

DCHC STATE OF THE REGION SUMMARY 2019

**2019
STATE OF
THE REGION**

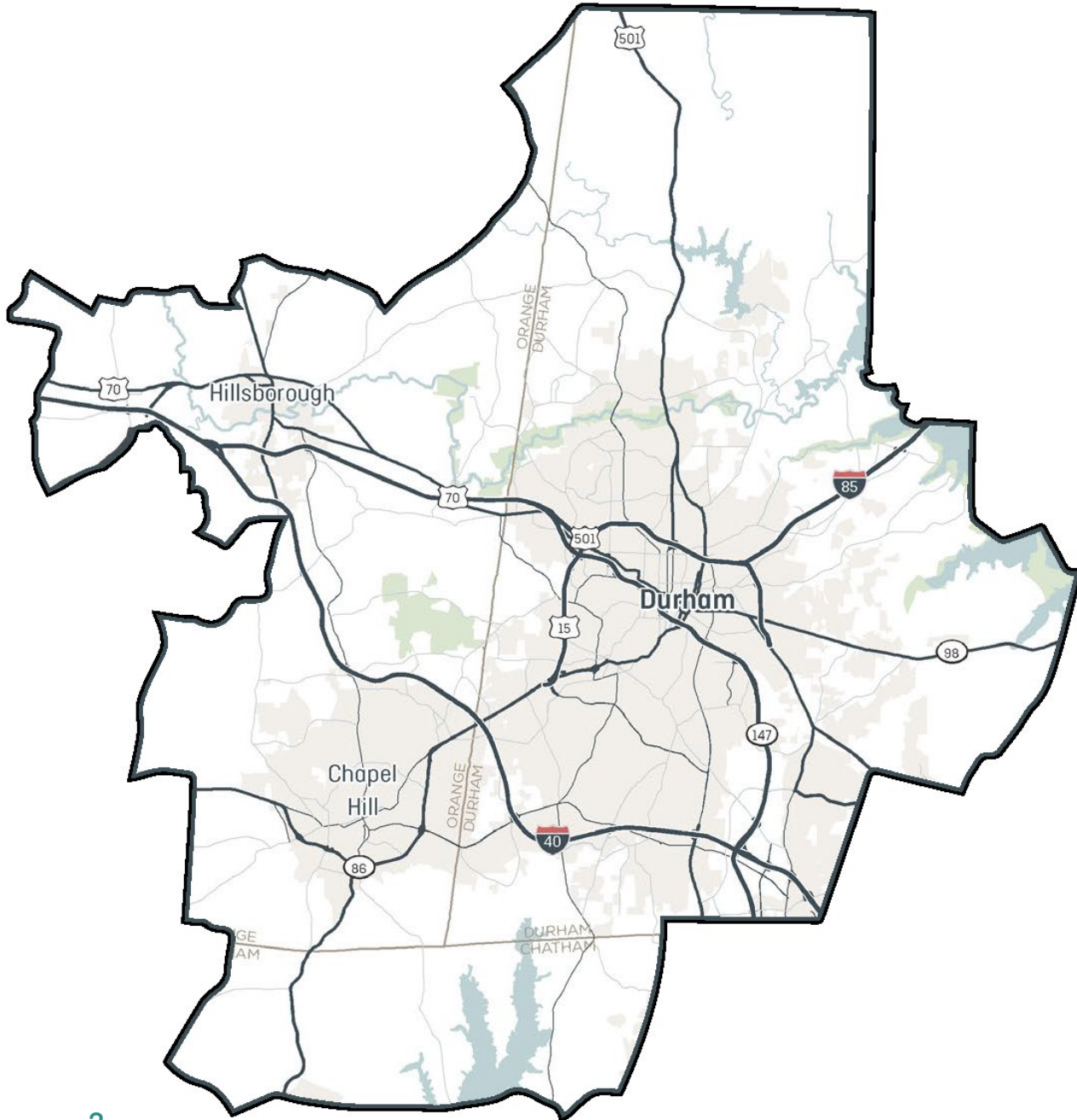
DCHC
Metropolitan Planning Organization
Planning Tomorrow Today



Prepared by: RENAISSANCE
PLANNING

INTRODUCTION

STATE OF THE REGION 2019



**THE DCHC REGION
INCLUDES ALL OF
DURHAM COUNTY AND
PARTS OF ORANGE AND
CHATHAM COUNTIES**



WHAT IS THE STATE OF THE REGION?

The State of the Region report is a snapshot of the Durham-Chapel-Hill-Carrboro (DCHC) Metropolitan Planning Organization (MPO) region's transportation system and the issues, trends, opportunities, and challenges faced in providing effective and efficient transportation for all users. The State of the Region is a function of population and economic growth patterns and transportation system investments. These patterns affect mobility and safety outcomes. Those outcomes guide continued investment. This report tells that story through five topical chapters.

TOPICS & FOCUS AREAS



POPULATION &
DEMOGRAPHICS



ECONOMY



REGIONAL
STRUCTURE



MOBILITY

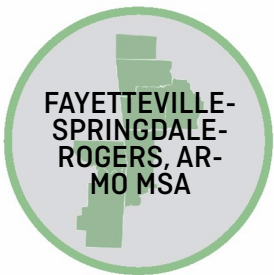


SAFETY

- The State of the Region report covers five specific topics relevant to understanding transportation and growth dynamics in the region.
- Each chapter contains an introductory section; key findings for each topic are introduced and discussed.
- At the end of each chapter are a series of metrics that help understand the dynamics of the chapter's topic.
- Each metric has indicators telling the story of the state of the region.

PEER REGION COMPARISONS

DCHC

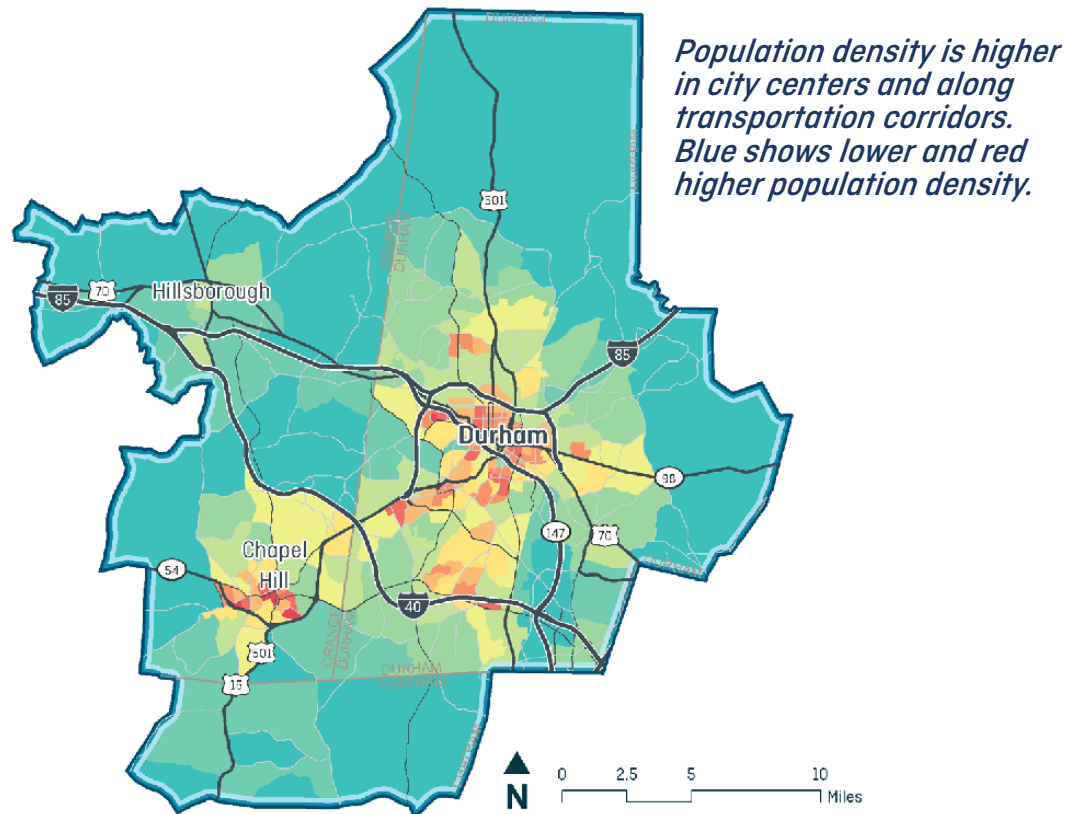


- Peer comparisons highlight similarities and differences in selected metrics for the DCHC region compared to peer regions across the country.
- Peer regions (metropolitan statistical areas or MSA) were selected based on a variety of factors including relative similarity to the DCHC region. Factors considered include:
 - Demographic growth trends and characteristics
 - Economic trends and characteristics
 - Population trends and characteristics.

FOCUS AREAS

STATE OF THE REGION 2019

1 | POPULATION & DEMOGRAPHICS



POPULATION PER SQUARE MILE BY BLOCK GROUP



KEY FINDINGS

- The region is growing rapidly
- The region remains diverse
- There are spatial disparities in educational attainment, income, and race characteristics across the region



1 | POPULATION & DEMOGRAPHICS: PEERS

The DCHC region has experienced an increase in households earning \$125,000 or more and a decrease in those earning less than \$25,000. This is most like Raleigh. While these trends track closely with Seattle, that city saw a more significant increase in earners in the highest income categories between 2012 and 2016.

Diversity trends in the DCHC region are most like Fayetteville, AR. Both have experienced increases in Asian residents and residents identifying as two or more races.

The educational attainment of residents in the DCHC region is most like Raleigh. The percentages of population with bachelor's and post-graduate degrees has increased in both regions.

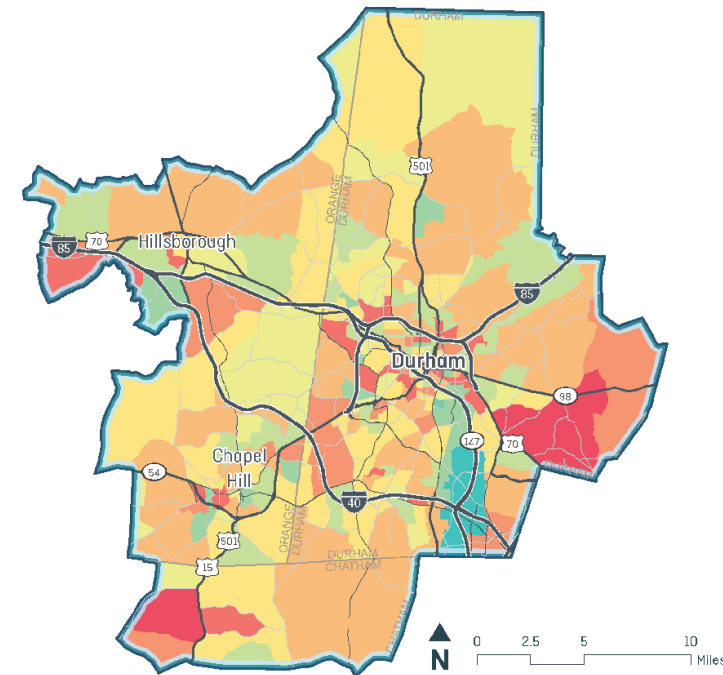
Age-related trends in the DCHC region are similar to most of the peer regions, many of which have experienced decreases in younger age groups and increases in residents aged 65 and over. Seattle and Charlotte deviate from this trend; both have experienced population increases in younger age groups (18 to 34 and 35 to 64, respectively).



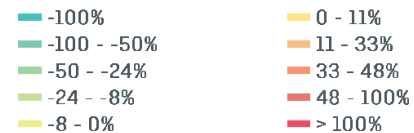
1 | POPULATION & DEMOGRAPHICS: METRICS

POPULATION DENSITY

- Between 2012 and 2016, the southeastern portion of Durham County experienced one of the largest increases in density in the region—more than 100 percent.
- Urban centers have grown slower than nonurban areas and several block groups in Chapel Hill, Durham, and Hillsborough have experienced population declines.



