking
- Chemicals
- Robotics, Automation, Mechatronics

Engineering

The Engineering field includes a number of highly specialized technical sectors related to the design and operation of engineering systems, including manufacturing machinery, civil infrastructure, electronic components, and aircraft.

Niche Subsectors

- Optoelectronics
- Industrial Operations
- Technology Development

Information Technology

The Information Technology industry includes a wide range of operations related to the usage and development of technology, including software publishing, computer system design, internet site development, data hosting and processing, and other information services.

Niche Subsectors

- Data Centers
- Systems Software
- Information Security
- Banking IT
- Web Applications

Aspirational Targets

- Logistics IT
- Data Visualization