**WHAT IS CHARLOTTE MOVES?**

Charlotte MOVES is our...

**VISION**
- to shape a new mobility future.

**STRATEGY**
- to leverage transportation to implement the Charlotte Future 2040 Comprehensive Plan.

**PLAN**
- to integrate various modes of travel into a single system that moves Charlotte.

The Charlotte MOVES Strategic Mobility Plan is a supportive measure to the Charlotte Future 2040 Comprehensive Plan. The plan will define a 20-year strategic vision to enhance mobility for our community.

**Charlotte MOVES will...**

1. **Support the goals and objectives of the Charlotte Future 2040 Comprehensive Plan**
2. **Integrate existing transportation plans and policies into a single Strategic Mobility Plan**
3. **Establish new goals for prioritizing transportation investments and measuring progress**
4. **Identify a “Transformational Mobility Network”**
5. **Modernize transportation policies and equip Charlotte to respond to a changing world**
Charlotte MOVES is guided by...

**CHARLOTTE DEPARTMENT OF TRANSPORTATION (CDOT)**
CDOT planning staff are leading and managing the Charlotte MOVES planning process in coordination with other agencies.

**INTERDISCIPLINARY STAFF TEAM**
A “Core Team” of planners, engineers, technical experts, designers, and policymakers from various CDOT and City departments and agencies.

**THE CHARLOTTE MOVES TASK FORCE**
A special task force appointed by Mayor Vi Lyles and chaired by former Mayor Harvey Gantt to assist in the development of the plan by identifying a Transformational Mobility Network and supporting public engagement.

**ADDITIONAL PUBLIC ENGAGEMENT**
Public engagement conducted through previous transportation plans, the Charlotte MOVES Task Force, and ongoing planning efforts will be complemented and updated through surveys and an equity focus group.

**COLLABORATION WITH COMPLEMENTARY PLANNING EFFORTS**
Ongoing collaboration with the Charlotte Future 2040 Comprehensive Plan and other planning teams to align efforts, mine data, and engage residents.
THE STATE OF MOBILITY REPORT

This “State of Mobility Report” is a foundational assessment of the physical conditions and socio-demographic trends that affect how Charlotte moves, documenting our successes and taking stock of our weaknesses. It is not a full accounting of our infrastructure or all information relevant to Charlotte’s mobility. It is simply intended to set the stage for defining and shaping a new mobility future.

DATA SOURCES

This report leverages a variety of data sources that provide unique and foundational data relating to mobility in Charlotte. Those sources that provided a bulk of the data in this report are identified and described below:

Mecklenburg County Quality of Life (QoL) Explorer
The QoL Explorer is an interactive database of more than 80 variables on social, housing, economic, environmental and safety conditions for 462 neighborhood profile areas (NPAs) that was created in partnership by Mecklenburg County, City, and UNC Charlotte Urban Institute.

US Census American Community Survey (ACS)
The ACS is an ongoing survey by the US Census Bureau that collects detailed population and housing information on a yearly basis down to the block group level.

Zillow Research
Zillow Research, which is independent of Zillow’s business goals, provides housing data, including their proprietary Zillow Home Value Index and Zillow Observed Rent Index, which offer smoothed measures of typical home values and market rate rents from a regional scale down to the neighborhood level.

Vision Zero - High Injury Network
Vision Zero is a comprehensive traffic safety initiative focused on eliminating traffic fatalities and serious injuries. Charlotte’s Vision Zero Action Plan was developed using a collaborative process that convened a Task Force of over 50 members from 25 organizations representing a breadth of safety professions and advocates.

US Census Longitudinal Employer-Household Dynamics (LEHD) OnTheMap
LEHD OnTheMap is a web-based mapping platform that provides information on employment that is compiled from several sources, including from the Quarterly Census for Employment and Wages, Office of Personnel Management, and Unemployment Insurance Wage Records.

ESRI Business Analyst Online (BAO)
ESRI BAO is a demographic mapping software that combines population, business, lifestyle, spending, and census data with map-based analytics.

Walk Score
Walk Score, owned by Redfin real estate brokerage, provides ratings between 0 and 100 that measure the walkability, bikeability, and public transit access for a specific location using patented methods of analysis. The scores are based on data from Google, Open Street Map, US Census, US Geological Survey (USGS), and others.

Equity Atlas
Developed as part of the Charlotte Future 2040 Comprehensive Plan, the Equity Atlas looks at built aspects of the City of Charlotte through an equity lens to identify what may need to be added and where. Much of the data in the Equity Atlas utilizes the Mecklenburg County Quality of Life Explorer and US Census data.

Housing & Transportation Affordability (HTA) Index
The HTA Index provides data on housing and transportation costs for population and households across the United States at the regional level down to the block group level. Estimated cost burdens are provided based on the average regional household and illustrate how costs vary between and within regions based on locational characteristics.
SETTING THE STAGE

This section highlights the fundamental and foundational characteristics that influence the Charlotte MOVES process and mobility throughout the City of Charlotte.

SHAPING A NEW MOBILITY FUTURE

Charlotte MOVES derives its vision from the ongoing Charlotte Future 2040 Comprehensive Plan work. The plan outlines a vision statement for mobility:

“Charlotte will provide safe and equitable mobility options for all travelers regardless of age, income, ability, race, where they live, or how they choose to travel. An integrated system of transit, bikeways, sidewalks, trails, and streets will support a sustainable, connected, prosperous, and innovative network that connects all Charlotteans to each other, jobs, housing, amenities, goods, services, and the region.”

We are at a critical moment in Charlotte’s history, punctuated by challenges and opportunities that have the potential to fundamentally change our mobility future. These include supporting equity, COVID-19, climate change, rapid population growth, emerging technologies, rising housing costs, balancing tradeoffs among different modes of travel, and more.

SAFETY
Too many people die traveling on our streets (74 in 2017). A disproportionate number of those fatalities are pedestrians and bicyclists. We must make our streets safe for everyone, regardless of age and ability, or where, when, and how you travel.

AFFORDABILITY
Over half of our household income is spent on the increasing costs of housing and transportation. Our mobility investments should reduce the cost of transportation and make it possible live and work in Charlotte without having to own a car.