POPULATION DENSITY CHANGE BY BLOCK GROUP

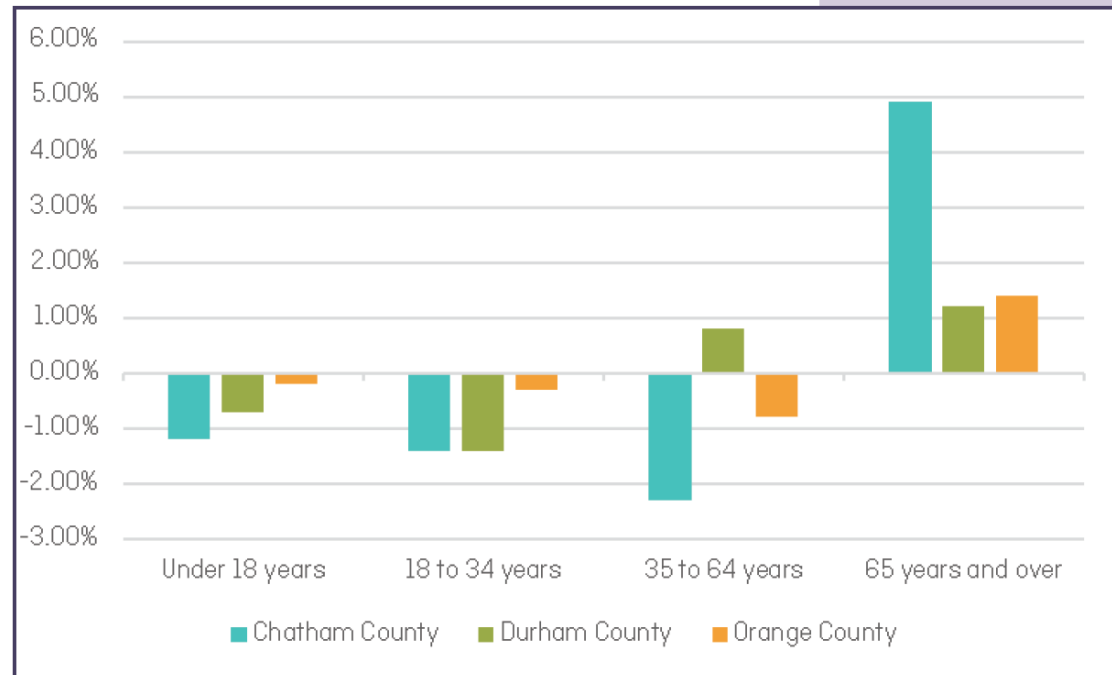


1 | POPULATION & DEMOGRAPHICS: METRICS

AGE

- All three counties experienced increases in the 65+ age group. This mirrors trends in both North Carolina and in peer regions.
- Chatham County experienced the largest growth in residents aged 65+ (nearly 5 percent). One quarter of the county's population is now aged 65 years or older.

CHANGE IN AGE GROUPS BY COUNTY 2012-2016

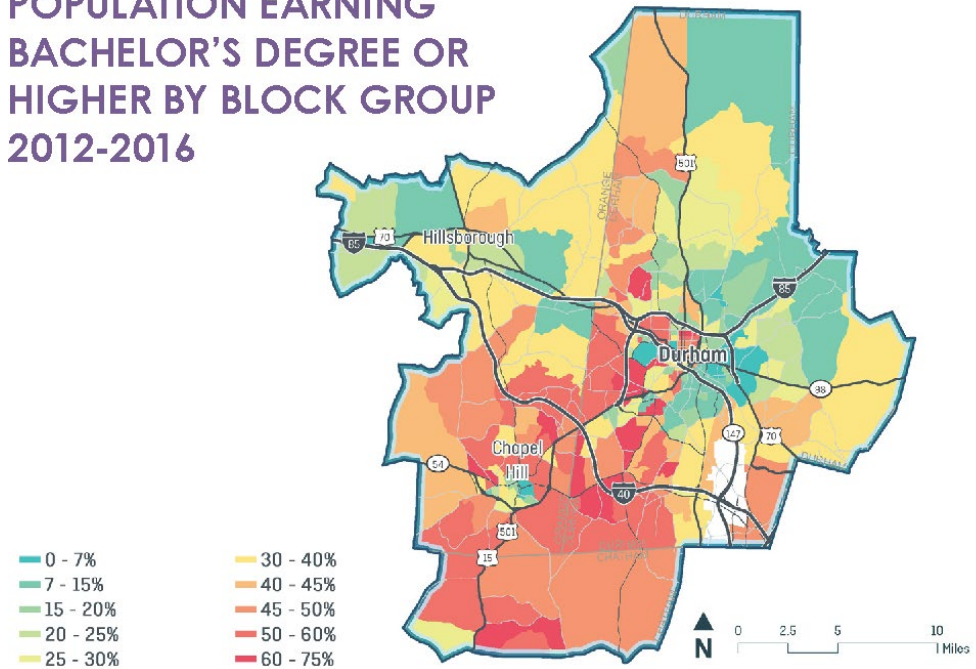


1 | POPULATION & DEMOGRAPHICS: METRICS

EDUCATION

- Between 2012 and 2016, Chatham, Durham, and Orange counties all saw increases in residents with a post-graduate degree.
- Chatham County experienced the largest increase in population with a post-graduate degree (2%).

PERCENTAGE OF
POPULATION EARNING
BACHELOR'S DEGREE OR
HIGHER BY BLOCK GROUP
2012-2016

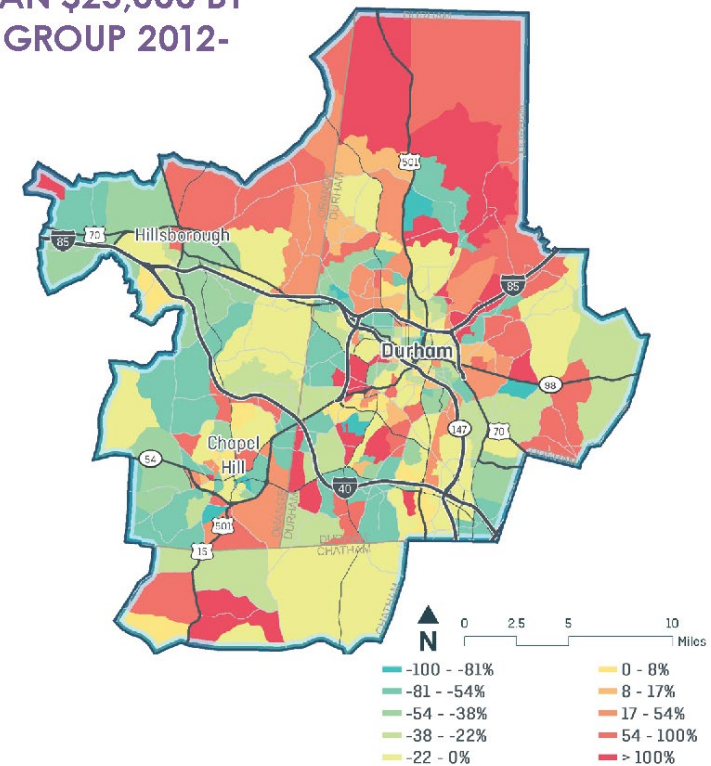


1 | POPULATION & DEMOGRAPHICS: METRICS

INCOME

- All three counties experienced increases in the number of households earning \$125,000 or more. Chatham had the most notable growth in the highest earning households (nearly 4% percent).
- Over the same four-year period, Chatham was also the only county to experience a slight increase in the percentage of households earning less than \$25,000 and a decrease in the percentage of households earning between \$75,000 and \$124,999.

CHANGE IN NUMBER OF HOUSEHOLDS EARNING LESS THAN \$25,000 BY BLOCK GROUP 2012-2016

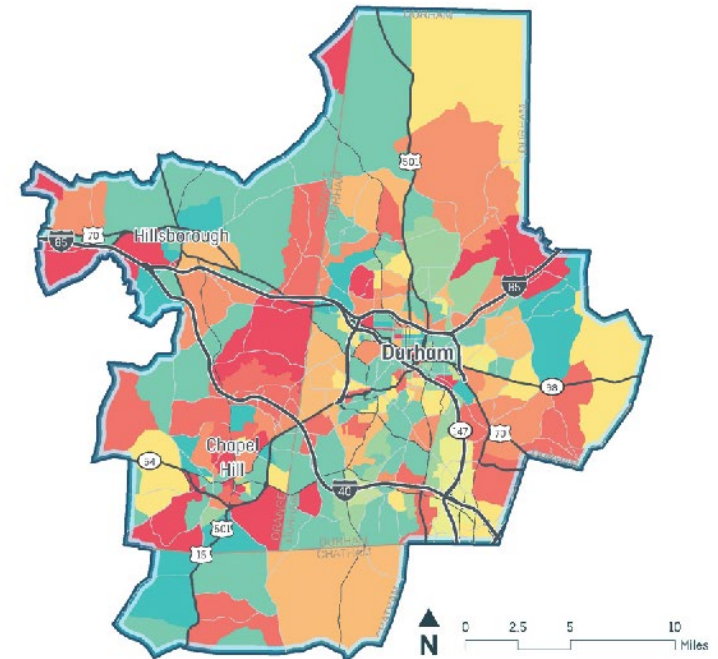


1 | POPULATION & DEMOGRAPHICS: METRICS

RACE

- Areas beyond the region's urban cores (block groups northeast, southeast, and southwest of Chapel Hill; and block groups northeast of the City of Durham and near Hillsborough) have experienced a 100 percent (or more) increase in residents identifying as Black/African American
- The Asian population is growing throughout the region, notably doubling in some areas of Chapel Hill
- Northern and central Orange County have seen significant growth in Hispanic populations; the percentage has doubled in some areas.

