May 2022

Coordinated Public Transit-Human Services Transportation Plan

Appendix A: Technical Memo 1

PREPARED FOR:

CRTPO
charlotte regional transportation planning organization

CATS
CHARLOTTE AREA TRANSIT SYSTEM

PREPARED BY:

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1 Existing Conditions: Population and Employment Data

As part of reviewing existing conditions in the study area, the project team reviewed the sociodemographic data, existing and future population densities, and existing transit service including paratransit service area.

Sociodemographic Analysis

The sociodemographic analysis is based on the 2015-2019 5-Year American Community Survey estimates. The analysis collects data points at the block group level for the entire nine county region, with emphasis on those block groups within the Charlotte Urban Area. The study analyzes eight parameters: proportion of older adults (aged 65+), proportion of children (aged 0-17), proportion of households without a readily accessible vehicle, proportion of households with an individual who has a disability, proportion of households within 150 percent of the federal poverty level, veteran status, and proportion of non-white persons.

Environmental Justice Index (EJI)

To assess the combined nature of all eight parameters more easily, an environmental justice index (EJI) is utilized. The index measures how many times a block group is above the nine-county average for each parameter. If a block group is above the study area average (Table 1), the EJI is triggered and a score of 1 is assigned for that measure, otherwise a score of 0 is assigned. All eight parameter scores are then added to calculate the EJI Score between 0 and 8. The higher the EJI Score, the greater the environmental justice concern.

Figure 1 shows the environmental justice index for the study area. Block groups shown in green depict lower EJI scores while those shown in oranges/reds depict higher EJI scores. Within the City of Charlotte, the 'wedge and crescent' pattern is apparent in the EJI map. Block groups within the wedge, the southeastern section of the city, tend to have lower EJI scores than the crescent, the semi-circular area radiating between I-77 and US-74 near and around uptown Charlotte, which have moderate to high EJI scores. The Town of Pineville within Mecklenburg County has triggered a moderate EJI score while the remaining towns of Matthews, Mint Hill, Huntersville, Cornelius, and Davidson largely have lower-end EJI scores.

Within Iredell County, the City of Statesville has several block groups with moderate to high EJI scores, primarily south of the I-40 corridor and west of the I-77 corridor. The Town of Troutman shows a mix of EJI scores, with hotspots to the west of the US-21 corridor and near the intersection of US-21 and I-77. Block groups near the downtown area of Mooresville have higher EJI scores than the rest of the Town.

Union County has lower EJI scores in the towns of Weddington, Marvin, and Waxhaw to the east of the US-74 corridor. Higher index scores can be seen along the US-74 corridor from Mecklenburg County into and around the City of Monroe and north of the US-74 around Wingate.

Within the surrounding counties, areas with moderate to high EJI scores include north of Fort Mill in York County, South Carolina, along the US 521 corridor south of Twelve Mile Creek in Lancaster County, South Carolina, block groups near the Town of Midland in Cabarrus County, and around Lake Norman of Catawba south of NC 150 in Catawba County.

Table 1: Environmental Justice Index (EJI) Study Area Averages

EJI Parameter	Study Area Average*
Older Adult (Aged 65+)	13.3%
Youth (Aged 0-17)	24.0%
Zero Vehicle Households	4.9%
Households with a Disabled Person	21.0%
Limited English Proficiency Households	3.0%
Households in Poverty (150% of Poverty Level)	17.5%
Persons with Veteran Status	7.0%
Non-White Persons	44.4%

Source: 2015-2019 5-Year American Community Survey Estimates

* Study area includes the 9 county Charlotte NC-SC Urban Area and includes the average block group percentage

EJI Score

- ■ 0 - Low
- ■ 1
- ■ 2
- ■ 3
- ■ 4
- ■ 5
- ■ 6
- ■ 7
- ■ 8 - High
- ■ N/a *

Source: 2019 ACS 5-Year Estimates

The Environmental Justice Index (EJI) Score is calculated on 8 parameters: Older Adults (Aged 65+), Youth (Aged 0-17), Zero Vehicle Households, Households with a Disabled Person, Limited English Proficiency Households, Households in Poverty, Persons with Veteran Status, and Non-White Persons. For each parameter, if the block group is above the study area average, the EJI is trigged and a score of 1 is assigned, otherwise a score of 0 is assigned. All parameters are added to calculate a EJI Score between 0 - 8.

* N/a block groups are typically industrial areas where population is insufficient for metric report.
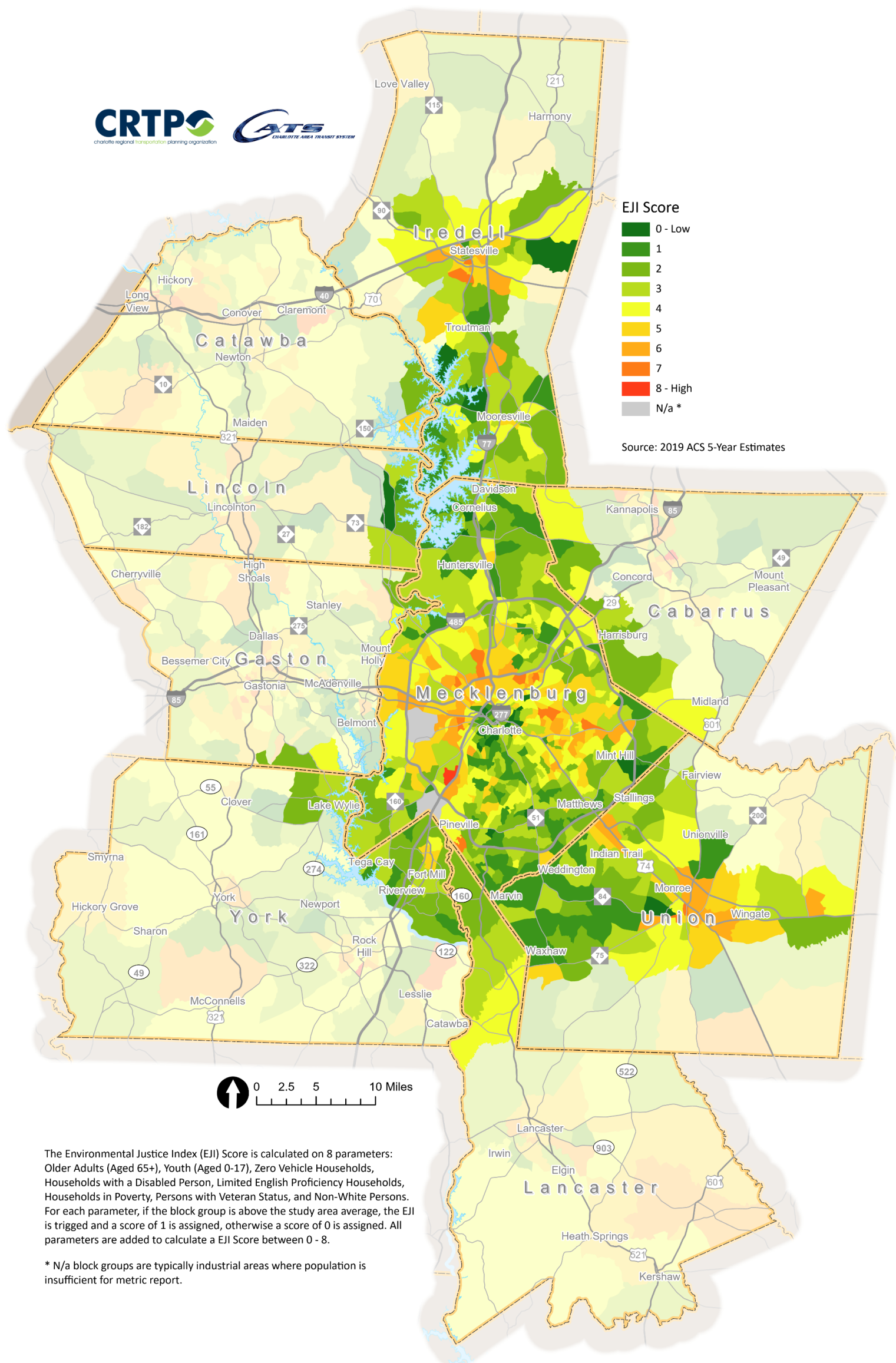
Figure 1 Environmental Justice Index (EJI)

Older Adults (Aged 65+)

Within the study area, there are over 332,000 individuals over the age of 65, comprising 13.3 percent of the total study area population. This proportion is significantly lower than the proportion of older adults as compared to the general population for the United States (15.6%), North Carolina (15.9%), and South Carolina (17.2%). However, the proportion of older adults is higher than that of the Charlotte NC-SC Urban Area, of which older adults account for 11.9 percent of the total population.

The proportion of older adults shows spatial clustering throughout the study area (Figure 3). The map shows block groups of older adults aged 65 years or older symbolized by quintile. Within the City of Charlotte in Mecklenburg County, the 'wedge and crescent' can once again be seen with the wedge in the southeast of the city showing clustering of older adults while the crescent shows lower concentrations of older adults. Localized concentrations within the crescent can be seen to the west of uptown Charlotte and east of uptown around the Plaza Midwood and Windsor Park neighborhoods. Additional concentrations of older adults can be found in the towns of Pineville, Mint Hill, Cornelius, and Davidson.

Iredell County has a high concentration of older adults throughout the study area. Larger concentrations of older adults can be seen surrounding the City of Statesville, particularly along the I-40 corridor and extending into the city. The Town of Troutman has a larger concentration of older adults along the western side of US-21 extending from I-77 up towards Statesville. The downtown of Mooresville has a large concentration of older adults as does the Lake Norman area.

Union County's concentration of older adults is generally lower than that of Iredell County within the study area. Lower concentrations of older adults exist in and around the towns of Marvin, Waxhaw, and Stallings. Higher concentrations can be seen around Indian Trail, Monroe, and Wingate and along the US-601 corridor.

Within the surrounding counties, higher concentrations of older adults can be seen around Lake Norman in Catawba and Lincoln counties, Mountain Island Lake in Gaston County, and Lake Wylie in Gaston and York counties. Within York County, SC, there is a concentration of older adults around Ft. Mill. Lancaster County, SC, shows clustering of older adults, particularly along the US 521 corridor.

Table 2 Older Adult Population (Aged 65+)

Geography	Count	Percentage
United States	50,783,796	15.6%
North Carolina	1,628,013	15.9%
South Carolina	863,558	17.2%
Charlotte NC-SC Urban Area	191,013	11.9%
Study Area	332,532	13.3%
Cabarrus County, NC	26,889	13.0%
Catawba County, NC	27,535	17.5%
Gaston County, NC	34,717	15.8%
Iredell County, NC	27,300	15.6%

Lincoln County, NC	14,101	17.0%
Mecklenburg County, NC	117,292	10.9%
Union County, NC	28,502	12.3%
Lancaster County, SC	18,855	20.4%
York County, SC	37,341	14.0%

Source: 2015-2019 5-Year American Community Survey Estimates

* Study area includes the 9 county Charlotte NC-SC Urban Area

** Charlotte NC-SC Urban Area includes block groups that intersect with the urban area boundary
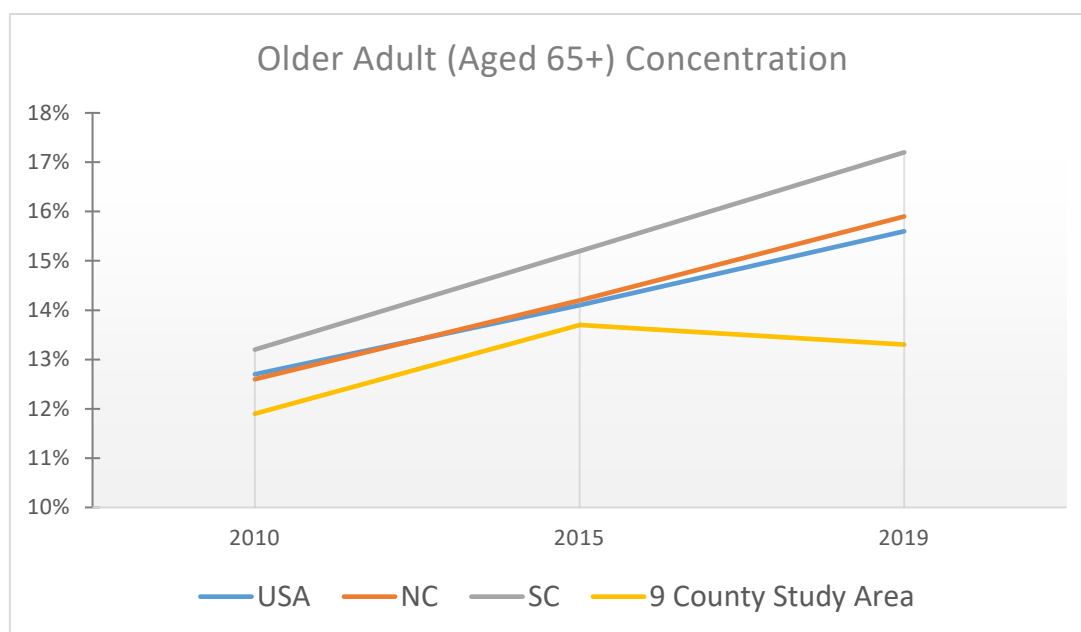
Source: American Community Survey 5-Year Estimates (2010, 2015, 2019)

Figure 2 Older Adult Concentration Trend (2010 – 2019)

Within the 9-county study area, nearly 120,000 older adults live within a ¾ mile area of a deviated fixed route or within an ADA paratransit service area. This is approximately 36 percent of the total older adult population within the study area[1]. This is an approximate figure based on Census Block Groups whose centroid overlaps with the service area to approximate a 50 percent or greater service availability within the block group.

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[1] Population within ¾ mile of fixed route and deviated fixed routes calculated after taking into account Gastonia Transit, Greenway routes (in Catawba County), and My Ride Rock Hill routes in addition to CATS, ICATS and Rider fixed routes and deviated fixed routes.

Older Adult
(Aged 65+)

- ≤ 7.9% (Bottom 20%)
- 7.9 - 11.4%
- 11.4 - 14.8%
- 14.8 - 20%
- > 20% (Top 20%)
- N/a *

Source: 2019 ACS 5-Year Estimates

0   2.5   5   10 Miles

* N/a block groups are typically industrial areas where population is insufficient for metric report.
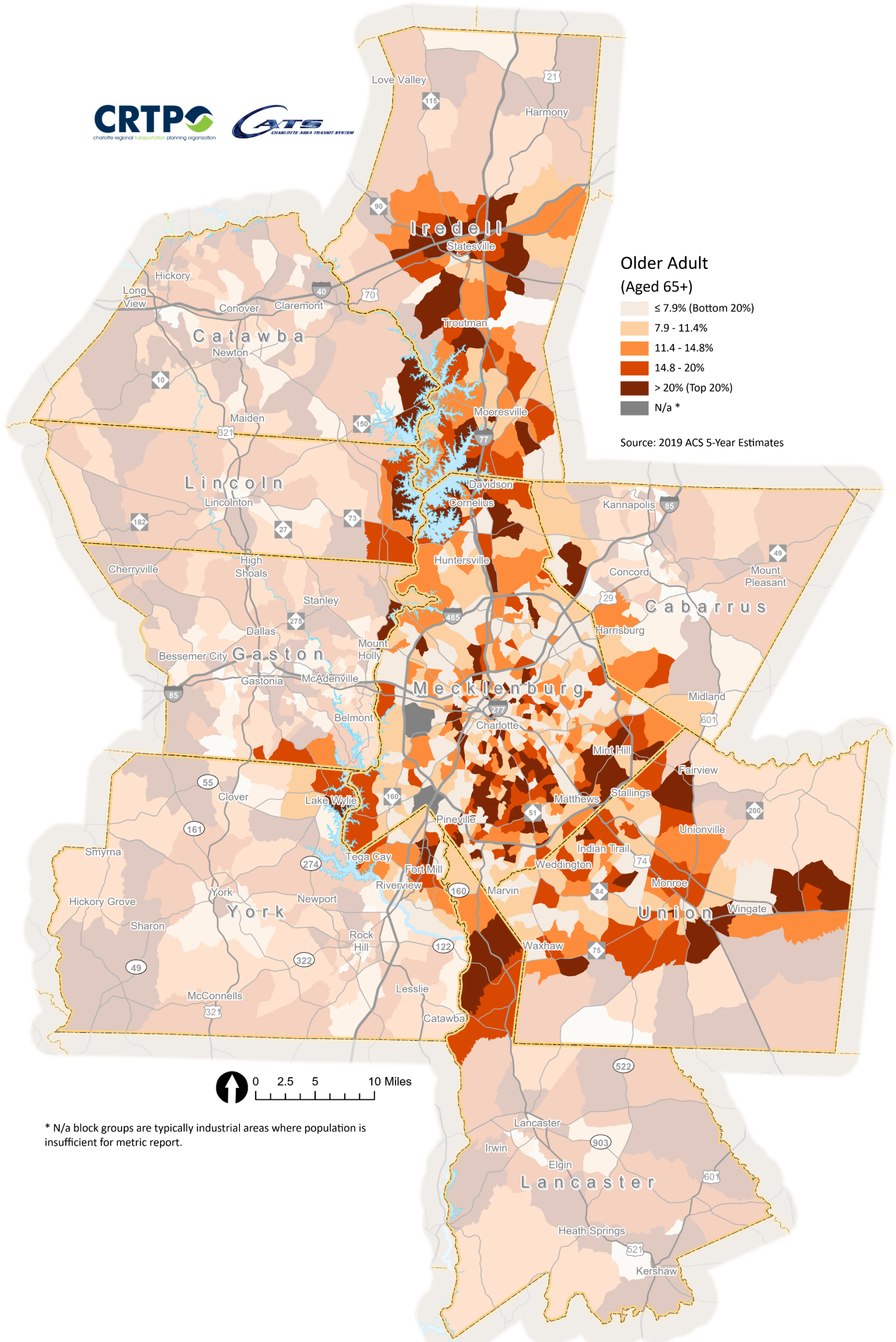
Figure 3 Older Adults (Aged 65+)

Youth (Aged 0-17)

Within the study area, there are over 600,000 individuals under the age of 18, comprising 24 percent of the total study area population. This proportion is higher than the proportion of youth-aged individuals as compared to the general population for the United States (22.6%), North Carolina (22.4%), and South Carolina (22.0%). However, the proportion of youth is lower than that of the Charlotte NC-SC Urban Area, of which youth-aged individuals account for 24.6 percent of the total population.

The concentration of youth throughout the study area largely features a dispersion pattern rather than a clustering pattern (Figure 6). The map shows block groups of youth aged 0-17 years symbolized by quintile. Within the City of Charlotte, there are low concentrations of youth in and around uptown Charlotte and generally along the US-74 corridor. Greater concentrations of youth within the City can be found in the eastern and western neighborhoods. Within Mecklenburg County, concentrations of youth can be seen in Pineville, Matthews, Huntersville, and Davidson.

In Iredell County, there is a greater concentration of youth towards the south. In and around the Town of Mooresville, there is a large concentration of youth-aged population. Statesville also has a concentration of youth-aged population along the US-70 corridor. The Town of Troutman has moderate levels of children.

Within Union County, there is spatial clustering of children and youth under the age of 18. The towns of Marvin, Weddington, Indian Trail, Stallings, and Waxhaw all have high concentrations of youth. The US 601 corridor is also host to a large proportion of youth-aged population. The City of Monroe and Town of Wingate have localized concentrations of youth surrounded by lower concentrations.

Within the surrounding counties, York County, SC, has the largest concentration of youth-aged population. High concentrations of youth in York County can be seen in and around Tega Cay, Riverview, and Fort Mill north of the Catawba River. Northern Lancaster County, SC also shows a high concentration of youth aged population connecting the concentration of youth-aged populations in York County, SC, and Union County. Western Cabarrus County also is host to high concentrations of youth, particularly southwest of Midland, west of Kannapolis, and around Harrisburg.

Table 3: Youth Population (Aged 0-17)

Geography	Count	Percentage
United States	73,429,392	22.6%
North Carolina	2,296,614	22.4%
South Carolina	1,102,502	22.0%
Charlotte NC-SC Urban Area	396,449	24.6%
Study Area	600,881	24.0%
Cabarrus County, NC	53,310	25.8%
Catawba County, NC	35,250	22.4%
Gaston County, NC	49,808	22.7%
Iredell County, NC	40,661	23.2%
Lincoln County, NC	17,764	21.4%
Mecklenburg County, NC	256,258	23.8%

Union County, NC	62,968	27.3%
Lancaster County, SC	20,067	21.7%
York County, SC	64,795	24.4%

Source: 2015-2019 5-Year American Community Survey Estimates

* Study area includes the 9 county Charlotte NC-SC Urban Area

** Charlotte NC-SC Urban Area includes block groups that intersect with the urban area boundary
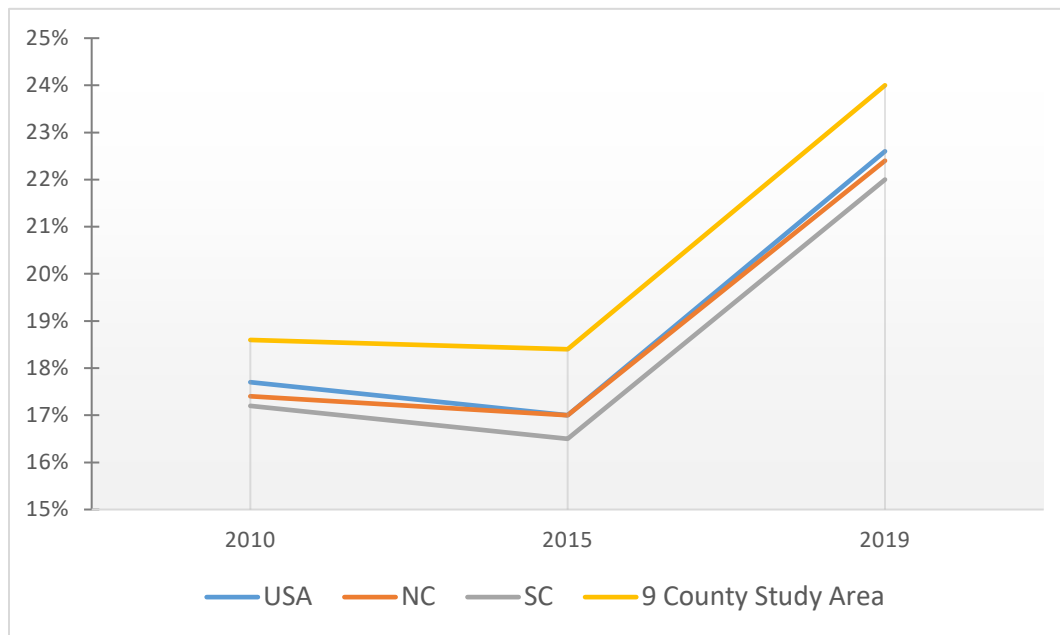

Figure 4 Youth (Aged 0-17) Concentration

Zero-Vehicle Households

Within the study area, there are over 45,600 households without access to a vehicle, comprising 4.9 percent of the total study area households. This proportion is significantly lower than the proportion of zero-vehicle households as compared to the United States (8.6 percent), North Carolina (5.8 percent), and South Carolina (6.3 percent). However, the proportion of zero-vehicle households is higher than that of the Charlotte NC-SC Urban Area, of which zero-vehicle households account for 4.8 percent of the total households.

The concentration of zero-vehicle households throughout the study area largely features a strong pattern of concentration (Figure 7). The map shows block groups of zero-vehicle households symbolized by quintile. Within the City of Charlotte, the 'wedge and crescent' pattern can be shown in the map. Within the wedge of Charlotte, there is a lower concentration of zero-vehicle households whereas the crescent shows higher concentrations of zero-vehicle households. Additional areas of high zero-vehicle household include the I-85 and US-74 corridors within the City of Charlotte. The towns of Mint Hill, Cornelius, and Pineville have lower concentrations of zero-vehicle households.

Within Iredell County, the Town of Mooresville and City of Statesville have higher concentrations of zero-vehicle households. Within Statesville, block groups along the US 70 and NC-90 corridors contain a higher proportion of zero-vehicle households. Likewise, with Mooresville, the US 21 and NC 115 corridors contain high proportions of zero-vehicle households. Block groups near Lake Norman or outside of municipal limits trend towards a lower concentration of zero-vehicle households within Iredell County.

Union County's concentration of zero-vehicle households centers around the City of Monroe and Town of Wingate. Moderate concentrations of zero-vehicle households include the towns of Unionville, Indian Trail, Stallings, and Waxhaw. The Towns of Weddington and Marvin have low concentrations of zero-vehicle households.

Within the surrounding counties, Cabarrus has a higher concentration of zero-vehicle households along its western boundary. This concentration can be seen near the town of Midland and west of the I-85 corridor around the Concord Mills shopping area. In Catawba County, Lake Norman of Catawba south of NC 150 has a higher concentration of zero-vehicle households. In general, the areas surrounding Lake Norman, Mountain Island Lake, and Lake Wylie have lower rates of zero-vehicle households. In the South Carolina counties of York and Lancaster, zero-vehicle household concentration is low to moderate, with the highest concentration north of the SC 460 corridor.

Table 4: Zero-Vehicle Households

Geography	Count	Percentage
United States	10,395,713	8.6%
North Carolina	230,276	5.8%
South Carolina	120,766	6.3%
Charlotte NC-SC Urban Area	28,599	4.8%
Study Area	45,642	4.9%
Cabarrus County, NC	3,153	4.4%
Catawba County, NC	3,077	4.9%
Gaston County, NC	4,632	5.5%
Iredell County, NC	2,298	3.5%
Lincoln County, NC	1,173	3.6%
Mecklenburg County, NC	23,605	5.7%
Union County, NC	1,936	2.5%
Lancaster County, SC	1,647	4.9%
York County, SC	4,121	4.1%

Source: 2015-2019 5-Year American Community Survey Estimates

* Study area includes the 9 county Charlotte NC-SC Urban Area

** Charlotte NC-SC Urban Area includes block groups that intersect with the urban area boundary

Households with at Least One Person with a Disability

Within the study area, there are over 103,000 households with at least one person with a disability, comprising 21 percent of the total study area households. This proportion is significantly lower than the proportion of households with at least one person with a disability as compared to the United States (25.5%), North Carolina (26.2%), and South Carolina (28.0%). However, the proportion of households with at least one person with a disability is higher than that of the Charlotte NC-SC Urban Area, where households with at least one person with a disability account for 17.2 percent of the total households.

The concentration of households with at least one person with a disability throughout the study area is largely clustered (Figure 8). The map shows block groups of households with at least one individual with a disability symbolized by quintile. Within the City of Charlotte, the largest concentration of households with at least one individual with a disability is on the city's western side near the airport and along the I-85 corridor west of I-77 and the southern portion of I-77 below NC-160. Additional clusters of households with at least one individual with a disability in Mecklenburg County exist in southeast Charlotte and the Town of Mint Hill and southwest of Pineville. Mecklenburg County largely has low to moderate concentrations of households with an individual with a disability present compared to the nine-county region.

Within Iredell County, there is strong spatial clustering of households with at least one individual with a disability near the Town of Troutman and City of Statesville. Near the downtown core of Statesville, there are lower rates of households with at least one individual with a disability whereas block groups surrounding downtown have a greater concentration. The Town of Mooresville has a higher concentration of households with at least once individual with a disability near and around its downtown core. The I-77 and I-40 corridors generally have a spatial concentration of households with at least one individual with a disability. Block groups nearer to Lake Norman or near Mecklenburg County have a lower concentration of households with at least one person with a disability.

Within Union County, there is a spatial concentration of households with at least individual with a disability along the US 74 from the Mecklenburg County line to the Anson County line to the east and the US 604 corridor from Cabarrus County to the north towards the state line. Concentrations of households with at least one individual with a disability are in and around the City of Monroe and the towns of Wingate, Unionville, and southern Waxhaw. The towns of Marvin and Weddington have lower than region's average presence of households with at least one individual with a disability while Indian Trail and Stallings contain pockets of moderate to high concentrations.

Within the surrounding counties, households near Lake Wylie and Lake Norman have low to moderate concentrations of households with at least one individual with a disability while Mountain Island Lake has moderate to high concentrations. This can be seen along the NC-16 corridor starting from the intersection of NC-16 and NC 73 in Lincoln County south towards the town of Mount Holly in Gaston County. Both York and Lancaster counties within the study area have low to moderate concentrations of households with at least one individual with a disability except in the Riverview and Fort Mill areas which have moderate to high concentrations.