GROWTH
We have outgrown our ability to travel the way we used to, and we cannot build our way out of congestion. Our mobility future rests in moving people (not just cars) and requires us to prioritize and invest in a broader range of mobility choices.

ENVIRONMENT
Transportation accounts for 40% of our greenhouse gas emissions. Our streets impact the tree canopy and the runoff in creeks. We must prioritize investments that expand sustainable mobility options and protect our environment and resources.

PROSPERITY
Our mobility investments can do more to expand prosperity throughout our city. We must identify investments that connect people to jobs, move goods and services, strengthen businesses, and support the needs of daily life.

TRANSFORMATION
The way we travel, like no time before, is in a period of creative disruption and rapid transformation. We must accept, adapt, and anticipate new opportunities, technologies, and challenges.
HEALTH
Our health is tied to the way we move and our ability to access daily needs. We must provide healthier active mobility options and expand access to the needs (food, recreational space, health care, etc.) that shape our health and happiness.

DEMOGRAPHICS
Charlotte is becoming increasingly older and more diverse, reshaping the very nature of who we are and what we need. We must re-balance our mobility choices to fit the changing needs of our future city.

EQUITY
We are currently reconciling the negative outcomes of our past decisions. We must further define and prioritize equity in our future decisions so that who you are, where you live, what you look like, and what you make won’t limit your mobility.

REGIONAL
We are the center of the region. How we invest shapes lives within, and beyond Charlotte’s borders. Our mobility and investment strategy must build and strengthen regional partnerships and define shared success.

ALIGNMENT
We are envisioning our future at all levels with transformational plans underway shaping our growth, development, land use, transit, and recreational space. Mobility is a common thread throughout these efforts, and now is the time to align a shared vision.

TRADEOFFS
Our space and resources are limited; accommodating each need equally simply is not possible. We must face the difficult tradeoffs necessary to support under-invested modes of transportation (e.g., walking, biking, transit) to help ensure safe and comfortable transportation choices.
Successfully balancing tradeoffs to support greater transportation equity will be a defining challenge for the Charlotte MOVES Strategic Mobility Plan. As Charlotte grows, needs increase, and available roadway space becomes more constrained, the tradeoffs necessary to support transportation equity interests are becoming more and more challenging.

Other interests like Vision Zero, minimizing traffic congestion, decreasing greenhouse gas emissions, supporting efficient commute times, and managing growth are often in competition, and they require staff and stakeholders to navigate thoughtful tradeoff decisions. One commonality amongst these interests is that they point toward a need for an aggressive and overarching mode shift target to create meaningful change. Mode shift means decreasing the percentage of Charlotteans who drive in cars alone, and increasing the percentage who use other forms of transportation (transit, walking, biking, carpooling, micromobility / shared mobility, and teleworking).

Creating a more sustainable distribution of travel (mode shift) supports transportation equity and affordability. It reduces our reliance on driving, which supports goals around climate, congestion, and growth management. It also creates enhanced travel choices and advances our Vision Zero safety commitment.

Aligning Competing Interests Through Mode Shift:

**SOCIAL/GEOGRAPHIC EQUITY**

*Where We Invest*
Supporting equity requires focusing limited resources on mobility needs identified by vulnerable communities to ensure that people of all ages, abilities, and backgrounds have access to high-quality, affordable transportation choices and equitable access to opportunity.

**MODAL EQUITY**

*How We Travel*
Projects, programs, and policies need to be prioritized that invest in under-invested travel modes (like walking, biking, and transit) to make sure that residents have safe and comfortable transportation choices, no matter how they choose to travel.

A mode shift target provides an appropriate lens to effectively balance tradeoffs between other, sometimes competing, goals.
EMERGING TRENDS

As technology, initiatives, and motivations change within Charlotte, the nation, and the world, it’s critical to understand the forces that most directly affect mobility in our City. These emerging trends present a variety of challenges and opportunities.

**SHARED AND MICROMOBILITY**

Bike share began in Charlotte with the launch of the Charlotte B-cycle system in 2012. Private dockless bike share companies began operating in Charlotte in 2017 and quickly pivoted to e-scooters. Lime, Bird, and Spin are Charlotte’s current e-scooter operators. They are part of an ongoing pilot program which has been continuously evaluated and reformulated with a focus on encouraging responsible rider behavior and closing first/last mile gaps for transit riders. Charlotte has innovated in this field through a unique, data-driven approach to dynamic pricing that supports first/last mile connections and discourages overcrowding in Uptown.

**RIDE SHARE**

Ridesharing companies, such as Uber and Lyft, have grown rapidly since launching in the early 21st century. While providing primarily vehicular transportation, rideshare companies provide an alternative to driving personal vehicles, taking transit, riding a bicycle, or walking to and from destinations. Companies like Uber have drastically changed the landscape for how we think and plan for the growing transportation network. Top rideshare destinations in Charlotte include Charlotte Douglas Airport; music/entertainment venues, restaurants/bars/breweries; sports stadiums; Uptown hotels; and light rail stops.

**NEW TECHNOLOGIES**

Shared lanes for mass transit and autonomous vehicles (AVs) and dedicated areas for AV drop-offs have been piloted in some US cities. These systems will utilize artificial intelligence to adapt to human behaviors. To ensure safety it will be necessary for governments and private companies to coordinate on mapping efforts and the development of AV communication sensors.

**CURB-LANE MANAGEMENT**

As transportation options and new trends like micromobility and ridesharing continue to increase, competition for curb lanes in employment/activity centers is becoming an ever-present challenge. Public transit, parked cars, bikes, scooters, rideshare services, delivery vehicles, and more all use the curb lane. Charlotte is already taking steps toward creating standards for curb lane management to help ensure the most efficient use of that public space resource during peak times. Curb lane management studies are currently ongoing in Uptown and South End.

**THE DELIVERY ECONOMY**

Consumers have been increasingly expanding online ordering and delivery—many for the first time due to COVID-19 (e.g., groceries, pharmacies, etc.). According to Forbes, while traditional retail sales have declined, e-commerce grew 129% in US and Canadian orders between April 2019 and April 2020. In 2020, e-commerce sales are projected to reach $710 billion, or 14.5% of all US retail sales (up from ~$601 billion in 2019; 11% of all sales).