CHANGE IN AFRICAN AMERICAN POPULATION BY BLOCK GROUP 2012-2016

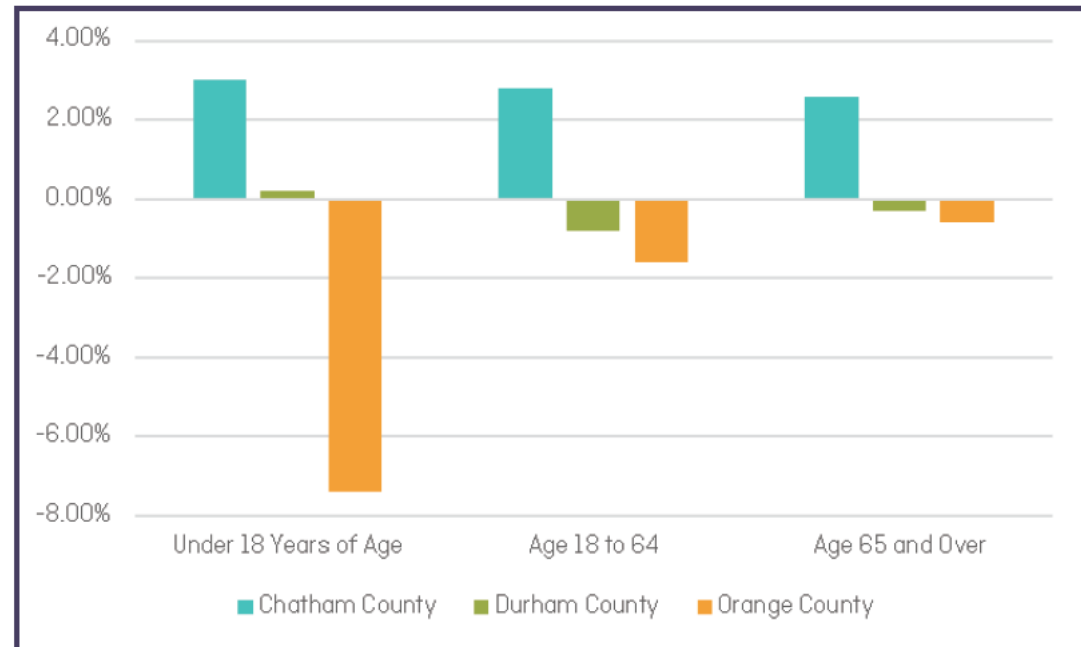


1 | POPULATION & DEMOGRAPHICS: METRICS

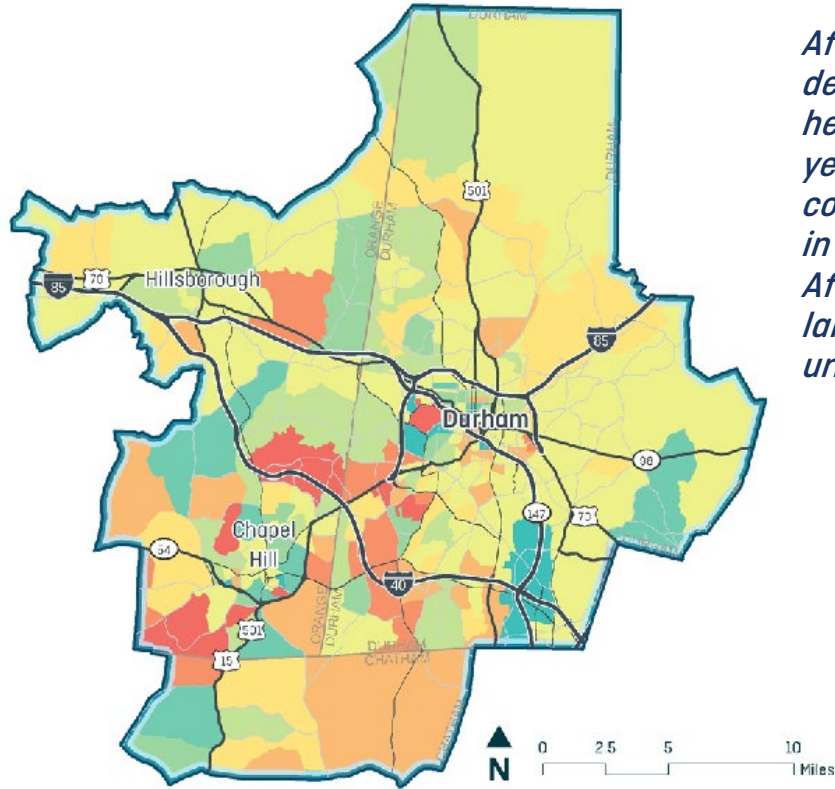
POVERTY

- Between 2012 and 2016, the share of residents 18 and under experiencing poverty decreased.
- Only Orange County experienced significant decreases in percentages of the population that are below the federal poverty level.
- Chatham County experienced increases in the population under the poverty level for all age groups between 2012- 2016

CHANGE IN POPULATION UNDER POVERTY LEVEL BY COUNTY 2012-2016



2 | ECONOMY



Affordable housing is decreasing, represented here in blues, greens, and yellows. Orange and red colors indicate an increase in affordable housing. Affordable areas are largely located outside of urban centers.

KEY FINDINGS

- Education and healthcare are the region's largest industries, and education is the fastest-growing industry
- Housing affordability varies by job type and nearly a quarter of the region's workers are likely to face housing and transportation cost burdens.
- Regional home values are higher than the statewide average and vary by county



2 | ECONOMY: PEERS

Madison, Wisconsin's job market is most like the DCHC region.

The tech services sector has a slightly higher share of jobs in the DCHC region; Madison has a slightly higher share of public administration jobs (likely due to the state capital). Like the DCHC region, Madison has many jobs in higher education.

Fayetteville has the highest proportion of affordable homes as a share of overall housing stock. Seattle and Durham have comparable shares of housing that can be considered "not affordable" (around 30% of total housing stock).

The DCHC region reports a higher average annual income for educational services professionals (\$70,371) compared to peer regions (ranging from \$37,803-\$58,854). Many of the educational services jobs in the DCHC region are in higher education, which tend to have higher wages than K-12 jobs.

Fayetteville has the lowest median home value (\$161,100); Seattle has the highest (\$365,400). DCHC is in the middle with a median home value of \$212,400. This is most like Raleigh (\$224,800) and Madison (\$230,200).

Average annual earnings in the retail trade and information industries are twice as high in Seattle (\$69,231 and \$194,541, respectively) compared to Durham-Chapel Hill (\$31,590 and \$87,759, respectively). Huntsville and Fayetteville have lower average wages but also have lower costs of living.

Charlotte has the highest wages for the finance and insurance industry and the arts, entertainment, and recreation industry. Annual wages for the agriculture, forestry and mining industry are relatively high in both Durham-Chapel Hill and Fayetteville.

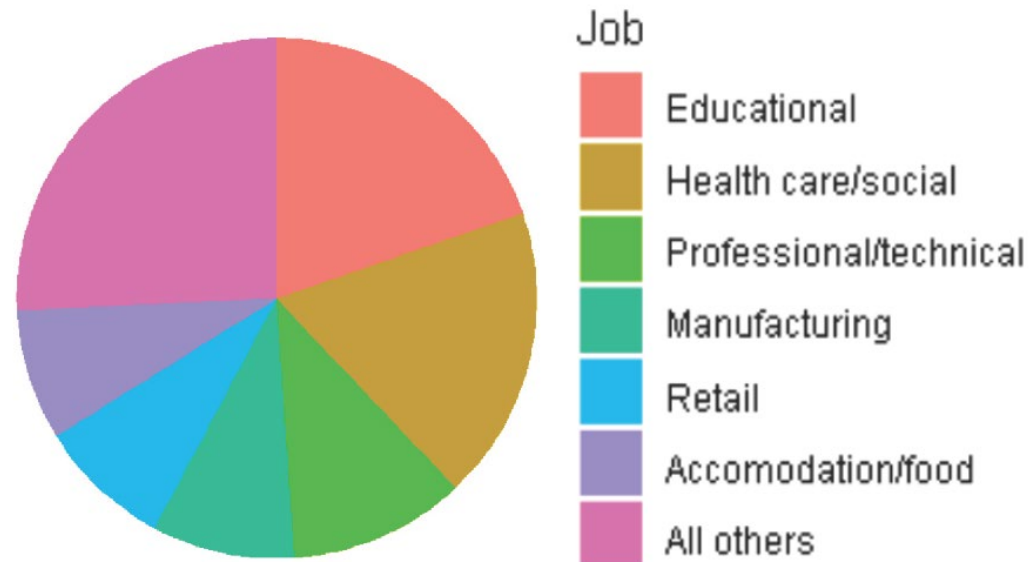


2 | ECONOMY: METRICS

JOB

- The educational services sector accounts for nearly one in five jobs in the region and grew more than any other sector between 2016 and 2017.
- The health care/ social services industry accounts for a similar share of jobs (about 20 percent) but experienced a decline between 2016-2017.
- Job density reflects the importance of higher education and healthcare to the region's economy. The highest densities are near university campuses, research facilities, and healthcare institutions associated with universities.

MIX OF JOBS BY INDUSTRY FOR THE DCHC REGION (2017)

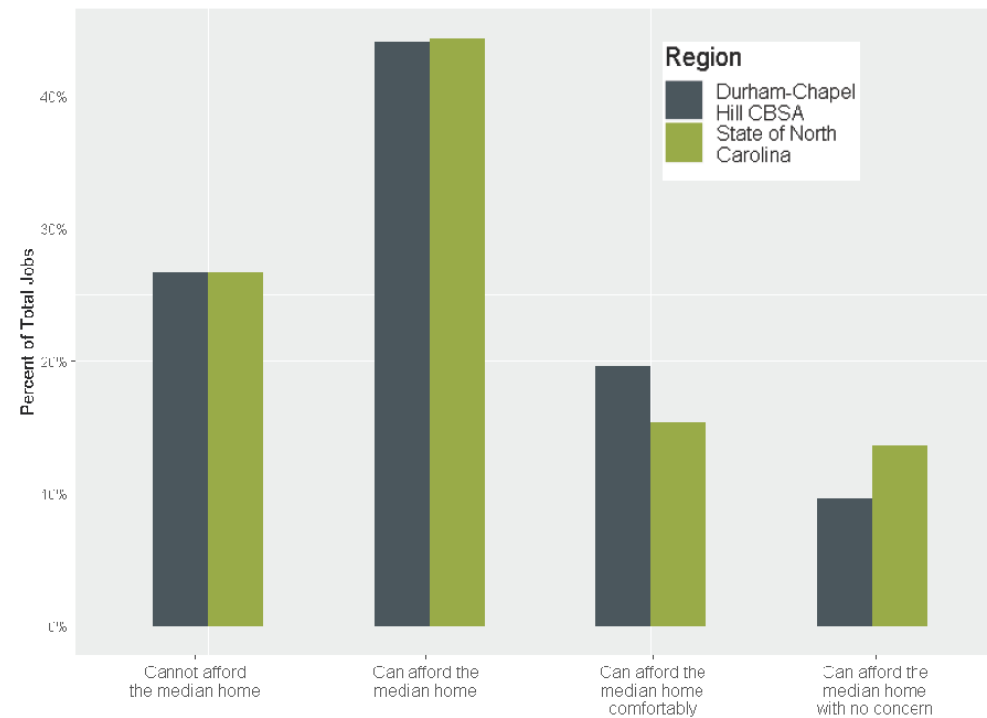


2 | ECONOMY: METRICS

WAGES

- Wages for most industries increased from 2016 to 2017.
- Industries experiencing wage decline include agriculture, forestry, fishing and hunting; finance and insurance; health care and social assistance; professional, scientific, and technical services; real estate; and transportation and warehousing.
- About a quarter of the region's jobs do not pay wages adequate for workers to afford a home priced at or near the region's median.

WAGES COMPARED TO RELATIVE HOME AFFORDABILITY, 2016



In the CBSA, the median home value is \$212,400. The qualifying income is \$48,615.
In the State, the median home value is \$161,000. The qualifying income is \$36,850.

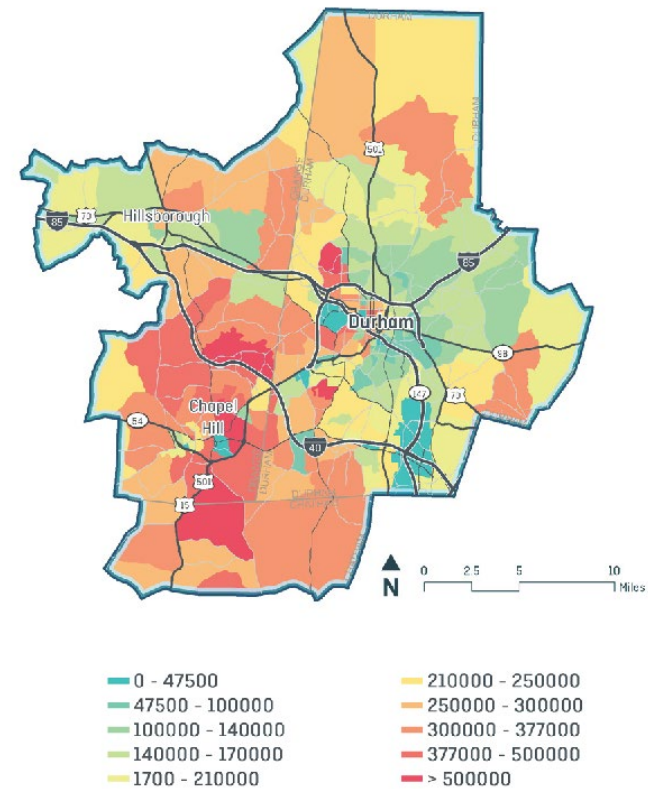


2 | ECONOMY: METRICS

HOME VALUES

- Orange County has the highest median home value of the three counties in the region (\$283,000), followed by Chatham County (\$251,600), and then Durham County (\$195,900).
- Most housing falling into the “affordable” range is developing in the area between I-40 and US 15-501 between Chapel Hill and Durham, south of NC-54 and west of US 15-501 near Chapel Hill, east of Hillsborough, and in the southern part of Durham County.
- Higher housing values in Orange County suggest that workers in lower wage industries likely travel to the county for work. This increases commuter strain on corridors connecting Orange County and other parts of the region where housing remains attainable for low-wage workers.