Table 5: Households with a Disabled Person

Geography	Count	Percentage
United States	30,781,341	25.5%
North Carolina	1,039,781	26.2%
South Carolina	538,695	28.0%
Charlotte NC-SC Urban Area	103,363	17.2%
Study Area	197,485	21.0%
Cabarrus County, NC	15,840	21.9%
Catawba County, NC	17,814	28.6%
Gaston County, NC	25,266	30.2%
Iredell County, NC	16,945	25.5%
Lincoln County, NC	9,428	28.7%
Mecklenburg County, NC	64,690	15.7%
Union County, NC	16,783	22.0%
Lancaster County, SC	8,947	26.4%
York County, SC	21,772	21.5%

Source: 2015-2019 5-Year American Community Survey Estimates

* Study area includes the 9 county Charlotte NC-SC Urban Area

** Charlotte NC-SC Urban Area includes block groups that intersect with the urban area boundary
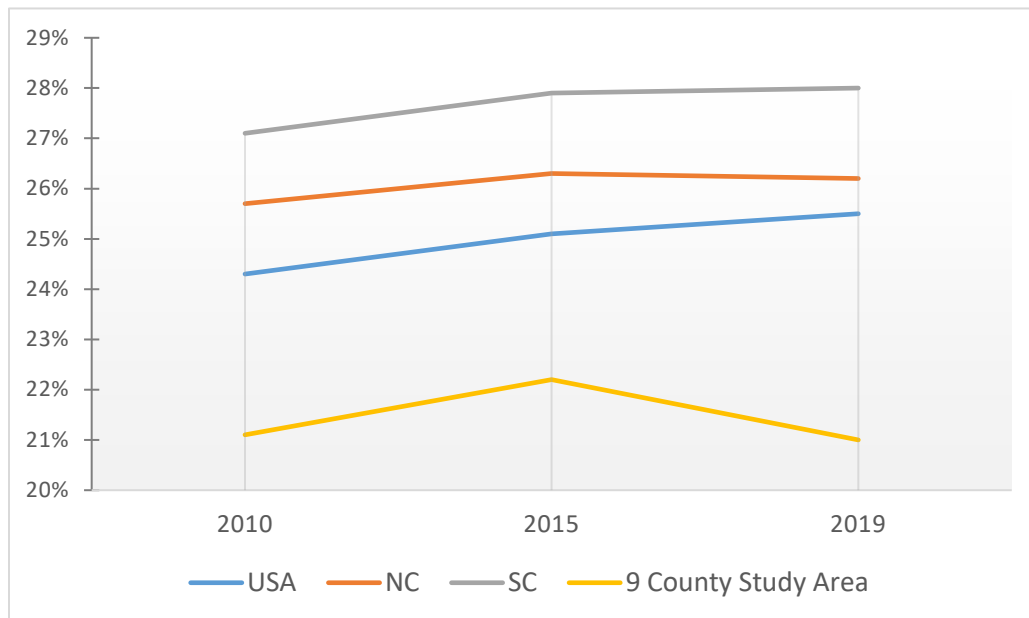

Figure 5 Households with a Disabled Person

Within the nine-county study area, nearly 76,000 households or 38.5 percent of all households with at least one individual with a disability live within a ¾ mile area of a fixed route or deviated fixed route or an ADA paratransit service area. This is an approximate figure based on Census Block Groups whose centroid overlaps with the service area to approximate a 50 percent or greater service availability within the block group.
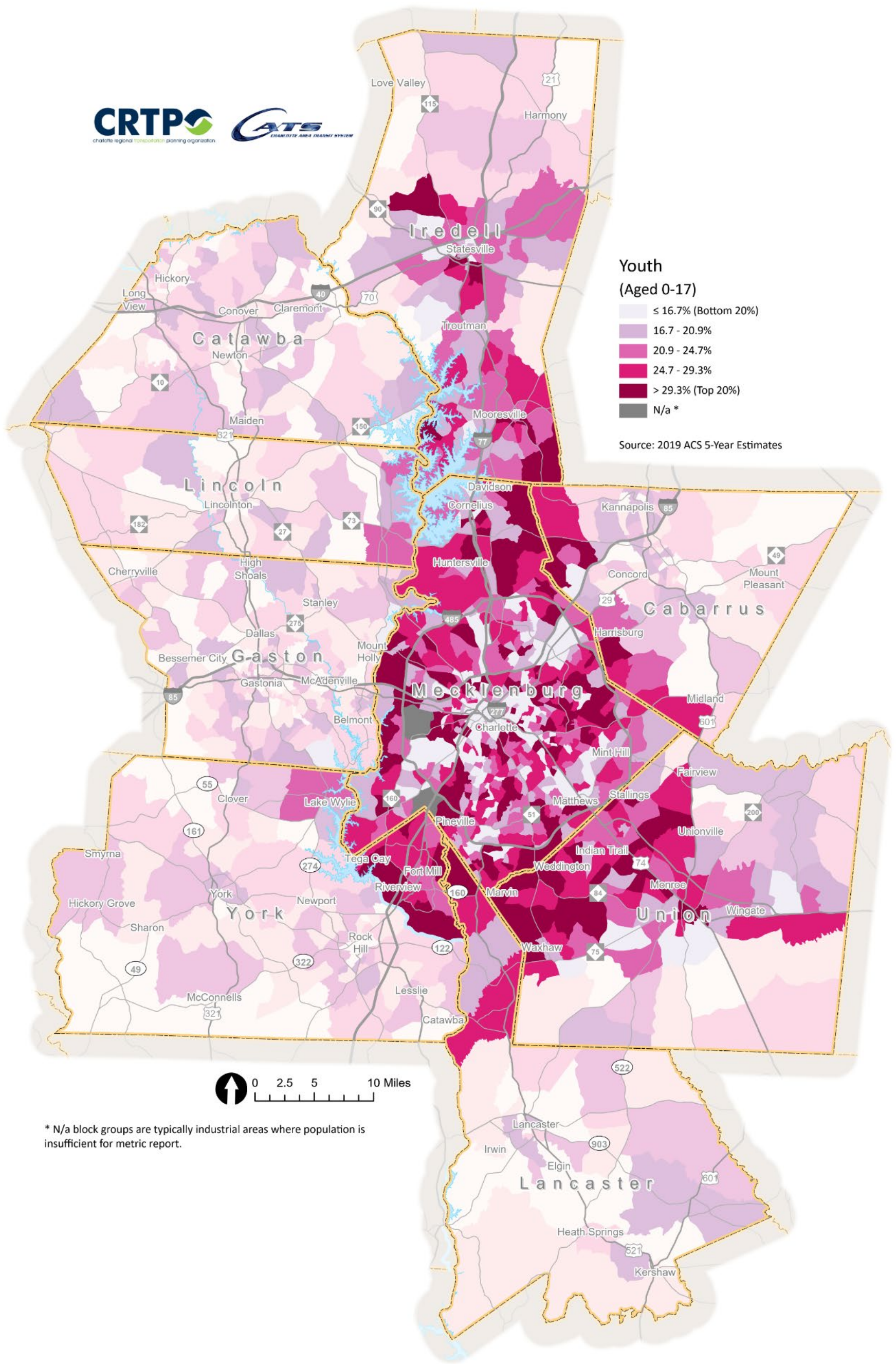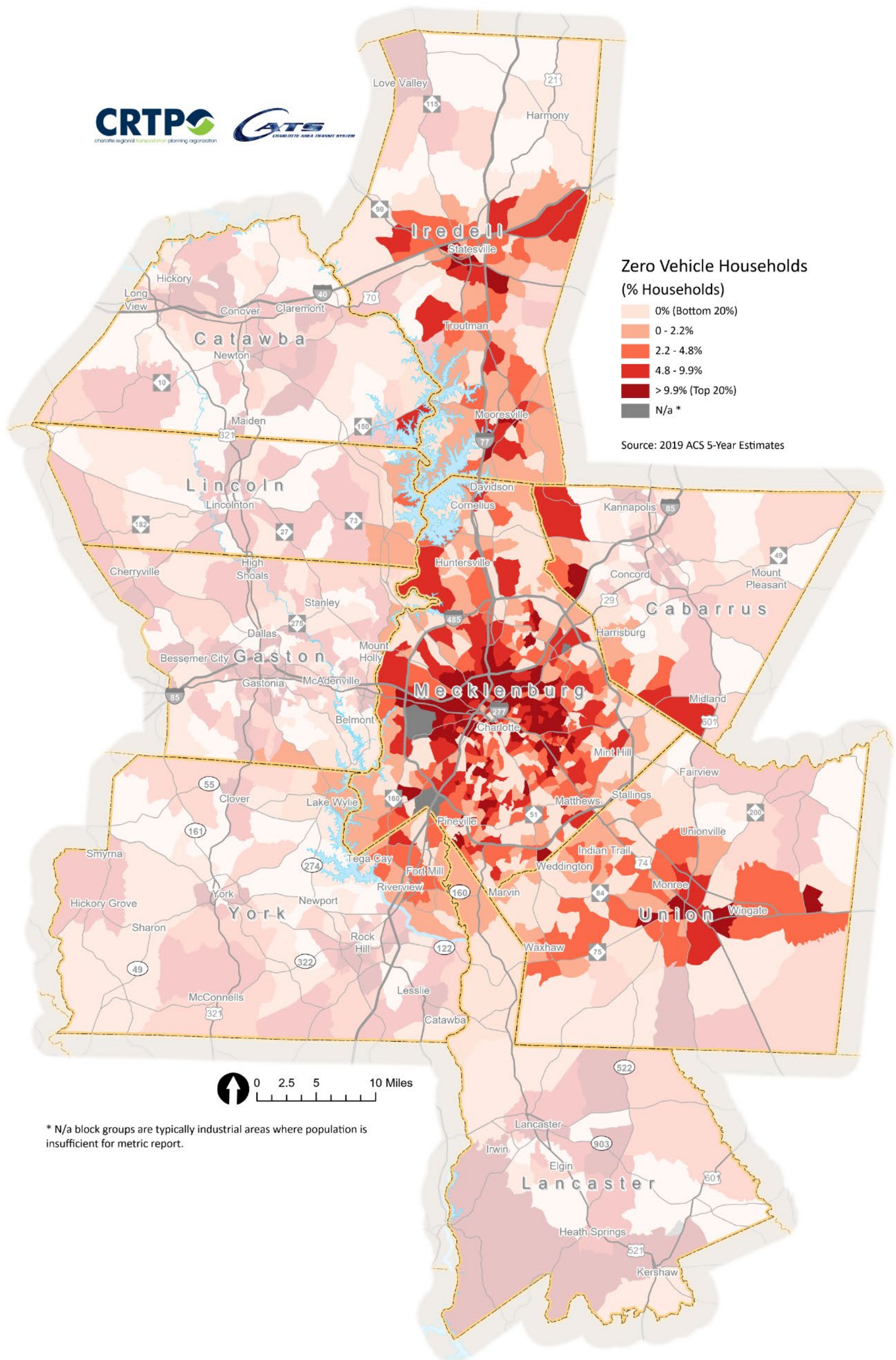
Figure 6 Youth (Aged 0-17)

Zero Vehicle Households
(% Households)

- 0% (Bottom 20%)
- 0 - 2.2%
- 2.2 - 4.8%
- 4.8 - 9.9%
- > 9.9% (Top 20%)
- N/a *

Source: 2019 ACS 5-Year Estimates

* N/a block groups are typically industrial areas where population is insufficient for metric report.

Figure 7 Zero Vehicle Households

Households with a Disabled Person
(% Households)

- 0 - 12.6% (Bottom 20%)
- 12.6 - 18.3%
- 18.3 - 24.6%
- 24.6 - 32.1%
- > 32.1% (Top 20%)
- N/a *

Source: 2019 ACS 5-Year Estimates

0   2.5   5   10 Miles

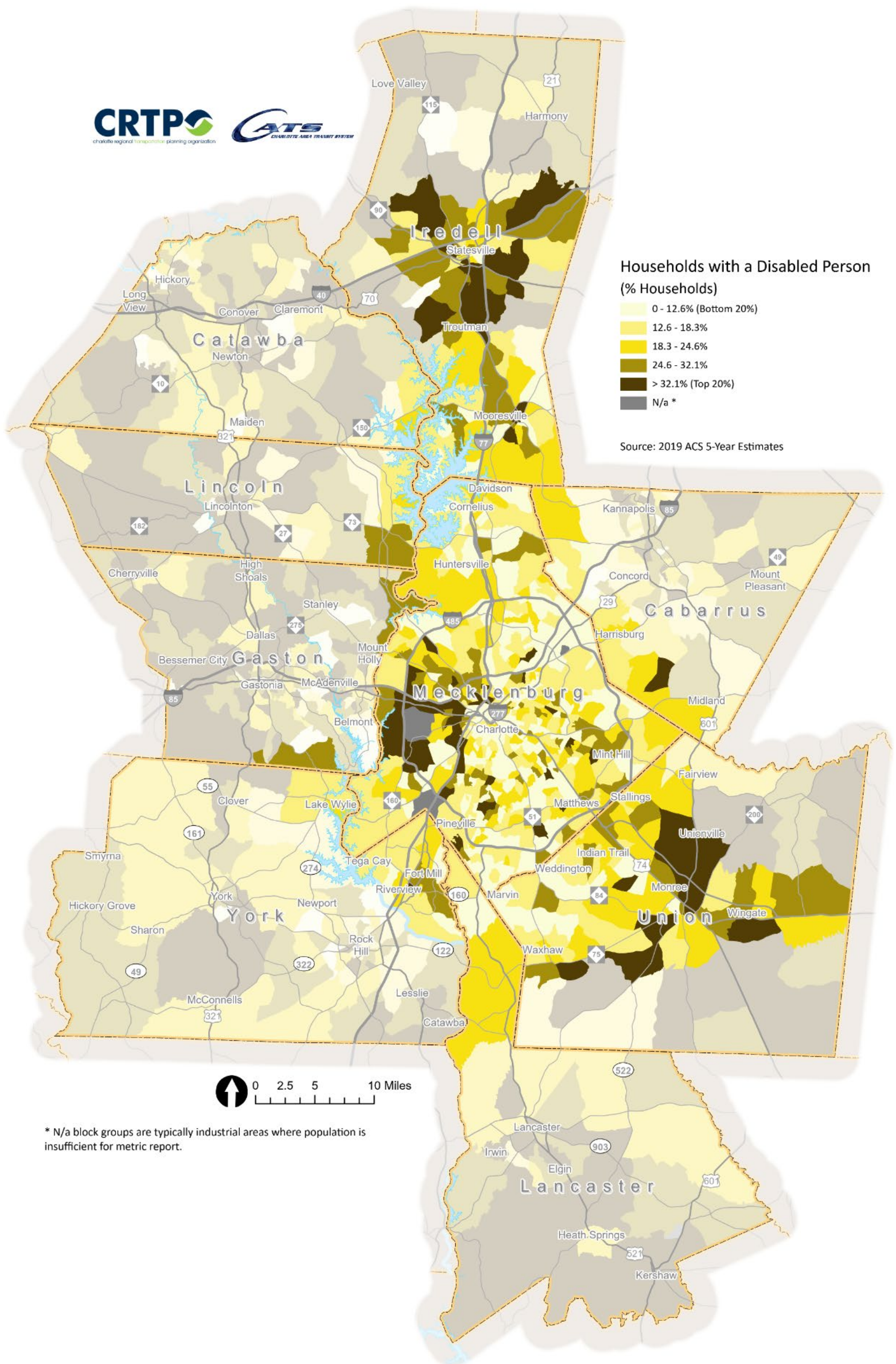* N/a block groups are typically industrial areas where population is insufficient for metric report.

Figure 8 Households with a Disabled Person Present

Limited English Proficiency Households

Within the study area, there are nearly 28,000 limited English proficiency households, comprising 3.0 percent of the total study area households. This proportion is lower than the proportion of limited English proficiency households as compared to the United States (4.4 percent), and the Charlotte NC-SC Urban Area (4.8 percent), North Carolina (5.8 percent), and South Carolina (6.3 percent). However, the proportion of limited English proficiency households is higher than that of both North Carolina (2.3 percent) and South Carolina (1.4 percent).

The concentration of limited English proficiency (LEP) households throughout the study area is largely clustered in a few activity centers (Figure 11). The map shows block groups of limited English proficiency households symbolized by quintile. Within the study area, Mecklenburg County has the largest concentration of limited English proficiency households. Once again, the 'wedge and crescent' model can be seen within the City of Charlotte regarding LEP households. Block groups in the crescent, southeast of uptown Charlotte between I-77 and US-74, largely consist of low concentrations of LEP households with a small concentration near the South Park neighborhood. Within the crescent of Charlotte, there is a large concentration of LEP households, particularly in the eastern part of the crescent. Outside of Charlotte, the towns of Pineville, Huntersville, and Cornelius have moderate to high concentrations of LEP households.

Table 6: Limited English Proficiency Households

Geography	Count	Percentage
United States	5,308,496	4.4%
North Carolina	90,567	2.3%
South Carolina	27,485	1.4%
Charlotte NC-SC Urban Area	28,599	4.8%
Study Area	27,954	3.0%
Cabarrus County, NC	1,253	1.7%
Catawba County, NC	1,596	2.6%
Gaston County, NC	1,122	1.3%
Iredell County, NC	1,226	1.8%
Lincoln County, NC	505	1.5%
Mecklenburg County, NC	19,688	4.8%
Union County, NC	1,459	1.9%
Lancaster County, SC	190	0.6%
York County, SC	915	0.9%

Source: 2015-2019 5-Year American Community Survey Estimates

* Study area includes the 9 county Charlotte NC-SC Urban Area

** Charlotte NC-SC Urban Area includes block groups that intersect with the urban area boundary

Within Iredell County, the concentration of LEP households is predominately limited to the Town of Mooresville and City of Statesville. Within the Town of Mooresville, higher concentrations of LEP households can be found along the I-77 and NC 150 corridors. The City of Statesville has higher concentrations of LEP households along the I-40, I-77, and US 70 corridors in addition to the downtown core.

Likewise, within Union County, the concentration of LEP households is predominately located along the US-74 corridor and in and around the City of Monroe. The highest concentration of LEP households is within the downtown core of Monroe and radiating northwest along US-74 and northeast along NC-200.

In the surrounding counties, there is low concentrations of LEP households. The exception to this spatial pattern can be found in Cabarrus County particularly near the towns of Midland and Harrisburg along the Mecklenburg County border.

Low-Income Population

Within the study area, there are over 446,000 low-income individuals (making up to 150 percent of the federal poverty level), comprising 17.5 percent of the total study area population. This proportion is lower than the proportion of low-income individuals as compared to the general population for the United States (20.3 percent), North Carolina (22.8 percent), and South Carolina (23.1 percent). The proportion of low-income individuals is slightly lower than that of the Charlotte NC-SC Urban Area, of which low-income individuals account for 17.8 percent of the total population.

The concentration of low-income population throughout the study area is largely clustered (Figure 12). The map shows block groups of low-income residents symbolized by quintile. The concentration of low-income residents within the City of Charlotte closely follows the 'wedge and crescent' model. The southeastern wedge of the city shows a low concentration of low-income residents. The crescent portion of the City of Charlotte plays host to a large concentration of low-income residents, particularly the inner ring of neighborhoods and along the I-77 and I-85 corridors. Outside of the city, the Town of Pineville has a moderate cluster of low-income residents as does the northern portion of Mint Hill.

Within Iredell County, the greatest concentration of low-income residents is in and around the City of Statesville. This highest concentration can be seen just south of downtown Statesville along the US 70 corridor. The Town of Mooresville is also host to another concentration of low-income individuals, particularly along the NC 115 corridor and into the downtown center.

Union County shows a spatial concentration of low-income individuals along the US 74, US 74 Bypass, and NC 75 corridors. Highest concentrations of low-income residents include the City of Monroe and towns of Indian Trail and Wingate. Outside of this corridor, the towns of Waxhaw, Marvin, Weddington, Stallings, and Fairview show low concentrations of low-income residents.

Within the surrounding counties, block groups surrounding Lake Norman and Lake Wylie show low concentrations of low-income residents with Mountain Island Lake block groups showing low to moderate concentrations. In Gaston County, two block groups south of Gastonia along the NC-274 corridor show moderate concentrations of low-income residents. Cabarrus County shows a concentration of low-income individuals along the US-29 corridor near the Mecklenburg County border. Both counties in South Carolina show low to moderate concentrations of low-income individuals, with a moderate concentration along the US-21 Bypass corridor.

Table 7: Low Income Population

Geography	Count	Percentage
United States	65,139,120	20.3%
North Carolina	2,323,518	22.8%
South Carolina	1,155,587	23.1%
Charlotte NC-SC Urban Area	283,433	17.8%
Study Area	446,871	17.5%
Cabarrus County, NC	31,592	14.7%
Catawba County, NC	34,811	22.2%
Gaston County, NC	50,440	22.9%
Iredell County, NC	27,068	15.0%
Lincoln County, NC	10,970	12.9%
Mecklenburg County, NC	200,294	18.3%
Union County, NC	28,831	12.2%
Lancaster County, SC	18,959	20.1%
York County, SC	43,906	15.9%

Source: 2015-2019 5-Year American Community Survey Estimates

* Study area includes the 9 county Charlotte NC-SC Urban Area

** Charlotte NC-SC Urban Area includes block groups that intersect with the urban area boundary

Veteran Status

Within the study area, there are over 133,500 individuals with veteran status, comprising 7 percent of the total study area population. This proportion is lower than the proportion of individuals with veteran status as compared to the general population for the United States (7.3 percent), North Carolina (8.4 percent), and South Carolina (9.0 percent). However, the proportion of individuals with veteran status is higher than that of the Charlotte NC-SC Urban Area, of which individuals with veteran status account for 6.4 percent of the total population.

The concentration of persons with veteran status throughout the study area is largely dispersed with limited spatial concentration (see Figure 12). The map shows block groups of persons with veteran status symbolized by quintile. Within the City of Charlotte, there is little spatial concentration of block groups with higher concentrations of persons with veteran status. Modest clusters can be seen in eastern Charlotte east of W.T. Harris Boulevard and in northern Charlotte north of the I-85 corridor. Within greater Mecklenburg County, clusters of veteran status persons can be seen within the towns of Mint Hill and Cornelius with lesser clusters in the towns of Matthews and Davidson. Within Mecklenburg County, there is a lower concentration of persons with veteran status inside the City of Charlotte than outside of its municipal boundaries.

Iredell County shows a moderate level of spatial clustering of persons with veteran status, particularly along the I-77 corridors and near population centers. Around the City of Statesville, there is clustering of veterans within the downtown core of the city and along the I-40 corridor. There is also moderate clustering of veterans along the US-21 corridor from Mooresville to Statesville with lesser clustering around the downtown areas of Mooresville and

Troutman. Areas outside of the population centers within Iredell County typically have lower concentrations of veterans.

Table 8: Individuals with Veteran Status

Geography	Count	Percentage
United States	18,230,322	7.3%
North Carolina	659,584	8.4%
South Carolina	365,139	9.4%
Charlotte NC-SC Urban Area	77,195	6.4%
Study Area	133,567	7.0%
Cabarrus County, NC	11,630	7.6%
Catawba County, NC	9,646	7.9%
Gaston County, NC	13,243	7.8%
Iredell County, NC	9,236	6.9%
Lincoln County, NC	5,821	8.9%
Mecklenburg County, NC	47,874	5.9%
Union County, NC	12,215	7.3%
Lancaster County, SC	6,151	8.5%
York County, SC	17,751	8.8%

Source: 2015-2019 5-Year American Community Survey Estimates

* Study area includes the 9 county Charlotte NC-SC Urban Area

** Charlotte NC-SC Urban Area includes block groups that intersect with the urban area boundary

Union County shows a greater level of spatial clustering of persons with veteran status. This is evident along the US 74 corridor extending from Mecklenburg County in the north and out to Anson County to the east. The Towns of Indian Trail, Stallings, Fairview, and Wingate all have spatial clustering of veteran status individuals. The City of Monroe also has a cluster of veterans on its western edge and extending along the NC 75 corridor.

Within the surrounding counties, clusters of veteran status individuals in abundant, especially in less built-up block groups. This is evident around Lake Norman, Lake Wylie, and Mountain Island Lake where block group surrounding these water features are host to greater densities of veterans in Catawba, Lincoln, Gaston, and York counties. Cabarrus county also has spatial clustering of persons with veteran status along its less developed western boundary.
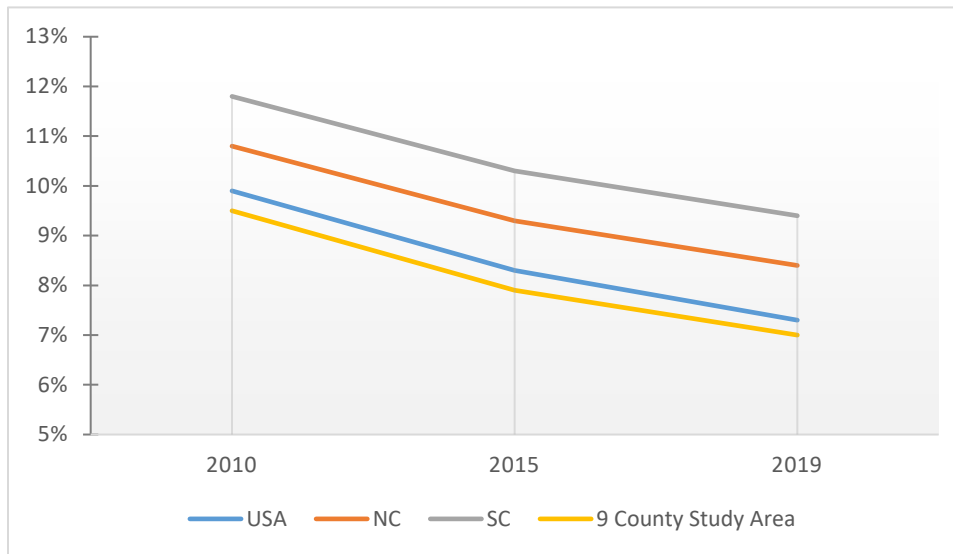
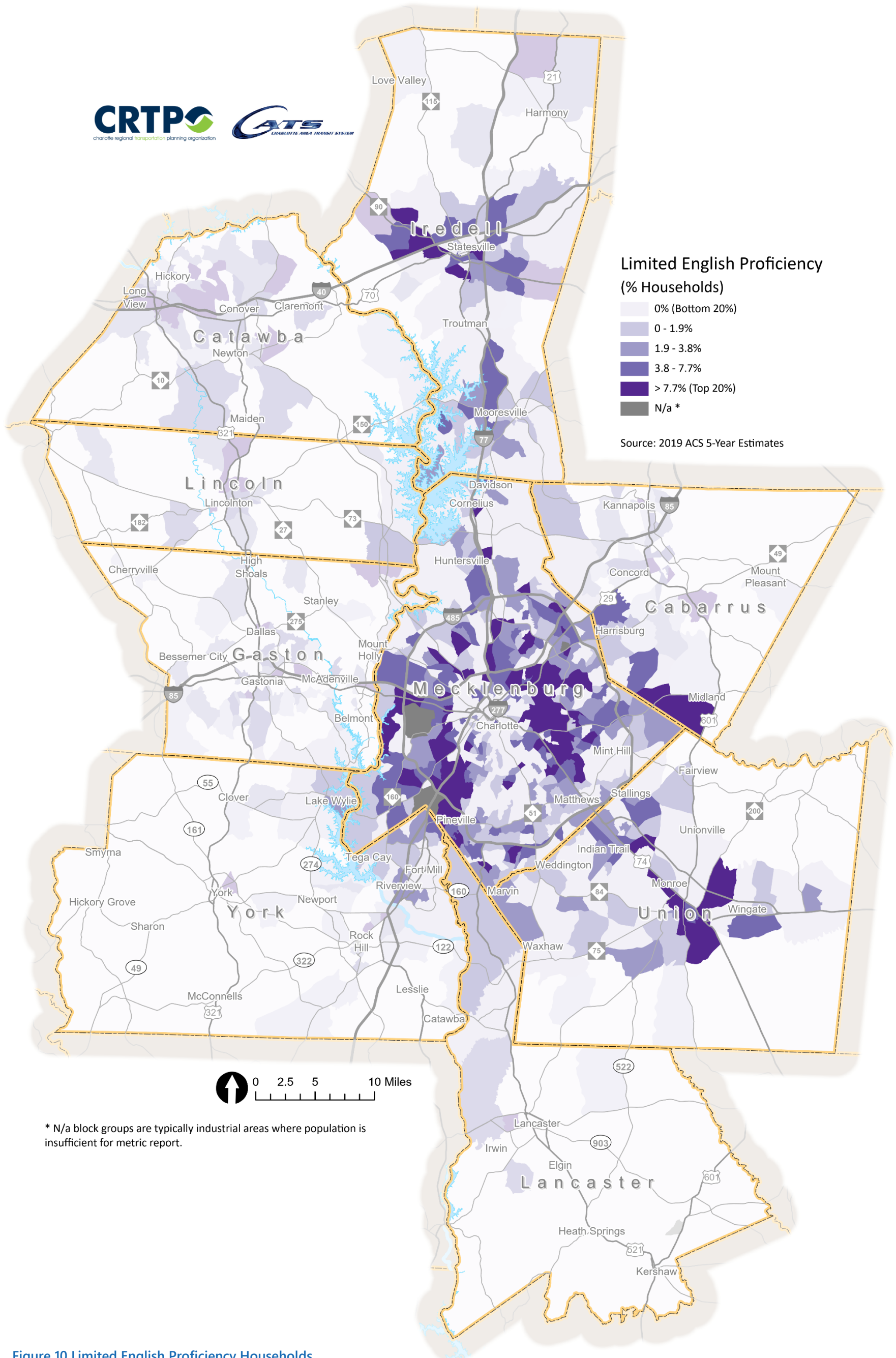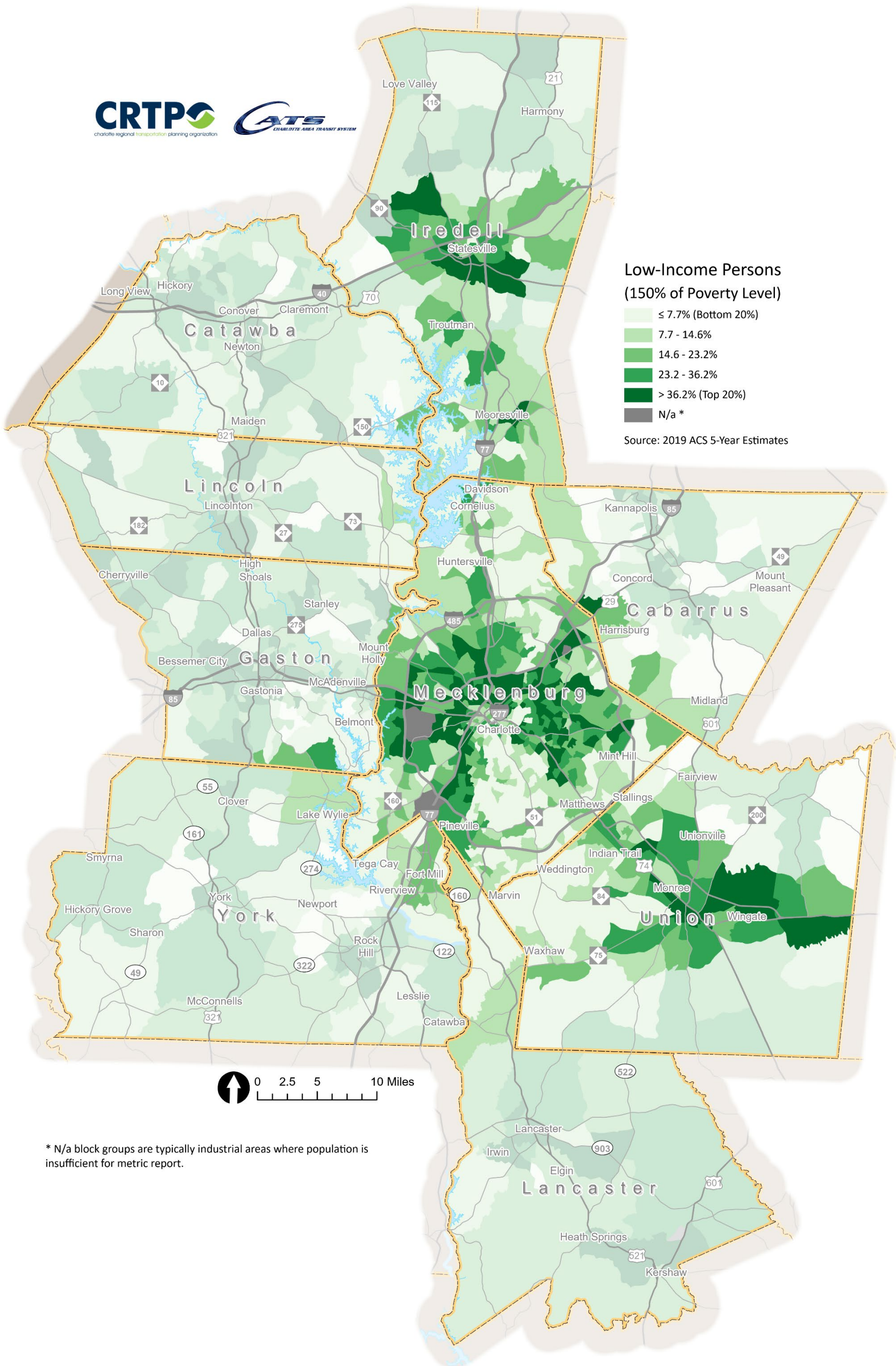**Figure 9 Individuals with Veteran Status**

Limited English Proficiency
(% Households)

- 0% (Bottom 20%)
- 0 - 1.9%
- 1.9 - 3.8%
- 3.8 - 7.7%
- > 7.7% (Top 20%)
- N/a *

Source: 2019 ACS 5-Year Estimates

* N/a block groups are typically industrial areas where population is insufficient for metric report.

