

# DISCOVER WITH US.

## NORTH CAROLINA'S LIFE SCIENCE SECTOR

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# RESEARCH. INNOVATE. REPEAT.

Three Tier 1 research universities. 22,000+ STEM graduates per year. Largest research park in North America. It's no wonder the life sciences industry in North Carolina is growing more than three times as fast as the national average. North Carolina is among the world's largest and most mature life sciences clusters and is highly specialized in biomanufacturing and clinical research; pharmaceuticals; research, testing and medical labs; and agricultural biosciences. Some of the biggest names in the industry operate in the state, including Grifols, Novozymes, Biogen, IQVIA, LabCorp, and BASF Plant Sciences.

Life sciences companies choose North Carolina for its winning combination of location, talent and training infrastructure, existing industry strength, and business-friendly environment. North Carolina is the 9th largest state in the nation with more than 10 million residents, growing 25% from 2001 to 2017. Our state consistently ranks among the top five in internationally-recognized business environment rankings. Top-tier university partnerships support the industry's continued success. Join the Momentum. Consider North Carolina for your next trade or investment decision.

## INDUSTRY LEADERS



## NORTH CAROLINA'S LIFE SCIENCES ADVANTAGE

With a high concentration of research & development activity, discovery moves faster in North Carolina. The state's life sciences landscape is highly diverse, including contract research organizations, medical device manufacturers, agricultural biotechnology companies, regenerative medicine firms, and health informatics organizations.

### 700+

#### COMPANIES

North Carolina is home to over 700 life science companies that directly employ more than 63,000 highly-skilled people. More than 2,300 additional NC companies provide support specifically to life sciences firms.

### #1

#### BIO MANUFACTURING

North Carolina has the largest biological product manufacturing industry in the U.S. by total employment. Billion-dollar biomanufacturing plants, such as Seqirus, operate in the state yielding innovative new therapies and vaccines.

### #3

#### PHARMA MANUFACTURING

North Carolina has the third largest pharmaceutical industry in the U.S. by total employment, growing more than 3x the national average over the past ten years.

### 36%

#### GROWTH

North Carolina's life sciences industry has experienced steady growth since 2001. This is due, in part, to our top research universities, industry-facing training programs and robust start-up ecosystem.



## NORTH CAROLINA'S LIFE SCIENCES SECTORS

NC's life sciences landscape is highly diverse. Examples of key sectors include:

### HUMAN THERAPEUTICS

Human Therapeutics, including NC's world-leading biomanufacturing and pharmaceutical facilities, enable new high-speed production of vaccines and pharmaceuticals. 250+ pharma companies operate in NC. Researchers at the Wake Forest Institute for Regenerative Medicine are growing human organs from donors' cells.

### RESEARCH & TESTING

North Carolina is home to 150+ contract research organizations that support life sciences companies with a wide range of services, including biopharmaceutical development, biologic assay development, commercialization, preclinical and clinical research and clinical trials management.

### AGRICULTURE

North Carolina is a place where a rich agriculture tradition meets high-tech science to create an unparalleled environment for innovation. R&D at universities and 100+ agriculture companies boost North Carolina's \$86 billion agriculture sector with innovations in plant and animal production.

### MEDICAL DEVICES & DIAGNOSTICS

From medical engineering labs to global manufacturers of medical devices, 160+ North Carolina companies produce breakthrough technologies that enable faster, more precise, and less expensive options for diagnosing and treating medical conditions in animals and people.



In 2015, Denmark-based Novo Nordisk announced a \$1.8 billion expansion in Johnston County, North Carolina, adding 700 new jobs and a new bio-manufacturing facility. The company manufactures insulin, GLP-1 products and prefilled delivery devices for the treatment of diabetes at its Clayton site. It plans to employ over 1,500 people at its two manufacturing facilities in N.C. by 2020.

# PLENTIFUL AND SKILLED WORKFORCE

## 4,900,000

### LABOR FORCE

Largely fueled by domestic in-migration, North Carolina has one of the largest labor forces in the U.S. Since 2010, over 370,000 people have moved to NC.