MEDIAN HOME VALUE BY BLOCK GROUP 2016

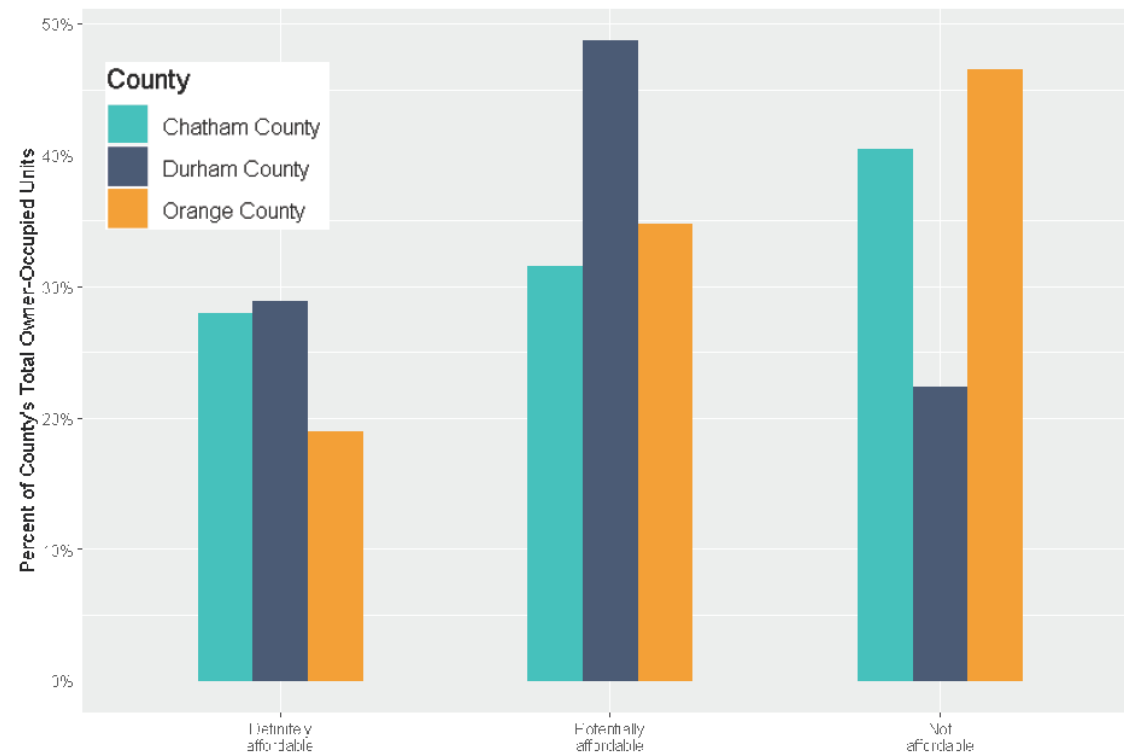


2 | ECONOMY: METRICS

AFFORDABILITY

- Most housing in Orange and Chatham Counties is “not affordable” to a worker earning area median income (AMI).
- Most housing in Durham is “potentially affordable” to a worker earning AMI.
- Less than 20 percent of housing in Orange County is “definitely affordable” to a worker earning AMI.
- Less than 30 percent of housing is “definitely affordable” to a worker earning AMI in Chatham and Durham Counties.
- Compared to the state, the DCHC region has less housing that is “definitely affordable” to a worker earning AMI.

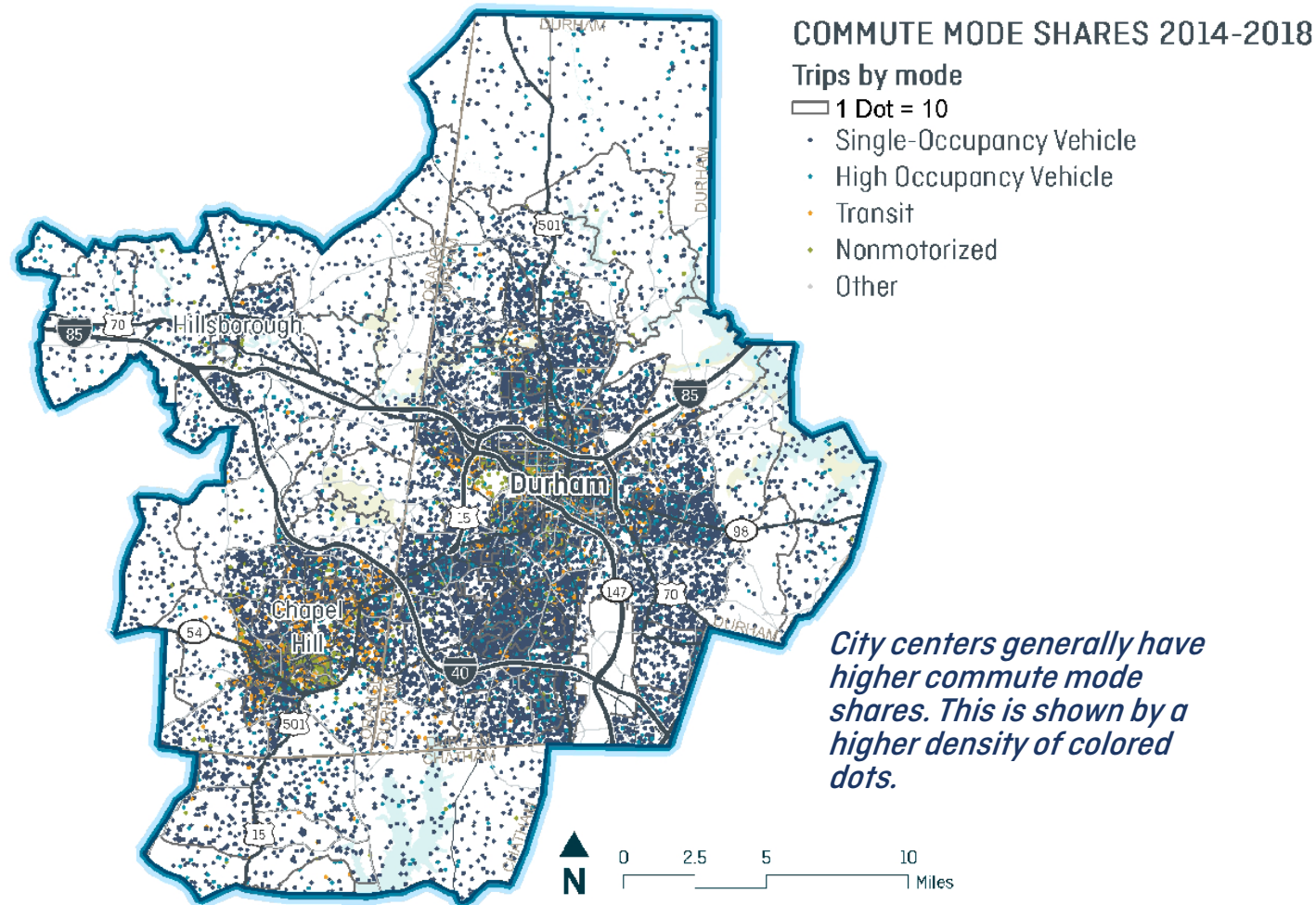
HOUSING AFFORDABILITY BY COUNTY 2016



In Chatham County, the median home value is \$251,600. The affordable value is \$260,762.
In Durham County, the median home value is \$195,900. The affordable value is \$246,364.
In Orange County, the median home value is \$283,000. The affordable value is \$296,269.



3 | REGIONAL STRUCTURE



KEY FINDINGS

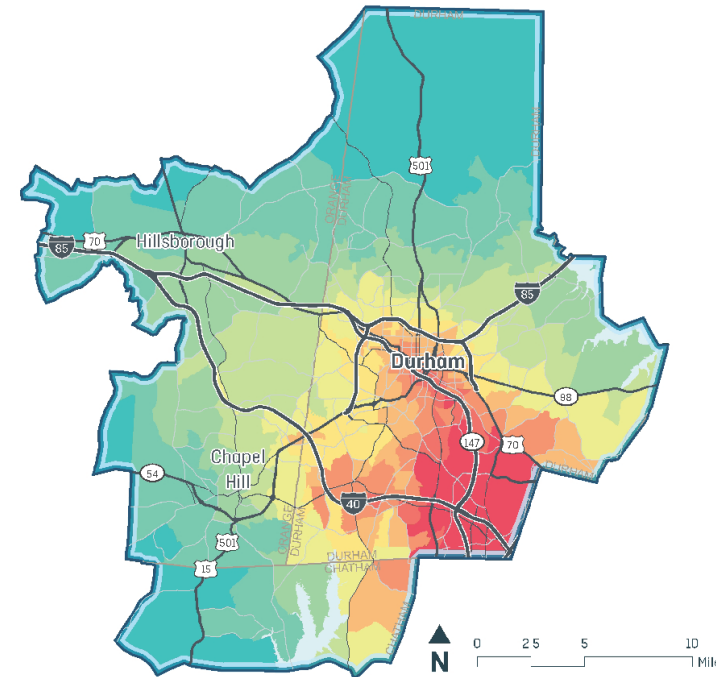
- Commuter flows reveal strong regional interdependence
- Research Triangle Park drives regional travel patterns
- There are growing mismatches between population growth, jobs, affordable housing, and accessibility.
- Regional centrality and multimodal options are critical to limiting total vehicular travel



3 | REGIONAL STRUCTURE: METRICS

AUTO ACCESSIBILITY

- Accessibility is highest in southeast Durham County and along major highways in this area
- RTP emerges as a major center in the region and shapes regional accessibility
- Accessibility is lower in the northern part of the region, which correlates with lower job densities



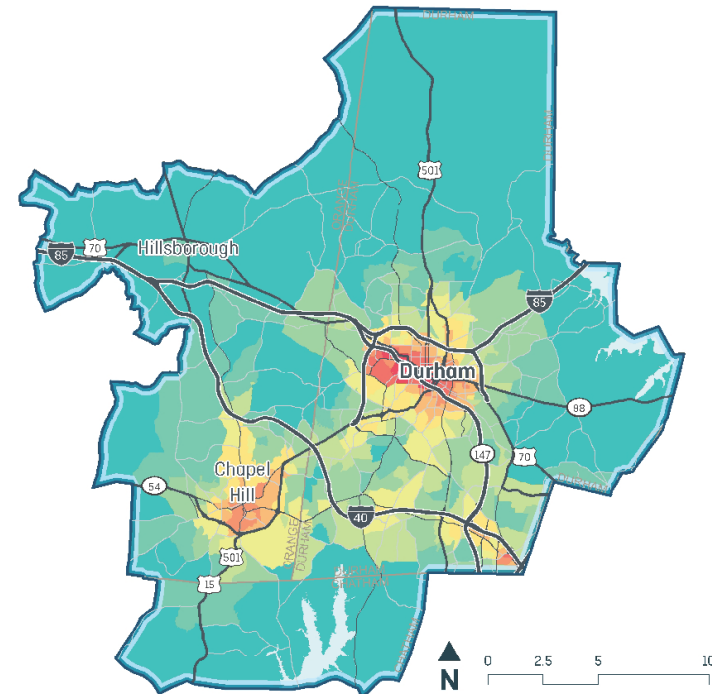
Total number of jobs available to residents within a reasonable commute time.