Page Sources: City of Charlotte, Uber, Forbes
Charlotte’s Mobility Evolution

THE EARLY CITY

Trade and Tryon crossroads
- Two major Native American trading paths intersected on high ground in what would become “Uptown” in future generations
- These paths didn’t follow compass directions and became the main streets for the early grid with roughly 400-foot square blocks

Mid 1800s Railroads
- Two main lines and two feeder lines ran through Charlotte with connections to Columbia/Charleston, Greensboro/Raleigh, Statesville, and Wilmington.
- City population doubled during the 1850s spurred by the railroads, an emerging textile industry, and a gold rush

Turn of Century Streetcar Service
- Built to unlock land to be developed in current day Dilworth and to connect first ring suburbs: Elizabeth, Wilmore, Wesley Heights, and Myers Park
- At its peak, the streetcar system had 50 operating trolley cars and 29 miles of track; service ran through 1938

THE MODERN CITY

Auto-Oriented Transportation
- Focus was on highway construction - widening thoroughfares and building major interstates
- I-77 built in late 1960s
- I-85 built from 1960s - 70s
- I-277 built in 1980s
- I-485 started in late 1990s

THE MULTI-MODAL CITY

Investment in Multi-Modal Travel Options
- CATS established in 1998
- LYNX Blue Line Light Rail service begins in 2007
- Investment in regional greenway and rail trail projects like the Cross Charlotte Trail and Carolina Thread Trail
- CityLYNX Gold Line Streetcar service begins in 2015
- Blue Line extension opens and future Silver Line approved in late 2010s
- Investment in technology, micromobility, and shared mobility (e.g., rideshare options, e-scooters, bike share, electric car charging stations)
Charlotte’s Expansion and Annexation

1950
Emerging from World War II, private automobile ownership became the norm for Charlotte households that could afford a car. Growth exploded beyond Uptown, ushering in a period of dramatic suburban growth and expansion. Local and national policies supported the increased suburban growth. They also supported increased racial segregation through redlining and urban renewal.

134,042 Population
30 Square Miles (5% of County)

1980
In the late 20th century, Charlotte emerged as a nationally-significant economic center with strength in the banking/financial services, energy, and logistics/freight industries. Rapid growth continued, characterized by the development of multiple employment/activity centers with sprawling suburban neighborhoods and corridors in between.

395,719 Population
140 Square Miles (25% of County)

2020
The early 21st century saw growth and development guided by major transportation investments like the LYNX Blue Line light rail, Little Sugar Creek Greenway, and I-485. Uptown and areas along the light rail, like South End and NoDa, were transformed by large, mixed-use, multifamily developments. Other centers, such as University City, South Park, Plaza Midwood, Midtown, and Ballantyne, also saw rapid growth and densification through large commercial and multifamily projects. The completion of the I-485 loop has begun to attract significant growth and development in the Prosperity Village area. In between emerging/growing centers, infill development is changing the land use characteristics and transportation demands on major corridors in the City.

877,279 Population
309 Square Miles (57% of County)

Page Source: City of Charlotte
RACIAL AND ECONOMIC PATTERNS

Income

The median household income for the City is around $61,000. Average household incomes in Uptown and SouthPark are around $100,000. The average income within the Arc (introduced on the adjacent page) is approximately $49,705.

Considering the median household income is crucial to understand the associated transportation and opportunity burdens a community—or subset of a community—faces. Access to transportation is one of the highest indicators of job accessibility and economic mobility. A component of the Arc map, income clearly follows the spatial boundary of economic segregation in Charlotte.

Charlotte’s highest income areas are heavily concentrated in a wedge of neighborhoods south of Uptown.

Race

Racial distribution is largely consistent with median household income data. The map to the right shows the percentage of the White population distributed throughout neighborhoods in Charlotte. In 2017, a concentration of White population spanned from south of Uptown to the South Carolina border. A component of the Arc map, race clearly follows a spatial boundary of segregation in Charlotte.

Minority neighborhoods are heavily concentrated within the Arc.
The Arc

One of the early products of the Charlotte Future 2040 Comprehensive Plan process is the “Built City Equity Atlas,” known more commonly as the Equity Atlas. The Equity Atlas examines Charlotte’s built environment and socio-economic characteristics through an equity lens. It identifies an “Arc” of vulnerable populations and communities of color that extends around center city Charlotte to the east, north, and west. This spatial pattern was identified using 1.) household income data, 2.) race data, and 3.) voter participation rates to identify areas of the City most likely to be historically and currently underrepresented. This area of racial and economic segregation is displayed on the map to the left, and will be overlaid on other maps within this document to show how conditions related to mobility may vary inside and outside of the Arc.

Source: Equity Atlas

ARC FAST FACTS

245
Square Miles
(45% of County)

511,064
Residents
(47.9% of City)

199,547
Households
(45.4% of City)

32.7%
White Residents
(11.2% below City Average)

$49,705
Average Income
($12,612 below City average)

+9,350
Residents per Year
(52.2% of City Growth)

269,219
Employed Residents
(44.3% of Workforce)

Source: Equity Atlas
GROWTH AND DIVERSITY

DEMOGRAPHIC FAST FACTS

<table>
<thead>
<tr>
<th>Population Total (2020)</th>
<th>Increase in Population (Since 2000)</th>
<th>Median Age</th>
<th>People Per Day (Meck. County Growth Rate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>877,279</td>
<td>52.5%</td>
<td>34.8</td>
<td>60+</td>
</tr>
</tbody>
</table>

Population Growth

Charlotte has seen significant population increase since 2000 (302,178 people, or 52.5%). The increase was most dramatic between 2000 and 2010, which saw a 28% increase as opposed to a 19.2% increase between 2010 and 2020. Charlotte’s population accounts for roughly 1/3 of the larger Charlotte-Concord-Gastonia Metropolitan Statistical Area (MSA), which has a population over 2.6 million.

Age

As seen on the table to the right, Millennials (roughly approximated by people 25-44) make up the largest share of the population among all generations at 31.4%. However, Baby Boomers (roughly approximated by people 55-74) make up the fastest growing cohort by far. This could be indicative, in part, of national trends that show Baby Boomers and empty-nesters moving back into urban areas from suburban neighborhoods. Given Charlotte’s diversity in age and growth in older populations, it will be necessary for all travel modes, especially biking, walking, and transit, to support people of all ages and abilities.