## 19,000+

### LIFE AND PHYSICAL SCIENTISTS

North Carolina is among the top states for people employed as life and physical scientists. This workforce is projected to grow 6% over the next five years.

## 40,000+

### ENGINEERS

North Carolina's engineering workforce has grown 9% over the past five years, more than twice the U.S. average.

## 22,500+

### STEM DEGREES

North Carolina's educational institutions award more than 22,500 Science, Technology, Engineering and Math degrees and certificates annually, including more than 4,800 biological and biomedical degrees.

## LABOR SUPPLY FOR LIFE SCIENCES INDUSTRY AND MAJOR SUBSECTORS

North Carolina offers life science companies an abundant and affordable supply of labor. NC's life science industry wages are **about 11% below the national average.**

INDUSTRY	NC 2017 JOBS	NC LOCATION QUOTIENT	NC 2017 AVG. ANNUAL SALARY	US 2017 AVG. ANNUAL SALARY
TOTAL LIFE SCIENCES	70,622	1.34	\$94,161	\$104,637
DRUGS & PHARMACEUTICALS	20,775	2.32	\$100,020	\$114,747
RESEARCH, TESTING, & MEDICAL LABS	36,675	1.23	\$98,756	\$108,853
AGRICULTURAL FEEDSTOCK & CHEMICALS	4,563	1.61	\$85,259	\$81,562
MEDICAL DEVICES & EQUIPMENT	8,609	.79	\$65,165	\$90,807

# THE PERFECT CLIMATE FOR GROWING TALENT

North Carolina offers one of the nation's most renowned education systems, supplying companies a pipeline of skilled workers and unparalleled access to R&D resources. In 2017, North Carolina had over \$2 billion in academic life science R&D expenditures, ranking fifth in the nation for total life sciences expenditures.

## UNIVERSITIES UNDERGRADUATE AND GRADUATE DEGREES

Among North Carolina's 53 colleges and universities, there are three Tier 1 research universities – Duke University, UNC Chapel Hill and North Carolina State University. The state boasts five medical schools, four pharmacy schools, and one veterinary school. The Biomanufacturing Training and Education Center (BTEC) at NC State University provides hands-on educational opportunities to develop skilled biotech professionals, as well as customized short courses tailored to meet the needs of specific companies. The Biomanufacturing Research Institute and Technology Enterprise (BRITE) at NC Central University trains the next generation of scientists, particularly in drug discovery and manufacturing technology. The Joint School of Nanoscience and Nanoengineering at NC A&T State University and UNC Greensboro provides students and companies access to state of the art tools and labs.

## COMMUNITY COLLEGES VOCATIONAL DEGREES

The North Carolina Community College System (NCCCS), third largest in the U.S., enrolls more than 800,000 students each year at 58 campuses. The NCCCS BioNetwork consortium delivers courses and certificates at its training facilities, online, at local community college campuses, and at company sites. For example, the Pharmaceutical Services Network at Pitt Community College (PSN@PCC) provides pharmaceutical training in a pilot plant environment with lab scale equipment to teach oral solid dosage theory and manufacturing techniques.



## NCWORKS

### CUSTOMIZED TRAINING PROGRAMS

NCWorks is a free, customized job training and recruiting program for new and expanding businesses. The program offers comprehensive training via our state's community colleges as well as customized curricula tailored to address the specific needs of the life sciences industry. In FY 16-17, NC BioNetwork developed more than 137 customized training courses and served over 90 bioscience companies.

## INDUSTRY RESOURCES

North Carolina has numerous programs and research centers that support life sciences entrepreneurs and businesses. Examples include:

- **The North Carolina Biotechnology Center (NCBiotech)** is a non-profit organization that leads life science economic development in NC with a specialized staff supporting the progression of ideas from the lab to the marketplace. NCBiotech invests in technology development through grants, in company development through loans, and in economic development through grants and support activities.
- **The North Carolina Biosciences Organization (NCBIO)** is a membership organization that advocates for policies that encourage the growth of life science companies, support the development of a strong life sciences workforce, and promote research and technology transfer at universities and other institutions.
- **BioLabs NC**, a biotech coworking facility in Durham, offers premium open lab space, research equipment and a national network that enables life science start-ups reach their milestones faster. BioLabs is one of a number of life science incubators across the state.
- **The North Carolina Research Campus (NCRC)** in Kannapolis is a public-private research center focused on transforming science at the intersection of human health, nutrition and agriculture. NCRC offers companies and researchers turn-key laboratory space and ample opportunities for collaborations.
- **The Council for Entrepreneurial Development (CED)** is a network that connects entrepreneurs with corporate partners, investors, academics, service providers and other organizations. In partnership with NCBiotech and NCBIO, CED hosts an annual Life Science Conference showcasing NC's most exciting and innovative life science companies.



For more than three decades, the North Carolina Biotechnology Center (NC Biotech) has been at the heart of the state's life science transformation, building partnerships and championing innovation. NCBiotech is headquartered in Research Triangle Park (pictured), with regional offices in Asheville, Charlotte, Greenville, Wilmington and Winston-Salem.

# UNMATCHED BUSINESS ENVIRONMENT

#1

## BEST STATE FOR BUSINESS

- Forbes (2018)

#1

## TOP COMPETITIVE STATE

- Site Selection (Prosperity Cup, 2018)

#3

## BEST STATE FOR BUSINESS

- Chief Executive (2018)

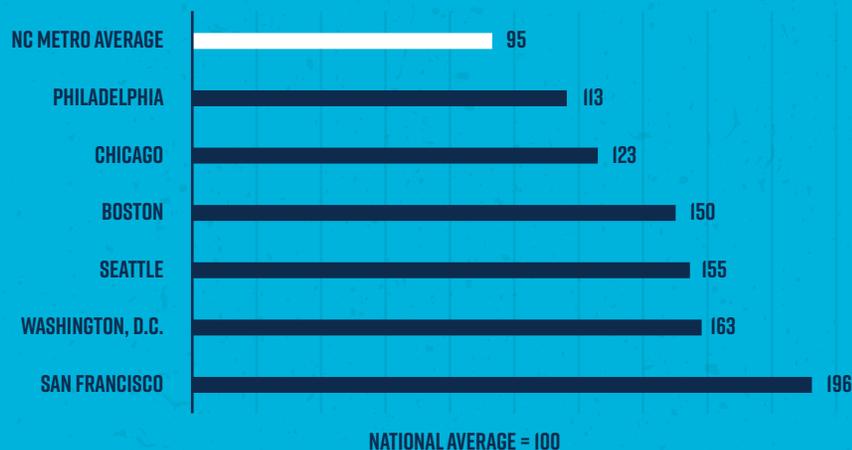
#2

## COMPETITIVE LABOR ENVIRONMENT

- Area Development (2018)

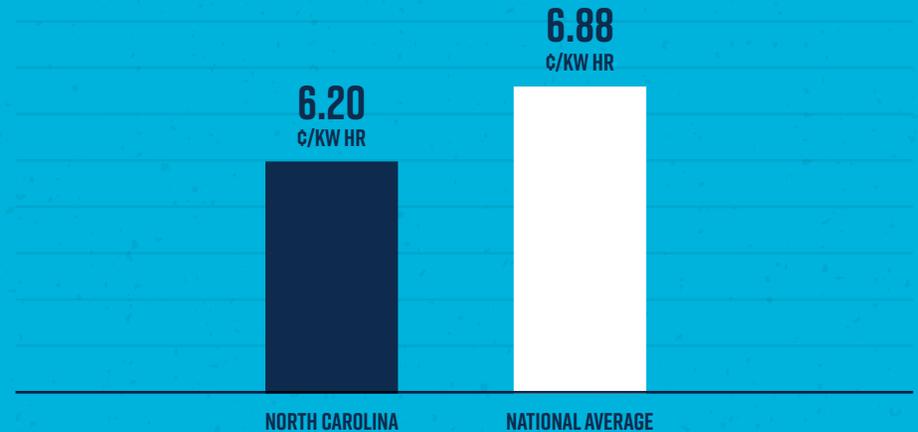
## LOW COST OF LIVING

The cost of living in many of North Carolina's metropolitan areas is well below other life sciences industry hubs.