Figure 10 Limited English Proficiency Households

Low-Income Persons
(150% of Poverty Level)

≤ 7.7% (Bottom 20%)

7.7 - 14.6%

14.6 - 23.2%

23.2 - 36.2%

> 36.2% (Top 20%)

N/a *

Source: 2019 ACS 5-Year Estimates

0   2.5   5   10 Miles

* N/a block groups are typically industrial areas where population is insufficient for metric report.
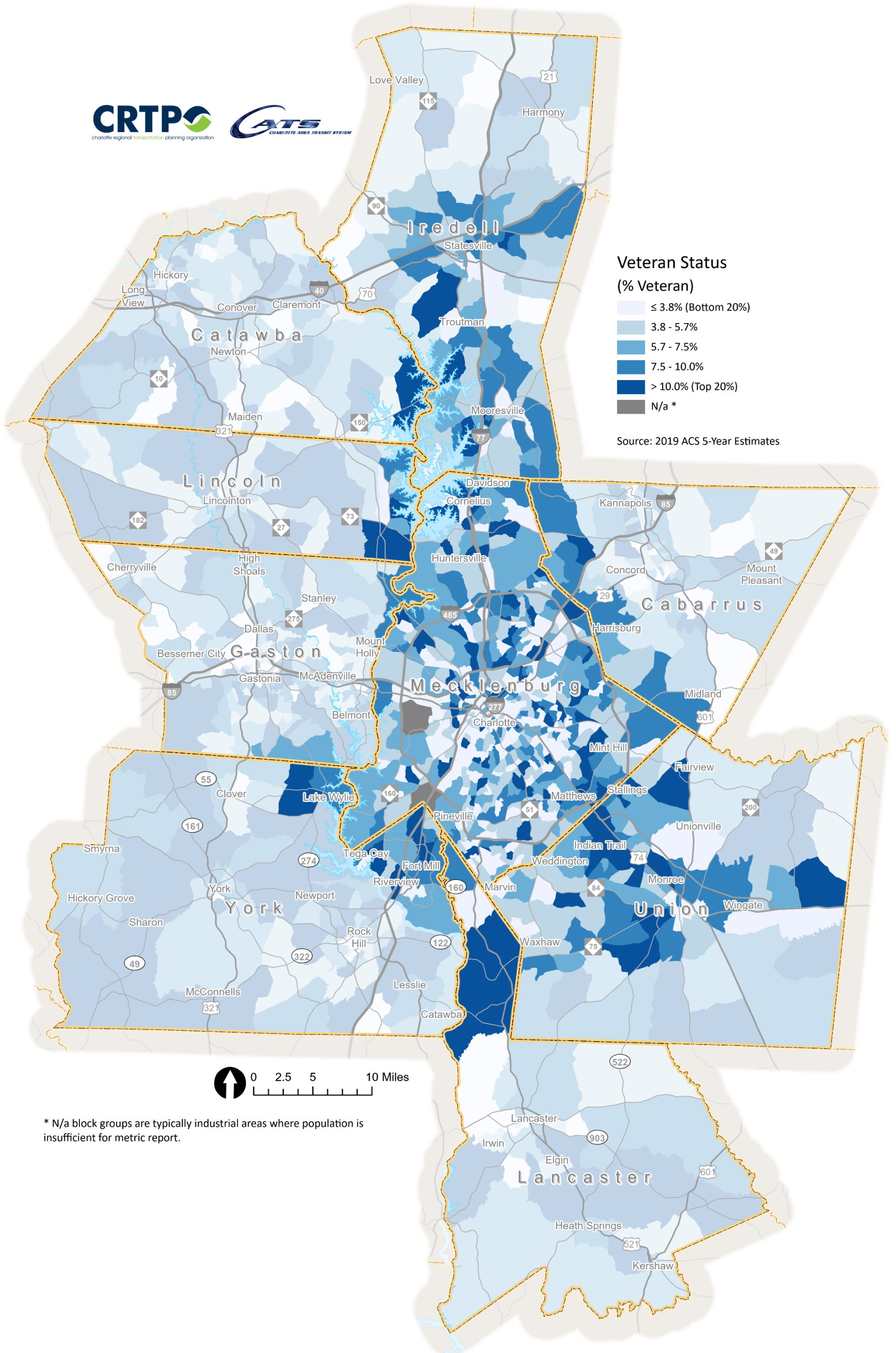
Figure 11 Low-Income Individuals

Veteran Status
(% Veteran)

- ≤ 3.8% (Bottom 20%)
- 3.8 - 5.7%
- 5.7 - 7.5%
- 7.5 - 10.0%
- > 10.0% (Top 20%)
- N/a *

Source: 2019 ACS 5-Year Estimates

0   2.5   5   10 Miles

* N/a block groups are typically industrial areas where population is insufficient for metric report.

Figure 12 Veteran Status

Non-White Persons

Within the study area, there are nearly 1,100,000 non-white individuals, comprising 41.8 percent of the total study area population. This proportion is lower than the proportion of non-white individuals as compared to the general population for the United States (42.2 percent), and the Charlotte NC-SC Urban Area (44.4 percent). However, the proportion of non-white individuals is higher than that of both North Carolina (39.5 percent) and South Carolina (37.9 percent) compared to that of the total population.

The proportion of non-white persons shows spatial clustering throughout the study area (Figure 11). The map shows block groups of non-white individuals symbolized by quintile. Throughout the nine-county region, Mecklenburg County shows the greater spatial concentration of non-white persons. This is evident in the City of Charlotte's 'wedge and crescent' layout. Within the wedge southeast of uptown Charlotte, there is spatial clustering of individuals who identify as White or Caucasian. Outside of this wedge in the crescent, there is extensive cluster of non-white individuals from the I-77 to the US-74 corridor. This is also evident around the I-485 loop except for the areas around the towns of Mint Hill and Matthews, where the concentration is less. Outside the City of Charlotte, the Town of Pineville shows a concentration of non-white individuals while the Town of Matthews shows localized clustering along the US-74 corridor and south of I-485. The towns of Mint Hill, Huntersville, Cornelius, and Davidson show lower concentrations of non-white individuals.

Within Iredell County, the concentration of non-white individuals is largely centered around population centers. This can be seen in the City of Statesville, where there is higher concentration of non-white individuals within the downtown core and to the western parts of the city. Likewise, in the Town of Mooresville, there is a concentration in and around downtown Mooresville and lessening in concentration closer to Lake Norman. Outside of these population centers, the concentration of non-white individuals lessens.

Table 9: Non-White Individuals

Geography	Count	Percentage
United States	139,751,634	42.2%
North Carolina	4,127,240	39.5%
South Carolina	1,939,873	37.9%
Charlotte NC-SC Urban Area	714,672	44.4%
Study Area	1,095,369	41.8%
Cabarrus County, NC	92,023	40.8%
Catawba County, NC	44,490	27.7%
Gaston County, NC	74,290	32.6%
Iredell County, NC	50,300	26.9%
Lincoln County, NC	15,149	17.5%
Mecklenburg County, NC	616,799	55.3%
Union County, NC	77,154	32.4%

Lancaster County, SC	31,089	32.4%
York County, SC	94,075	33.3%

Source: 2015-2019 5-Year American Community Survey Estimates

* Study area includes the 9 county Charlotte NC-SC Urban Area

** Charlotte NC-SC Urban Area includes block groups that intersect with the urban area boundary

Union County shows a spatial concentration of non-white individuals along the US 74 from Mecklenburg County to Anson County. The greatest concentration of non-white individuals within the county exists in the City of Monroe and Town of Wingate. The towns of Marvin, Waxhaw, Indian Trail, and Stallings show moderate levels of spatial clustering of non-white individuals. Outside of these population centers in Union County, there is a greater concentration of individuals who identify as White or Caucasian.

Within the surrounding counties, the spatial concentration of non-white individuals is largely tied to population centers. This is evident in York and Lancaster counties within the study area where there is a clustering of municipalities and non-white individuals. In the western counties of this study area, there is less spatial concentration of non-white individuals. An exception is Gaston County in Gastonia where a large concentration of non-white individuals resides within the municipal limits. Cabarrus County, on the eastern edge of the study area, again shows this pattern of non-white individuals clustering in or near population centers with less built-up areas featuring a greater concentration of individuals who identify as White or Caucasian.
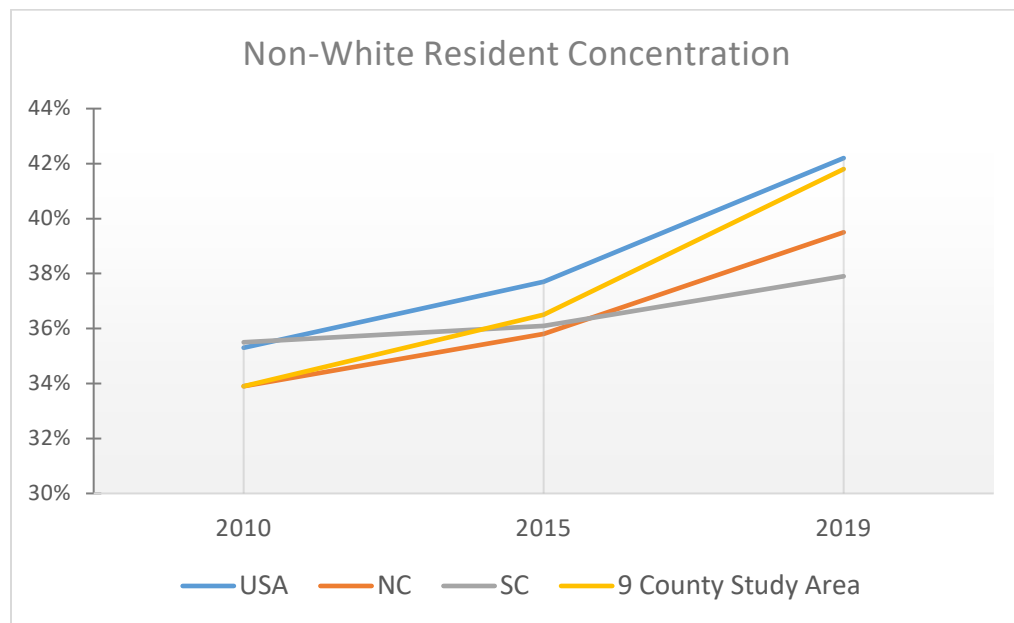

Figure 13 Non-White Population Concentration

Minority Population
(% Non-White)

- ≤ 11.3% (Bottom 20%)
- 11.3 - 23.9%
- 23.9 - 38.9%
- 38.9 - 67.2%
- > 67.2% (Top 20%)
- N/a *

Source: 2019 ACS 5-Year Estimates

0   2.5   5   10 Miles

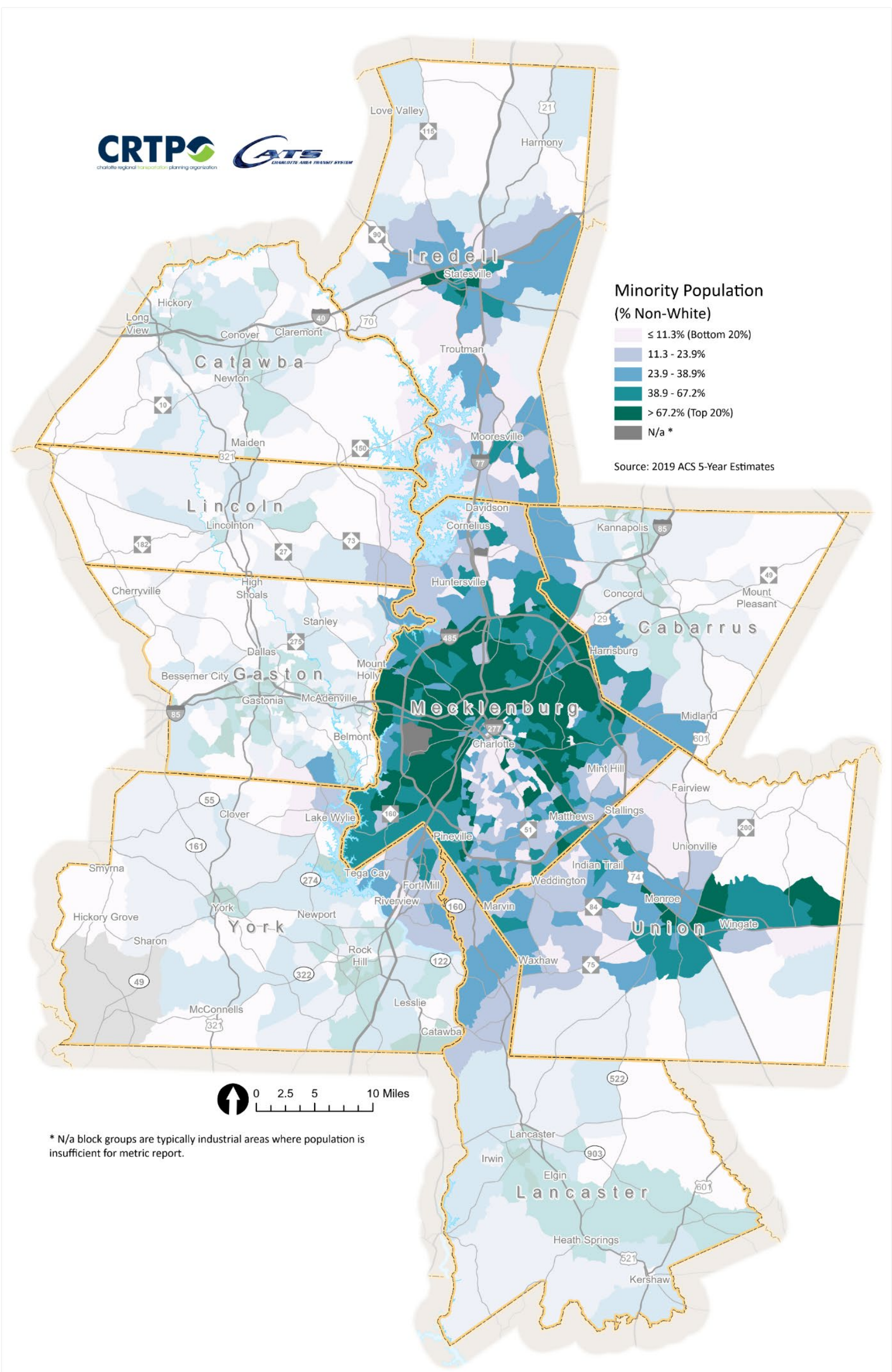* N/a block groups are typically industrial areas where population is insufficient for metric report.

Figure 14 Non-White Individuals

Population and Employment Growth

Population and employment growth out to 2045 was reviewed for the study area. Figure 16 on the following page illustrates the expected concentration of employment growth between 2018-2045 for the study area. The Coordinated Public Transit-Human Services Transportation Plan update utilized data from the Metrolina Regional Travel Demand Model (TDM), more specifically from the latest tour based Metrolina Regional Model (MRM2001, Working Version, May 2021) and the Greater Hickory MPO Travel Demand Model (July 2019, V1.2). The Metrolina TDM covers eight of the nine counties overlapping with the Project Study Area and the Greater Hickory MPO Travel Demand Model files cover Catawba County. In combination, 1,862 transportation analysis zones (TAZs) were reviewed as overlapping with the Charlotte Urban Area for population and employment growth. The TAZs are a special area delineated by state and/or local transportation officials for tabulating traffic-related data (based on trip purpose such as journey-to-work and place of-work). The TAZs from the Metrolina TDM are populated with base year (2018, with 2015 base year used for Catawba County) and future (2045) population and employment data. The population and employment projections at the TAZ level is used in the Travel Demand Model to help project future travel patterns within the region.

The population and employment projections adopted as part of the Regional Travel Demand model development in the region show that the Charlotte Urban Area will become home to 2.798 million people, 1.09 million households, and 1.948 million jobs by year 2045[2]. These regional growth projections are depicted in Figure 10. These growth projections reflect a 58 percent growth in population and households, and a 46 percent growth in jobs when compared to the model's baseline year 2018 estimates of 1.76 million people, 685,000 households, and 1.36 million jobs.

Table 10: Population and Employment Projected Change in the Study Area, 2018-2045

Parameter	2018	2045	Absolute Growth	% Growth
Population, Charlotte Urban Area Coordinated Public Transit-Human Services Transportation Plan Study Area	1,763,788	2,798,111	1,034,323	58.6%
Employment, Charlotte Urban Area Coordinated Public Transit-Human Services Transportation Plan Study Area	1,364,972	1,948,234	583,262	42.7%

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[2] Based on Metrolina Travel Demand Model (MRM2001, Working Version, May 2021) and the Greater Hickory MPO Travel Demand Model (July 2019, V1.2), for 1862 TAZs overlapping with Charlotte Urban Area.
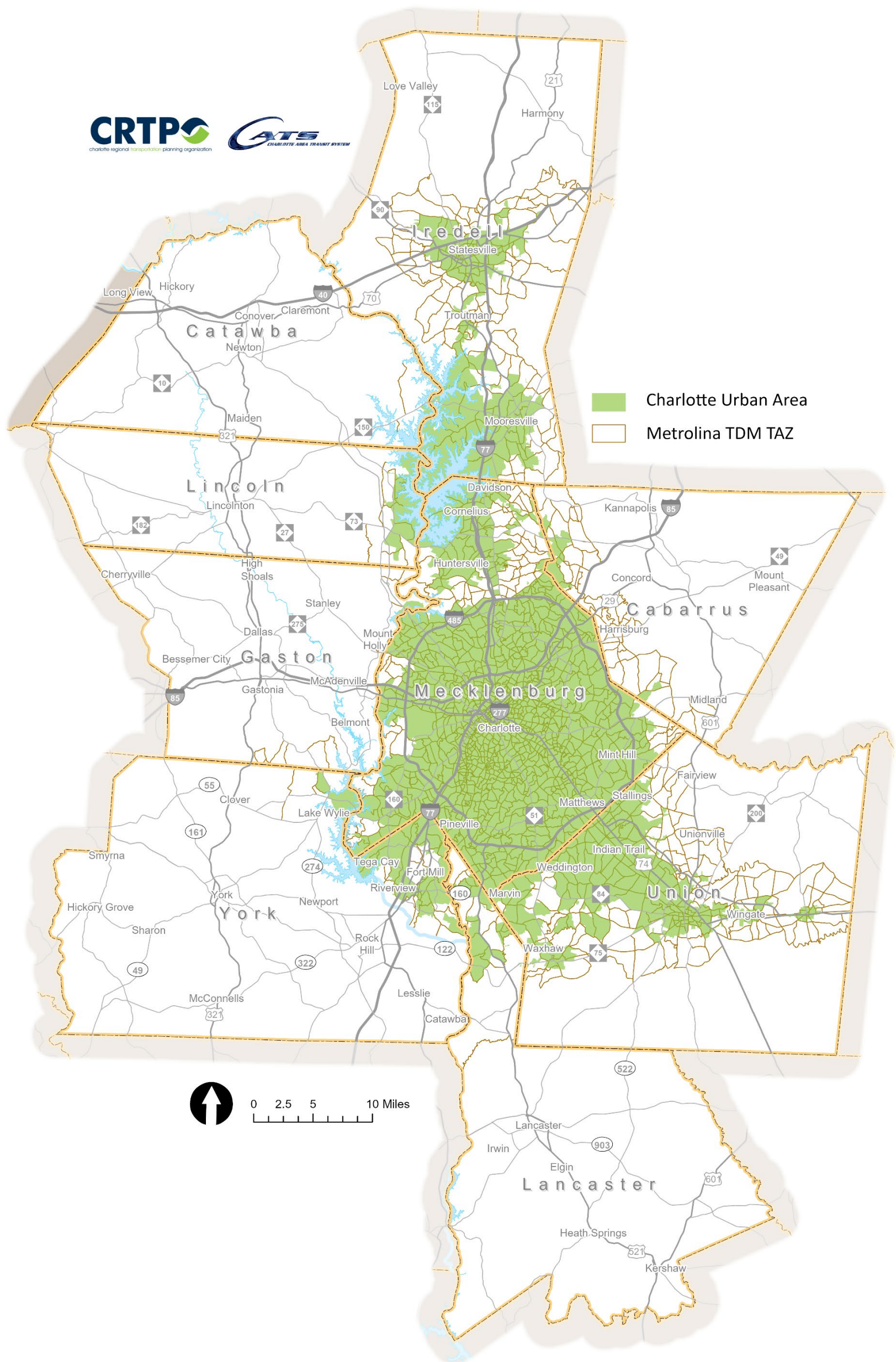
Figure 15 Charlotte Urban Area and Travel Demand Model TAZs Reviewed for Population and Employment Growth Data

The Charlotte region's population is expected to grow rapidly by 2045. The population growth is expected to occur largely around and outside of the I-485 loop (Figure 16). Within the City of Charlotte, high levels of growth are predicted along the existing LYNX Blue Line and proposed LYNX Silver Line as well as northern areas of Charlotte within the I-485 loop. High population growth is expected in areas surrounding I-485 and the Mecklenburg County suburbs of Mint Hill, Matthews, Pineville, Huntersville, and portions of Cornelius and Davidson.

Outside of Mecklenburg County, the urban area of Union County is expected to see moderate to high population growth with low to moderate growth outside the existing urban area. Iredell County's growth is largely constrained to the Town of Mooresville, Town of Troutman, and City of Statesville and their surrounding suburbs. Within Statesville, the downtown core is predicted to have relatively low population growth compared to locations around it.

In the greater Charlotte area, both Cabarrus and York counties are expected to see significant population growth, with Gaston, Lincoln, and Lancaster counties expected to see focused growth in specific sub-areas. Cabarrus County is expected to see most of its growth in and around Harrisburg, Concord, Kannapolis, and Midland. York County is expected to see growth primarily north of the Catawba River, around Lake Wylie, York, Clover, and in the suburbs around Rock Hill. The City of Rock Hill is largely not expected to see significant population growth. Lancaster County is expected to see significant population growth in its norther regions while Lincoln County population growth is expected to occur primarily in its eastern portion. Gaston County can expect significant population growth in and around the I-85 and US 74 corridors from Belmont and Mt. Holly out to the county's western edge. Catawba county is expected to see much lower population growth and even population loss.

Referencing the CONNECT Beyond transit study with population growth projections (Figure 18), it appears the study will extend coverage into many areas expected to see large increases in population. Despite the proposed large increase in transit access coverage, there are several areas with expected significant population growth with limited access to transit. These gap areas include Marvin, Weddington, Stallings, and Unionville in Union County, the SC 74 corridor new Lake Wylie in York County, southern portions of Cabarrus County, and Mint Hill in Mecklenburg County.
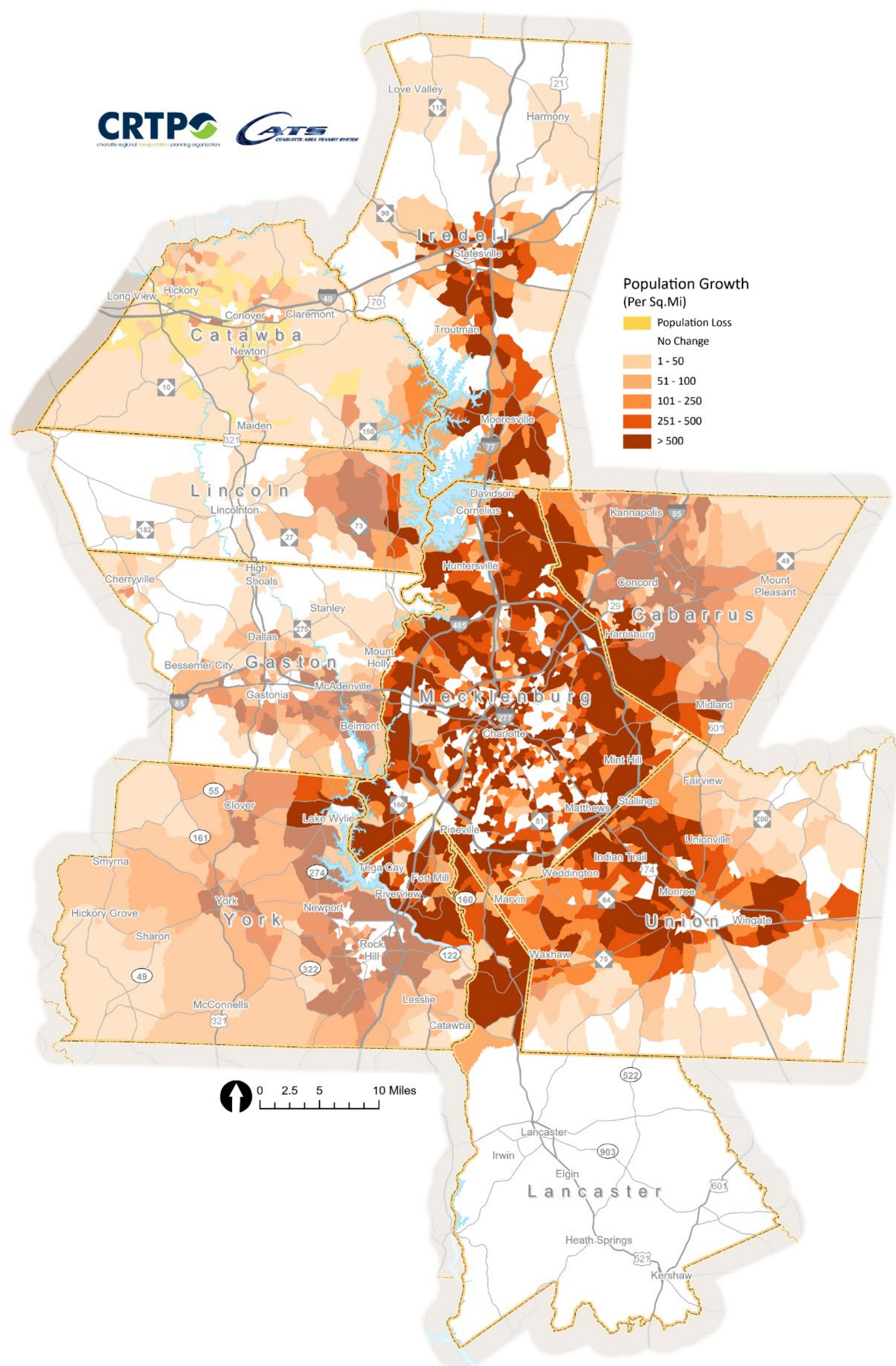
Figure 16 Projected Population Growth in the Study Area, Persons per Square Mi, 2018-2045 (2015-2045 for Catawba County)
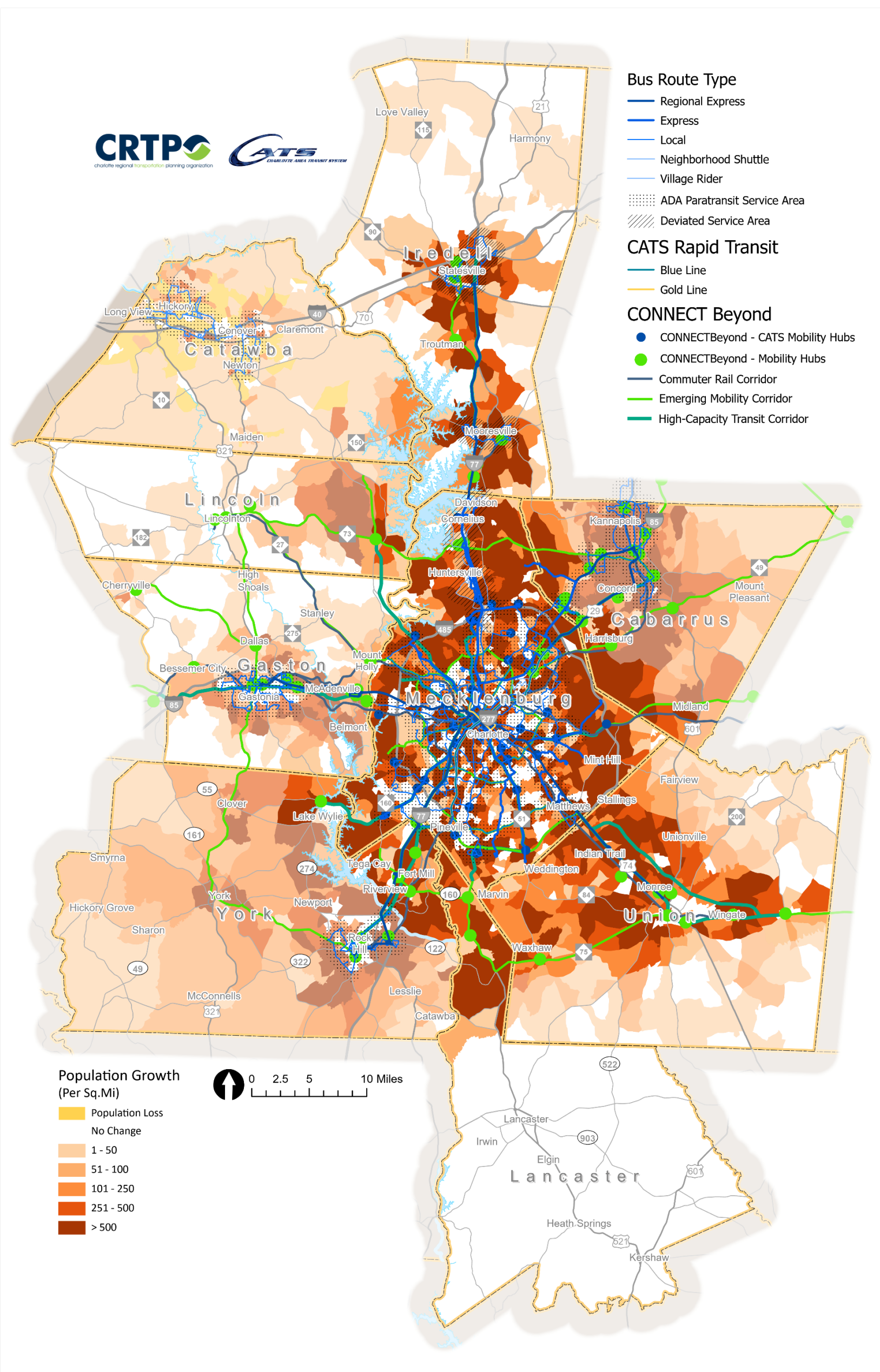
Bus Route Type
— Regional Express
— Express
— Local
— Neighborhood Shuttle
— Village Rider
ADA Paratransit Service Area
Deviated Service Area

CATS Rapid Transit
— Blue Line
— Gold Line

CONNECT Beyond
● CONNECTBeyond - CATS Mobility Hubs
● CONNECTBeyond - Mobility Hubs
— Commuter Rail Corridor
— Emerging Mobility Corridor
— High-Capacity Transit Corridor

Population Growth
(Per Sq.Mi)
Population Loss
No Change
1 - 50
51 - 100
101 - 250
251 - 500
> 500

0   2.5   5   10 Miles

Figure 17 Projected Population Growth in the Study Area, Persons per Square Mi, 2018-2045 (2015-2045 for Catawba County) with Existing Transit Service and Planned Transit Improvements

The Charlotte region's employment is also expected to grow rapidly by 2045. The employment growth is much more dispersed within Mecklenburg County compared to the surrounding counties (Figure 18). Within Charlotte, the LYNX Blue line, proposed LYNX Silver Line, University area, and block groups surrounding the airport are expected to see the highest growth in jobs. Outside of Charlotte, the Towns of Cornelius, Davidson, and Pineville are expected to see moderate to high increases in employment.