<table>
<thead>
<tr>
<th>Cohort</th>
<th>2010</th>
<th>2020</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 14</td>
<td>477,963</td>
<td>526,347</td>
<td>10.1%</td>
</tr>
<tr>
<td>15 - 24</td>
<td>291,715</td>
<td>335,681</td>
<td>15.1%</td>
</tr>
<tr>
<td>25 - 34</td>
<td>309,666</td>
<td>375,962</td>
<td>21.4%</td>
</tr>
<tr>
<td>35 - 44</td>
<td>345,570</td>
<td>365,220</td>
<td>5.7%</td>
</tr>
<tr>
<td>45 - 54</td>
<td>325,374</td>
<td>367,906</td>
<td>13.1%</td>
</tr>
<tr>
<td>55 - 64</td>
<td>246,836</td>
<td>332,995</td>
<td>34.9%</td>
</tr>
<tr>
<td>65 - 74</td>
<td>141,369</td>
<td>233,634</td>
<td>65.3%</td>
</tr>
<tr>
<td>75 - 84</td>
<td>74,051</td>
<td>107,418</td>
<td>45.1%</td>
</tr>
<tr>
<td>85+</td>
<td>29,171</td>
<td>40,282</td>
<td>38.1%</td>
</tr>
</tbody>
</table>

Diversity

In Charlotte (seen on the graph to the right), 43% of residents identify as White; 35% identify as Black; and 13% identify as Hispanic. This means that the majority of Charlotte residents are from a minority racial or ethnic group. This breakdown is more diverse than the larger Charlotte-Concord-Gastonia MSA, which is 23% Black and 11% Hispanic.

<table>
<thead>
<tr>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>White, 43.0%</td>
</tr>
<tr>
<td>Hispanic, 13.0%</td>
</tr>
<tr>
<td>Black, 35.0%</td>
</tr>
<tr>
<td>Asian, 6.0%</td>
</tr>
<tr>
<td>Mixed, 2.0%</td>
</tr>
<tr>
<td>Other, 1.0%</td>
</tr>
</tbody>
</table>

Page Source: ESRI Business Analyst. US Census American Community Survey
Population Density by Race

The map below shows population density by race throughout the City, where one dot is equal to 100 people. Charlotte’s population density is generally greater in the urban core and on the south and east sides. The spatial pattern of the Arc is clearly evident in the racial distribution of population density within the City.

Source: US Census American Community Survey
Charlotte is a car-dependent city. 76.6% of Charlotte workers drive alone to work. 23.4% travel by some other mode (e.g., walk, bike, transit, carpool, or telework). That imbalance is a direct result of 1.) Charlotte’s sprawling pattern of growth and development after World War II, and 2.) Charlotte’s historic underinvestment in infrastructure for walking, biking, and riding transit. Charlotte’s car dependence also reflects other challenging issues, like the lack of a connected multimodal network, our transportation sector accounting for almost 40% of greenhouse gas emissions (Strategic Energy Action Plan. 2015.), or the fact that the average household in Charlotte spends nearly a quarter of their income on transportation (HTA Index).

Modal imbalance is a direct result of Charlotte’s sprawling pattern of growth and development.
In general, the farther you live from Uptown, the more likely you are to drive alone to work. This is especially true on the northern side of the City. Higher SOV percentages are seen closer to Uptown in areas outside of the Arc, particularly those areas south of Uptown. The immediate area surrounding Uptown within the Arc is representative of people who are least likely to use SOV travel for their daily commute. Many of these areas also correlate to areas where there are higher percentages of households without access to vehicle.

Source: US Census American Community Survey
AFFORDABLE TRAVEL

Vehicle Access
Roughly 13,000 Charlotte households do not have access to a car. In a City like Charlotte, which has been designed and developed for vehicular travel, it is very difficult to move through the City without one. This is especially true for those within vulnerable communities who are less likely to be able to afford a vehicle.

Almost 13,000 households in Charlotte don’t have access to a vehicle, and the vast majority of these households are within the Arc.

Low-Wage Living
The map to the right shows the areas where workers making $1,250 or less per month live. The figure shows that the concentration of those households with lower incomes are generally within the Arc—to the west, north, and east. These households are less likely to be able to afford a motor vehicle, which highlights the need to improve access to various transportation choices for these residents and workers.

The highest concentrations of low-wage households are primarily within the Arc.
Cost-Burdened Households

This map displays housing cost burden by block group in Charlotte. The United States Department of Housing and Urban Development defines cost-burdened families as those who spend 30% or more of their median income on housing expenses. Areas with the highest housing cost burden include areas inside the Arc close to Uptown (particularly to the north and west) and the University of North Carolina at Charlotte (UNC Charlotte).

44.9% Increase in Charlotte Home Value (Since 2010)
13.4% Increase in Avg. Charlotte Rent Prices (Since 2016)

Households that spend 25% or more of their income on housing:
Within Arc: 48%
Outside Arc: 16%

NOT COST-BURDENED
Less than 25% of income spent on housing

APPROACHING COST-BURDEN
25%-30% of income spent on housing

COST-BURDENED
More than 30% of income spent on housing

<table>
<thead>
<tr>
<th># of Households in Cost-Burdened Block Groups</th>
<th>Approaching Cost-Burdened</th>
<th>Cost-Burdened</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arc Households</td>
<td>50,956</td>
<td>49,215</td>
</tr>
<tr>
<td>Non-Arc Households</td>
<td>19,252</td>
<td>7,660</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>% of Households in Cost-Burdened Block Groups</th>
<th>Approaching Cost-Burdened</th>
<th>Cost-Burdened</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arc Households</td>
<td>24.4%</td>
<td>23.6%</td>
</tr>
<tr>
<td>Non-Arc Households</td>
<td>11.5%</td>
<td>4.6%</td>
</tr>
</tbody>
</table>

Source: US Census American Community Survey
ACCESS TO CRITICAL NEEDS

Critical Needs Index

A successful mobility system should connect the community to those destinations and needs most critical for livability. The map on the adjacent page showcases an index of accessibility to public transportation, grocery stores, public outdoor recreation, and low-cost health care—all basic needs. The Critical Needs Index map shows an aggregate score of the percentage of households within a half mile of each of those 4 categories.