## LOW ELECTRICITY COSTS

NC's industrial electricity costs are **about 10% below the national average.**



## LOW BUILDING COSTS

Average construction costs in North Carolina's metropolitan areas are up to 16% below the national average.

## UNPARALLELED INNOVATION

North Carolina businesses lead the nation in innovation with 70% patent growth over the past 10 years.

## RIGHT TO WORK STATE

North Carolina is one of 28 right to work states.

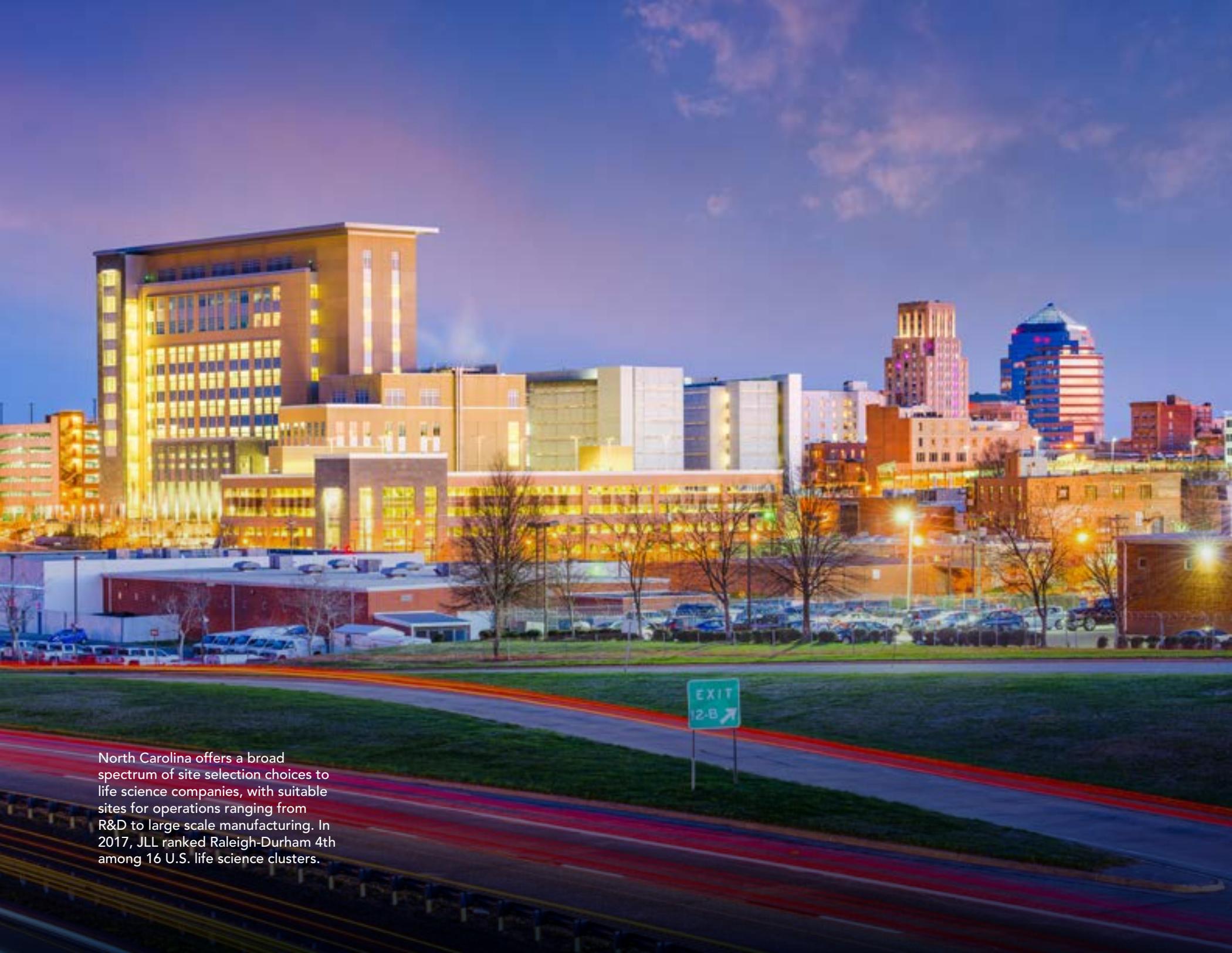
## AAA BOND RATING

North Carolina is one of only four states to earn Standard & Poor's highest rating for over 55 consecutive years.