Within the greater study area, both Union and Iredell counties can expect significant job growth along their main transportation corridors. Within Union County, a large increase in employment is expected along US-74 from the Mecklenburg County line out to Wingate with additional hotspots around the towns of Marvin and Waxhaw. In Iredell County, employment growth is predicted along the I-77 and US-21 corridors and the towns of Mooresville, Troutman, and City of Statesville.

In the surrounding counties, there is significant employment growth predicted. The South Carolina counties of York and Lancaster both see high employment growth near the state border with York County seeing additional employment growth in the greater Rock Hill and York areas. Gaston County is expected to see employment growth along the I-85 and US 74 corridors from Mecklenburg to Cleveland County as well as along the US 321 corridor. Lincoln County will likely see employment growth along its eastern edge and along the NC 73 corridor into Lincolnton. Cabarrus County will see strong employment growth near the Mecklenburg County line and in its cities and towns while some employment loss will occur primarily in its more rural block groups. Catawba County will see employment growth primarily near Lake Norman and the I-40 corridor while experience employment loss primarily near the NC-16 corridor and west of Hickory.

Referencing the CONNECT Beyond transit study with employment growth projections (Figure 20), it appears that the study will extend coverage into many areas expected to see large increases in employment. While the CONNECT Beyond study is comprehensive, some large employment growth areas may still be underserved. These underserved areas include the SC-274 corridor between Rock Hill and Lake Wylie and south of Rock Hill along I-77 in York County. Additional underserved areas in North Carolina include NC-90 in Iredell County, NC 150 in Catawba County, the City of Belmont in Gaston County, Marvin, Waxhaw, and Stallings in Union County, and rural Cabarrus County between Harrisburg and Midland.
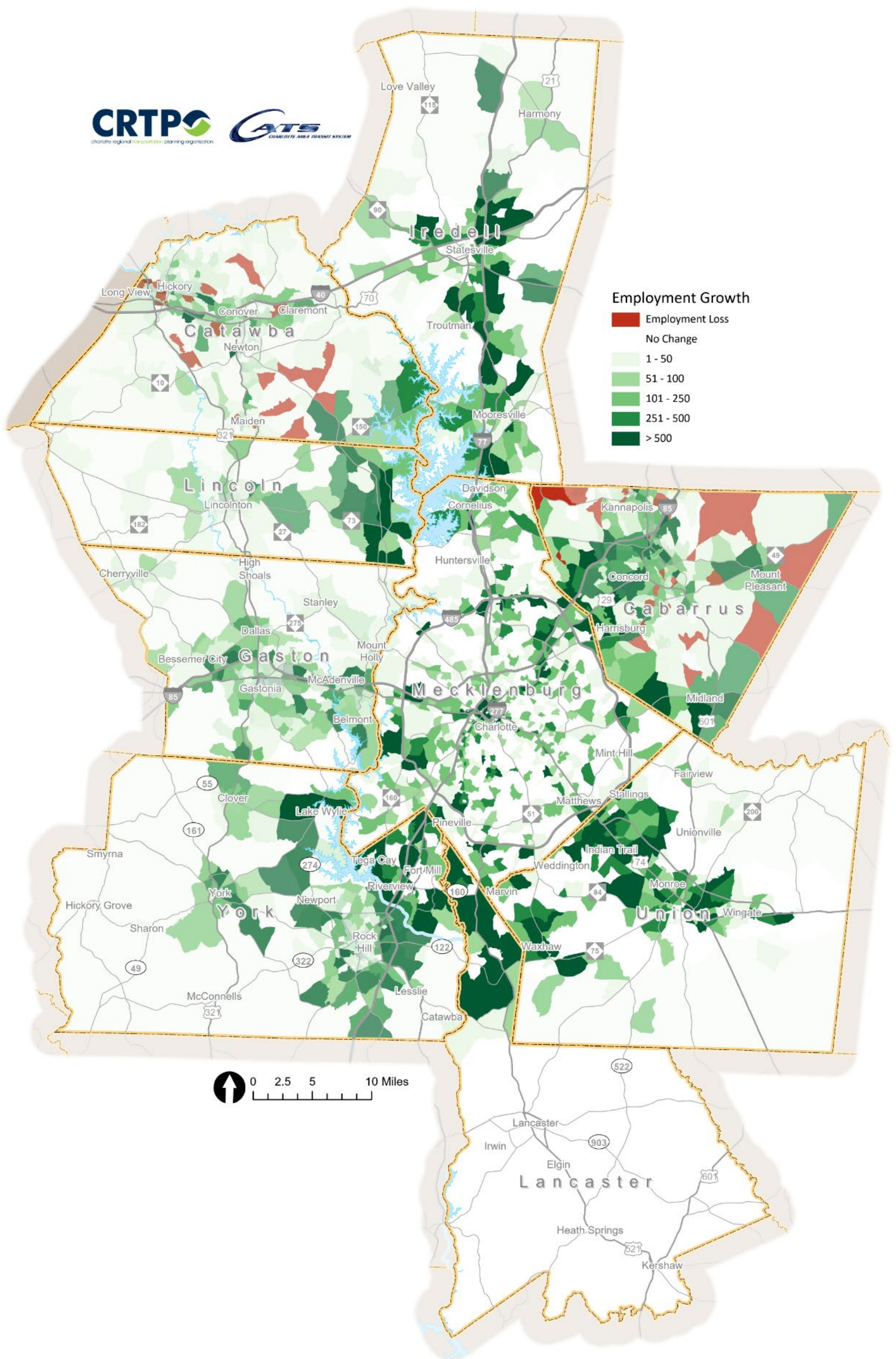
Employment Growth

- Employment Loss
- No Change
- 1 - 50
- 51 - 100
- 101 - 250
- 251 - 500
- > 500

Figure 18 Projected Employment Growth in the Study Area, 2018-2045 (2015-2045 for Catawba County)

Legend

Bus Route Type
— Regional Express
— Express
— Local
— Neighborhood Shuttle
— Village Rider
⋮ ADA Paratransit Service Area
⁄ Deviated Service Area

CATS Rapid Transit
— Blue Line
— Gold Line

CONNECT Beyond
● CONNECTBeyond - CATS Mobility Hubs
● CONNECTBeyond - Mobility Hubs
— Commuter Rail Corridor
— Emerging Mobility Corridor
— High-Capacity Transit Corridor

Employment Growth
■ Employment Loss
No Change
1 - 50
51 - 100
101 - 250
251 - 500
> 500

0   2.5   5   10 Miles

Figure 19 Projected Employment Growth in the Study Area, 2018-2045 (2015-2045 for Catawba County) with Existing Transit Service and Planned Transit Improvements

2 Charlotte Urban Area Existing Transportation Providers

A variety of public, human service and private transportation providers serve individuals traveling into and within the Charlotte Urban Area. Transportation that serves individuals with disabilities, seniors, people with low incomes and veterans is funded and operated by state, county, and local agencies. This section provides an overview of existing public, human services transportation and private transportation providers in the Charlotte Urban Area.

Public Transit Agencies Serving Charlotte Urban Area

The table below provides a brief summary of existing public transportation providers in the region, with a more detailed description following.

Table 11: Public Transportation Providers serving Charlotte Urban Area

Provider	Geographic Area Served	Type of Service(s) Provided
Cabarrus County Transportation (CCTS)	Cabarrus County	Demand Response
Catawba County Medicaid Transportation Services	Catawba County	Non-Emergency Medicaid Transportation (NEMT)
Charlotte Area Transportation System (CATS)	City of Charlotte, Express Bus service outside of Mecklenburg County	Fixed Route, Deviated Fixed Route, Express Route, ADA Paratransit, Light Rail, Streetcar
Gaston County Access	Gaston County, Limited Service to the VA in Salisbury	Deviated Fixed Route, Demand Response, Salisbury VA Shuttle, Subscription Routes
Greenway Public Transportation	Catawba County; Alexander, Burke, Caldwell Counties	Fixed Route, ADA Paratransit, Deviated Fixed Route (in Burke and Alexander Counties), Demand Response
Iredell County Area Transportation System (ICATS)	Iredell County, Limited Service to Mecklenburg and to the VA in Salisbury	Deviated Fixed Route, Express Bus, Demand Response, Subscription Routes, Salisbury VA Shuttle
Lancaster Area Ride Service "LARS	Lancaster County (SC)	Demand Response
Mecklenburg County Transportation Services (MTS)	Mecklenburg County	Demand Response and Subscription Routes (focus on Medicaid Transportation, Seniors (60+), Rural General Public, Veterans, Transportation to Congregate Meal Sites)
Rider (Concord Kannapolis Area Transit)	Concord and Kannapolis areas of Cabarrus County,	Fixed Route, ADA Paratransit, Express Bus with connection with CATS light rail via JW Clay station

	Express Bus service to Mecklenburg County	
Transportation Lincoln County (TLC)	Lincoln County; some trips outside the County for medical appointments	Demand Response, Subscription Routes
Union County Transportation Services	Union County, some trips to Mecklenburg County and to the VA in Salisbury	Demand Response
York County Access	York County (SC)	Demand Response

*Note – these are agencies that provide transportation within the Charlotte Urban Area. Additional transit agencies operating in the nine-County region that do not serve Charlotte Urban Area include Gastonia Transit and My Ride Rock Hill.

Cabarrus County Transportation Services (CCTS)

Cabarrus County Transportation Services (CCTS) is one of two public transit agencies that provide mobility options in the county, with Concord Kannapolis Area Transit (Rider) being the other agency. Cabarrus County Transportation Services operates as a demand response service with some subscription routes, primarily serving four programs: Medicaid, Work First Family Assistance Program, Adult and Aging Services Program, and Rural General Purpose (RGP) Program, providing curb-to-curb service. CCTS operates six days a week, covering 623,915 miles and providing 82,116 trips in 2018 with 21 vehicles.

The CCTS vehicle fleet as reported in 2019 NTD data includes:

- 24 demand response vehicles
  - 24 cutaways, with seating capacity ranging from 8 to 10. All are ADA accessible vehicles.

Catawba County Medicaid Transportation and Greenway Public Transportation

Greenway Public Transportation (Western Piedmont Regional Transit Authority) provides fixed route transit service to Hickory, Newton and Conover in Catawba County. Deviated fixed route service is provided in Alexander and Burke Counties. In addition, on demand and subscription route transportation is provided to residents of Alexander, Burke, Caldwell and Catawba Counties. The Western Piedmont Regional Transit Authority was first formed in 2008 as the first rural and urban regional transit authority in North Carolina.

Fixed routes operating in Hickory, Newton and Conover in Catawba County operate Monday through Saturday from 8:45 AM to 5:20 PM. As of September 2021, Catawba fixed routes are operating on a Saturday schedule until further notice. Catawba Fixed Route options do not reach the southeastern

quadrant of Catawba County which overlaps with the Charlotte Urban Area. Residents of Catawba County that would like to utilize Greenway on demand public transportation have to pre-register and schedule a trip three business days in advance. The scheduling office is open Monday through Friday 8:30 AM-5:00 PM.

Greenway Public Transportation Vehicle. Image Courtesy of https://www.mygreenway.org/

Greenway fixed route bus fare is $1.25 per trip, with a $0.60 reduced fare and $2.50 for an ADA paratransit trip. On demand van trips also typically charge a $2.50 fare except for passengers whose trips are covered through a human services agency program.

In addition to Greenway public transportation services, Catawba County Medicaid Transportation provides trips to medical appointments for Medicaid recipients in County vehicles driven by Social Services employees. Passengers who are ambulatory and can board a vehicle independently are encouraged to call Catawba county Social Services Medicaid Transportation office at 828-695-5608 (8 AM-5 PM Monday through Friday) to reserve a trip. A three-day notice is required to schedule a trip within Catawba County, and a five-day notice to schedule a trip outside the County. For passengers who use a wheelchair or otherwise require assistance to board a vehicle, Catawba County contracts with additional providers. Trip scheduling can still be done via the same contact phone number.

The Greenway vehicle fleet as reported in 2019 NTD data includes:

- 7 demand response vehicles and buses
    - 7 cutaways, with seating capacity ranging from 14 to 23. Four are ADA accessible.
- 12 buses
    - 6 buses, with seating capacity of 32. All are ADA accessible.
    - 1 van, with seating capacity of 8. The van is ADA accessible.
    - 5 cutaways, with seating capacity ranging from 16 to 17. All are ADA accessible.
- 43 demand response vehicles
    - 14 cutaways, with seating capacity ranging from 13 to 24. Thirteen are ADA accessible.
    - 29 vans, with seating capacity ranging from 6 to 16. Twenty-five are ADA accessible.

Charlotte Area Transit System (CATS)

CATS is the largest public transit system in North Carolina and provides public transportation services to Mecklenburg County, the City of Charlotte, suburban towns surrounding Charlotte, and the Town of Rock Hill in York County, South Carolina. CATS carries more than 24.2 million riders annually including 23.9 million fixed route trips and 0.37 demand response or vanpool trips. There were 249,065 wheelchair trips on fixed route service in 2019. Service is provided via local fixed route bus service, express routes, neighborhood shuttles, regional bus services, vanpool, complementary paratransit, streetcar, and light rail transportation.

CATS Light Rail

CATS Express Bus Vehicle

In Northern Mecklenburg County, North Meck Village Rider routes operate as deviated fixed route service to connect destinations in Huntersville, Cornelius, and Davidson. Three routes – Route 97 Cornelius, Route 98 McCoy Road and Route 99 Northlake Mall/CPCC all meet at the Huntersville Gateway Park and Ride on Statesville Road. Each route has a schedule and a map; for those passengers who cannot walk to one of the stops, they can schedule a deviation up to ¾ mile off the main route by calling a day in advance. North Meck Village Rider routes accept CATS weekly, monthly and transfer passes and are operated on the following schedule:

- Monday through Friday: 6:00 a.m. - 10:00 p.m.
- Saturday and Sunday: 7:00 a.m. - 4:00 p.m.

CATS also provides ADA Paratransit services within ¾ mile buffer of fixed route and light rail. ADA Paratransit transportation is branded as "Special Transportation Service" (STS). Riders have to pre-register as an ADA Paratransit eligible passenger. Once registered, an STS passenger must call a day in advance to schedule a trip.

CATS-Pass Mobile App Trip Planning Screen Shows Bus Location in Real Time

A variety of fare levels and monthly passes are available for CATS passengers. A one-way fare for an STS trip is $3.50, a 10-ride ticket book for STS costs $35, while an STS monthly pass costs $140. A regular local bus or light rail one-way

fare is $2.20, with a monthly pass cost of $88. An Express bus one-way fare is $3.00, with a monthly pass cost of $121 and an Express Plus monthly pass cost of $176 for an expanded number of express bus routes. Discounted fares for buses, light rail and express buses at half the typical cost are available for seniors 62+, Medicare card holders, disabled individuals and youth in grades K-12.

CATS-Pass mobile ticketing app includes real-time bus tracking and allows a ticket purchase for light rail and bus trips.

CATS' vehicle fleet as reported in 2019 NTD data includes the following vehicles:

- 300 buses
  - o 300 buses, with seating capacity ranging from 22 to 49. All are ADA accessible.
- 85 demand response vehicles used for STS (ADA Paratransit) service
  - o 84 cutaways – 46 with a seating capacity of 13 and 38 with a seating capacity of 17. All are ADA accessible.
  - o 1 bus with a seating capacity of 20. The bus is ADA accessible.

CATS Demand Response (STS) Vehicle

- 42 light rail vehicles
  - o 42 light rail vehicles, with seating capacity of 68. All are ADA accessible.
- Three streetcar rail vehicles
  - o 3 streetcar rail, with seating capacity of 40. None are ADA accessible.
- 91 vanpool vehicles
  - o 28 minivans, with seating capacity of 7. None are ADA accessible.
  - o 63 vans, with seating capacity of 15. None are ADA accessible.

Operating expenses for the whole system are over $156 million, while fare revenue is over $27 million, for a farebox recovery of approximately 18 percent. The vanpool has the highest fare box recovery ratio of 0.3 while the streetcar rail has the lowest at 0, as it does not collect fares. Other than the streetcar rail, demand response has the lowest fare box recovery ratio of 0.07.

Iredell County Area Transportation System (ICATS)

Iredell County Area Transportation System (ICATS) is a community transportation provider that operates demand-response service, subscription routes and deviated fixed route service as well as one express bus route to Charlotte. ICATS operates as a coordinated transportation provider within Iredell County that enables routes and schedules to be structured to transport multiple passengers to multiple destinations.

Deviated fixed routes have specific stops and times and allow passengers to request a deviation up to ¾ mile by requesting the deviation in advance. Deviated fixes routes include the following:

- The Statesville Bloom (operates weekdays) between 9:00 A.M. and 4:35 P.M.)

- The Mooresville Main (between 7:10 A.M. and 6:40 P.M.)
- The Community Connection (between 6:30 A.M. and 4:26 P.M.): this route has been suspended during the COVID-19 pandemic, but ICATS would like to see this route return to service.
- ICATS Express route with service from Statesville to the Charlotte Transportation Center operates on weekdays between 5:00 A.M. and 4:45 P.M.

Fares are set at $1.00 per trip, with a $3.00 fare for an express bus trip. Transfers from an express bus to a local ICATS route are free. Express bus monthly pass is $121. Seniors 65 and older and individuals with disabilities pay a reduced fare for express bus trips at $1.50 per trip.

ICATS operates a VA shuttle to the VA Hospital in Salisbury on Tuesdays. Reservations must be made 48 hours in advance. Approved riders can request to be picked up at home or at the Meeting Street stop.

The ICATS vehicle fleet as reported in 2019 NTD data includes:

- 21 demand response vehicles
  - 11 cutaways, with seating capacity ranging from 10 to 17; ten are ADA accessible.
  - One minivan, with seating capacity of 7-not an ADA accessible.
  - Nine vans, with seating capacity ranging from 8 to 10. All are ADA accessible.
- Seven buses
  - Seven cutaways, with seating capacity ranging from 10 to 22. All are ADA accessible.

Lancaster Area Ride Service "LARS"

The Council on Aging of Lancaster County provides transportation throughout the Lancaster area through the Lancaster Area Ride Service also known as "LARS". Ride service must be scheduled 3 days in advance. Transportation services are provided on the following schedule:

- Monday through Friday: 8:00 A.M. - 5:00 P.M.

Riders are required to call or come to the office in-person for the intake process. Program Fees vary. Residents of Lancaster County are eligible.

The LARS vehicle fleet as reported in 2019 NTD data includes:

- 22 demand response vehicles
  - 12 cutaways, with seating capacity of 15. All are ADA accessible.
  - Seven minivans, with seating capacity ranging from 5 to 7. Four are ADA accessible.
  - Two vans, with seating capacity of 15. All are ADA accessible.
  - One automobile, with seating capacity of 5. None are ADA accessible.

Mecklenburg Transportation System (MTS)

The Mecklenburg County Department of Social Services (DSS) operates the county's human service transportation program, Mecklenburg Transportation System (MTS). As the largest operator of human

service transportation, MTS provides demand responsive and subscription transportation with both vendor and direct services vehicles for several programs for the county's seniors and individuals with disabilities. Services are funded by Medicaid, health and human service agency funding, NC Dept. of Transportation and Mecklenburg County's ½ cent transit sales tax dedicated to service improvements. Some of the services provided by DSS include:

- Medicaid Transportation – Adult and children authorized to receive non-emergency Medicaid transportation are transported to and from a medical destination.
- Elderly Disabled Transportation Assistance Program (EDTAP) – Adults aged 60+ and children and adults with disabilities are transported to and from dialysis, chemotherapy, or other medical related appointments.
- Elderly General Purpose (EGP) – Adults aged 60+ who are not living in an assisted living facility or nursing home are transported to and from non-emergency medical appointments (physicians, lab tests, chemotherapy/radiation treatments, dialysis, mental health, etc.), dental appointments, pharmacy, grocery, employment to work and senior centers. Subsidized passes for bus or light rail public transit service are also provided. This funding stream is closed to new customers and trips for current riders are limited.
- Rural General Public (RGP) – Persons living outside or their destination is outside the Charlotte/Mecklenburg County Urban Area are eligible to ride.
- Veterans Services Transportation – Qualified veterans are transported to and from Veterans Affairs hospitals in North Carolina, medical clinics in Charlotte and other destinations approved by the Veterans Services Office.
- Senior Citizens Nutrition Program (SCNP) Congregate Sites – Adults aged 60+ are transported to and from Mecklenburg County Senior Citizens Nutrition congregate sites for meals and social activities.
- Subscription – Transportation of individuals with disabilities to supported employment sites and Adult Day Care sites.

The MTS vehicle fleet as reported in 2019 NTD data includes the following:

- 30 demand response vehicles
  - 28 cutaways, with seating capacity ranging from 16 to 18. All are ADA accessible.
  - Two vans, with seating capacity of 7. None are ADA accessible.
- 85 demand response passenger vehicles (taxis)
  - 85 automobiles, with seating capacity of 4. None are ADA fleet vehicles.

MTS Vehicles

Rider (Concord Kannapolis Area Transit)

Rider has been providing local fixed route service in Concord and Kannapolis, North Carolina, since 2004. Rider provides fixed route bus service on seven local fixed routes as well as the Concord Charlotte Express (CCX), a regional express route which connects passengers traveling from Cabarrus County to the Charlotte metropolitan area via the JW Clay light rail station in Charlotte. Americans with Disabilities Act (ADA) Complementary Paratransit service is provided within ¾ of a mile of the seven local fixed routes. In 2019, Rider covered 712,160 miles and provided 425,347 trips, operating seven days per week. There were 12,801 ADA Paratransit trips provided in 2019.

Fixed route and ADA Paratransit services operate seven days a week, 5:30 a.m. to 8:30 p.m. - Monday through Friday and 8:30 a.m. to 8:30 p.m. on Saturdays and Sundays.

The Rider vehicle fleet includes ten transit vehicles utilized in fixed route and express bus service. In addition, three Ford Transit vans and two cutaway buses are used to provide ADA paratransit service. Two additional cutaway buses are available as needed to support fixed route or ADA Paratransit.

Rider Bus

Rider offers multiple options for the payment of fares. Currently, fareboxes accept both coins and cash. Drivers cannot make change. Passes are available in 10 rides, one-day, seven-day, and 31-day increments and can be purchased at the Rider Transit Center. ADA Paratransit 10-ticket booklets can be purchased at the Rider Transit Center or from the Paratransit drivers for cash only. Reduced fares are available for fixed route service for qualified individuals: persons with disabilities, riders 65 and older, Medicare card holders (with photo ID), and current students with a valid school ID and proof of enrollment. An application must be submitted to receive a Reduced-Fare ID Card.

Rider's fare structure is as follows:

- Regular Fare: $1.25 per ride
- Reduced Fare, regular routes $0.60 per ride
- Children under age 5 Free
- Transfer to local routes Free
- ADA paratransit trip $2.00

- 1-Day pass $4.00 $2.00
- 10-Ride pass $10.00; Reduced fare $5.00
- 7-Day pass $12.00; Reduced fare $6.00
- 31-Day pass $40.00; Reduced fare $20.00

Rider has been going through the process of digital fare payment system implementation, TouchPass. All 17 vehicles are expected to be retrofitted with TouchPass fare boxes. The digital fare payment system will allow more flexible options to purchase transit passes and hold stored value for fares. Both mobile (phone) and smart card technology platforms will be available for payment. Digital fare collection system will also be used to implement fare capping, ensuring no passenger pays more than $40 at most in a given 31-day period if they pay for each trip individually.

The Rider vehicle fleet as reported in 2019 NTD data includes:

- 21 demand response vehicles
    - 2 cutaways, with seating capacity of 15. All are ADA accessible.
    - 3 vans, with seating capacity of 10. All are ADA accessible.
- 12 buses
    - 2 cutaways, with seating capacity of 17. All are ADA accessible.
    - 10 buses, with seating capacity ranging from 32 to 33. All are ADA accessible.

Transportation Lincoln County (TLC)

Transportation Lincoln County (TLC) is a consolidated transportation system operating in Lincoln County, NC. TLC offers demand response transportation and subscription routes. TLC has contracts to provide transportation with the following human service organizations:

- Lincoln County Senior Services
- Lincoln County Services for the Blind
- Lincoln County Department of Social Services
- Lincoln County Veterans Services
- Gaston Skills/Salem Industries

Most typical public transportation trips fall under one of the following categories:

- Medicaid Transportation (Lincoln County DSS)
- Elderly or Disabled Transportation
- Services for the Blind Transportation
- Veterans Transportation
- General Public and Other Transportation Services

TLC Vehicle

A trip reservation three days in advance is required for in-county trips, and five days in advance for out-of-county trips. Passengers in the "General Public" category are expected to pay a fare. Hours of service are 6 AM-5 PM Monday through Friday, with the administration office open Monday through Friday from 8 AM to 5 PM.

The TLC vehicle fleet as reported in 2019 NTD data includes:

- 22 demand response vehicles and buses
    - 8 cutaways, with seating capacity of 8. All are ADA accessible.
    - 14 vans, with seating capacity ranging from 8 to 12. Thirteen are ADA accessible.

All of the vehicles were listed as Metrobus Demand Response vehicles.

Union County Transportation (UCT)

Union County Transportation (UCT) provides demand response services and some subscription routes. No fixed route or deviated fixed route services are currently available. Most passengers riding on UCT demand response vehicles do not have to pay a fare.

Union County residents can also access an express bus route, 74x, operated by CATS, to travel between Monroe Crossing Mall Park and Ride location and Charlotte along US 74 (Independence Boulevard) during weekday peak hours (6:15-8:30 AM and 4:15-6:46 PM)

UCT has received access to a suballocation of urban transit (section 5307 funding) in recent years and this has allowed UCT to expand eligibility for a greater variety of trips. Section 5307 funding has become available to UCT since 2019. UCT is expecting a further increase in urban transit funding, with an accompanying decrease in rural (section 5311) funding as Union County is quickly growing and becoming more urban. Prior to receiving urban transit funding, transportation services available to residents of Union County were more limited, based on available grant programs or through sponsorship of a local human service agency.

Trips eligibility includes but is not limited to the following:

- Senior citizen at least 60 years of age (for trips to daycare, nutrition sites, medical appointments
- A developmentally disabled adult
- Non-Emergency Medicaid Transportation (NEMT) client
- A veteran eligible for medical treatment at a VA Hospital or clinic
- Anyone over the age of 18 years old for a general-purpose trip, for work or to attend Community College classes
- Transportation services are also provided to the clients of contracting human service agencies such as Social Services, Vocational Rehabilitation, Veteran Services, and Senior Nutrition.

For Rural General Public passengers, a fare of $2 per trip is required. Wheelchair passengers who fall under the Rural General Public category are also paying a $2 per trip fare. As with most on demand transportation services, a potential transit rider has to pre-register with UCT. The determination of whether a fare is required is made at the time of registration and may be

Union County Transportation Vehicle

dependent upon the type of trip being scheduled. Some work-purpose trips require a wait to ensure that a seat is available on a vehicle that can make the pick-ups and drop offs at the time desired. No wait is required to sign up for urgent trips such as for dialysis. Trips have to be scheduled 48 hours in advance. Service hours are between 6 AM and 5 PM.

UCT vehicle fleet as reported in 2019 NTD data includes:

o 30 demand response vehicles (Union County staff reported 24 vehicles as actively in use as of February 2022)
  - 18 cutaways – eight with a seating capacity of 8 and ten with a seating capacity of 12. Eleven of these are ADA accessible.
  - 10 minivans – all with a seating capacity of 6. Three of these are ADA accessible.
  - 2 vans – each with a seating capacity of 9. Both are ADA accessible.

UCT is in the process of converting additional vehicles to be ADA accessible.

UCT partners with Anson County Transportation three days a week to transfer passengers for some of the trips into Mecklenburg County. UCT will drop off passengers at relay (transfer) sites, and Anson County Transportation can take the passengers to Charlotte. Another transfer occurs for the reverse leg of the journey.

York County Access

York County Access is operated through the York County Council on Aging and provides two transportation programs: Essential Service and Ride to Work Service. Essential service provides transportation to the doctor, pharmacy grocery store, or medical treatment facilities. This service operates from 6 AM to 6 PM on weekdays. Ride to Work Service is only offered within the city limits of Rock Hill, and provides transportation to work within the city. This service operates from 5:30 AM to 9:00 AM and 3:30 PM to 6:00 PM on weekdays. Trips have to be scheduled 48 hours in advance for both services. Fares for both services are $2.50 each way within York County – trips outside York County require an additional fare that is determined on an individual basis.

The York County vehicle fleet as reported in 2019 NTD data includes:

- 16 demand response vehicles
    - 11 cutaways, with seating capacity of 14. All are ADA accessible.
    - 5 minivans, with seating capacity of 4. All are ADA accessible.