3 | REGIONAL STRUCTURE: METRICS

TRANSIT ACCESSIBILITY

- Transit accessibility is highly reflective of current service availability in the region.
- Neighborhoods in and around urban centers have greater transit accessibility.
- A lack of transit service to areas outside urban centers is clearly reflected, with areas of lower transit accessibility spanning the region's suburban and rural areas

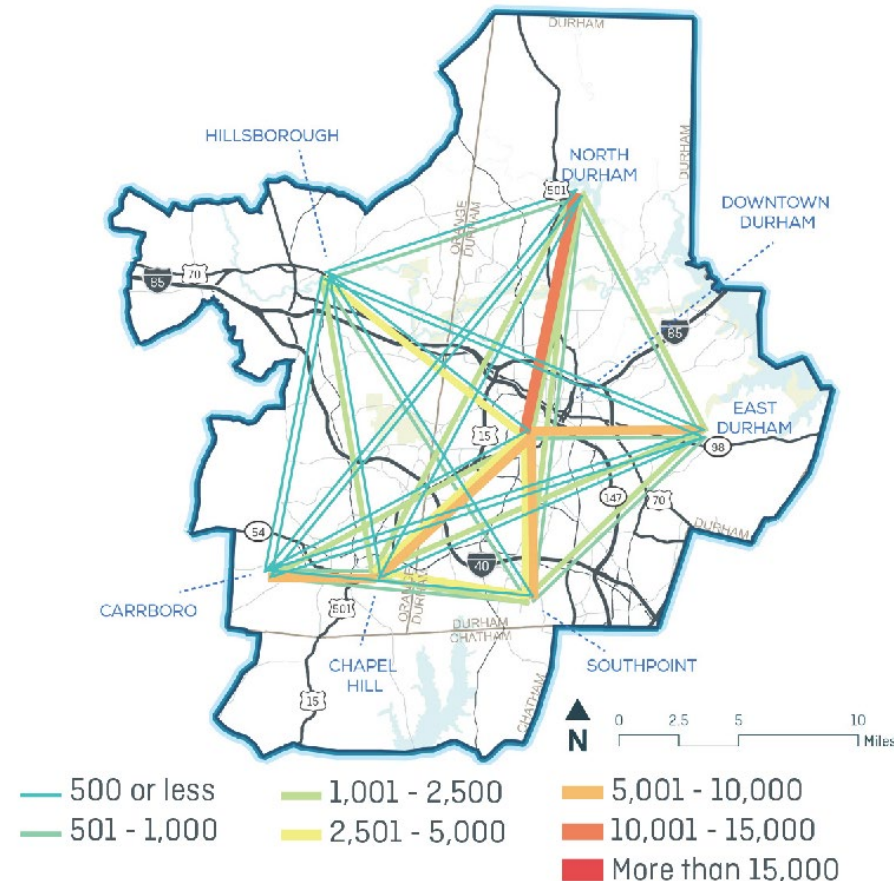


3 | REGIONAL STRUCTURE: METRICS

COMMUTER FLOWS

- Downtown Durham is a key regional destination, particularly for commuter flows to/from northern Durham.
- Significant flows exist between east Durham, southwest Durham (Southpoint), and Chapel Hill.
- Regional flows provide a broader context; significant commuting occurs between the DCHC area and Wake County, with more people traveling from the DCHC area to Wake County than vice versa.

DCHC COMMUTER FLOWS 2016

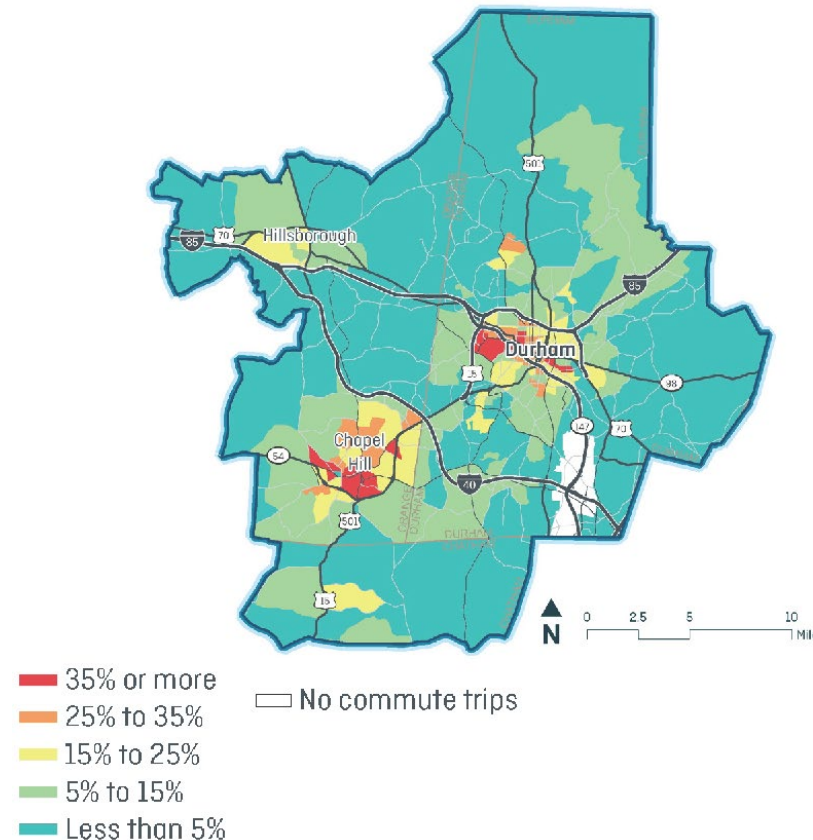


3 | REGIONAL STRUCTURE: METRICS

MODE SHARE

- Transit, walking, and biking are most common in urban centers, where the network and service options make them viable alternatives.
- Automobiles remain the most common mode choice.

NON-AUTO MODE SHARE 2016

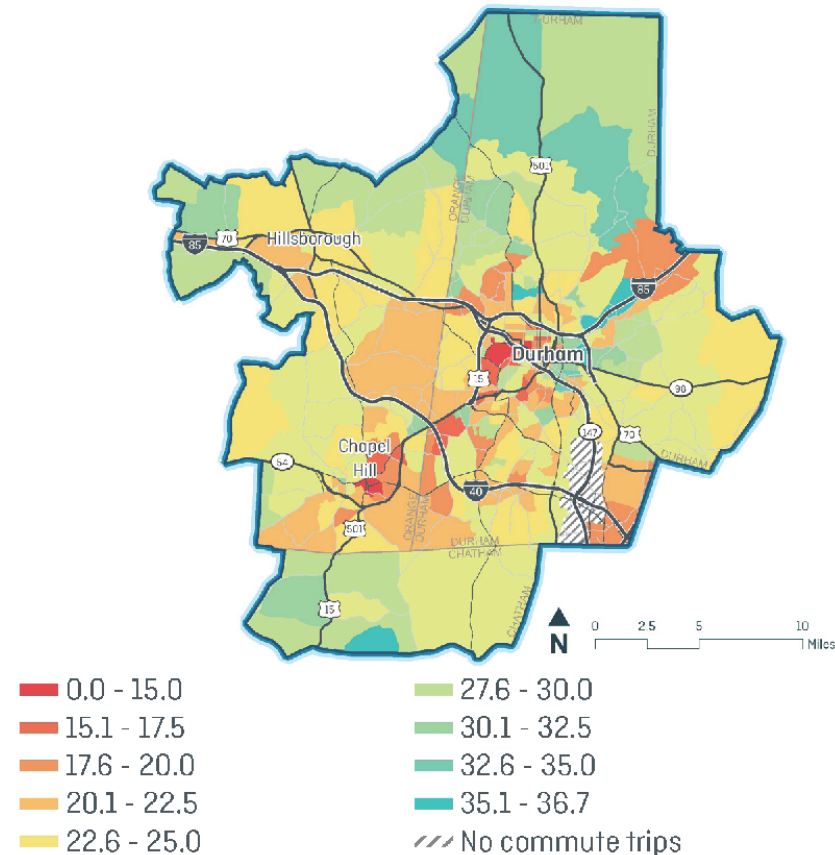


3 | REGIONAL STRUCTURE: METRICS

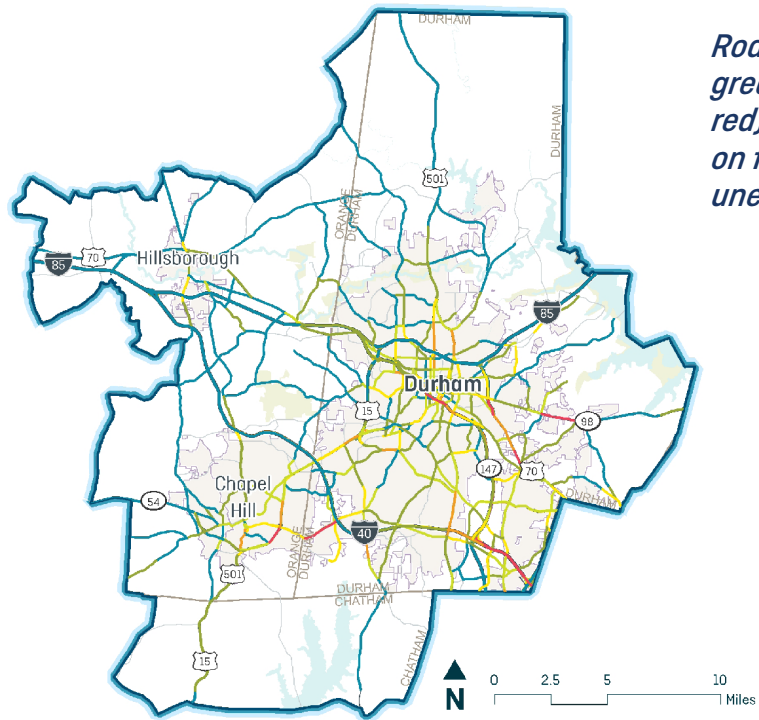
TRAVEL TIME

- Urban centers are highly productive, with commute times as short as 15 minutes or less.
- Commute times from out-lying neighborhoods and more distant suburbs stretch to more than 35 minutes.

AVERAGE COMMUTE TIME BY BLOCK GROUP 2016



4 | MOBILITY

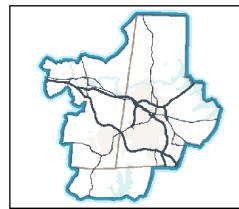


Road segments with LOTTR greater than 1.5 (shown in red) indicates that travelers on these roadways face more unexpected delays.

TRAVEL TIME RELIABILITY IN 2017

Level of Travel Time Reliability (PM Peak Period)

- 1.05 or less
- 1.06 - 1.10
- 1.11 - 1.15
- 1.16 - 1.25
- 1.26 - 1.50
- Greater than 1.50



KEY FINDINGS

- Regional traffic volume is rising, increasing demand on the region's roadways
- LOS is decreasing on several major corridors
- Drivers experience more unexpected delays
- There are more pedestrian and bicycle facilities across the region
- Transit ridership is stable
- Passenger growth at RDU continues
- Freight movement will increase; truck traffic remains highest on interstate roadways

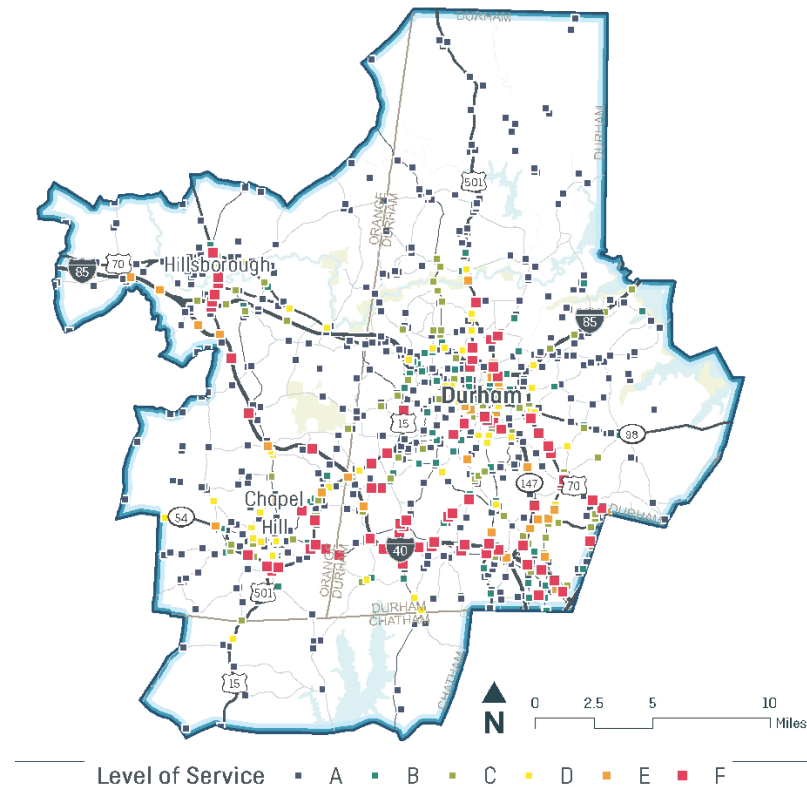


4 | MOBILITY: METRICS

LEVEL OF SERVICE

- In 2017, LOS declined on 58.6 percent of roads measured within DCHC jurisdiction. In Durham County, 81 percent of roads measured showed declining LOS.
- Overall, LOS in the DCHC area remains adequate:
 - 65 percent of roads operate at LOS A
 - 17 percent of roads operate at LOS C or B
 - 6 percent of roads operate at LOS F
- Major corridors experiencing a downward trend in LOS include:
 - I-40
 - US 70
 - NC 54
 - US 15-501
 - I-85