**AS A LONG-ESTABLISHED BIOTECHNOLOGY HUB THAT ATTRACTS THE NATION'S TOP TALENT, RESEARCH TRIANGLE PARK WAS AN OPTIMAL LOCATION TO EXPAND OUR FOOTPRINT AND COMPLEMENT OUR EXISTING STATE-OF-THE ART MANUFACTURING SITE IN THE CHICAGOLAND AREA.**

**ANDREW KNUDTEN,  
SENIOR VP OF TECHNICAL OPERATIONS, AVEXIS**



North Carolina offers a broad spectrum of site selection choices to life science companies, with suitable sites for operations ranging from R&D to large scale manufacturing. In 2017, JLL ranked Raleigh-Durham 4th among 16 U.S. life science clusters.

# GO BIG. SPEND LESS.

## 2.5%

### CORPORATE INCOME TAX

North Carolina has the lowest rate among the 44 states which levy this tax. NC uses single sales factor apportionment.

## 4.75%

### STATE SALES & USE TAX

Counties levy an additional 2-2.75%. Sales tax exemptions are available for manufacturers, large fulfillment centers, and data centers.

## 5.25%

### PERSONAL INCOME TAX

Standard deduction is \$10,000 for single tax payers, \$20,000 for married couples, and \$15,000 for head of households.

## NONE

### STATE PROPERTY TAX

There is no state-level property tax. Real and personal property taxes vary by local government. In 2018, N.C. had the 7th lowest commercial and 9th lowest industrial effective property tax rates in the U.S.

## INCENTIVES

Targeted, performance-based incentive programs complement North Carolina's competitive cost structure. The Economic Development Partnership of North Carolina (EDPNC) helps companies navigate the incentive process.

### JOB DEVELOPMENT INVESTMENT GRANT (JDIG)

JDIG is a performance-based, discretionary incentive program that provides cash grants to new and expanding businesses to help offset the cost of locating or expanding a business facility in North Carolina. Companies can qualify for a JDIG based on the project location, number of jobs, and average wage. The grant amount is based on a percentage of the personal income tax withholdings associated with the new jobs. A company can use JDIG funds for any purpose.

### ONE NORTH CAROLINA FUND (ONE NC)

One NC is a discretionary cash-grant program that allows the Governor to respond quickly to competitive job-creation projects. The local government must provide an incentive to match the One NC funding. Awards are based on the number of jobs created, level of investment, location of the project, economic impact of the project, and the importance of the project to the state and region. Awards may be used in new or existing buildings for installation or purchase of equipment, structural repairs and/or renovations, construction and/or improvements to utility lines.

### PUBLIC INFRASTRUCTURE & TRANSPORTATION PROGRAMS

North Carolina offers a number of different programs to fund public infrastructure development, including the Community Development Block Grant Economic Development Program, Utility Account, Rural Division's Economic Infrastructure Program, NCDOT's Rail Industrial Access Program, North Carolina Railroad Company's NCRR Invests program, and the NC Department of Commerce's Joint Economic Development Program with the NCDOT.

### BUILDING REUSE PROGRAMS

North Carolina offers two different programs that provide grants to renovate and upfit vacant industrial and commercial buildings including:

- Community Development Block Grant Building Reuse Program
- Rural Division's Building Reuse Program

### OTHER INCENTIVE PROGRAMS

- NCWorks Customized Training Program
- Foreign Trade Zones
- NC Biotechnology Center Economic Development Award
- Recycling Business Development Award Grants
- Golden LEAF Foundation Grants
- Building Demolition Programs

# MARKET ACCESS & TRANSPORTATION INFRASTRUCTURE

North Carolina's robust transportation infrastructure connects companies to domestic and international markets. Ten airports offer commercial services, including four international airports that connect North Carolina to major cities in the U.S. and abroad. North Carolina also has the second-largest state-owned highway system and major controlled-access arteries such as I-95 (running the length of the East Coast), I-85, and I-40 (running from NC to California). Two deepwater seaports and an integrated rail system ensure that North Carolina companies can easily reach suppliers and customers.