Park Access

The Trust for Public Land (TPL) publishes an annual “ParkScore” ranking for the 100 largest cities in the United States. Currently, Charlotte/Mecklenburg County ranks 95th out of 100. The score takes into account several critical characteristics (acreage, investment, amenities, and access) and scores each characteristic out of 100. As it relates to mobility, Charlotte/Mecklenburg County scored 3 out of 100 on parks access, which takes into account the percentage of population living within 10 minutes of a public park, physical barriers to access, walkability, bikability, safety and more. Improving access to parks through mobility investment is imperative to improving public health and equity within the City.

Improving access to parks through mobility investment is imperative to improving public health and equity within the City.

| 37% | Residents Within 10-minute Walk from Park (National Average: 55%) |
| 6%  | City Land Used for Parks and Recreation (National Average: 15%) |
In general, Charlotte residents that live closer to Uptown and the urban core are more likely to have better access to destinations that fulfill critical needs. Areas near large employment centers like University City and Ballantyne also support greater access to critical needs.
ACCESS TO JOBS

One of the most common daily trips for most Charlotteans is between two places - their home and their place of employment. The identification of important employment characteristics is critical to understanding the needs of Charlotte workers and improving economic vibrancy.

EMPLOYMENT FAST FACTS

<table>
<thead>
<tr>
<th>Industry</th>
<th>Employees</th>
<th>Growth</th>
<th>New Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees in Healthcare</td>
<td>64,828</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employees in Finance and Insurance</td>
<td>62,740</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growth in Transportation and Warehousing Since 2012</td>
<td>33.6%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Economic Engine

Charlotte is the economic engine of a region of over 2.6M people (U.S. Census. Charlotte-Concord-Gastonia MSA. 2019 est.). As the center of the region, how the City invests in its mobility network has significant effects beyond Charlotte’s borders. Roughly half of Charlotte’s employment base commutes from homes outside of Mecklenburg County. Union County (6.4%), Cabarrus County (5.8%), Gaston County (5.4%), and York County, SC (5.4%) are the top origin points for Charlotte workers who commute from outside the County.

Top Industries

Healthcare and Social Assistance, and Finance and Insurance are the two largest industries in Charlotte, with more than 64,000 and 62,000 employees in 2017, respectively. However, Finance and Insurance has seen rapid growth since 2012, with a 33.2% change; whereas Healthcare and Social Assistance increased at less than half that rate over the same time span. Both industries have a strong presence in Uptown, Midtown, University City, and Ballantyne. Healthcare and Social Assistance, Finance and Insurance, Administration and Support, and Waste Management and Remediation account for 30% of Charlotte’s workforce. As these and other office-based industries (like professional and technical services) continue to grow, focus will need to be placed on efficiently moving commuters in and out of employment clusters.
The data from the Quality of Life Explorer (QoL) shown on the map below was used to evaluate the areas within Charlotte that have the highest number of jobs. The map shows clusters of high employment areas in and around Uptown Charlotte, University City, SouthPark, Ballantyne, and the airport. Employment centers with the highest density of jobs per acre are located outside the Arc.

Job Density

<table>
<thead>
<tr>
<th>Density Range</th>
<th>Colors</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 3 Jobs/Acre</td>
<td>Light</td>
</tr>
<tr>
<td>3 - 9 Jobs/Acre</td>
<td>Medium</td>
</tr>
<tr>
<td>9 - 20 Jobs/Acre</td>
<td>Dark</td>
</tr>
<tr>
<td>20 - 45 Jobs/Acre</td>
<td>Very</td>
</tr>
<tr>
<td>45 - 145 Jobs/Acre</td>
<td>Deepest</td>
</tr>
<tr>
<td>Arc</td>
<td>Gray</td>
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</table>

Source: LEHD OnTheMap
ACCESS TO TRANSIT

CATS Service and the 2030 Plan

In November 2006, the Metropolitan Transit Commission (MTC) adopted the 2030 Transit Corridor System Plan (shown at right). Updated in 2019, this long-range plan consists of multiple rapid transit improvements in five corridors, a series of Center City improvements, and bus service and facility improvements throughout the region.

BUS SERVICE
The Charlotte Area Transit System (CATS) operates more than 70 routes that transport over 25 million passengers annually.

RAIL AND STREETCAR
The LYNX Blue Line is about 20 miles long with 26 stations, and operates from I-485 at South Boulevard to UNC Charlotte’s main campus in University City. The rail carried 28,000 riders a day in 2019. The CityLYNX Gold Line is about 1.5 miles long and runs from Uptown to Novant Hospital with six stops.

The LYNX Blue Line carried 28,000 riders a day in 2019.

COVID-19 AND TRANSIT RIDERSHIP
While long term COVID-19 impact on travel behavior has yet to come into focus, regional polling indicates a return to transit in a post-pandemic reality.

Once completed, the 2030 System Plan will encompass 25 miles of commuter rail, 45 miles of light rail, 10 miles of streetcar, and an expanded network of buses and other transit services.

ONGOING EFFORTS
Current efforts to expand public transportation has CATS focused on several primary initiatives that include expansion and improvement of the current bus system and service frequency through Bus Priority Corridors and the Envision My Ride process. Additionally, investment and ongoing efforts related to premium rail transit options include:

- **LYNX Blue Line Extension** (to Ballantyne)
  - 5.5 miles | 5 stations

- **CityLYNX Gold Line Phases 2 & 3** (East to West Cit.)
  - 10 miles | 37 stops

- **LYNX Red Line** (North Meck. County and Mooresville)
  - I-77 BRT (Long-Term: Commuter Rail | 25 miles | 10 stations)

- **LYNX Silver Line** (Matthews to Belmont)
  - 26 miles | 27 stations
Transit Facilities and Access

The map below illustrates the existing transit system with emphasis on access to premium transit (light rail and bus routes that provide 15-minute headways or less during peak hours). Five and ten minute walking buffers (1/4 mile and 1/2 mile respectively) were placed on stops and stations to highlight areas with access to strong transit options. Future transit options (Red Line, Silver Line, and Blue Line Extension) are shown on the map as well.