VEHICULAR LEVEL OF SERVICE 2017

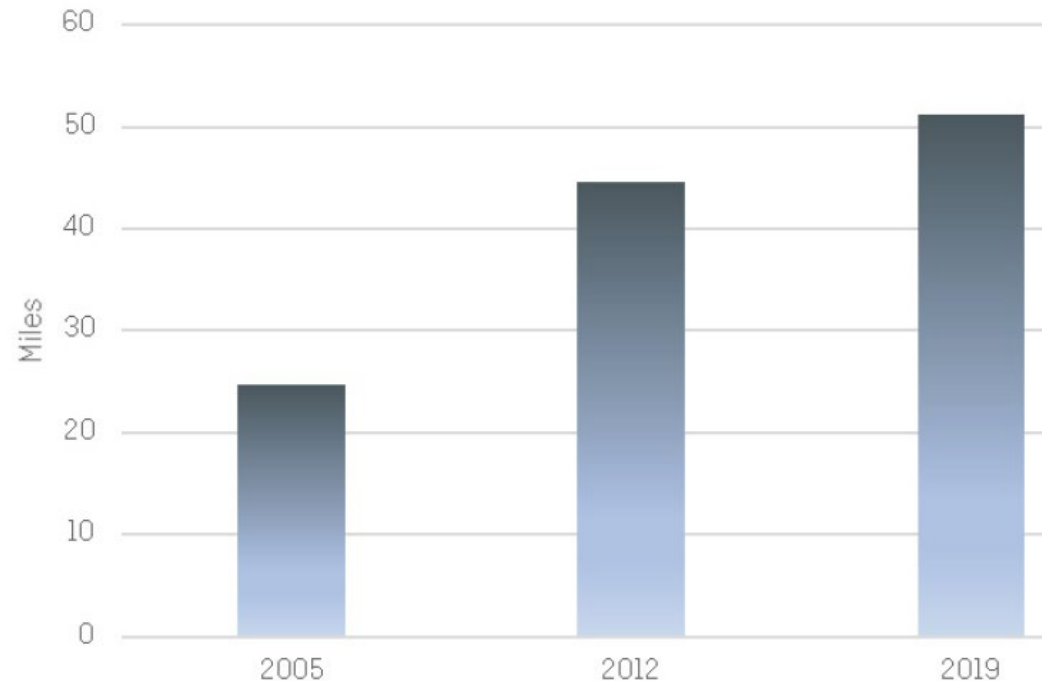


4 | MOBILITY: METRICS

ACTIVE TRANSPORTATION

- Between 2005 and 2019, all types of active transportation facilities have increased in the DCHC region.
- There are a total of 855.2 miles of sidewalk in the DCHC area as of 2019, which is an 18.5 percent increase from 721.5 miles in 2012.
- There are 69.6 miles of greenways in the DCHC area, including 56.6 miles that are paved and 13.0 miles that are unpaved.
- There are 183.55 miles of on-road bicycle facilities in the DCHC area, a 158.53 percent increase from 70.97 miles in 2012.
- On-road bicycle facility mileage grew from 2012- 2019 at more than twice the rate that it did from 2005-2012.

GREENWAYS: DCHC REGION 2005-2019



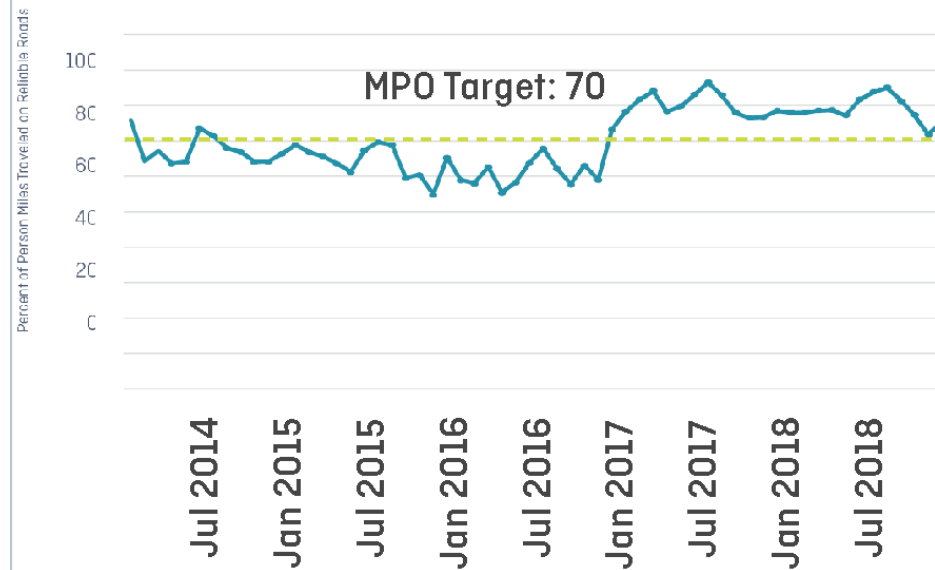
4 | MOBILITY: METRICS

Level of Travel

Time Reliability

- An LOTTR below 1.5 is considered reliable. Non-interstate National Highway System (NHS) travel time reliability for the DCHC MPO shows a stable downward trend; an apparent increase in 2017 was due to different data sources.
- The amount of person-miles traveled on reliable interstates has decreased since 2014. Today, about 80 percent of all person-miles traveled on interstate happens on reliable roads.

NON-INTERSTATE NHS TRAVEL TIME
RELIABILITY MEASURE 2014-2018

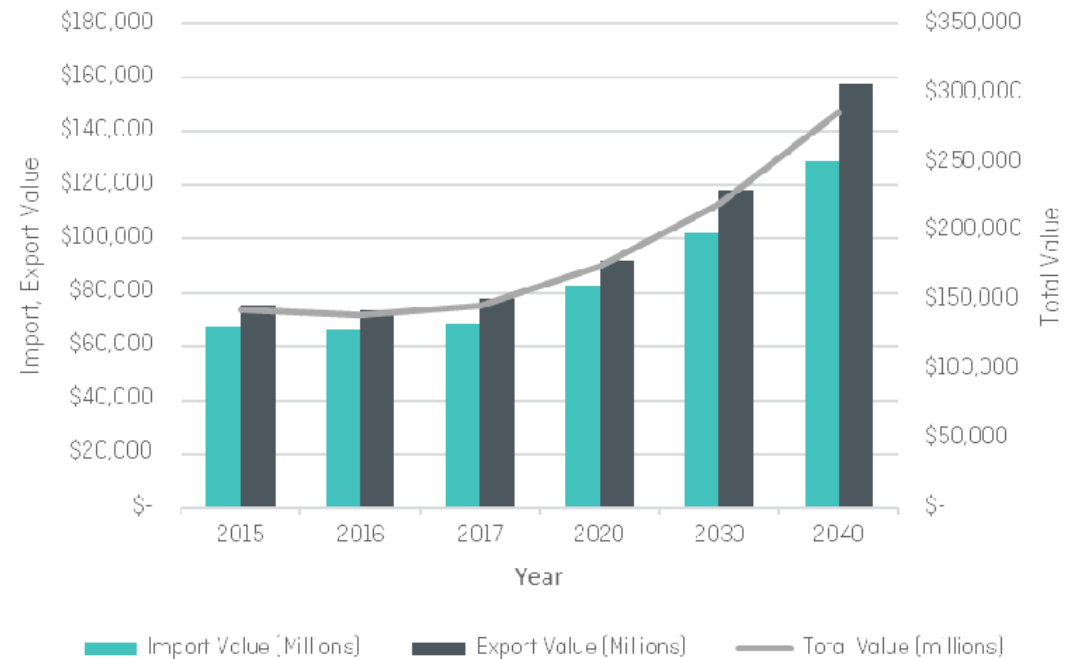


4 | MOBILITY: METRICS

FREIGHT

- The total value of freight moving in and out of the DCHC region has increased between 2005 and 2020 and is projected to significantly increase through at least 2040.
- The weight of freight moving in and out of the DCHC region has remained steady since 2005. This is significant because while value has increased, the demand on the region's roadways has not significantly increased.

DCHC REGION FREIGHT VALUE 2015-2040

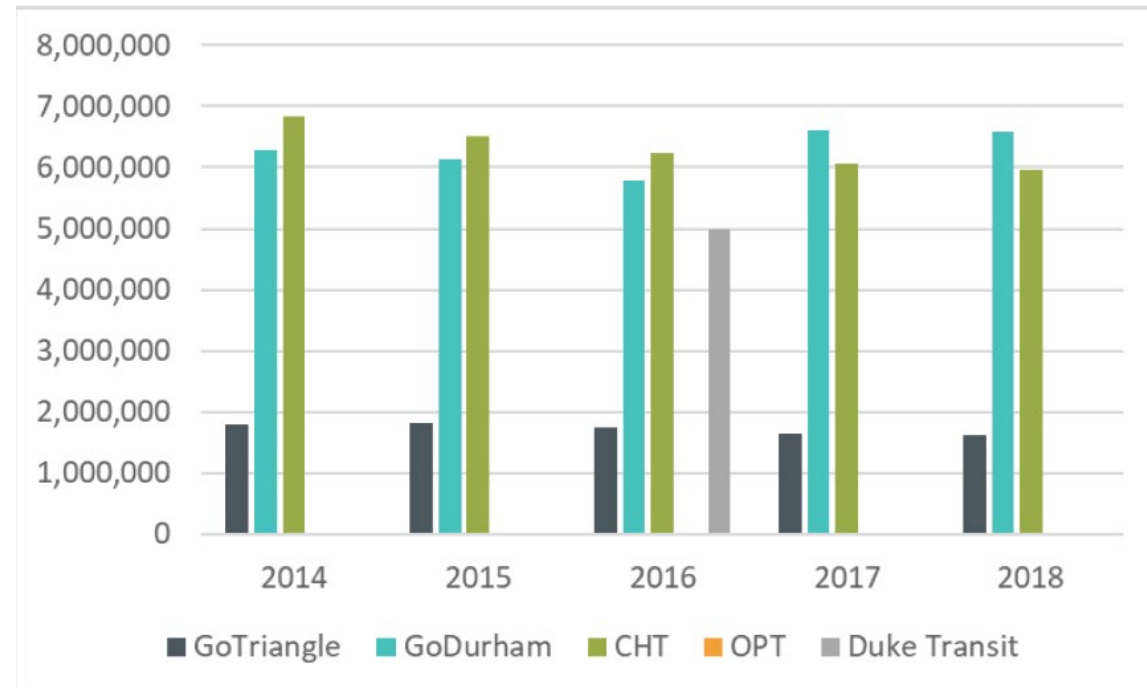


4 | MOBILITY: METRICS

TRANSIT RIDERSHIP

- Although a little over half of the fixed bus routes in the area offer some degree of weekend service, weekday ridership is ten times higher than weekend ridership (17.1 million compared to 1.7 million), suggesting that a high share of riders use transit services for commuting.
- Durham Station, which is co-located with the Amtrak train station and the Greyhound bus station, is the most utilized stop, with 125,540 boardings and 122,083 alightings. This stop is served by both GoDurham and GoTriangle.
- Ridership for Chapel Hill Transit has steadily decreased from 6.8 million in 2014 to 6 million in 2018.
- Demand-responsive service ridership for GoTriangle increased by more than 50 percent from 2017 to 2018.