## ROADS

### Second-largest state-owned highway system

North Carolina's roads stretch for more than 90,000 miles (145,000 km). The state's central East Coast location offers easy access to the country's most important transportation corridors.

Major controlled-access arteries include:

- I-95, running the length of the East Coast
- I-40, linking North Carolina to California
- I-85, stretching through the manufacturing heart of the Southeast

## PORTS

### Two deepwater seaports in-state with on-dock rail

North Carolina's ports offer fast turn times and capacity for ships carrying up to 10,000 TEUs. Inland terminals in Charlotte and Greensboro provide easy market access. North Carolina companies also enjoy easy access to the Port of Norfolk and the Port of Charleston.

Port of Wilmington

- Container and general cargo operations
- Channel depth of 42 feet M.L.L.W.
- On-terminal cold storage facility and 1M sf of covered storage

Port of Morehead City

- General cargo and bulk handling facility
- Channel depth of 45 feet M.L.L.W.
- 1M sf of covered storage

## AIR

### The world's 7th busiest airport is located in Charlotte

Ten airports offer commercial services, including four international airports that provide easy access to global markets. International airports include:

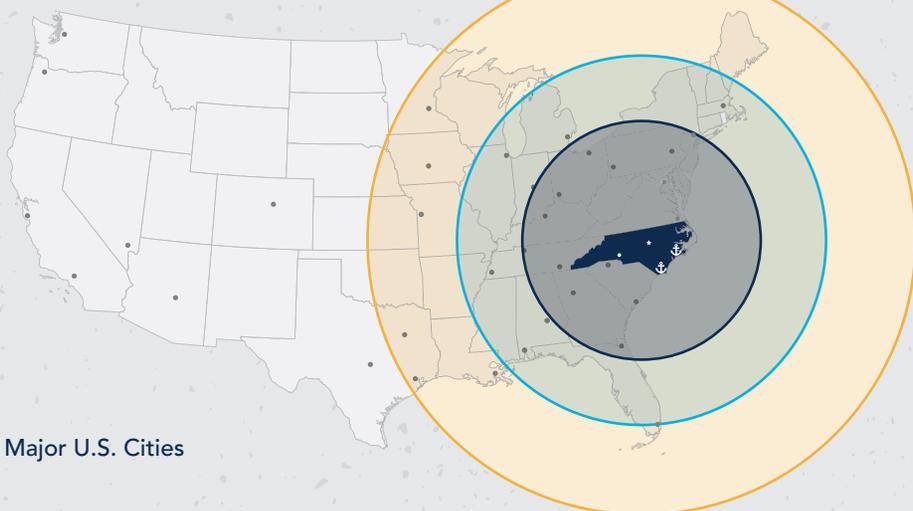
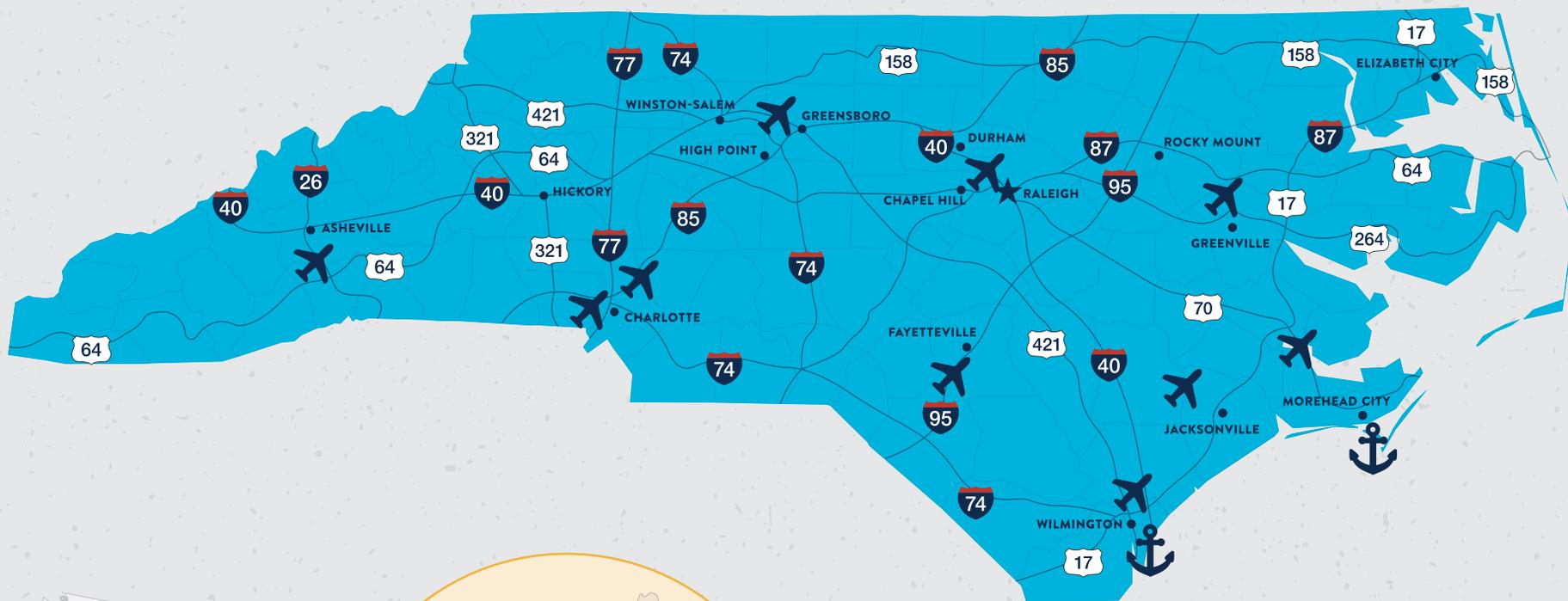
- Charlotte-Douglas International Airport (CLT)
- Raleigh-Durham International Airport (RDU)
- Wilmington International Airport (ILM)
- Piedmont Triad International Airport (GSO)