York County Access address and website information is listed as follows:

Address: 917 Standard St. Rock Hill, SC 29730
Phone: (803) 327-6694 extension 304
Website: http://www.yorkcountygov.com/YorkCountyAccess

Public Transportation Ridership Trends

Passenger Trips

NTD data were reviewed for the public transportation providers in the Charlotte region. Passenger trips were evaluated by mode with a particular focus on bus and demand response trips. Due to the size of CATS compared to other regional agencies, the values were evaluated both together and in separate graphs to enable a better view of the smaller agencies' data. Figure 20 shows the passenger trips across all CATS modes. The majority of CATS's ridership comes from bus and light rail passengers. Ridership on buses was trending downward before the COVID-19 pandemic, while light rail ridership was trending upwards until it saw a decrease in 2020 with the onset of the pandemic.
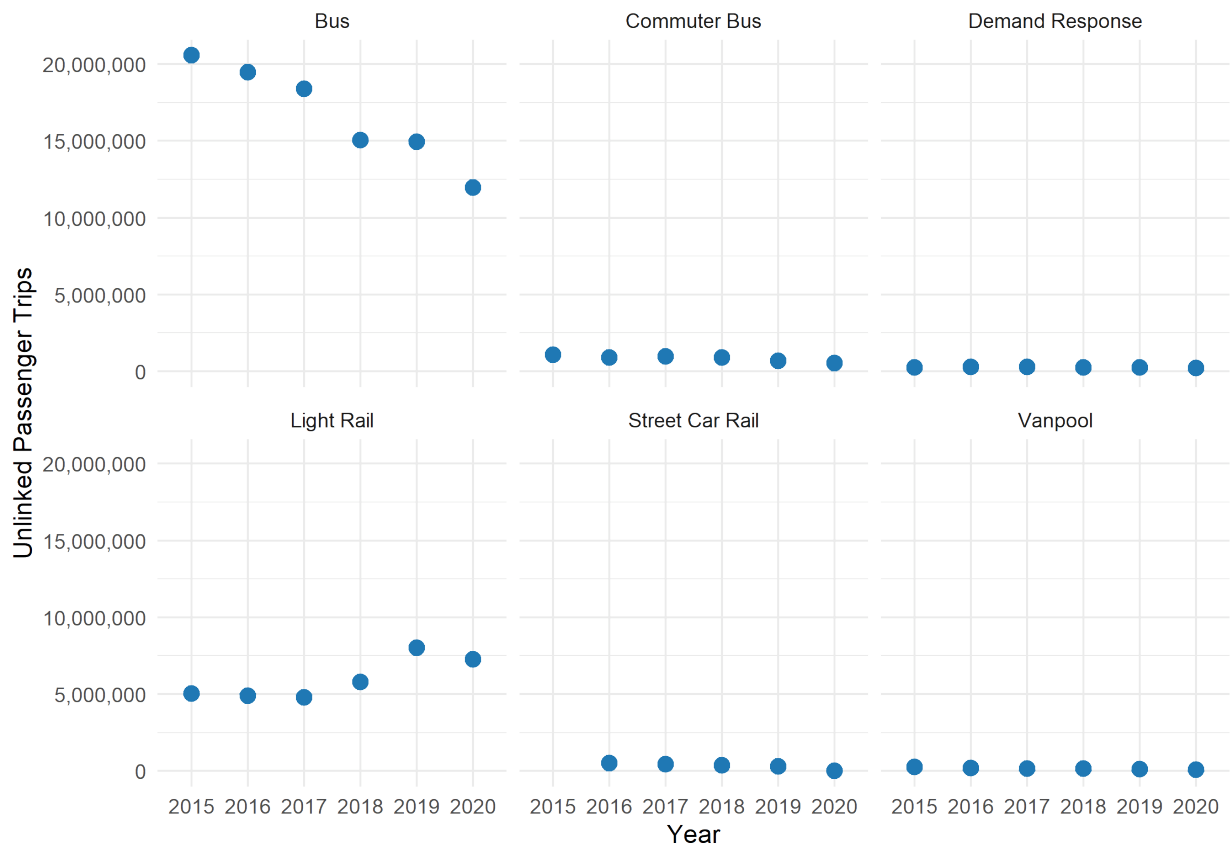
Figure 20 CATS Unlinked Passenger Trips by Mode

Bus passenger trips were evaluated for agencies excluding CATS in Figure 21. Following CATS, CK Rider has the highest number of bus passenger trips in the region. CK Rider saw the largest decline in passenger trips, with trips declining both before and during the COVID-19 pandemic. Other agencies had relatively stable passenger trips, although ICATS has been trending upwards in ridership since 2015, including throughout the COVID-19 pandemic.
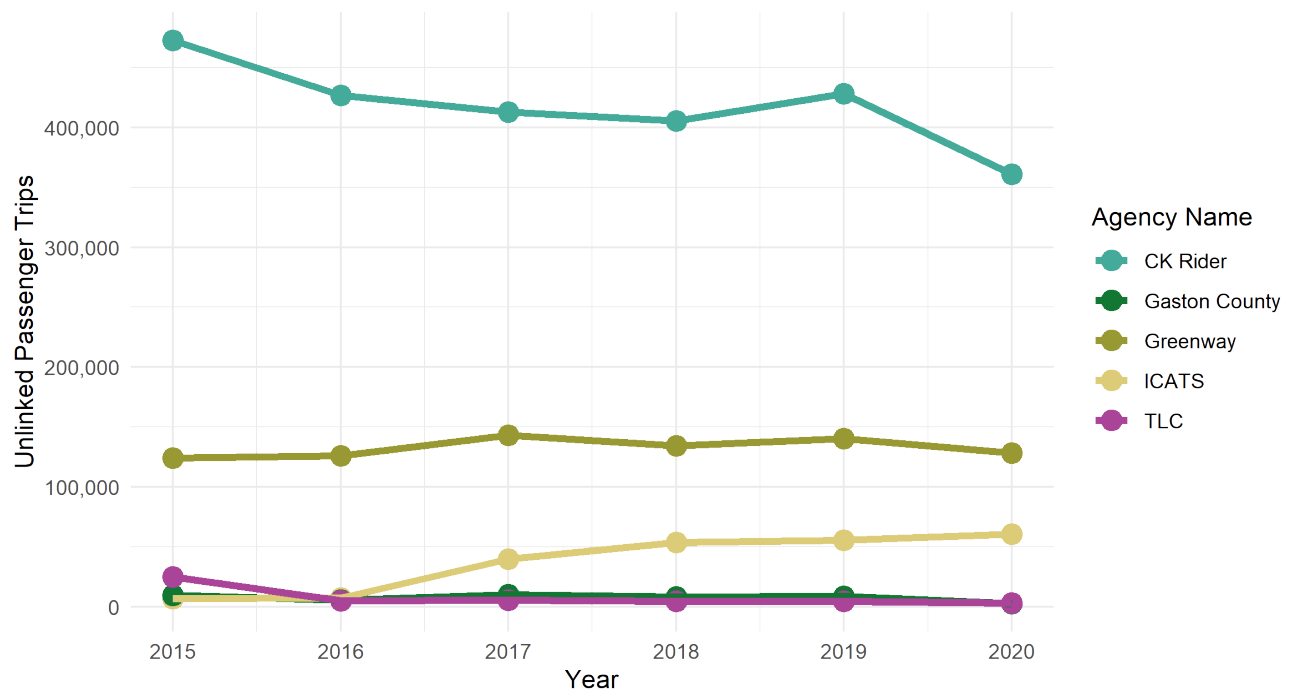
Figure 21. Bus Unlinked Passenger Trips Excluding CATS

The number of demand response passenger trips between 2015 and 2020 are shown in Figure 22. MTS has the highest amount of demand response passenger trips, followed by CATS. MTS passenger trips were increasing pre-COVID-19 but saw a drop following COVID-19. The other regional agencies are further examined in Figure 23, which excludes CATS and MTS demand response ridership to see the smaller agencies' trends. Most of the agencies demand response passenger trip volumes were relatively flat pre-COVID, although Gaston County and Cabarrus County ridership was declining before COVID. Almost all agencies saw a decrease in passenger trip volume with the onset of the pandemic.
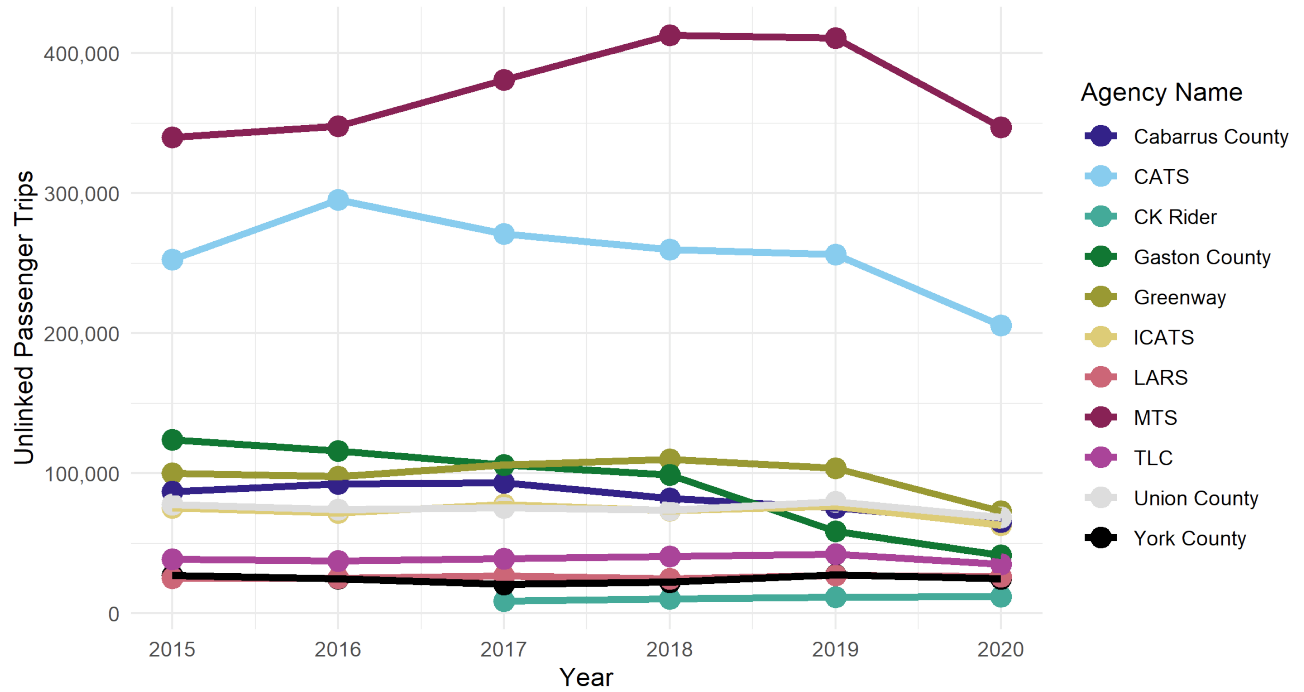
Figure 22. Demand Response Unlinked Passenger Trips
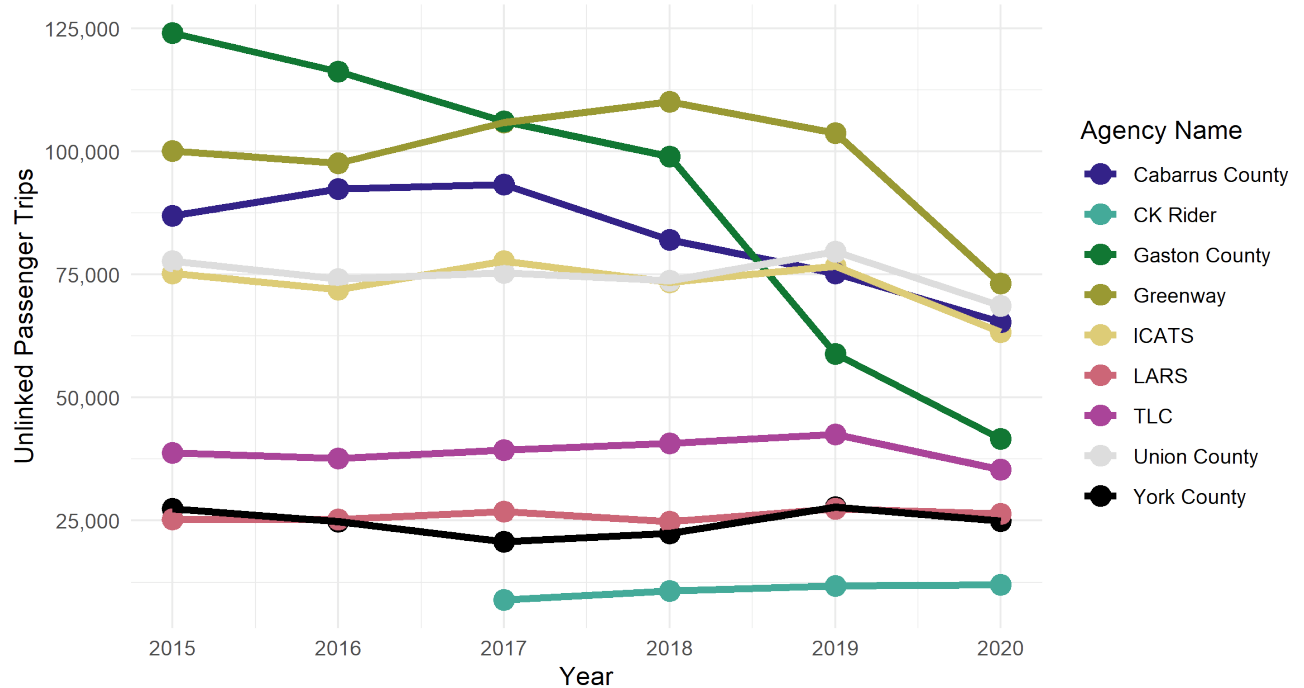
Figure 23. Demand Response Unlinked Passenger Trips Excluding CATS and MTS

Demand response VMT trends were examined, as illustrated in Figure 25. VMT trends mostly followed the trends for agency passenger trips.
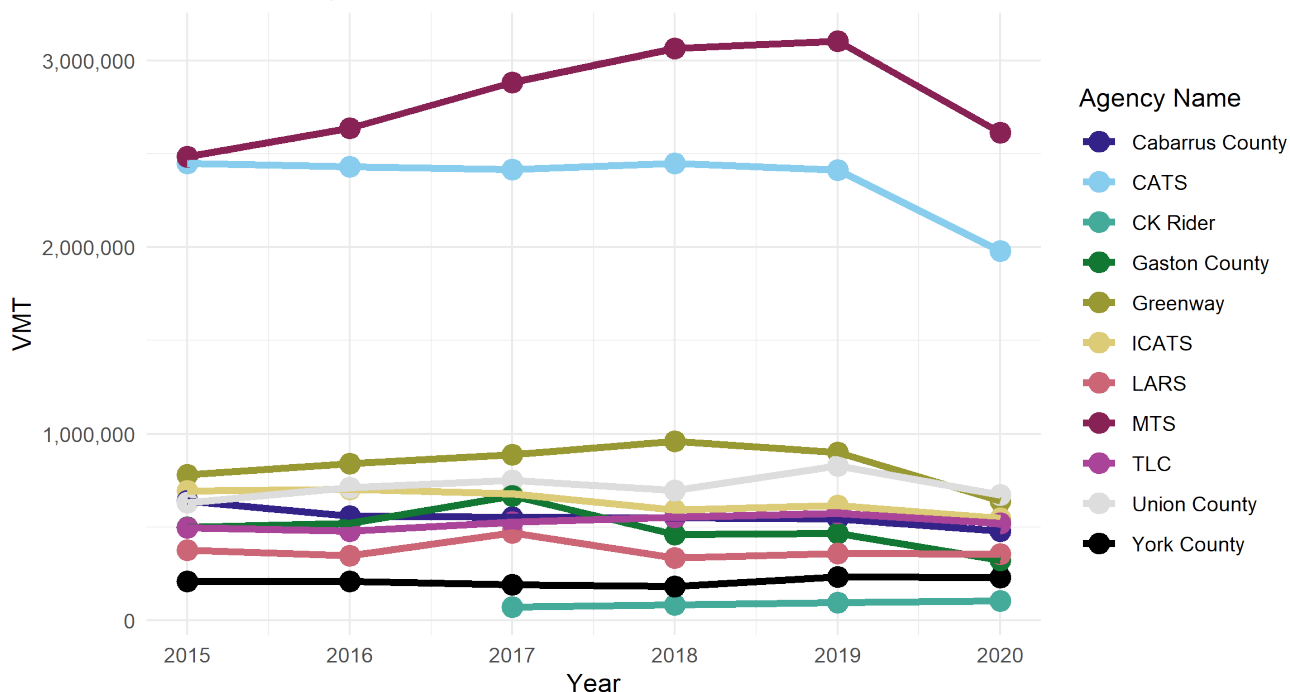
Figure 24 Demand Response VMT

Route Level Ridership and Wheelchair Ridership by Route

Some agencies provided route level ridership data and wheelchair trip data. Analysis of ridership and wheelchair trips by route for Rider and CATS is summarized below, based on the available data. This section analyzes the annual passenger count, annual wheelchair trip count, and the proportion of the annual passenger count that were wheelchair trips.

Rider

When reviewing Rider system ridership by route, the Orange and Blue routes have the highest number of trips, while the CCX, Red, Yellow, and Brown routes tend to have the lowest (see Figure 25). Similarly, the Red, Yellow, and Brown routes had the least number of wheelchair trips, while the Orange and Purple routes had the highest number of wheelchair trips. Most routes' wheelchair trip volumes trended downward throughout the pandemic, with the exception being the CCX route. The CCX route was

introduced in 2018, which may explain the slower ramp up in total wheelchair trips and then upward trend in wheelchair trips during the pandemic.
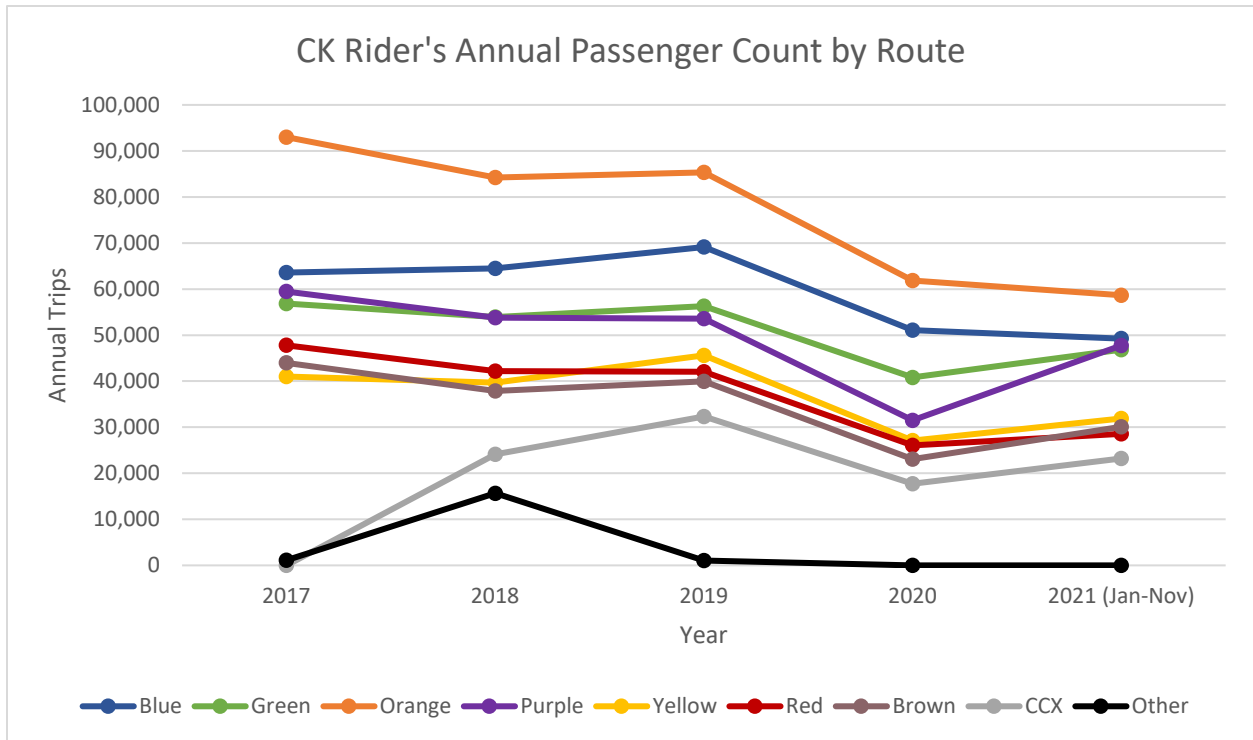

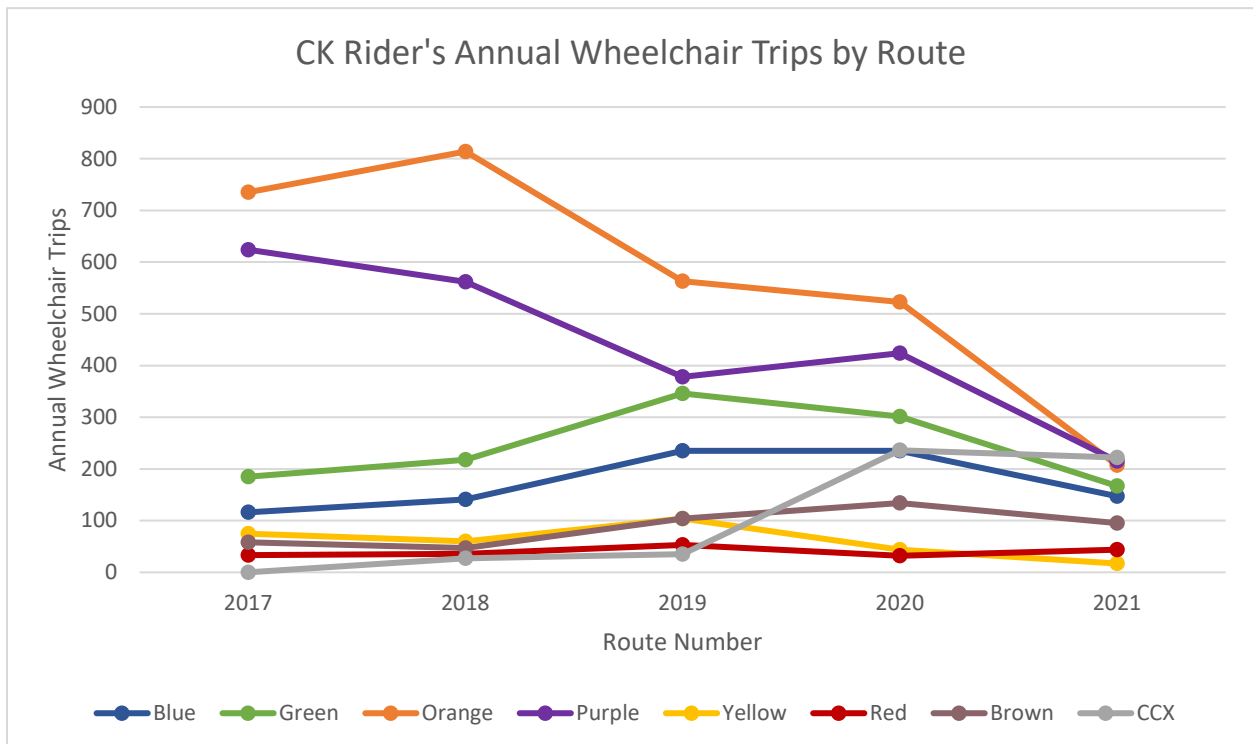Figure 25 CK Rider's Annual Passenger Count by Route

Figure 26 CK Rider's Annual Wheelchair Passenger Count by Route

Across the majority of Rider's fixed routes, the wheelchair trip share of total ridership increased until the outset of the pandemic. The Purple and Orange routes have the highest proportion of wheelchair trips (see Figure 27), with CCX also having a high proportion once it was introduced and had time for its initial ridership to ramp up. The Red and Yellow routes have the lowest proportion of wheelchair trips. The proportion of wheelchair trips was trending upward pre-pandemic for most routes (see Figure 27 below) but declined in 2021 for all routes except the Red route.
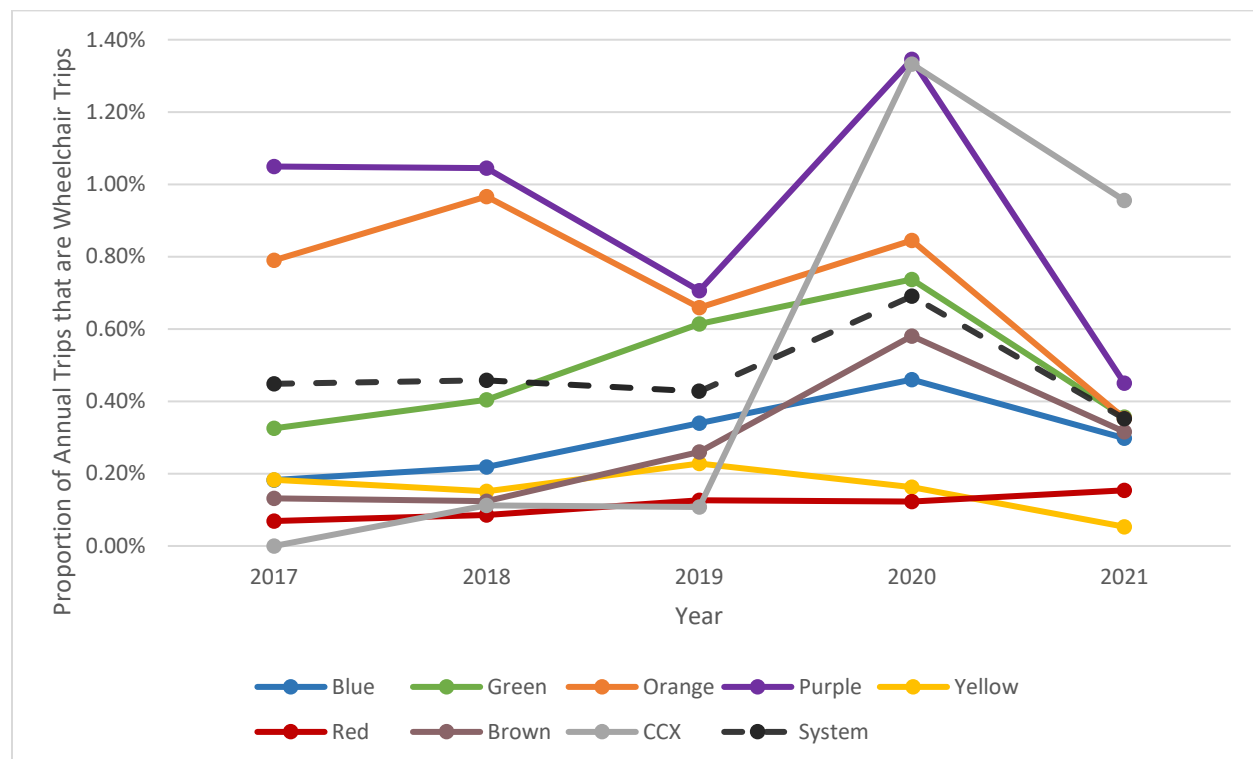
Figure 27 Rider's Proportion of Passenger Counts that are Wheelchair Trips by Route

CATS

CATS provided total annual ridership data by route from 2017 to 2021 and annual wheelchair ridership by route from 2017 to 2020. The route with the highest amount of total annual ridership is Route 9. Most of the lines were seeing a decrease in annual ridership pre-COVID-19, with the downward trend continuing through the pandemic.
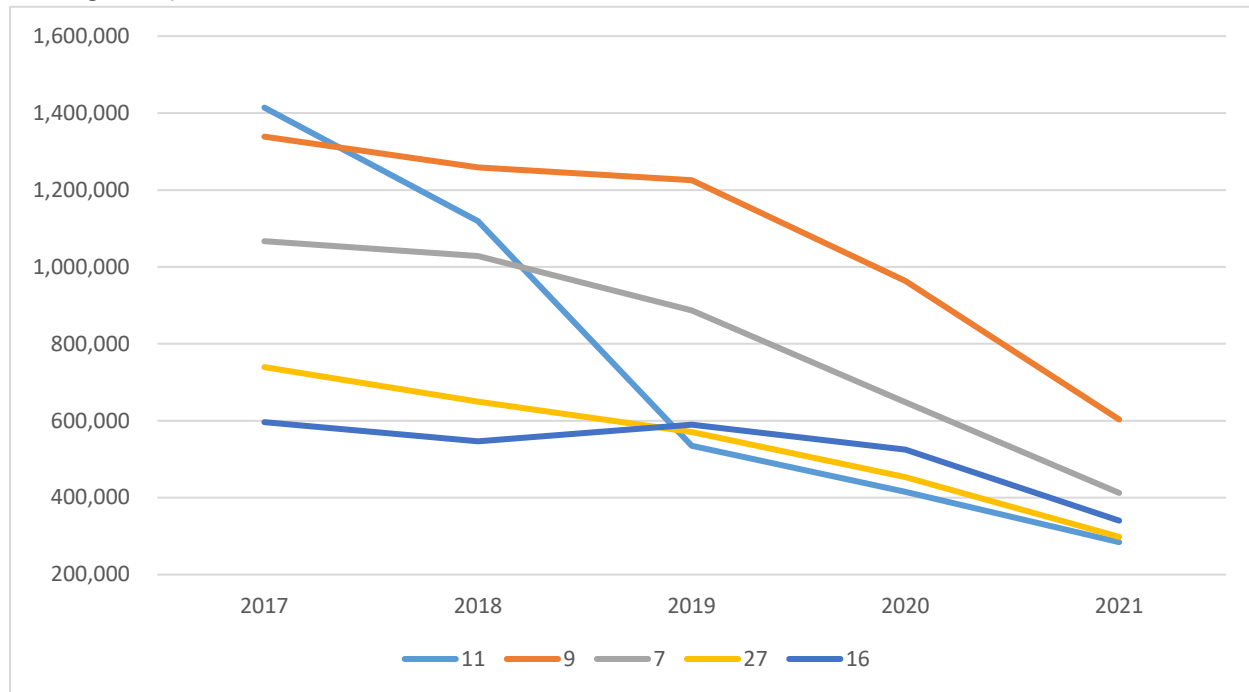

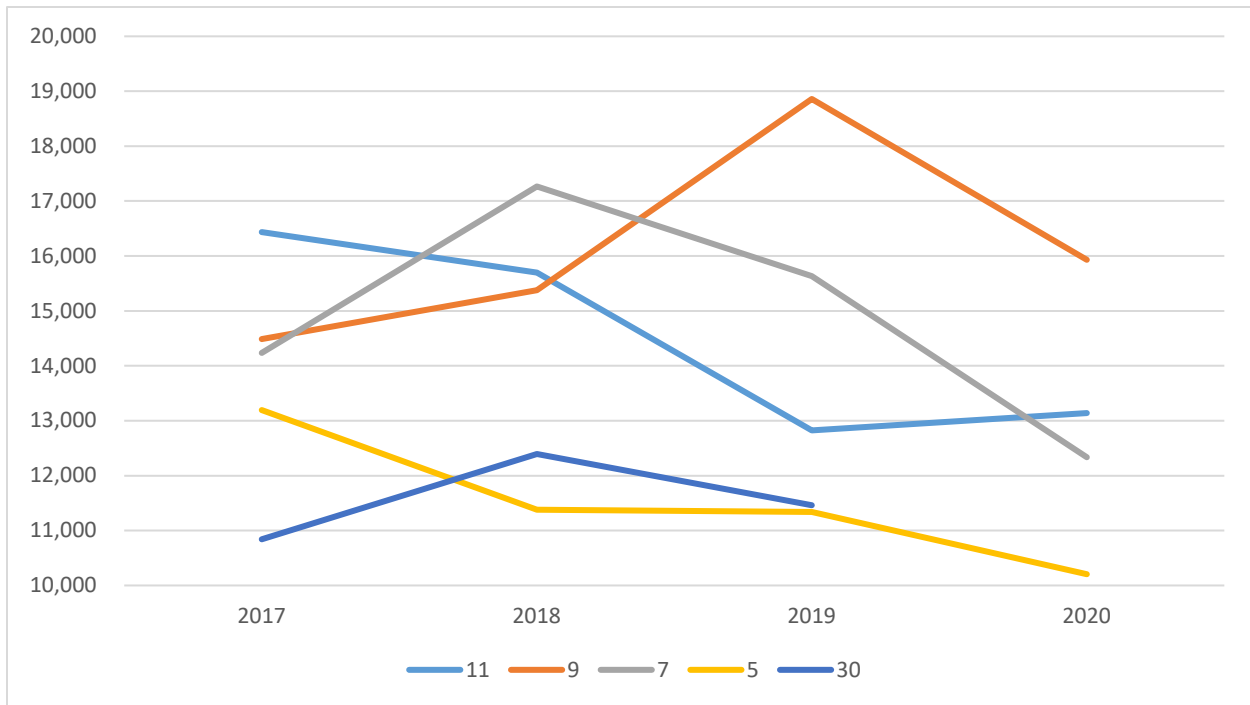**Figure 28 CATS Annual Ridership by Route (Top 5 Volumes)**

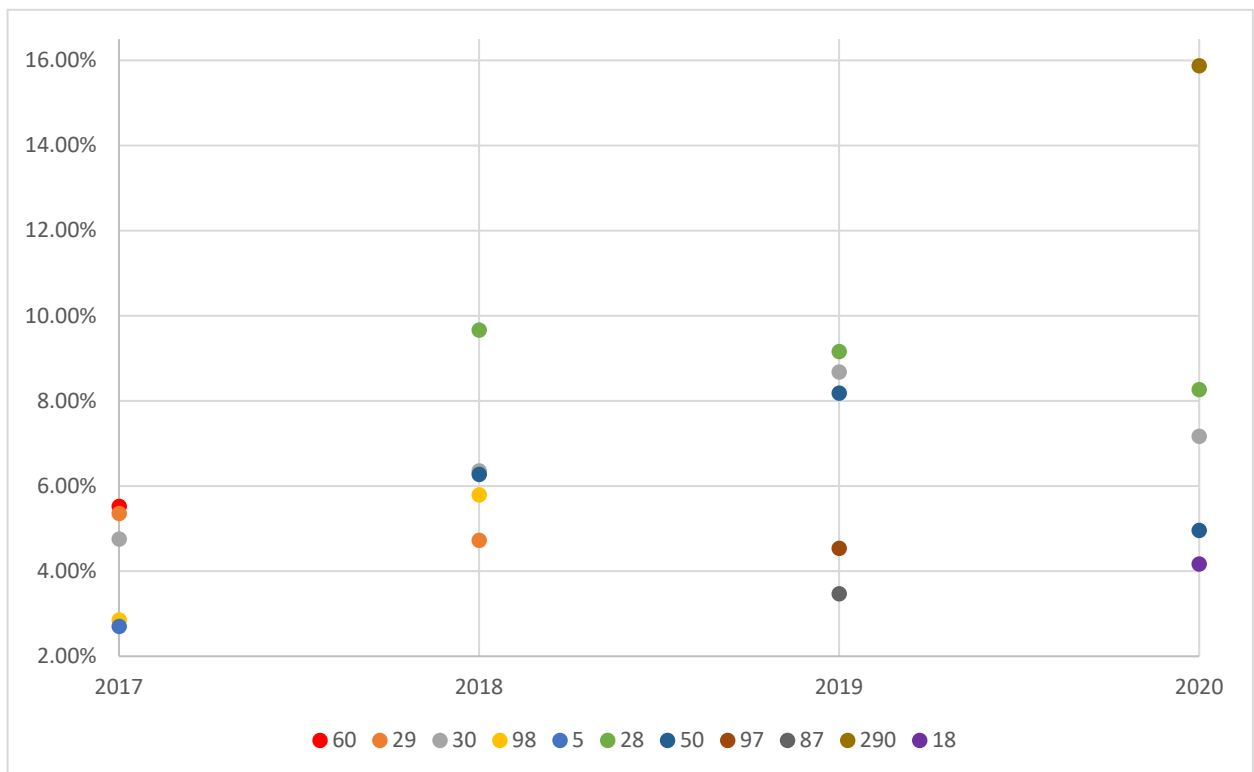**Figure 29 CATS Annual Wheelchair Ridership by Route (Top 5 Volumes)**

Figure 30 CATS Proportion of Passenger Counts that are Wheelchair Trips by Route (Top 5)

The routes with the highest annual wheelchair ridership had some overlap as those with the highest annual ridership routes. Routes 11, 9, and 7 were the highest among both groups, but routes 5 and 30

had higher wheelchair counts despite not being in the top five for total ridership routes. In 2020, route 19 (not pictured) had the fifth highest wheelchair ridership rather than route 30.