TRANSIT RIDERSHIP: FIXED ROUTE

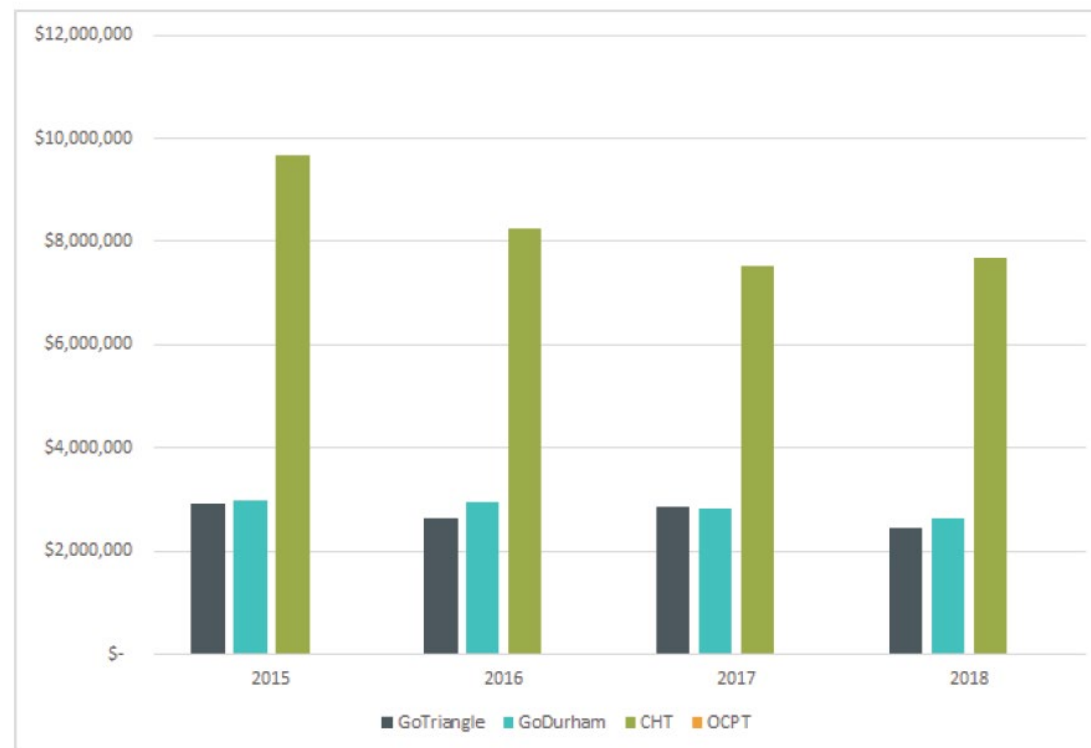


4 | MOBILITY: METRICS

TRANSIT REVENUE

- GoDurham and GoTriangle generate the highest amount of revenue miles of transit service in the region. While they have similar amounts of revenue miles (around 4 million miles annually from 2014 to 2018), GoDurham has around 150,000 more revenue hours each year.
- Revenue hours and miles for all agencies have remained relatively stable since 2014.
- Revenue miles peaked for GoDurham in 2017 (4.5 million) and for GoTriangle in 2015 (4.3 million).
- Farebox recovery ratios decreased slightly between 2014-2017.

TRANSIT REVENUES BY AGENCY 2014-2017

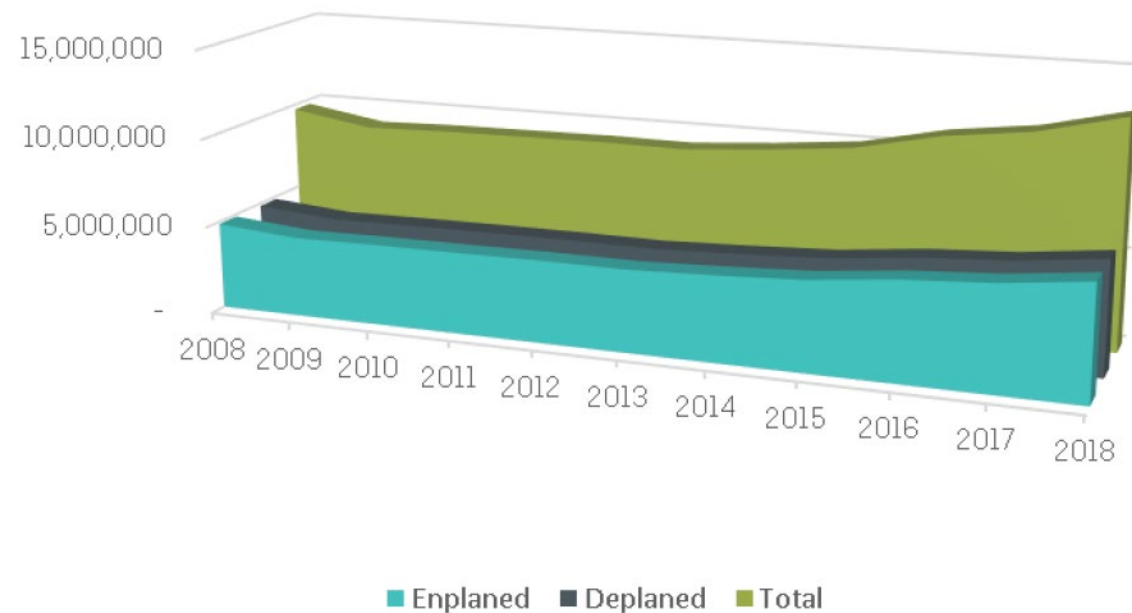


4 | MOBILITY: METRICS

AIR TRAVEL

- In 2018, total passengers at RDU totaled nearly 12.5 million, a 39 percent increase since 2009 and the most of all years examined.
- Total passengers have increased during the ten-year period with the only annual decrease occurring in 2013.

RDU AIR TRAVEL TRAFFIC 2008-2018

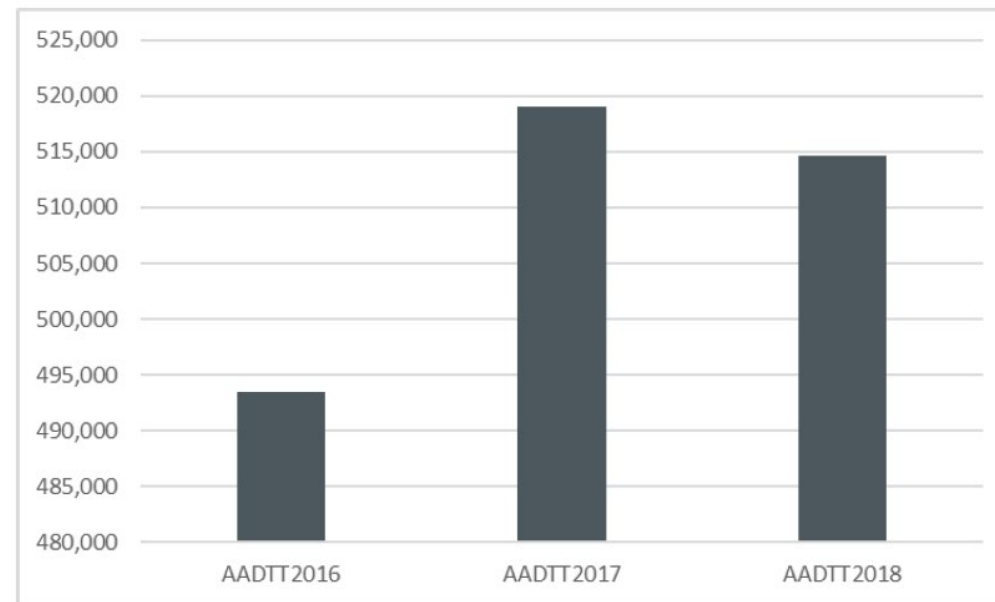


4 | MOBILITY: METRICS

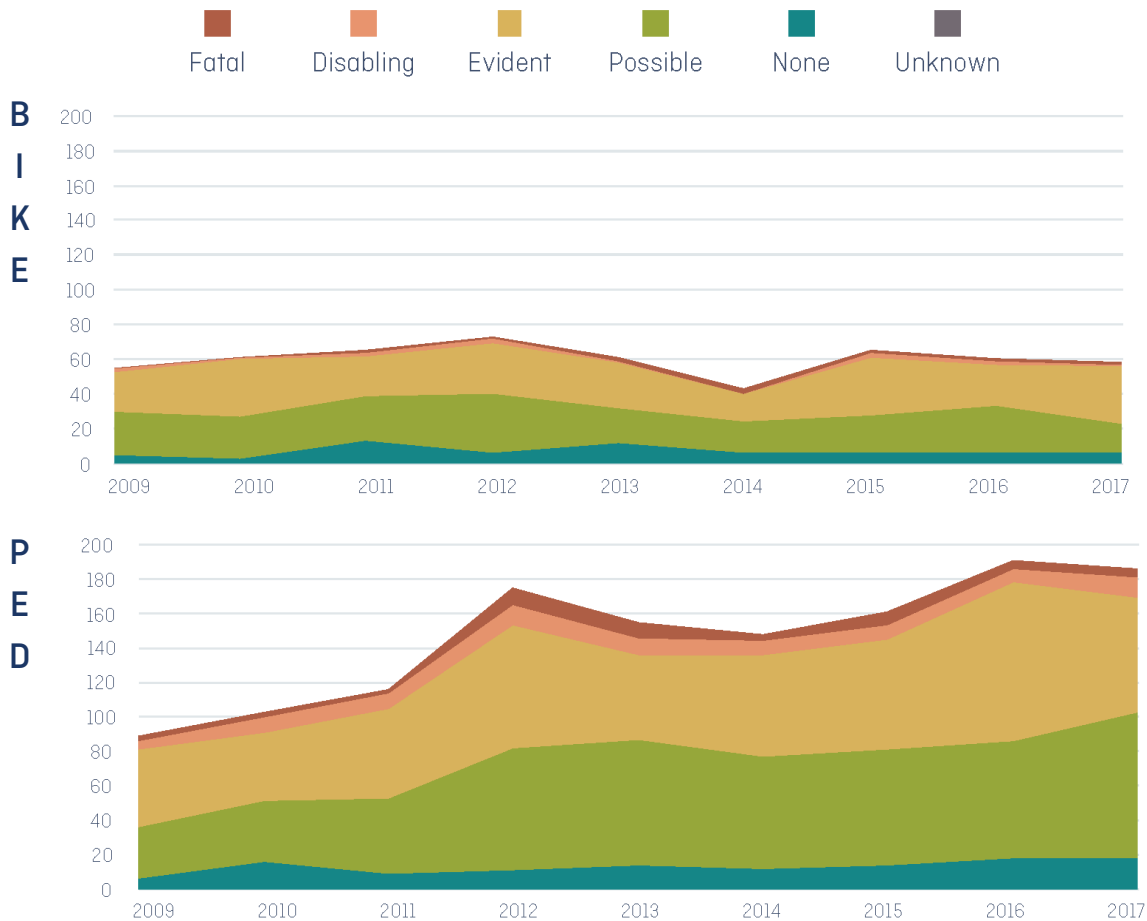
AVERAGE ANNUAL DAILY TRUCK TRAVEL

- Truck traffic remained heaviest on the region's interstates (I-40 and I-85) in 2016, 2017, and 2018.
- A relatively higher concentration of truck traffic on interstates suggests goods are both moving through - and in - the region.