**BUS RIDERSHIP**
- 78% African American
- 63% commuting to work
- 47% earn < $25,000/year

**LYNX RIDERSHIP**
- 71% African American
- 63% commuting to work
- 45% earn $25,000 - $49,999/year
CAR TRAVEL

Commute Times

The map to the right shows the percentage of commuters who live within Charlotte and travel 20 minutes or more to work. In 2018, the mean travel time to work was about 25 minutes for Charlotte residents.

76.6% of Charlotteans drive alone on their daily commute.

- **24.6** Average Daily Commute Time (Minutes)
- **36.8%** Commute More than 30 Minutes Daily
- **22%** Average Household Income Spent on Transportation (HTA Index)
- **$15,719** Average Annual Household Cost of Driving in Charlotte (City of Charlotte)

Street Connectivity

The map to the right uses data from the Mecklenburg County Quality of Life (QoL) Explorer tool to display the connectivity of the street network by an index number from 1 to 3 for each NPA. The index is calculated by dividing the total number of street links by the number of nodes, which include intersections and end points. A score of one indicates less connectivity and a score of three is indicative of a more connected street system. The City has a goal of having an average street connectivity index of 1.4. In 2018, the mean index value for NPAs across Charlotte was 1.16.

Higher street connectivity provides greater route choice and facilitates efficient multimodal travel.
Roadway Traffic Volumes

Annual average daily traffic (AADT) is a measure of the total volume of vehicle traffic on a highway or road. High traffic roads in Charlotte include I-485, I-277, I-85, and I-77. These interstates are Charlotte’s major thoroughfares and include the inner- and outer-beltlines that encompass Uptown and the greater metropolitan area.

Source: City of Charlotte
WALKABILITY

Sidewalks

According to a recent CDOT study, there are 2,546 miles of sidewalk in Charlotte. Many gaps in the sidewalk network remain. For example, the Charlotte WALKS Pedestrian Plan identified 1,890 miles of missing sidewalks (2015 data). Not surprisingly, research indicates that streets without sidewalks are more likely to have pedestrian crashes. Encouraging walking promotes health and economic benefits.

The biggest determinant of sidewalk availability is the time when the street was originally built. Charlotte’s land development regulations did not require sidewalks on both sides of all new streets until 1998. Areas with more recent investment and development tend to have more sidewalks than older streets.

2,546
Miles of Sidewalk in Charlotte

1,890
Miles of Sidewalk Gaps Identified in Pedestrian Plan (2015)

41%
Households in Arc with Access to Sidewalks
The sidewalk availability map to the right shows the percentage of paved streets that have sidewalks. The data set was last updated in 2015. Sidewalk availability is most prevalent in Uptown and areas directly adjacent to it, especially to the south. In some cases, sidewalk availability increases more towards the edge of the City - this is due to newer developments in those areas which were required to build sidewalks after more comprehensive sidewalk requirements were adopted by Charlotte in 1998.

Source: Equity Atlas
BICYCLING

Bicycle Friendliness

The map to the right displays the bicycle friendliness score by assigning NPAs an index number from 1 to 3. The index is calculated by assessing the street speeds, the bicycle lane miles, and the greenway and multi-use path miles, which is then divided by the total street mileage. A score of 1 indicates less bicycle friendliness, with a 3 being most bicycle friendly. The average score for Mecklenburg County is 1.5, with a score of 1.4 within the Arc, indicating a need to improve the bicycle network citywide. The most bike friendly areas are closest to the urban core where the street connectivity is shown to be higher.

In general, the least friendly areas for biking are located within the Arc. Areas south of Uptown, especially SouthEnd and Dilworth are among the friendliest for biking in Charlotte.

190 Miles of Existing Bikeways (includes greenways/shared-use paths)

0.2% Residents that Bike for Daily Commute

0 # of Continuous Bicycle Facilities Across Uptown

Bike Priority Network

The development of a Bicycle Priority Network is currently underway. The purpose of this is to establish a clear vision and plan for the implementation of a connected regional network that will support travel by bike, scooter, and other micromobility devices. The development of this network was a key recommendation of the 2017 Charlotte BIKES Plan, and it will be a key focus of the Charlotte MOVES Strategic Mobility Plan.

The Bicycle Priority Network is being developed in collaboration with the City’s Bicycle Advisory Committee and with project teams for the Meck Playbook Greenway Master Plan update, the Uptown CycleLink, the Cross Charlotte Trail (XCLT), and the Silver Line Rail Trail. The development of the Bicycle Priority Map is focused on three key principles (to the right):

1. Extend/leverage existing and planned corridors
2. Focus on all-ages-and-abilities (AAA) bicycle facilities
3. Start in and build out

The purpose of the Bike Priority Network is to establish a clear vision and plan for the implementation of connected regional network that will support travel by bike, scooter, and other micromobility devices.
Bicycle Facilities and Access

The map highlights existing bicycle facilities with a focus on access to premium all-ages-and-abilities (AAA) facilities (protected bike lanes, greenways, shared-use paths). Access to these facilities is shown as a half mile buffer (about a ten minute walk). In general, areas around Uptown and to the south have good access to premium facilities, while households within the Arc typically have less access, aside from the University City area.
GREENWAYS & URBAN TRAILS

Regional Greenway Connectivity

Greenways and urban trails are the “superhighways” of Charlotte’s regional pedestrian and bicycle system. They are also the most complete and longstanding part of Charlotte-Mecklenburg’s all-ages-and-abilities (AAA) bicycle network. In public surveys conducted by the County, paved walking and biking trails are typically the #1 requested amenity, with natural surface trails being a close second.

Mecklenburg County Park & Recreation built and maintains the great majority of the greenway system. In recent years, urban trails built and maintained by the City of Charlotte (like the Blue Line Rail Trail, the Uptown CycleLink, and portions of the Cross Charlotte Trail) have become important additions to that greenway network.

COUNTY GREENWAY MASTER PLAN
The current greenway master plan calls for 308 miles of paved trails throughout the County. Today, there are approximately 55 miles of greenways on the ground. The County is in the process of implementing an “accelerated greenway plan” with a goal to build 30 new miles between 2019 and 2023.