Given the varying ridership levels among routes, the proportion of CATS's ridership that came from wheelchair ridership was also considered by route. This data was available from 2017 to 2020. The values varied year to year, but all years included route 30 in the top five, and three years included routes 28 and 50.

MTS

MTS shared the number of wheelchair trips as compared with total number of passenger trips for the year (see Figure 31 illustrating the percentage of trips). While the overall number of trips has declined during COVID-19 to around 278,000 trips in 2021, the percentage of wheelchair trips has steadily increased in the last several years to 19 percent in 2021.
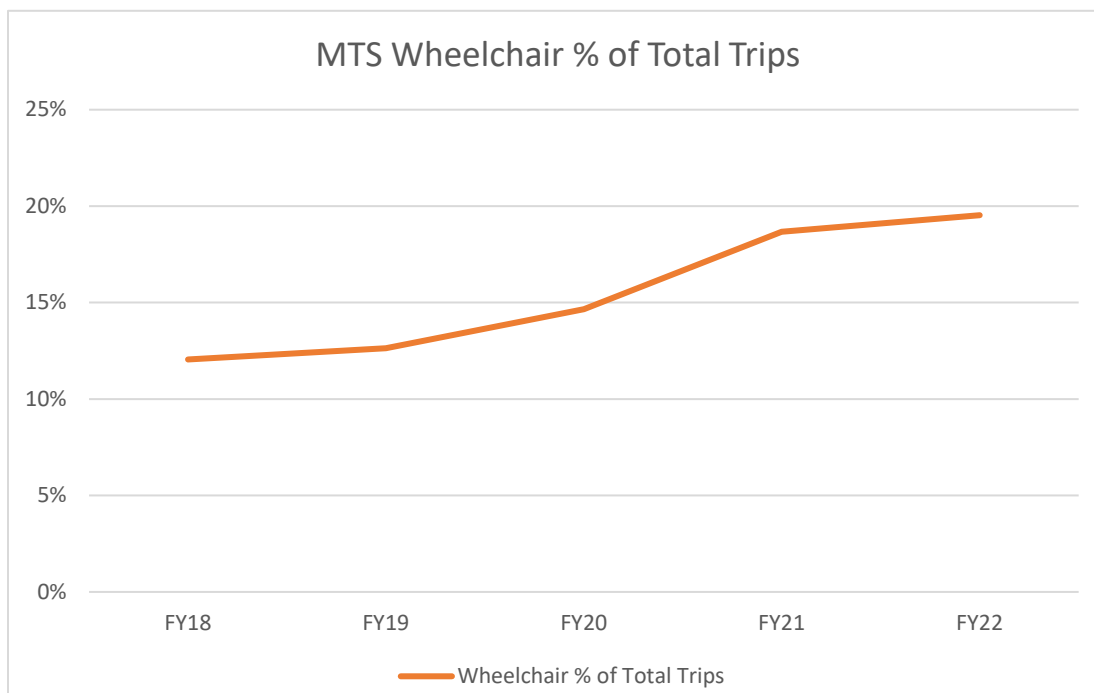

Figure 31 MTS Proportion of Wheelchair Trips

Union County

Union County provided the total number of wheelchair/lift trips for the past four years. The fiscal year 2022 number only includes the first seven months of this fiscal year, explaining the sharp drop compared to previous years (see (Figure 32). While there was a drop in 2020 in total number of wheelchair trips, this recovered in 2021. Assuming a similar number of average monthly trips for the last five months of the 2022 fiscal year, the number of wheelchair trips will continue to increase compared to 2021.
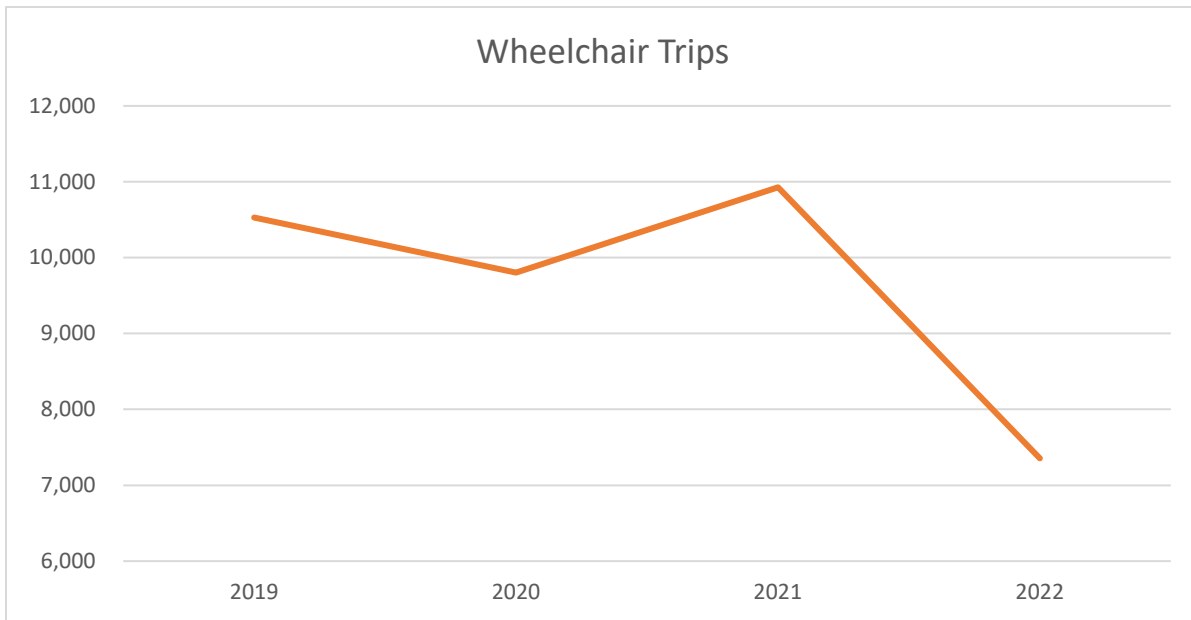
Figure 32 Union County Wheelchair Trips

Passenger Fares and Agency Funding

Passenger fare collection trends as well as trends in funding by FTA grant funding category by agency were reviewed for the last five years where NTD data were available.

Figure 33 examines the total demand response fares by agency. It should be noted that the NTD data did not distinguish between "Passenger Paid Fares" and "Organization Paid Fares" in their fare data until 2018. Figure 34 shows the total demand response passenger paid fares from 2018 onward to get a better sense of the data. Until 2020, MTS reported their total fare data as only their passenger paid fares, whereas in 2020 their total fare data included passenger paid fares and organization paid fares, explaining the huge spike in their 2020 value in Figure 33. The same reporting issue seems to be occurring for Greenway in 2020 and Gaston County across all years. Despite having the highest amount of demand response passenger trip volume, MTS has a small amount of total fares received from the service. Most agencies receive very little fare revenue from their demand response services. CATS receives the most amount of passenger paid fares.
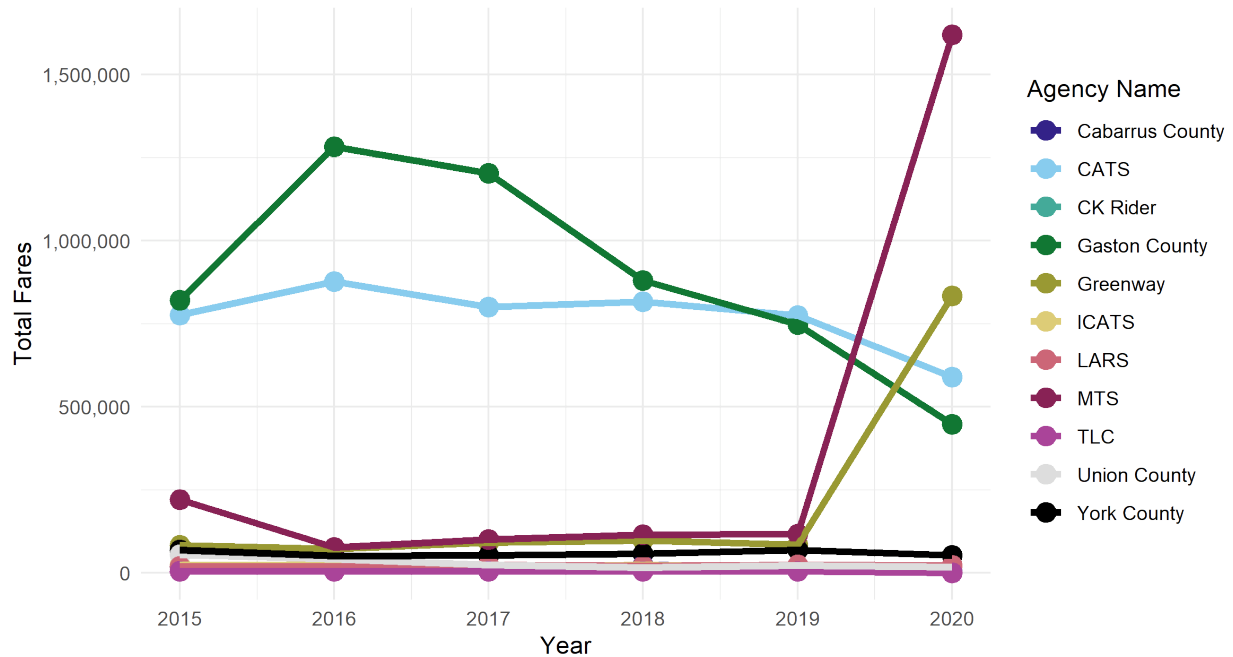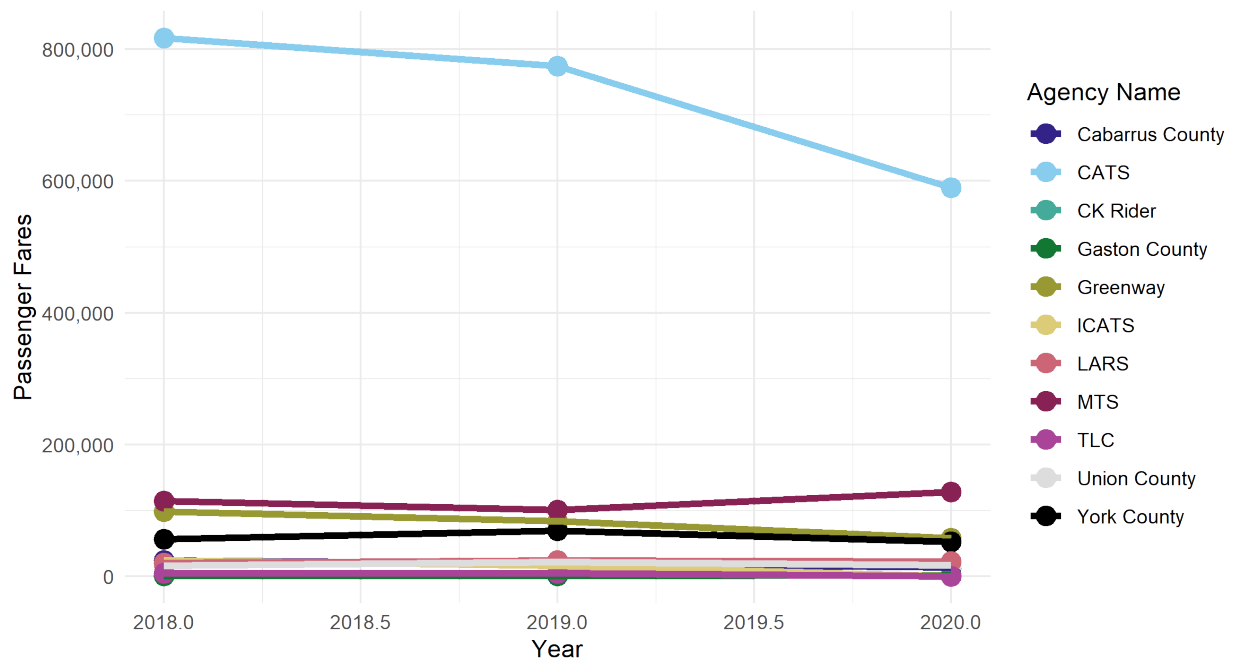
Figure 33 Total Fares

Figure 34 Total Passenger Paid Fares

Figure 35 further examines passenger paid fares by all agencies, excluding CATS. Removing CATS allows the data for the smaller agencies to be more readable. MTS and Greenway have the passenger paid fares following CATS. Most agencies receive less than $25,000 a year in passenger paid fares.
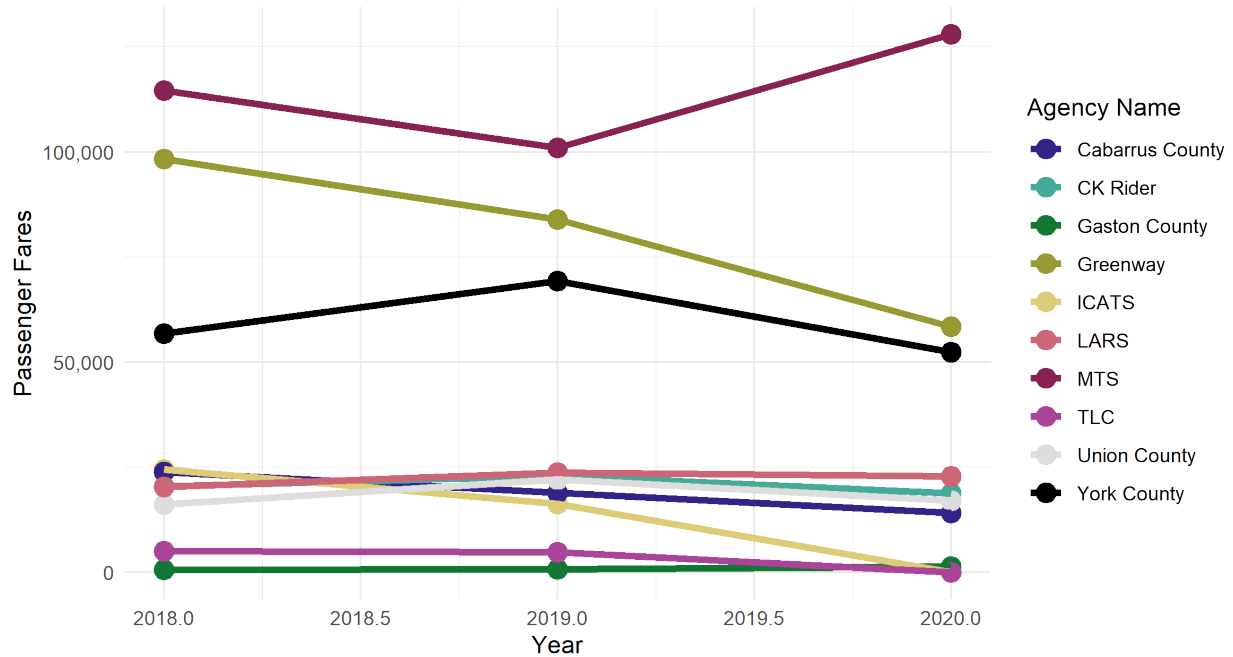
Figure 35 Total Passenger Paid Fares Excluding CATS

The FTA Section 5310, Section 5311, and Section 5307 funding was examined by agency. CATS received large amounts of 5310 funding in years 2018 and 2019. CK Rider and ICATS both tended to receive some
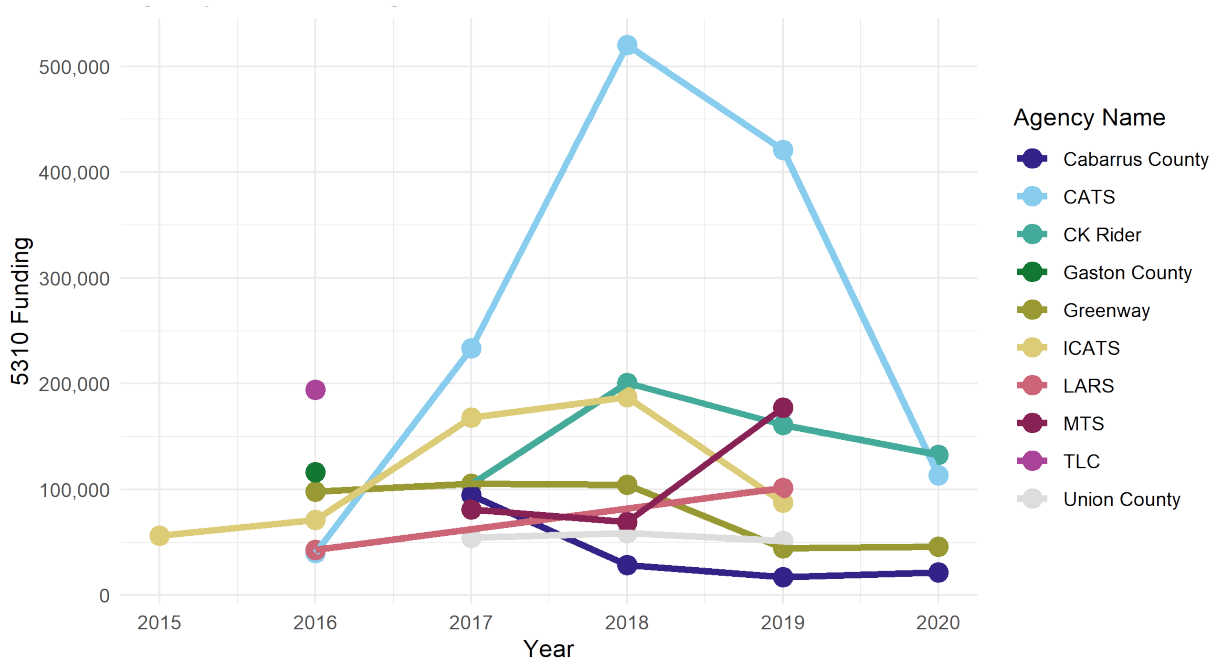

Figure 36 5310 Funding by Agency

of the highest amounts of funding in recent years following CATS. While MTS has the highest volume of demand response passenger trips, it receives less 5310 funding than many of the other agencies.

ICATS, Greenway, and TLC receive the highest amount of 5311 funding. Greenway had a large spike in 5311 funding in 2017, receiving over $1 million. CATS and CK Rider have not received any 5311 funding.
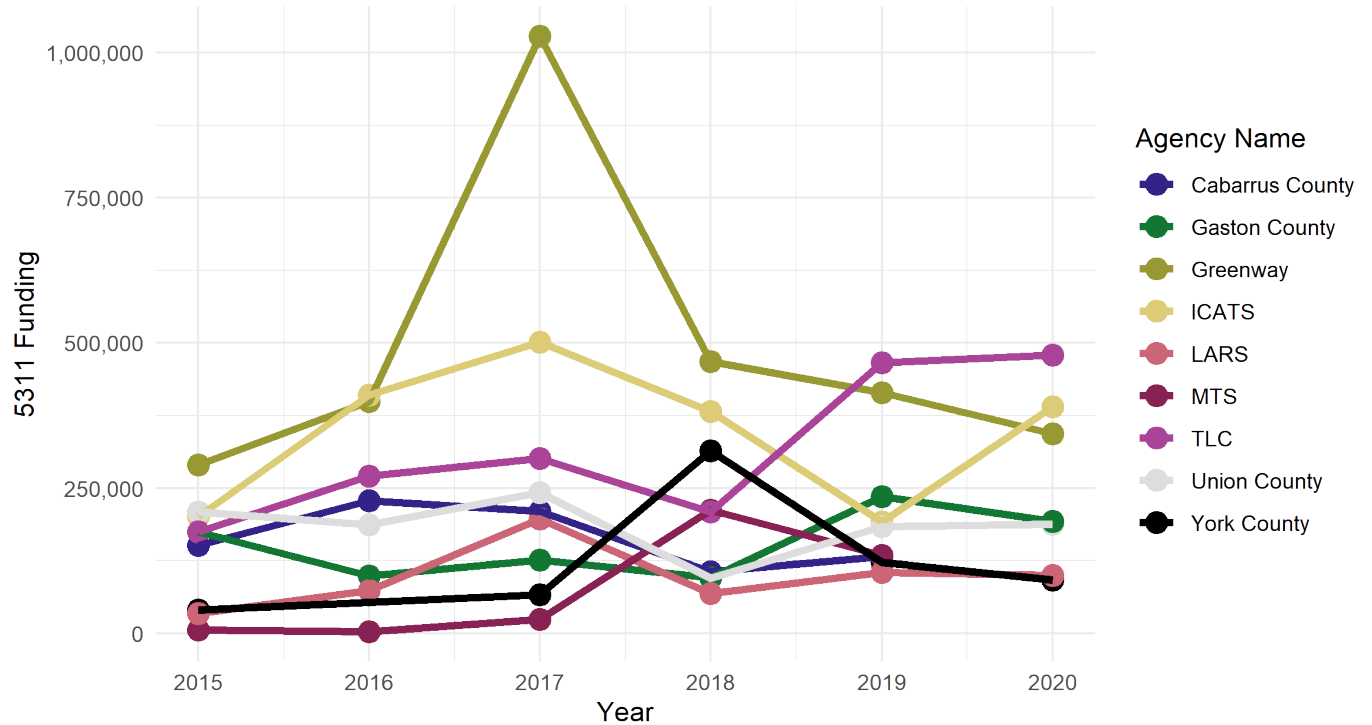
Figure 37 5311 Funding by Agency

CATS receives the greatest amount of 5307 funding by far, with amount received mostly being over $10 million a year, with some years exceeding $30 million. Most agencies receive under $2.5 million annually. Gaston County, LARS, and TLC have not received any 5307 funding. Union County has started to receive 5307 finding in 2019 and expects to see an increased share of the regional 5307 funding allocation in the next several years.
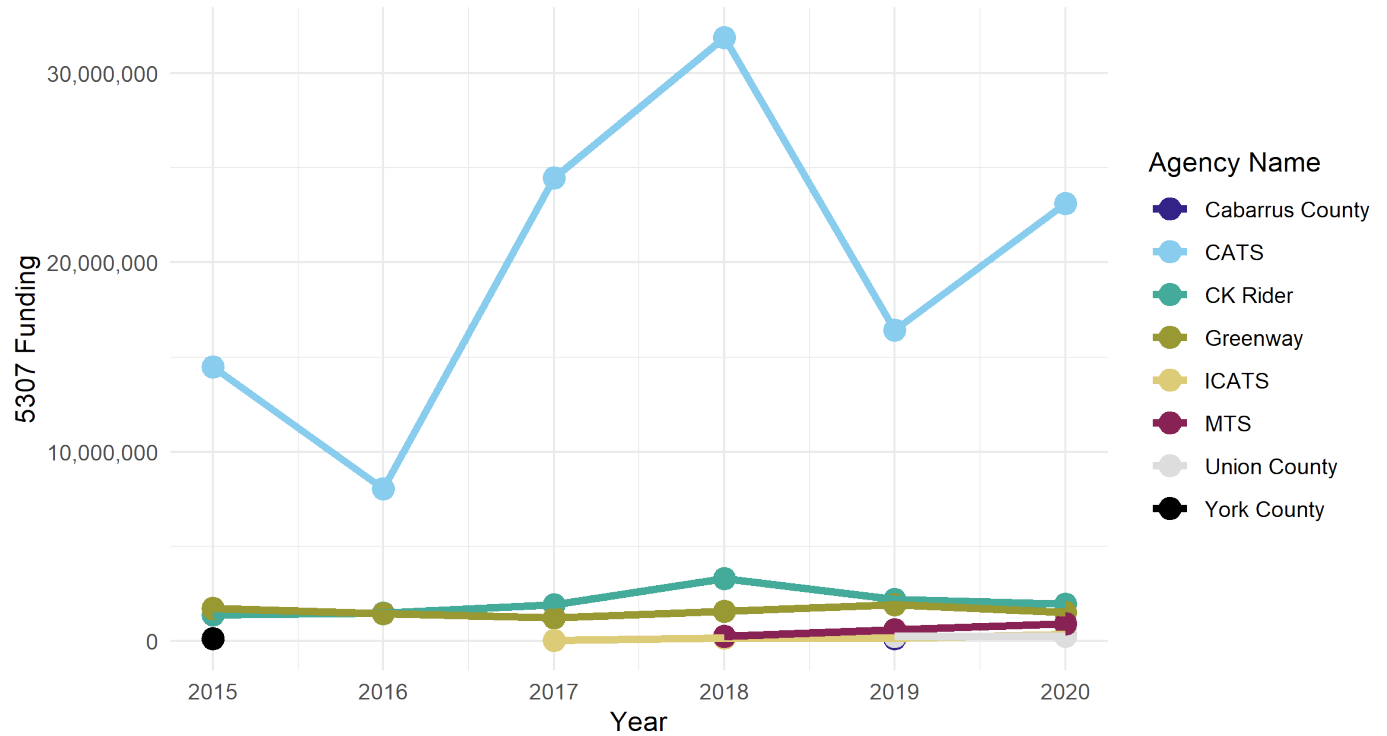
Figure 38 5307 Funding by Agency

Subrecipients of Charlotte Urban Area FTA Section 5310 Funding

In addition to existing public transit agencies, a variety of non-profit and public agencies in the area have received FTA Section 5310 funding through a CATS call for grant funding in recent years. The following is a list of non-profit and public agencies who have been recent recipients of FTA Section 5310 funding apportioned to Charlotte Urban Area, based on FY 2017 and FY 2018 grant funding calls for projects.

Metrolina Association of the Blind (MAB)

Project Name: *Door-Through-Door Transportation for the Blind and Visually Impaired*

To expand operational services, this grant will allow MAB to provide door-through-door service, where the driver will continue to stay with the clients on their trips and offer human-guide service as needed.

Project Name: Replacement Vans

This project purchased three vans to replace MAB's existing three-van inventory.

Iredell County Area Transportation System (ICATS)

Project Name: Fare Box Upgrade

Fare boxes will be updated to utilize a passenger transit card.

Union County Transit

Project Name: Paratransit Support Mobility for Seniors and Disabled

This project will allow Union County to provide Demand Response service to over 100 residents that previously were on a waiting list.

Centralina Council of Governments

Project Name: Regional Transit Resource Guide Mobility Management

This project created a Regional Transit Guide for the greater Charlotte Region.

Mainstreaming Consultants, DBA Disability Rights and Resources (DRR)

Project Name: "Let's All Go" (Mobility Management)

The "Let's All Go" project was planned to provide and/or expand travel training services to increase transportation options for seniors and people with disabilities. With this funding the agency was planning to foster disability awareness and provide sensitivity training to transportation operators, managers, and drivers; both public and private. The project also included an update of the toolkit of transportation options, to be distributed to the above listed groups.

Other Community Transportation Services

There are a number of other community-based transportation services that are operated by non-profit, health and human service, faith-based agencies, churches, and school districts. The majority of these services are eligibility-based, providing transportation to their specific client populations for specific trip purposes. Several community transportation service providers, of which some have utilized FTA Section 5310 funding in the past are as follows:

- UNC Charlotte operates "Niner Transit" system which serves UNC Charlotte campus and takes students to key community destinations including providing a shopping shuttle

- Metrolina Association of the Blind (MAB) operates three vans for its clients

- Mainstreaming Consultants, Inc., dba Disability Rights, provides travel training and information for individuals with disabilities

- Centralina Regional Council of Governments provides travel training

- Lancaster County D.A.V. Van: volunteer driver-based program to transport veterans in Lancaster County, South Carolina to Dorn VA Medical Center in Columbia or Rock Hill VA Clinic on certain days of the week

Shared Mobility Providers and Ride Sharing

Existing shared mobility providers in the Charlotte region include Lyft and Uber ridesharing services, as well as several scooter-share companies and a bikeshare program.

Uber and Lyft operate in the City of Charlotte, portions of Mecklenburg County, Gaston County and Union County. The screen shot below from a Lyft driver sign-up page[3] illustrates the Lyft service area as reported to potential drivers in the fall of 2021.