DCHC REGION AVERAGE ANNUAL DAILY TRUCK TRAVEL 2016-2018



5 | SAFETY



KEY FINDINGS

- Reported crashes steadily increased throughout the region
- Fatalities within the MPO must be reduced to meet safety targets
- Pedestrian crashes increased steadily from 2013 to 2017
- Bicycle crashes fluctuate slightly from year to year

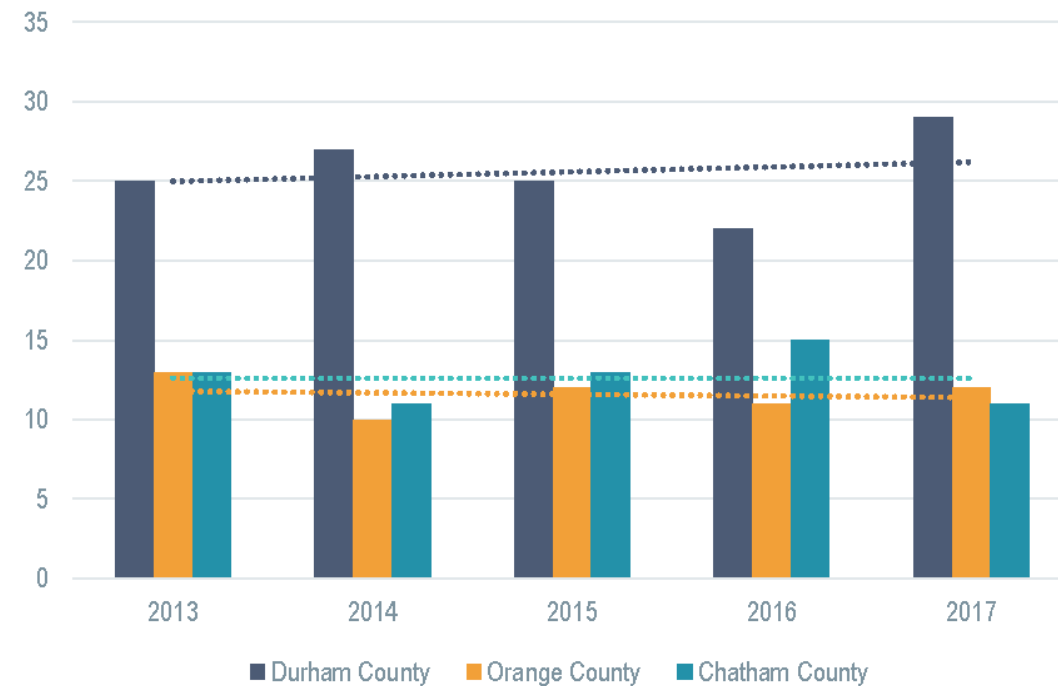


5 | SAFETY: METRICS

FATALITIES

- Vehicular fatalities between 2013 to 2017 have generally remained steady in Orange and Chatham Counties but have increased in Durham County during the same time period.
- Pedestrian fatalities between 2013 to 2017 have been decreasing overall in all three counties.
- Bicycle fatalities decreased in Orange County between 2013 to 2017. Bicycle fatalities increased in both Durham and Chatham Counties during the same time period.

Total Vehicular Fatalities by County 2013-2017

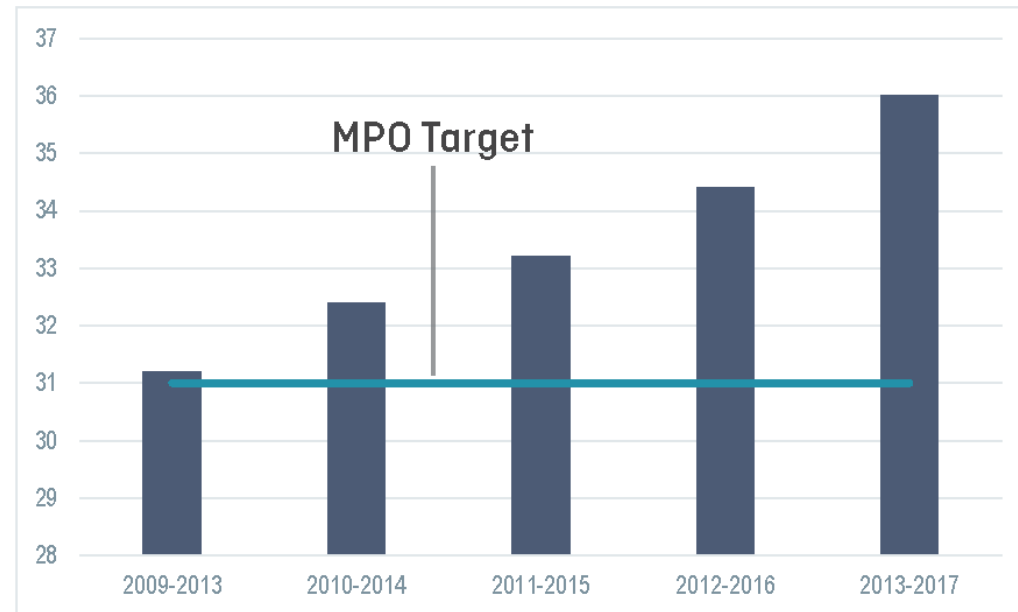


5 | SAFETY: METRICS

FATALITIES & SERIOUS INJURIES

- The five-year averages for nonmotorized fatalities and serious injuries in the DCHC region have remained fairly constant since 2009.
- Motorized fatalities and serious injuries have been increasing during the same time period for the DCHC region

Motorized Fatalities and Serious Injuries (5-year averages)

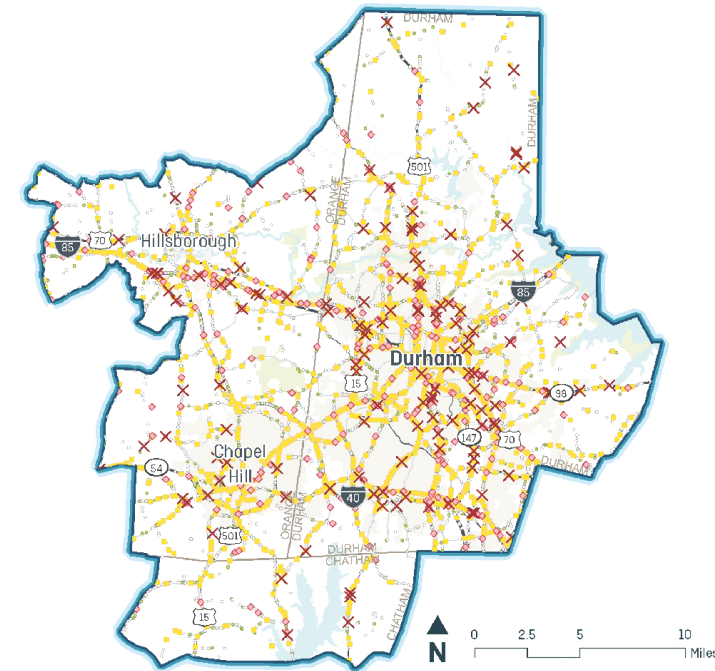


5 | SAFETY: METRICS

VEHICULAR CRASHES

- 15,310 crashes occurred in the DCHC region in 2017.
- Nearly 80 percent resulted in no or unknown injuries.
- Crashes resulting in disabling injuries or death made up less than one percent.
- Roadways in downtown Durham had the highest rates of accidents per vehicle miles traveled.
- Fatal vehicular crashes in the DCHC region generally occur along the region's main arterials and interstates and surrounding the urban core. Allowed speed on these roadways is higher likely accounting for the increased likelihood of fatal injuries

Vehicular Crash Location and Severity in the DCHC Region 2013-2017



SAFETY

Crash Locations 2013 to 2017

Severity

- ✕ Fatality
- ◆ Serious Injury
- ◆ Evident Injury
- ◆ Possible Injury
- ◆ Property Damage Only or Unknown

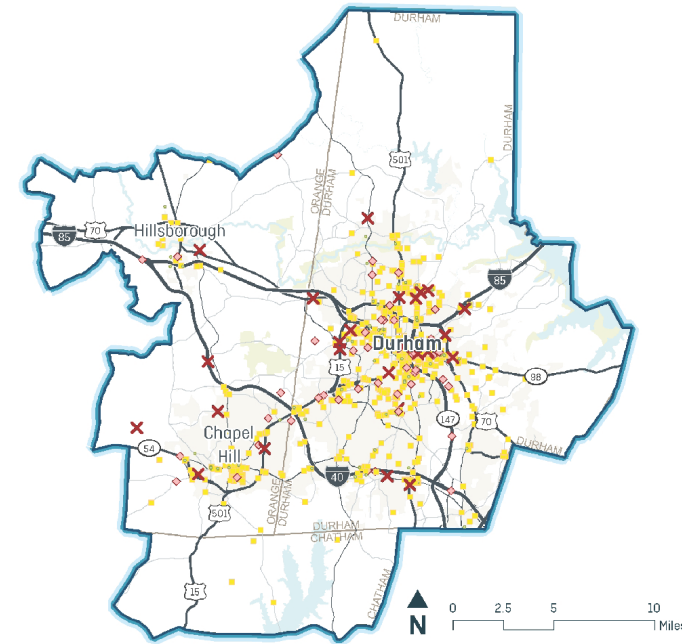


5 | SAFETY: METRICS

PEDESTRIAN CRASHES

- 841 pedestrian crashes occurred between 2013 and 2017.
- 734 crashes (87 percent) resulted in disabling injuries.
- 31 crashes (four percent) resulted in fatalities.
- Pedestrian crashes have increased since 2013; the number resulting in fatalities or disabling injuries has remained consistent.
- Pedestrian crashes tend to be less severe during the day than at night, on low speed limit roads than on high speed limit roads, and in paths without cars than shared with cars.
- Pedestrian and bicycle crashes are concentrated in Durham and Chapel Hill; this may be due to higher pedestrian and bicycle volumes in those areas.

Pedestrian Crash Location and Severity in the DCHC Region 2013-2017



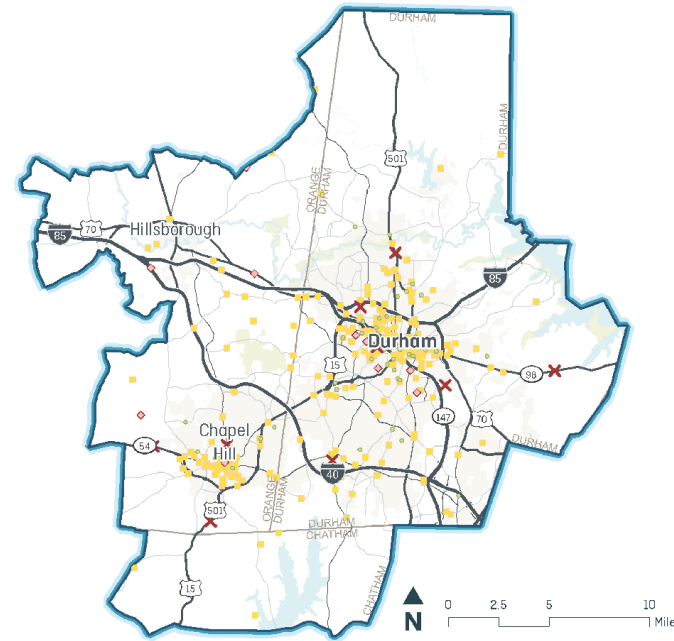
- SAFETY**
Pedestrian crashes (2013 - 2017)
- Severity**
- ✕ Fatality
 - ◆ Serious Injury
 - Other Injury
 - No Injury



BICYCLE CRASHES

- 287 bicycle crashes occurred between 2013 and 2017.
- 243 crashes (85 percent resulted in injuries; seven (two percent) resulted in disabling injuries).
- Eight crashes (three percent) resulted in fatalities.
- Total bicycle crashes in the region have remained roughly constant since 2013 (except for a notable drop in 2014); the number resulting in fatalities or disabling injuries has stayed about the same as well.
- Pedestrian and bicycle crashes are concentrated in Durham and Chapel Hill; this may be due to higher pedestrian and bicycle volumes in those areas.
- Although 49 percent of bicycle crashes occurred in downtown Durham, that area had a relatively low share of crashes resulting in disabling injuries and fatalities.

Bicycle Crash Location and Severity in the DCHC Region 2013-2017



SAFETY
Bicycle crashes (2013 - 2017)
Severity

- Fatalities
- Serious Injury
- Other Injury
- No Injury



THANK YOU

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