CAROLINA THREAD TRAIL (CTT)
The CTT is a regional greenways and blueways system covering 15 counties and reaching 2.9 million people in North and South Carolina. The CTT vision includes more than 1,600 miles of planned trails and 170 miles of blueways. A recent addition is the 6th Street cycle track in Uptown Charlotte, the first two-way, on-street, cycle track facility to be incorporated as part of the CTT network.

CHALLENGES
One challenge to the utility of the greenway network as the backbone of Charlotte’s pedestrian and bicycle system is the fact that nearly all greenway corridors follow creeks. This has implications in two major ways described below.

Lack of East-West Connections
Since nearly all greenway corridors follow creeks, and most creek corridors in the Charlotte region run on a north-south orientation, there are very few east-west greenway connections across the City. So, in addition to the planned greenway network, the current greenway master plan calls for an additional 200+ miles of “overland connectors” along streets to improve east-west connectivity.

Climate Resilience
Most greenways are within floodplains. As a result, much of Charlotte’s bicycle network is under water during rain events. A recent analysis by CDOT revealed that the City loses as much as 44 miles (or 24%) of its bike network after significant rain events. The impacts to those segments can last for days until floodwaters recede and sedimentation/debris is cleared (see map on page 33).
Regional Greenways & Urban Trails Vision

This map illustrates regionally-significant greenways and urban trails. It does not include all existing and planned pedestrian/bicycle facilities. The map is a "living document" that is regularly updated and maintained by CDOT to help illustrate a regional bicycle/pedestrian vision.

MAJOR REGIONAL BIKEWAYS
- Mooresville to Charlotte Trail (MCT)
- Cross Charlotte Trail (XCLT)
- Blue Line Rail Trail
- Silver Line Rail Trail
- McAlpine / Campbell / Irwins Creek Greenways
- Paw / Irwin / Stewart / Sugar / Steele Creek & Walker Branch Greenways
- Briar Creek Greenway / Independence Park / Fairview Trail

Indicates Existing Segment
Indicates Planned/Funded/Future Segment
Major Roadway
Waterbody

Source: City of Charlotte
HEALTH & SAFETY

Vision Zero

Vision Zero is a comprehensive traffic safety initiative focused on eliminating traffic fatalities and serious injuries. Vision Zero distinguishes itself from traditional road safety approaches by acknowledging that human error is inevitable, but that it should not be fatal. That approach puts emphasis on the shared responsibility of designers, decision-makers, and users.

Charlotte’s Vision Zero Action Plan was developed using a collaborative process that convened a Task Force of over 50 members from 25 organizations representing a breadth of safety professions and advocates—including public health professionals, law enforcement agencies, transportation engineers and planners, emergency response professionals, and activists. The Vision Zero Task Force jointly developed the following commitment statement to guide the effort:

“As a community, it’s our responsibility to eliminate traffic deaths and serious injuries for all who share Charlotte streets by 2030.”

In order to focus citywide safety efforts, Charlotte employed a data-driven approach to Vision Zero that revealed key characteristics of crashes with fatal and serious injuries. For example, Vision Zero data analysis showed that:

1. 100% of fatalities and serious injuries occur on just 10% of Charlotte’s streets (also known as the High-Injury Network, or HIN).
2. Speeding accounts for 44% of all traffic fatalities in the City of Charlotte.
3. People walking and bicycling are involved in less than 3% of all crashes but account for nearly 44% of all traffic deaths, reaffirming that pedestrians and cyclists are the most vulnerable users of roadways in Charlotte.

HISTORIC CRASH DATA

The chart to the right showcases historic crash data annually since 2009. The bars highlight the number of people killed or severely injured (KSI) by which travel mode was involved in each year.

100% of fatal/serious injury crashes occur on just 10% of our streets.

Public Health

More than half of the deaths in Mecklenburg County are caused by chronic diseases. (Mecklenburg County Public Health: Behavioral Risk Factor Surveillance Survey. 2016.) These deaths are disproportionately linked to ‘place’ in Mecklenburg County. Six zip codes in the County, all located within the Arc, have been designated a Public Health Priority Area because rates of chronic disease, infectious disease, and death are up to 10% higher than other areas. (Mecklenburg County Public Health: State of the County Health Report. 2018.) Social determinants of health, including transportation, public safety, and the availability of food, housing, and health care, play a significant role in these outcomes.
The High Injury Network is used to identify locations where investments in safety are most urgent. It illustrates the 10% of Charlotte’s streets that account for all fatalities and serious injuries. The Killed or Severely Injured (KSI) score shows the combined and weighted score for each roadway segment on the HIN, reflecting both the severity and number of crashes.
SUSTAINABILITY & RESILIENCY

Climate change is one of the most critical issues affecting our society today, and transportation is an important contributing factor in the pollution levels that lead to negative effects from climate change. Charlotte’s Strategic Energy Action Plan (SEAP) is the guiding document for environmental sustainability in the City.

The SEAP supports two primary goals that were adopted by City Council in November 2017:

1. **Strive to become a low carbon city by 2050, with each person emitting less than 2 tons of CO2e per year (Charlotte is currently at 12 tons of CO2e per person per year).**

2. **Strive to source 100% of energy use in municipal buildings and fleet from zero carbon sources by 2030.**

While the SEAP does not outline specific transportation mode shift goals, it clearly states mode shift is critical to achieve the emissions reduction target.

AIR QUALITY

According to Mecklenburg County air quality data, over the past 15 years, air quality has notably improved in the Charlotte-Concord-Gastonia MSA (see chart to the right). Nearly 250 days of the year in 2019 were “Good” quality compared with a little more than 100 days in 2004 and about 150 days in 2010.

In 2020, early data from the Environmental Protection Agency has shown improved air quality, likely due to the circumstances of the pandemic and reduced travel.

Over past fifteen years, air quality has notably improved in Charlotte-Concord-Gastonia MSA

BIKE NETWORK RESILIENCY

Building a sustainable and resilient transportation network means 1) reducing the impact of transportation on climate change and 2) planning for its effects. For example, severe rain events are becoming more common as a result of climate change. Most greenways are within floodplains. As a result, between 25 and 44 miles of Charlotte’s bike infrastructure disappears under water during rain events. That represents 13% - 24% of the total bike network. Planning for a more climate-resilient transportation system means we can’t be too dependent on our greenways as the only pedestrian and bicycle superhighways in Charlotte. We have to build a more complete on-street pedestrian and bicycle network.