Generalized Lyft Service Area. Courtesy of https://lyft.com/driver/

Recently, GEST Carts (Green Easy Safe Transportation) service has been introduced to the Charlotte area and now provides service in a limited area including the Uptown and South End. The services are targeting limited hours focused on Thursday, Friday, and Saturday evenings. GEST Carts provides a free electric shuttle, with advertising covering the operating expenses. An app is the

Charlotte GEST Vehicle. Courtesy of https://www.gestcarts.com/

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[3] Lyft, Charlotte Service Area Map retrieved from https://www.lyft.com/driver/cities/charlotte-nc?utm_source=google&utm_medium=cpc&utm_campaign=PAID_DAX_SRCH_US_CLT_WEB_ALL_NBRND_UBER_ALL_202107&adgroup=uber--misspell_NA_NA_202107&utm_term=ubber&device=c&matchtype=p&targetid=kwd-3253789948&loc_physical_ms=9009983&loc_interest_ms=&network=g&devicemodel=&adposition=&campaign_id=14723802637&ad_id=547202695377&adgroup_id=127527511197&placement=&ref=&adname=rsa_202107

preferred way of requesting a ride, although a phone number is also available. Vehicles are able to travel up to 25 miles per hour.

Another provider, Jaunt, has been operating in Uptown, South End, and West End, and provides services Monday-Thursday from 11 AM-5 PM and on Friday and Saturday from 7:30 PM-2 AM. Jaunt also provides free rides in an electric shuttle vehicle and allows reservations via an app or a phone call.

Neither GEST nor Jaunt have ADA Paratransit vehicles available based on the information available.

E-scooters appeared in Charlotte in 2018, and remained while the dockless bikeshare systems were phased out. Scooter share services operating in the Charlotte region include Lime, Bird and Spin. Those three operators have 400 e-scooters each. Prior to COVID-19, scooter use was reported to be highest in denser neighborhoods in and around Uptown, including South End and Plaza Midwood[4].

Docked bicycle share system in Charlotte has initially launched in 2012 as Charlotte B-cycle with 200 bikes and 20 bikeshare stations. Recently the system been rebranded as "Charlotte Joy Rides" and now features pedal-assist e-bikes. The system is operated by a non-profit, with healthcare industry partners sponsoring part of the costs. The system hours are from 5 AM until midnight.[5] A bikeshare program that operated in Gastonia for about three years, set up through a cooperative effort between Go Gaston and a private firm named Zagster, stopped operations in June 2021 in the wake of COVID-19 pandemic[6].

Typically, users of e-scooter systems are expected to make a reservation via a smart phone mobile app. Joy Rides allows a reservation and payment via a kiosk at one of the stations.

Charlotte Jaunt Vehicle. Courtesy of https://www.facebook.com/Ride.Jauntclt/

Bird Scooters at Trade Street and Tryon Street Intersection in Uptown

Joy Rides Bikeshare Station in Uptown

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[4] AXIOS Charlotte, May 7, 2020. "Scooters are returning to Charlotte this weekend". Retrieved from https://charlotte.axios.com/218138/scooters-are-returning-to-charlotte-this-weekend/

[5] Joy Rides, "About" Retrieved from https://charlottejoyrides.com/about

[6] Bill Poteat, Gaston Gazette, June 1, 2020. "Gaston bike share program ends". Retrieved from https://www.gastongazette.com/story/news/coronavirus/2020/06/01/gaston-bike-share-program-ends/115020444/

Private Transportation Providers

Private transportation providers are also major players in the Charlotte Mecklenburg transportation arena. These include operators of taxi companies, limousines, accessible vans, airport shuttles and intercity, tour and charter bus companies.

In Mecklenburg County, the Charlotte-Mecklenburg Police Department's Passenger Vehicles for Hire (PVH) Office administers and enforces Chapter 22 of the Charlotte City Code-Passenger Vehicle for Hire ordinance, governing taxis, limousines, sedans, SUVs, shuttles, vans, vehicle operators, and chauffeur licensing[7]. As of January 2022, the posted list of approved Passenger Vehicles for Hire in Mecklenburg County included 87 companies.

The following list includes a summary of private transportation providers, by county, based on online research:

- Cabarrus County: 27 providers
- Catawba County: 25 providers
- Iredell County: 47 providers
- Gaston County: 27 providers
- Lancaster County, South Carolina: 14 providers
- Lincoln County: 8 providers
- Mecklenburg County: 87 providers
- York County, South Carolina: 3 providers
- Union County: 16 providers

Please refer to the Appendix C for a full list of private transportation providers by county.

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[7] City of Charlotte, Charlotte-Mecklenburg Police Department. Retrieved from
https://charlottenc.gov/CMPD/Organization/Pages/SpecOps/PVH.aspx

3 Prior Plans Summary

This section provides a summary of some of the key prior transportation planning studies in the region.

Coordinated Human Services Transportation Plan for the Charlotte Urban Area (FY 2016-2021)

This document is the previous Human Services Transportation Plan for the Charlotte Urban Area, approved in 2016. The plan recommendations centered around the following five key strategies:

Strategy 1: Mobility Management

Facilitate coordination among existing public and human service transportation providers in the Charlotte UZA through mobility management.

› Create a department of transportation coordination
› Integrate social services sites (Nevins, Lifespan, etc.)
› Centralize demand responsive dispatching with on-line options (Red Cross, STS, DSS)
› Establish a centralized intake-dispatch brokerage to integrate STS, PVH, County and City transportation resources

› Hire a mobility manager to coordinate community transportation resources

› Implement technology for one-stop transportation

› Facilitate regional communication

› Develop and implement standardized demand responsive ridership eligibility guidelines

Strategy 2: Travel Training

Empower individuals to lead more active, independent lives that maximize existing transportation options.

› Establish transportation kiosks in senior / low-income housing and social service locations

› Create a demonstration bus

› Create a mobile classroom

› Provide one-on-one instruction, as well as group instruction, to target populations for "first and last mile" access

Strategy 3: Ride Sharing

Close the gap on "first and last mile" access to transportation options.

› Employ new interactive technologies to empower individuals to schedule demand response service

› Develop and market "How to Find a Ride"

› Develop and implement a travel companion program

Strategy 4: Improve Existing Services

Improve existing services that increase reliability and expand transportation options for people with disabilities, seniors, and individuals with low incomes.

› Provide same-day STS

› Expand dialysis transportation

› Expand/improve volunteer driver programs

› Purchase larger vehicles to accommodate over-sized mobility aids

› Expand CATS neighborhood circulators

› Provide disability sensitivity training to taxi and limousine drivers

› Improve transportation options for employment and related needs

› Improve access to transportation for veterans and others with visual impairments

› Improve access to transportation for basic services for individuals who are homeless

› Improve bus stop environment, accessibility, amenities for seniors and disabled

› Improve transfer connections, times, and locations

› Expand transportation alternatives for persons over 65 or living with a disability (before/after hour services)

›   Provide more fuel-efficient, environment-friendly modes of transportation

›   Add Braille to fixed route bus stops

Strategy 5: Develop New Service

Develop new services that expand transportation options for people with disabilities, seniors, individuals with low incomes, and veterans.

›   Provide general purpose transportation for people with disabilities

›   Provide transportation to veterans' medical facilities

›   Expand fixed route services in the Charlotte UZA

›   Provide new fixed route services to unserved areas within the Charlotte UZA

›   Expand out-of-county coordination to non-emergency medical facilities or places of employment

CATS Envision My Ride (EMR) Bus Priority Study

The CATS Envision My Ride (EMR) study is a planning initiative to redesign the current bus system. As part of this initiative, the CATS EMR study is taking a comprehensive look at the structure and frequency of the existing bus network to determine how the system can best serve the City of Charlotte and the greater region. The study is currently in progress and is expected to finish in 2022. Its key vision is to create a better bus network. The key aspects around which EMR study recommendations will be developed include the following:

- More frequent bus service

- More direct bus service

- More crosstown and suburb connections to other transit lines, bikeshare, park & rides, and other mobility options

- Greater connectivity between different routes to improve transfer opportunities

Twenty-two future high-frequency bus routes were evaluated for focused treatments based on the study goals and objectives. The team looked at the following options:

- Enhancing access to opportunities

- Connecting the priority bus network to all other modes

- Providing equitable transit access for underserved and vulnerable populations modes

- Offering resilient travel options

Ongoing bus stops improvement initiatives include the following projects, subject to funding availability:

- Corridors of Opportunities

- o West Boulevard and Remount Road Mobility Plaza
- o Areas of Persistent Poverty Grant Application Mobility Hub Improvements
- o Ashley Road and Freedom Drive
- o West Boulevard and Clanton Road

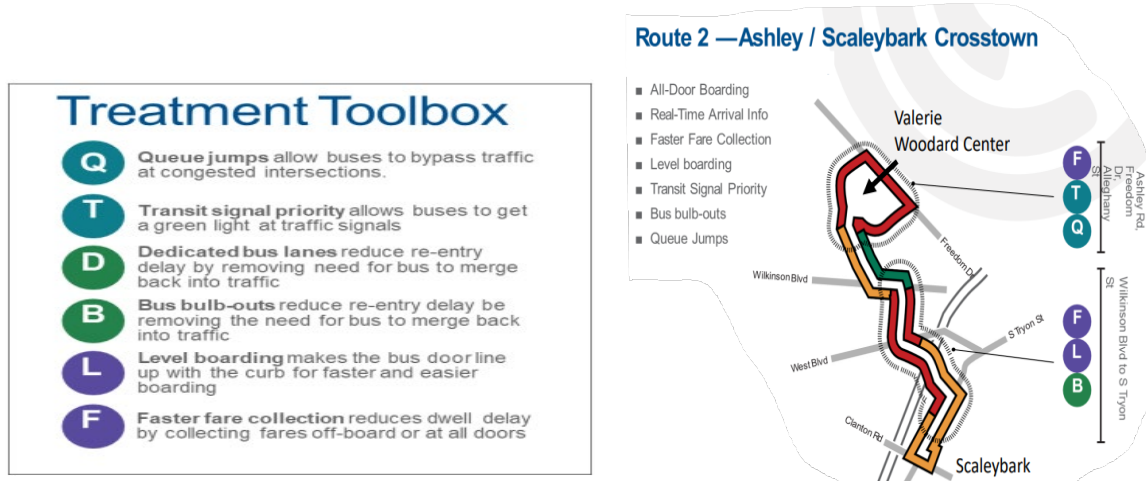Figure below illustrates an example of potential bus priority treatment.

Figure 40. Potential Bus Priority Treatment for Route 2 - Ashley/Scaleybark Crosstown

CONNECT Beyond (2021)

CONNECT Beyond is a regional mobility plan that sets the vision for how to better connect the rural, suburban, and urban communities in the 12-county region covered by the Centralina Regional Council and Metropolitan Transit Commission. The plan is intended to guide and coordinate future mobility investments for the next two decades and serve as a blueprint for implementing a robust, integrated public transit network that will combine high-capacity transit lines, enhanced bus services, local mobility options, and innovative transportation technologies.

CONNECT Beyond includes key recommendations paired with specific strategies and implementation steps to create a network that transforms the way residents and visitors travel throughout the region. The end goal is to achieve a total mobility network bringing seamless connectivity by way of high-quality multimodal transportation services.

Figure 41 - CONNECT Beyond Project Priorities

Key Priorities

The plan's vision emphasizes equity, noting that transportation is a crucial element in providing access to education, jobs, and housing to improve economic and social mobility. Six key project priorities are identified, as shown in Figure .

Relevant Recommendations

The plan identifies five interconnected "Mobility Moves," acting as the foundation to guide priorities and implementation strategies:

- **Create Mobility-Friendly Places:** strategies for how the region can work together to promote sustainable growth, encourage mobility-supportive land use and community development to enhance connectivity, and encourage residents and visitors to use alternative mobility options.

- **Expand Mobility Choices:** focuses on how regional partners can work together to expand transportation demand management (TDM) strategies, enhancing the experience of using our region's total mobility network services, embracing emerging mobility trends, and implementing a network of Mobility Hubs to support our region's total mobility network.

- **Strengthen Rural to Urban Connections:** focused on improving mobility and transportation choices for those living in rural communities that rely on transit to get to critical medical appointments, jobs, and daily activities.

Figure 42. CONNECT Beyond Mobility Moves

- **Build a Better Bus Network:** improvements to a bus network cannot be underestimated, as a quality bus network makes crucial multimodal connections and offers a means of accessing many economic, social, and educational opportunities – not to mention its impact in reducing congestion and improving air quality.

- **Invest in Strategic Mobility Corridors:** identifying and evaluating Strategic Mobility Corridors throughout the region. To identify and evaluate Strategic Mobility Corridors, the Team conducted a High-Capacity Transit Corridor Identification and Evaluation Process and a Commuter Rail Assessment.
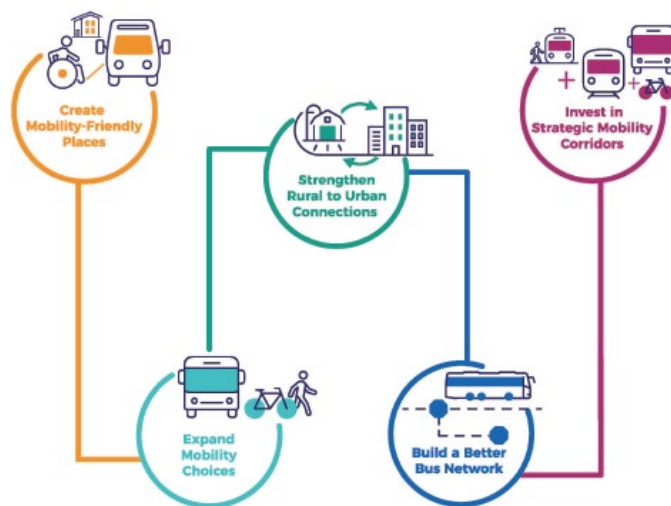
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CATS 2030 Transit Corridor System Plan (2020)

In 1998, the County created the 2025 Transit-Land Use Plan and enacted the half-cent sales tax as a blueprint for investing in public transit projects to proactively address these potential "growing pains." The purpose was to integrate rapid transit system with land-use planning along five strategic corridors to support economic growth in a way that encouraged sustainable environments, improved the quality of life, and attracted businesses and people to the region.

CATS continues to update the 2030 Transit System Plan while implementing rapid transit project improvements and strengthening the current bus network. These investments increase access and mobility options through the expansion of transit services, enhancing customer amenities at stops, creating pedestrian-friendly neighborhoods in close proximity to light rail stations, and integrating transit-oriented development policies.

Integrated land-use planning and transit-oriented development (TOD) are the cornerstones of the 2030 Transit Corridor System Plan and a key component in moving the region forward.
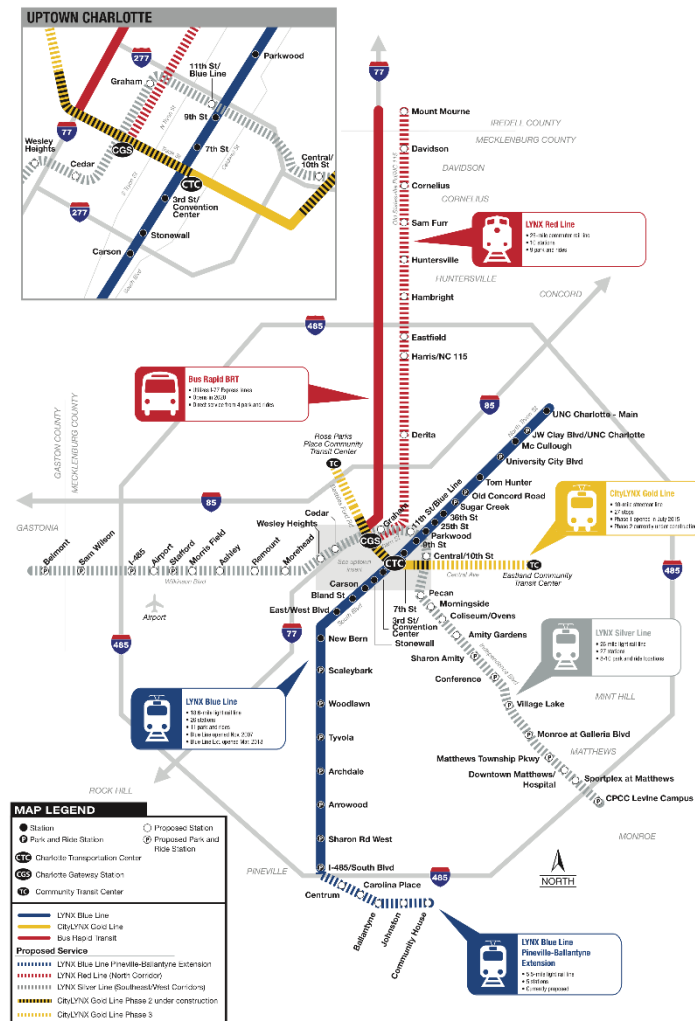
Figure 43. CATS 2030 Transit Corridor System Plan

The 2030 Transit Corridor System Plan consists of multiple transit modes in five corridors, a series of improvements in Charlotte's Center City and bus service and facility improvements to link the area's key centers of economic activity.

Once completed, this 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.

CRTPO 2045 MTP (2018)

The 2045 Metropolitan Transportation Plan (MTP) is a long-range vision for the Charlotte region that focuses on the region's current and future transportation needs. With a planning horizon of more than 25 years, the MTP defines the region's strategy for creating a network of road, bicycle and pedestrian, transit, and rail that supports economic vitality and sustainability.

The 2045 Metropolitan Transportation Plan (MTP) is a long-range vision for the Charlotte region that focuses on the region's current and future transportation needs. With a planning horizon of more than 25 years, the MTP defines the region's strategy for creating a network of road, bicycle and pedestrian, transit, and rail that supports economic vitality and sustainability.

Key Themes

Goals with select relevant objectives:

1. Provide, manage, and maintain a safe, efficient, and sustainable transportation system for all modes, intended to serve all segments of the population:

    1.1. Develop an efficient, multimodal transportation system (CTP) capable of providing an appropriate level of service for a variety of transportation modes.

    1.2. Provide all users a convenient, safe, and comfortable way to reach their destination, regardless of location, personal mobility level, age, or economic status.

2. Encourage walking, bicycling and transit options, integrated with motor vehicle transportation, by providing a transportation system that serves the public with mobility choices.

    2.1. Support the operation of safe and efficient scheduled transit services that minimize travel times and distances.

    2.2. Encourage programs and incentives that promote ridesharing (or eliminate barriers to ridesharing).

3. Provide a sustainable transportation system that improves the quality of life for residents, promotes healthy living and is sensitive to significant features of the natural and human environments.

4. Promote equitable transportation options for low income and minority neighborhoods, as well as the aging population.

    4.1. Support opportunities to serve the elderly and transportation-disadvantaged populations with convenient transportation to needed services.

    4.2. Provide meaningful opportunities for public involvement in the transportation planning process.

5. Encourage regional collaboration and linkages between transportation and land use planning.

6. Support economic competitiveness by making investment decisions for transportation modes that make the most efficient use of limited public resources and enhance system performance, as well as by pursuing sustainable funding possibilities.

6.1. Promote strategies that increase vehicle occupancy and the use of alternate modes by utilizing a full range of transportation demand management options.

7. Maximize transportation opportunities for the movement of goods

Relevant Recommendations

Goal 4: 4) Promote equitable transportation options for low income and minority neighborhoods, as well as the aging population.

› Support opportunities to serve the elderly and transportation-disadvantaged populations with convenient transportation to needed services.

› Provide meaningful opportunities for public involvement in the transportation planning process.

CRTPO Comprehensive Transportation Plan (2020)

The Comprehensive Transportation Plan (CTP) is a long-range regional plan that evaluated existing and future multimodal transportation needs, considering how to best provide transportation options for all. The plan is not fiscally constrained and has a 30-year horizon. It identified future needs including major transit improvement needs, made high level transit improvement recommendations, and identified projects for follow-up study and inclusion in shorter-term plans.

Relevant Recommendations

Higher-level project identification. No transit projects were identified specific to human service transportation needs.

Iredell County Transportation Master Plan (ICTMP)

Iredell County Transportation Master Plan (ICTMP) outlines a comprehensive transportation strategy to manage congestion, improve mobility and safety, and position the county to meet future transportation needs. Iredell County Transportation Master Plan identified the following priority transit corridors to improve public transportation in Iredell County and connections to the greater Charlotte region:

- North corridor Bus Rapid Transit (BRT) on I-77 from Center City Charlotte to NC 150
- Priority High-Capacity Transit (HTC) Corridor on I-77 from NC 150 to I-40 in Statesville

- Emerging Mobility Corridor on US 21 from I-77 to US 64/Front Street in Statesville
- HTC Commuter Rail Corridor on NC 115 from Faith Road in Mt. Mourne to East Iredell Avenue in Mooresville

ICTMP also recognizes that CONNECT Beyond has identified I-77 as one of 13 HTCs currently ready for high-capacity transit investments in the region. US 21 is one of 24 emerging mobility corridors meaning that it is a good candidate for high-capacity transit in the future but is currently suitable for other types of transit investments. NC 115 has been identified as a commuter rail corridor that would transport passengers during peak periods when traffic congestions is heaviest. The plan also acknowledges the EV Corridor on I-40. Figure 44 shows the priority transit corridors in Iredell County.
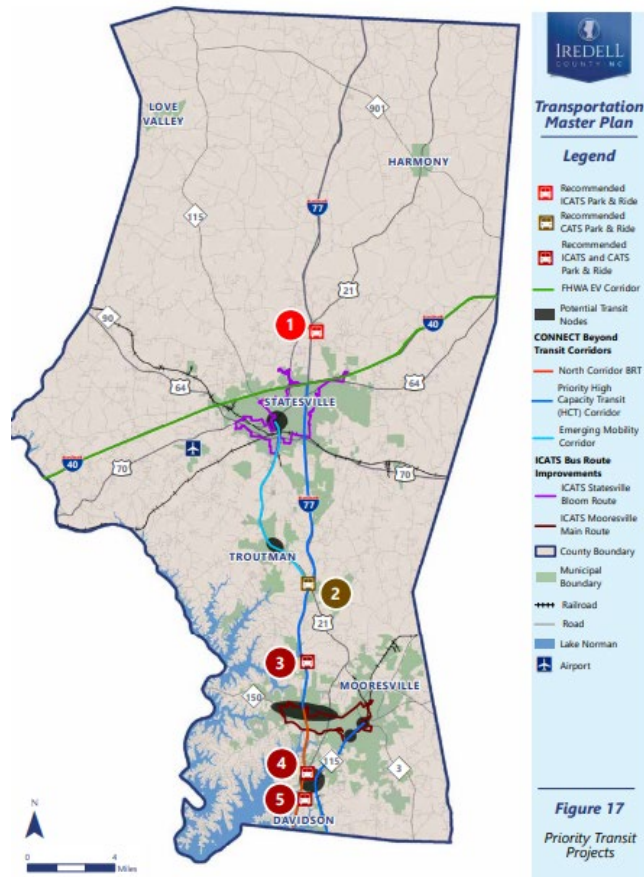

Figure 44. ICTMP Priority Transit Projects

- **Nodes** – Areas along CONNECT Beyond corridors with a high concentration of trip generators and activity level were recommended as transit nodes. Six potential nodes are recommended:
    - Downtown Statesville.
    - Commercial corridor along US 21/North Main Street/South Main Street approximately from Mills Street to Perry Road in Troutman.
    - Commercial corridor along NC 150/River Highway approximately from Morris Plantation Park to US 21/Charlotte Highway in Mooresville.
    - Downtown Mooresville.
    - Commercial and recreational area around NC 115/South Main Street approximately from West Lowrance Avenue to East Wilson Avenue in Mooresville.
    - Commercial area approximately within I-77, Fairview Road, NC 115/Mecklenburg Highway, and Langtree Road in Mooresville.
- **Facilities** – ICATS future transit center was identified as a high priority. The location of this future center remains to be determined. This center is expected to serve as a hub for all transit services in the county and is critical to enhancing transit operations in the county.

- **Routes** – ICATS plans to double service frequency on local circulators in Morrisville and Statesville which will reduce headway and increase reliability.

- **Park and Ride Lots** – These facilities provide a convenient, safe transfer area fort transit carpool and vanpool passengers, cyclists, and pedestrians (Table 12).

Table 12 - Recommended Park and Ride Lot Cost Estimates and Prioritization Score

#	P&R Lot Location	Estimated Cost	Prioritization Score
	ICATS		
1	I-77 Exit 54 (reinstatement of old park and ride lot)	$758,000	1
	CATS		
2	North Corridor BRT (US 21 at Julian Pl)	$3.031M	2
	ICATS and CATS		
3	North Corridor BRT (Cornelius Rd at Dorothy Ln)	$3.031M	3
4	BRT – Mt Mourne (Fairview Rd at Center Church Rd)	$3.031M	1
5	BRT -Langtree Rd (Langtree Rd at Castle Dr)	$3.031M	2

Greater Hickory MPO 2045 Metropolitan Transportation Plan

The 2045 Metropolitan Transportation Plan (MTP) updates the prior 2040 Long Range Transportation Plan for the Greater Hickory MPO. This fiscally constrained plan is focused on transportation facilities, programs, and services that will serve the urban area's future travel needs while remaining within the projected available funding over a 25-year horizon. New emphasis has been given to performance metrics and targets to help prioritize projects addressing system deficiencies, improving operations, and/or enhancing quality of life.

Greater Hickory MTP recommended transit improvements include the following:

- Circular Route in Burke County – The proposed service would establish a circular route in Morganton that would traverse US. 70 through Valdese, ultimately ending at Blue Ridge Healthcare Valdese. The proposed route would provide 26 percent of Burke County's residents with an additional transportation option.

- Additional Fixed and Demand Response Routes: An unfunded recommendation, the plan notes the lack of funding sources to add services to undeserved areas.

The plan reviews and does not make any additional recommendations for intercity bus services. Currently intercity bus services to Hickory are offered by both Sunway Charters and Greyhound Lines. Inc. (Figure)

- Sunway offers daily roundtrip service from Boone to Charlotte with stops in Newton and Lenoir which creates possibilities for passengers to connect to several intra and intercity transportation choices along its route, including a link to Amtrak's Crescent Route

- Greyhound Lines, Inc. offers service to neighboring cities, including Asheville and Winston Salem

- Additionally, the privately-owned Hickory Hop provides citizens with airport shuttle service to and from Hickory Regional Airport to Charlotte-Douglas International Airport
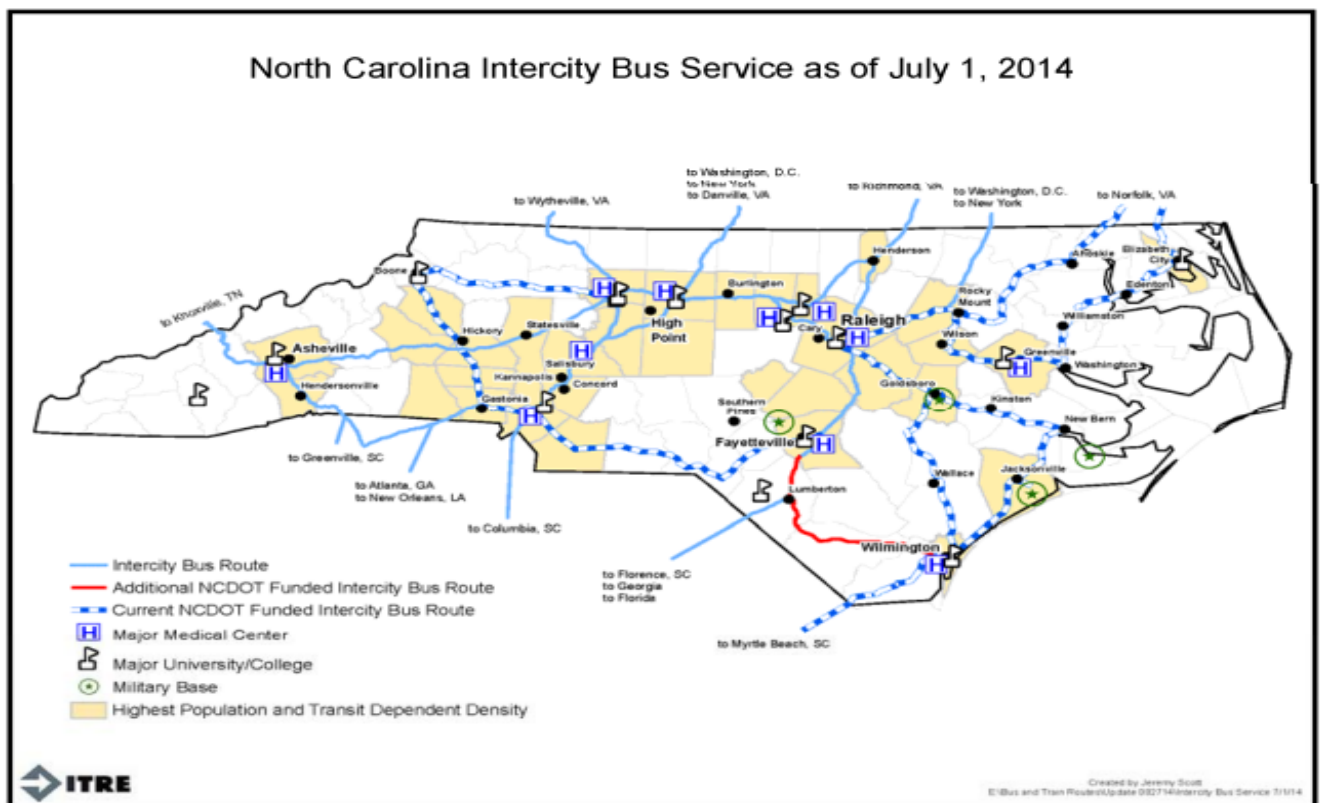

Figure 45 - North Carolina Intercity Bus Network

Rock Hill – Fort Mill Area Transportation Study (RFATS) 2045 Long Range Transportation Plan

Rock Hill – Fort Mill Area Transportation Study (RFATS) 2045 Long Range Transportation Plan (LRTP) covers the urban areas of York and Lancaster counties, South Carolina. The RFATS region has a local fixed route transit service implemented in 2020, My Ride Rock Hill. In addition, there are several available connections to Charlotte:

- Express bus service between downtown Rock Hill and uptown Charlotte (operated by the Charlotte Area Transit System – CATS) operates at peak hours on weekdays, with connections to the following Park & Ride locations:

    - Rock Hill Park & Ride lot in downtown Rock Hill

    - Manchester Cinemas (a Park & Ride lot adjacent to I-77)

    - Baxter Village in Fort Mill Park & Ride

    - Carowinds/Cabela's Park & Ride

- CATS feeder bus services connecting to the CATS LYNX Blue Line Station (light rail)

- A vanpool program for commuting trips that either begin or end within the Charlotte Urban Area

- Intercity bus and rail – the closest available service is in the neighborhood communities of Charlotte, NC, and Spartanburg, SC, no passenger rail service currently

A major change in intercity service could come from the development of a national high speed passenger rail (HSR) network. The high-speed rail corridor would serve Charlotte, potentially providing access to RFATS area residents via connecting bus service (Figure). Three potential routes are under study for the high-speed rail corridor between Atlanta and Charlotte (Figure):

- The Norfolk Southern (NS) railroad corridor

- The I-85 corridor

- A "greenfield" corridor which offers the opportunity to define a fully grade-separated route alignment with optimal geometric characteristics for high-speed passenger rail service

There is an interest in connecting Columbia to the expanding passenger rail network that passes through the Charlotte Region. The South Carolina Department of Transportation SCDOT's Statewide Transit Plan (2014) identified the Rock Hill to Charlotte corridor as having potential for commuter rail. However, there are currently no active plans for commuter rail service to serve the RFATS region. Rock Hill-York County-Charlotte Bus Rapid Transit (BRT) Service could be replaced or supplemented by commuter rail service as ridership grows (Figure 48).