## RAIL

### Two Class 1 Carriers

North Carolina has more than 3,200 miles (5,100km) of track. Two class 1 carriers, CSX Transportation (CSX) and Norfolk Southern (NS), offer direct service to North American markets and to all major ports along the U.S. East Coast.

- Intermodal service hubs in Charlotte (NS, CSX) and Greensboro (NS)
- Direct intermodal service from Port of Wilmington to CSX terminal in Charlotte
- Major rail yards in Lexington (NS) and Hamlet (CSX)
- 19 regional railroads, including six that connect to both NS and CSX railroads



**178 MILLION CUSTOMERS WITHIN A DAYS DRIVE**

Easily access other major U.S. markets

-   
**8 HOURS**  
 102 M PEOPLE
-   
**12 HOURS**  
 178 M PEOPLE
-   
**18 HOURS**  
 224 M PEOPLE

● Major U.S. Cities



The Charlotte Douglas International Airport (pictured) is the 7th busiest airport in the world and the region's premier air cargo facility. Charlotte Douglas International Airport, Raleigh-Durham International Airport, and other N.C. airports offer world-class service to hundreds of nonstop destinations around the globe.



**NORTH CAROLINA WAS CHOSEN FOR THE LOCATION, FOR THE UTILITY AND TRANSPORTATION ADVANTAGES, AND THE STATE CONTAINS AN EXCEPTIONAL WORKFORCE. IN ADDITION, WE CAN SERVICE OUR CUSTOMER BASE QUICKER AND PROVIDE MORE COST-EFFECTIVE TRANSPORTATION.**

**GERARDO MURAIRA,  
OPERATIONS DIRECTOR, NUTEC GROUP**



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