44 Miles of Bike Facilities Under Water During Severe Rain Events

24% of Total Bike Network Under Water During Severe Rain Events
The map below showcases the roadways and bicycle network facilities that are adversely affected during severe rain events. These facilities are prone to flooding during severe rain and flood events because of their elevation. The majority of roadways affected fall within the Arc, which creates transportation issues for communities that may already struggle to easily move around the City. The majority of the affected bicycle network is south of Uptown, outside of the Arc.

Source: City of Charlotte
HOW DO WE COMPARE?

This section provides a comparison between Charlotte and peer cities to illustrate how Charlotte is performing on key metrics related to mobility.

PEER CITY BENCHMARKS

Peer Cities

The four cities profiled were selected from the peer city set identified in the Charlotte Growth Factors Report that was developed as part of the Charlotte Future 2040 comprehensive planning effort. They are all fast-growing U.S. urban centers that possess comparable and aspirational characteristics when compared to Charlotte. Like Charlotte, they are each grappling with modernizing their transportation systems, housing affordability concerns, and similar land use patterns. Showcasing these comparisons provides greater insight and context for evaluating Charlotte’s current mobility reality.

CHARLOTTE
877,279
Population

AUSTIN
964,254
Population

MINNEAPOLIS
425,403
Population

NASHVILLE
692,587
Population

DENVER
734,134
Population
GROWTH AND AFFORDABILITY

Housing Affordability

When compared with the City’s peers, housing costs may seem relatively affordable for a desirable urban center, but in Charlotte, housing costs have been increasing at a faster rate than in the peer cities. While Charlotte has historically had the lowest, or nearly the lowest, average home value of the peer cities, home values have increased at a faster rate than the other cities in recent years, with Nashville being close behind. Rent trends in the peer cities have followed a similar pattern. Average rent in Charlotte has consistently been lower than the other peer cities in recent years, but it has grown at a significantly faster rate than the next closest peer city, Minneapolis.

Population Growth

The Charlotte region’s population base and explosive growth over the past several decades is most similar to Austin’s trajectory. Both regions’ population of nearly 400,000 in 1980 grew to over 1 million in 2020. While Austin and Charlotte more than doubled in size over those four decades, the other peer cities grew by an estimated 44% or less over the same period.

Charlotte has grown by 161.3% since 1980.

HOUSING AND TRANSPORTATION COST BURDEN

According to the H&T Index, three of the five cities are above the threshold of 45% for being considered housing and transportation cost-burdened. Charlotte has the greatest burden with the average household paying 51% of their household income toward housing and transportation costs, in part due to higher-than-average transportation costs. Nashville and Austin have the next highest cost burdens at 47% and 48%, respectively.

HOUSING AND TRANSPORTATION COST BURDEN

<table>
<thead>
<tr>
<th>City</th>
<th>H &amp; T Costs % Income (Avg)</th>
<th>H &amp; T Costs % Income (Range)</th>
<th>H &amp; T Costs &gt;44% Income</th>
<th>Housing Costs % Income</th>
<th>Housing Costs &gt;30% Income</th>
<th>Transportation Costs % Income</th>
<th>Median Household Income</th>
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<tbody>
<tr>
<td>Charlotte, NC</td>
<td>51%</td>
<td>24% - 116%</td>
<td>62.9%</td>
<td>29%</td>
<td>34.2%</td>
<td>22%</td>
<td>$61,993</td>
</tr>
<tr>
<td>Austin, TX</td>
<td>47%</td>
<td>28% - 98%</td>
<td>48.9%</td>
<td>28%</td>
<td>28.3%</td>
<td>19%</td>
<td>$71,543</td>
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<tr>
<td>Minneapolis, MN</td>
<td>38%</td>
<td>15% - 79%</td>
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<td>17%</td>
<td>16%</td>
<td>$63,590</td>
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<tr>
<td>Nashville, TN</td>
<td>48%</td>
<td>20% - 106%</td>
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<td>24%</td>
<td>20.2%</td>
<td>18%</td>
<td>$68,377</td>
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</table>

Page Sources: US Census American Community Survey, HTA Index
CHARLOTTE MOVES | STATE OF MOBILITY

MODE SPLIT & TRAVEL TO WORK

Mode Split

In both Charlotte and Nashville, more than three of every four commutes are by single occupancy vehicles (SOVs), the highest shares of the peer city set. Carpooling and working from home make up a bulk of the remaining commute types in both areas. While SOVs still make up a majority of trips, Minneapolis has the most balanced distribution of commutes across all modes.

Commute time

The mean travel time to work ranges from 22.3 minutes in Minneapolis, which has the highest walk/bike/transit scores, to 24.6 minutes in Charlotte, which had some of the lowest scores and highest rates of car-dependency.

Charlotte experiences the highest mean travel times compared with the other peer cities.

Vehicle Access

Minneapolis has the highest percentage of households without access to a vehicle at 8.2%, largely driven by the convenience of other modes for moving about the city. Vehicle access is highest in the two peer cities that scored most car-dependent: Nashville and Charlotte.

High SOV rates, commuting times, and vehicle access show significant car-dependency in Charlotte.

Page Source: US Census American Community Survey
WALK - BIKE - TRANSIT

Walk Score

Walk Score measures the walkability of any address using a patented system. For each address, Walk Score analyzes hundreds of walking routes to nearby amenities. Points are awarded based on the distance to amenities in each category, as well as population density and road metrics.

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<td>Austin, TX</td>
<td>26</td>
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<tr>
<td>Charlotte, NC</td>
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</table>

Bike Score

Bike Score measures whether an area is good for biking. For a given location, a Bike Score is calculated by measuring bike infrastructure (lanes, trails, etc.), hills, destinations and road connectivity, and the number of bike commuters.

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Transit Score

Transit Score is a measure of how well a location is served by public transit. Transit Score is calculated by measuring nearby transit routes based on the frequency, type of route, and distance to the nearest stop on the route.

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Page Source: WalkScore.com