Figure 46 Federally Designated Southeast High Speed Rail Corridor Status
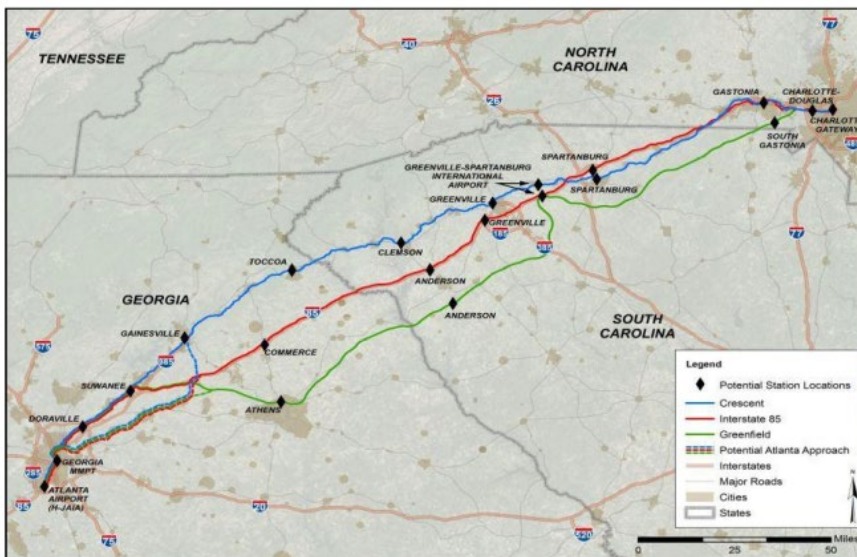
Figure 47 Potential High Speed Rail Corridor Alignment Options, Atlanta to Charlotte
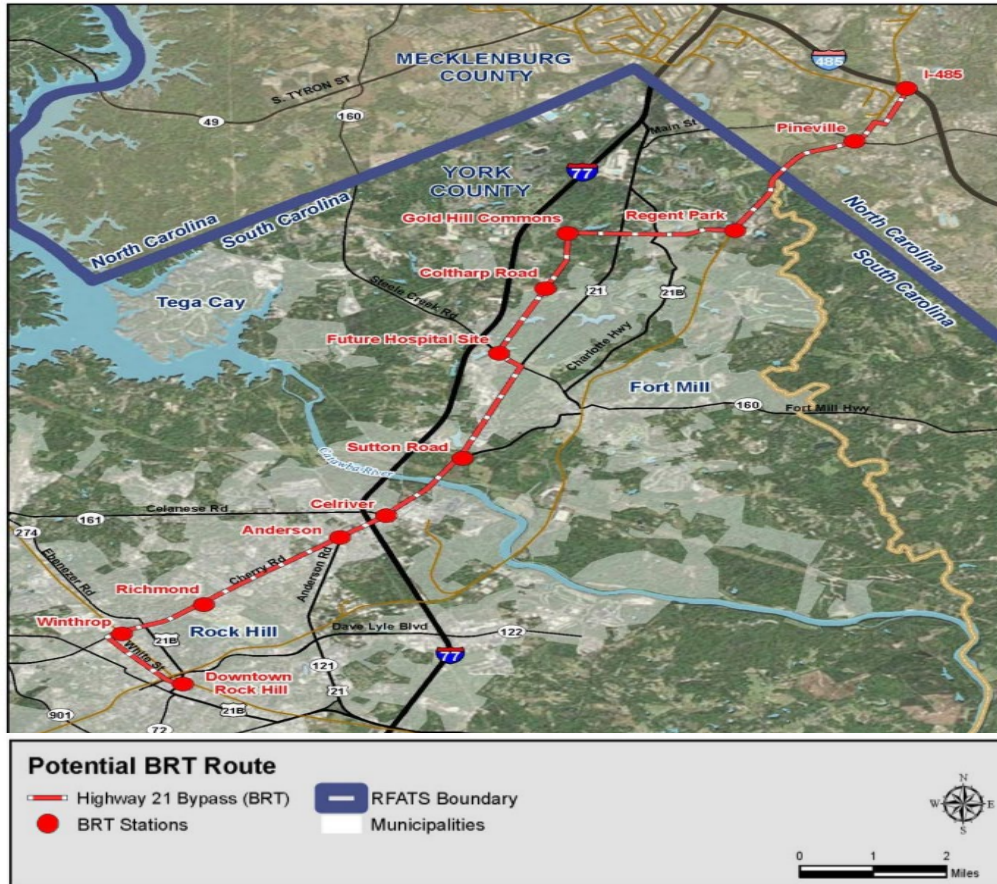
Figure 48 Proposed Rock Hill-York County-Charlotte Bus Rapid Transit Service

The study estimates the capital cost of the project between $511 and $516 million in four phases of implementation.

RFATS study recommended the following transit service improvements for implementations:

- Demand-response transportation service for portions of the region

- Lynx Blue Line Feeder Bus Route

- Lancaster Area Ride Service improvements

- Intercity Bus and commuter rail improvements

- Bus Rapid Transit (BRT) Service: connect Rock Hill to Charlotte with stops in Pineville and at I-485 in North Carolina (Figure)

- Provide local transit service in the Tega Cay/Fort Mill

- Provide local service in the Rock Hill area (implemented since the study has been adopted, in July 2019 with free service utilizing all-electric buses, see routes in Figure below).
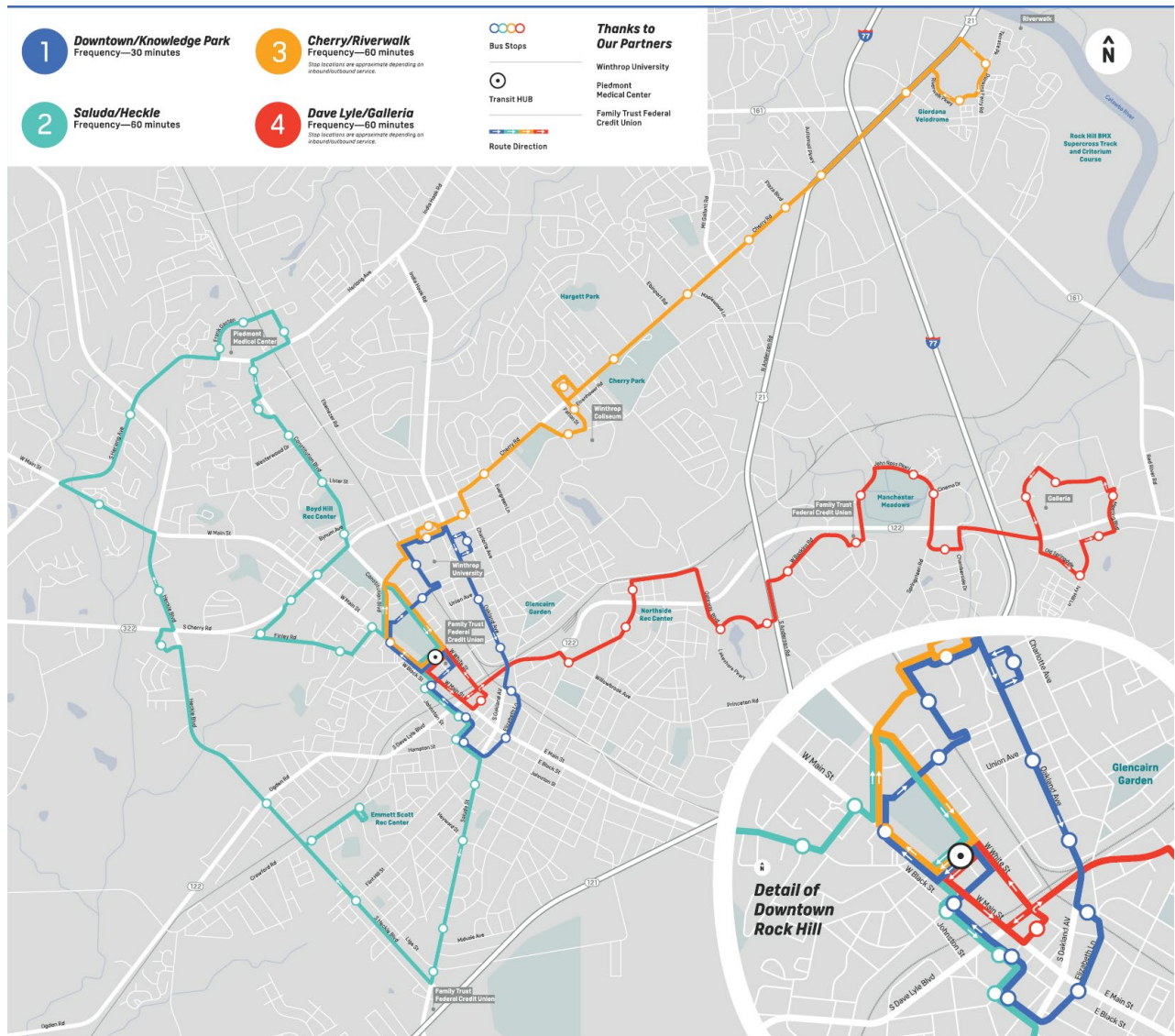
Figure 49 My Ride Rock Hill Fixed Route Service Map (Launched July 2019)

2020 Cabarrus County Long Range Public Transportation Master Plan

Cabarrus County Transportation Service (CCTS) and Rider Transit created a Long Range Public Transportation Master Plan in order to have a strong vision for improved public transportation throughout Cabarrus County to address both today's and future community needs. Two public transit agencies help provide mobility options in the Cabarrus County – Cabarrus County Transportation Service (CCTS) and Concord Kannapolis Area Transportation (Rider). The Master Plan includes phased service recommendations for a 20-year horizon (Figure).

The key recommendations include the following:

- New and replacement fixed route vehicles

    - Improve weekday frequency to 30-40 minutes

    - Add needed vehicles for weekday service (requires two vehicles per route)

- New and replacement demand response vehicles

- Bus stop amenities

- Technology, software, and data

- Three new transit hubs that would serve as major connection points between Fixed Routes and Demand Response zones

- New administration and maintenance facility

- Additional studies (high-capacity transit, park and ride studies, site feasibility, etc.)

- Park and ride lot construction

Year 1-3	Year 4-6	Year 7-8	Year 9-11	Year 12-14	Year 15-20
Extend hours of service for existing 8 fixed routes to 12:30 a.m.	Double frequency of fixed routes to 30-40 minute service	Add 8 fixed routes (for a total of 16 routes)	Double frequency of fixed routes to 15-minute service	Add 4 fixed routes (for a total of 20 routes)	Add 1 fixed route (for a total of 21 routes)
Initiate consolidation of CCTS and Rider Transit	Implement countywide demand response service	Begin operation of Downtown Concord hub and Kannapolis Train Station hub	Establish Harrisburg Town Commons hub	Begin operation of Harrisburg Town Commons hub	Introduce High Capacity Transit modes (light rail, bus rapid transit, and/or commuter rail)
Identify potential vanpool partners	Establish Downtown Concord hub and Kannapolis Train Station hub				
Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6

Figure 50. 20-Year Vision Plan Phased Service Improvements Recommendations

Public transit in Cabarrus County after full implementation of the 20-year vision is expected to have the following characteristics (Figure):

- One system

- No unserved areas

- 194 vehicles (108 buses, 86 Demand Response)
- 559 employees
- $70.56 million annual budget (Plan Year 20)
- 6.4 to 6.9 million passenger trips annually – not including high capacity transit
- High Capacity Transit (one or more modes)
- An overall "world class level" transit service

Total 20-year investment required:

- Bus and Demand Response System (non-HCT)
    - Operating: $759,482,819
    - Personnel: $54,070,056
    - Capital: $201,374,000
    - Total Cost: $1,014,926,875
- High Capacity Transit Options: $1.5-$4 billion
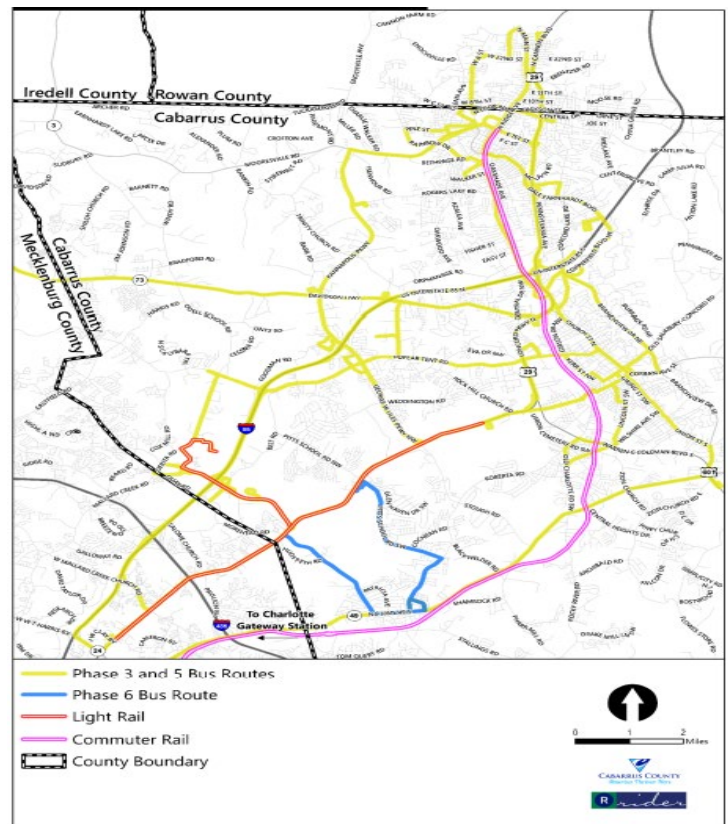

Figure 51. Cabarrus County 20-Year Vision Network

North Carolina Department of Transportation (NCDOT) Statewide 5310 Locally Coordinated Plan

A statewide Locally Coordinated Plan (LCP) is required for programming of funding under FTA Section 5310 Program – Enhanced Mobility of Seniors and Individuals with Disabilities and is relevant to other transportation programs, such as FTA Section 5311 program that addressed transportation for rural areas and the FTA Section 5307 program for small urban areas.

North Carolina Department of Transportation (NCDOT) Locally Coordinated Plan (LCP) presented recommendations for project prioritization, regional distribution, the call for projects, and annual 5310 program of projects. The study recommendations were organized around the following key themes:

- service expansion
- service coordination

- improved communication between agencies

Table 13 - Proposed FY20 5310 Distribution Targets

Proposed 5310 Distribution Targets		Small Urban FTA Apportionment Data		Rural Census Data		FY20 5310 Targets by District		
Analysis District	Small Urbanized Area	With disabilities Under 65	Older Population	With disabilities Under 65	Older Population	5310 Small Urbanized	5310 Rural	Total
1--Southwestern		-	-	35,804	72,654	$0	$228,726	$228,726
2--Northwestern	Gastonia	18,635	23,878	78,589	130,290	$299,641	$440,500	$740,141
3--Yadkin Valley	High Point	14,868	23,391	31,256	50,746	$269,658	$172,933	$442,590
4--Rocky River				25,051	42,976	$0	$143,462	$143,462
5--Piedmont / Triangle	Burlington	10,054	18,592	56,529	108,571	$201,903	$348,176	$550,079
6—Sandhills				55,318	61,775	$0	$246,934	$246,934
7--Cape Fear				22,842	36,033	$0	$124,160	$124,160
8--North Central	Rocky Mount	6,715	10,308	64,808	88,336	$119,982	$322,962	$442,944
9--East	Goldsboro, Greenville, Jacksonville, New Bern	26,139	36,364	64,945	88,712	$440,534	$324,044	$764,578
10--North East				29,345	47,709	$0	$162,498	$162,498
Total		76,411	112,533	464,487	727,802	$1,331,717	$2,514,393	$3,846,110
FY18 5310 Appropriation						$1,479,686	$2,793,770	
Administration (10%)						$147,969	$279,377	

The project priorities identified in the plan for funding with FTA section 5310 funding included the following:

- Vehicle replacement (capital)

- Contracting for trips (capital)

- Provision of trips (operating)

- Mobility manager (capital)

- ADA bus stops and shelters (capital)

Table 13 shows the NCDOT proposed FY 2020 target distribution amounts.

Union County Multimodal Transportation Plan

2025 Comprehensive Plan Update and associated Multimodal Transportation Plan was initiated by the Union County Commissioners to identify a sustainable land use and transportation strategy for the growing communities. The 74X Regional Express route operated by CATS connects from the northwest side of Monroe to Charlotte. No local fixed route transit service currently exists in Union County.

Union County Public Transportation Plan divided the recommendations into two phases:

- Phase 1: Short-Term Transit Recommendations

- o Enhancing the 74X express route with improved headways and weekend services

- o Extending the route into downtown Monroe

- Phase 2: Long-Term Transit Recommendations (Figure)

  - o Circulator system in Monroe

  - o Downtown transit hub, preferably with 30-minute headways on the circulator system

  - o Extension of the 74X express route to at least Wingate to the east

  - o Creation of a fourth park-and -ride location

  - o Extension of the 61X express route into Waxhaw on NC 16

  - o Suitable station/ park-and-ride facility in town

  - o Route deviated service or a companion circulator service to cover the areas of Waxhaw
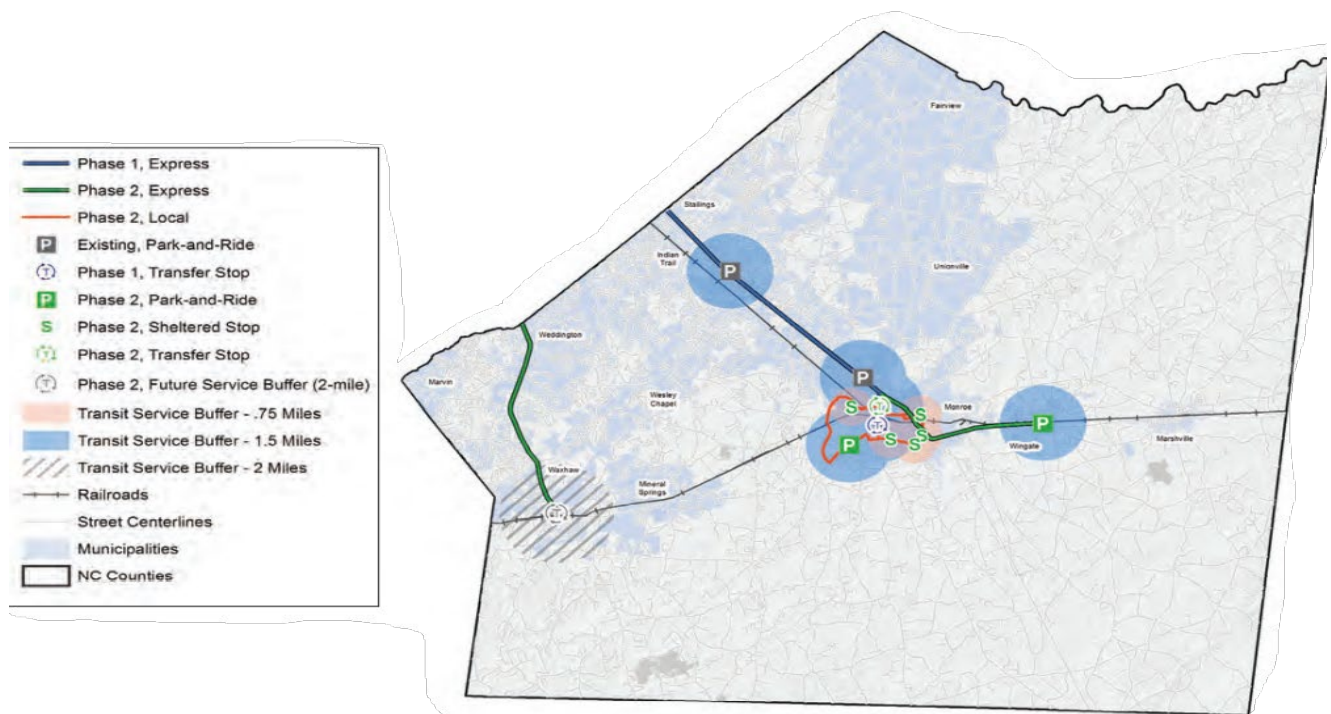

Figure 52. Union County Long-Term Transit Recommendations

South Carolina Statewide Public Transportation and Coordination Plan

The South Carolina Statewide Transportation and Coordination Plan was prepared in coordination with the development of the 2040 Multimodal Transportation Plan and it is the update of the Statewide Transit Plan 2008. The purpose of this update was to identify existing public transportation services, needs, and strategies through the planning horizon of 2040. The plan reviewed the following transit and rail service types relevant to the Charlotte Urban Area Coordinated Public Transit-Human Services Transportation Plan:

> › Fixed route transit service
>
> › Route deviation service
>
> › Demand response service
>
> › Complementary Paratransit Services
>
> › Commuter Bus
>
> › Intercity Services (statewide intercity & regional bus network plan)

The 2040 transit and passenger rail needs identified in the plan total $1.65 billion and include the following key projects:

- $516 million for Rock Hill – York County – Charlotte Bus Rapid Transit (BRT)

- $50 million for Greenville Bus Rapid Transit

- $46 million for Charleston Commuter Corridor

- $1.038 billion for the South Carolina segment of the Atlanta to Charlotte High Speed Rail

Gaston-Cleveland-Lincoln MPO (GCLMPO) 2045 Metropolitan Transportation Plan (MTP)

The 2045 Metropolitan Transportation Plan (MTP) for the Gaston-Cleveland-Lincoln Metropolitan Planning Organization (GCLMPO) is a long-range transportation plan. GCLMPO and is the federally designated regional transportation planning entity for Gaston, Cleveland, and Lincoln Counties of North Carolina. The GCLMPO area's transit services range from demand-response to vanpools to fixed-route bus service, intercity rail service, and intercity bus service.

GCLMPO 2045 MTP transit recommendations are as follow:

- Study the feasibility of vanpool service.

- Add bike racks to transit buses.

- Continue to use large buses for fixed route operations on major arterials but consider using Light Transit Vehicles (LTVs) on routes where passenger capacities are much lower.

- Request federal funds to purchase scheduling software and registering fare boxes with card readers to allow passengers to use 'Smart Cards'.

- Bus replacement

As part of the GCLMPO 2045 MTP study recommendations, the following future CATS initiatives are recommended:

- Develop a new rapid transit vision for Charlotte's West Corridor, which is currently poised for streetcar under the 2030 Transit Corridor System Plan.

- The LYNX Silver Line continues through uptown Charlotte and extended to the airport as a light rail corridor.

Charlotte Moves Task Force Report (2020)

The Charlotte Moves Task Force Report (2020) is a long-range multi-modal transportation action plan that was produced as a result of the Charlotte Moves Task Force. The Task Force was convened by the Mayor of Charlotte in 2019 to advise the City of Charlotte in the creation of a new Strategic Mobility Plan. The report focused on providing safe and equitable mobility to city and county residents that supports a sustainable, connected, and innovated network of multi-modal transportation options. The report identified recommendations for a transformational mobility network that addresses the growing mobility needs in the area and a funding strategy to pay for it. The recommended mobility network improvements are expected to support the future shift in travel patterns and modes towards a commute pattern less centered on drive alone mode (Figure). The transformational mobility network consists of the following elements:
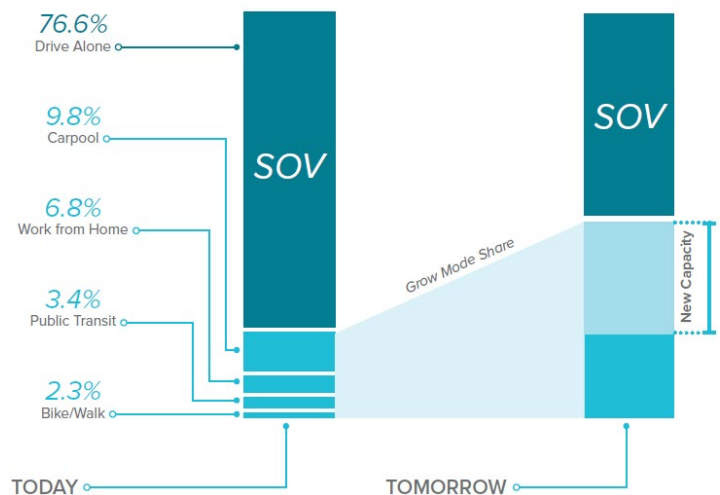

Figure 53 Desired Shift in Travel Patterns in the Charlotte Region (Charlotte Moves Task Force Report)

› Ninety miles of new rapid transit corridor investments including the LYNX Silver Line light rail, LYNX red line commuter rail corridor, MetroRapid I-77 BRT, CityLYNX Gold Line streetcar extension, and the LYNX Blue Line light rail Pineville-Ballantyne extension

› 140 miles of bus priority corridor investment including expanding the network of high frequency bus routes, improving headways on all routes to 30 minutes or better, developing bus priority corridors, and improving customer amenities

› 115 miles of new greenways including the Mooresville to Charlotte Trail, Cross Charlotte Trail (XCLT) 2.0, and the North Charlotte Arc Trail

› 75 miles of bicycle facilities including the Uptown CycleLink, Silver Line Rail Trail, urban trails, and commuting corridors

› 150 square miles of focused first and last mile pedestrian investment including filling critical sidewalk gaps, enhancing walkability in activity centers, improving pedestrian safety, and creating mobility hubs

› Sixty miles of roadway corridor investment including new street connections, congestion management, and partnerships with state and private investment projects

The plan is estimated to cost between $8 to $12 billion to design, build and finance and assumes a 50-50 funding approach between local and state and federal sources. To fill the $4 to $6 billion local funding gap, the plan proposed a one-cent sales tax increase within Mecklenburg County is the primary funding source along with a dedicated property tax increase and vehicle registration fee as secondary funding sources, if needed.

Plan Review Summary

The region has seen dramatic investment and growth in its transit services in the last two decades. At the same time, ongoing population and employment growth and increases in traffic congestion highlight the need for additional and better-connected transit services across the regional footprint. CONNECT Beyond is probably the most comprehensive vision of the regional transit improvement needs, and includes both major transit capital improvement recommendations as well as recommendations for how to improve and build upon the existing transit planning, interagency coordination and transit governance structures in the region through adding new positions such as a Regional Mobility Manager, regional committees, follow-up studies, and improving communication methods to better share information about existing transit agencies and services.

4 Peer Regions Review

A review of five peer regions was conducted to identify innovative strategies, best practices and solutions that other regions are utilizing to help address the needs and gaps in transportation services for seniors and individuals with disabilities. The description below highlights some of the findings.

Background

The development of CRTPO's Coordinated Public Transit – Human Services Transportation Plan (HSTP) included a peer region review to examine the transit services in similar regions and highlight examples of innovative ADA paratransit and human service transportation and pilot programs. The peer regions included Atlanta, Georgia; Austin, Texas; Indianapolis, Indiana; Orlando, Florida; and Raleigh, North Carolina. Table 15 below summarizes the transit services offered in each region, including the greater Charlotte region. For the purposes of this study, microtransit is defined as public transportation service provided with a small shuttle-sized vehicle that operates in a defined area. Bike share and scooter share, while part of the larger shared mobility spectrum of solutions, were not considered as part of peer agency review as those forms of shared mobility tend to be less utilized by seniors and individuals with disabilities.

Table 14: Transit Service Matrix for Peer Regions Reviewed as Part of the Study

REGION	Local bus & shuttle	Commuter/ express bus	Bus rapid transit	Micro-transit*	Streetcar	Commuter rail
Atlanta	✔	✔	x	✔	✔	✔
Austin	✔	✔	✔	✔	x	✔
Charlotte	✔	✔	x	✔	✔	✔
Indianapolis	✔	✔	✔	✔	x	x
Orlando	✔	✔	✔	✔	x	✔
Raleigh	✔	✔	x	x	x	x

Note: All regions reviewed also provide vanpool services for specific employers and on-demand paratransit service among multiple counties.

Indicators of Innovative Human Service Transportation and Microtransit

In recent years, mobility options have expanded to include microtransit, neighborhood connectors, feeder services, and partnerships with private service providers. Technology has also changed the landscape by offering zero-emission transit vehicles, real-time reservation options, and streamlined payment options in one mobile app. Below is a list of indicators of innovative human service transportation. These indicators are used to highlight innovative ADA paratransit and human service transportation programs.

- **Mobile app reservations**: the user can utilize a mobile app to make a reservation for a trip needed immediately. Like Uber and Lyft rides, a reservation does not need to be made multiple hours in advance. The user can make the reservation expecting a short wait time and can track the location and/or the estimated arrival time while waiting.
- **Door-to-door or curb-to-curb pick-up/drop-off locations**: Door-to-door or curb-to-curb service is offered. A transit rider does not need to find the nearest transit stop for pick up and drop off is in very close proximity to the rider's front door.
- **Extended paratransit service area**: the service area goes beyond the minimum ¾ mile distance from the existing transit service
- **Free to the user**: The service is provided at no cost to the user. This cost is often absorbed by the transit agency or through advertisements on vehicles.
- **Multiple transportation options included in one ticket purchase**: This option allows the user to make a complete trip by planning and paying for multiple modes of transportation (bus, train, Uber/Lyft, microtransit) at one time. No need for multiple apps or purchasing multiple tickets/passes.
- **Sustainability**: Examples include service offered to everyone (not solely the aging and disabled population); modified services and strategies to maintain service during the pandemic.

Table 15: Transit Indicators of Microtransit Innovation Matrix

	Transit Service	Mobile App RSVPs	Curb-to-Curb	Extended Svc Area	Free to User	Complete Trip	Sustain-ability
ATL	CobbLinc's FLEX		✔	✔			✔
Austin	Pickup	✔	✔	✔			✔
Austin	CARTS Now	✔	✔	✔	✔		✔
Austin	Country Bus		✔	✔			✔
Indy	Open Door		✔	✔			✔
Indy	Zip Connect			✔			
Indy	Midtown-Get-Around		✔	✔			✔
ORL	Neighbor-Link	✔	✔	✔			✔
ORL	Brightline+	✔	✔	✔		✔	✔
Raleigh	GoCary Door-to-Door		✔	✔			
Raleigh	RTP Connect	✔	✔		✔		
Raleigh	Morrisville Smart Shuttle	✔			✔		✔

Best Practices by Region

Atlanta Best Practices

CobbLinc's FLEX

CobbLinc offers FLEX, an on-demand curbside bus service open to all passengers. There are three zones. Trips must start and end within the same one zone. Each zone has a collection point that has a FLEX bus pick up at least once per hour. FLEX offers door-to-door service by reservation and the flexibility of walk-up service from the collection point. Reservations must be made by phone between two and 24 hours before the trip unless pick up is at the collection point (then no reservation required).

Why Innovative?
CobbLinc's FLEX service offers:

- Door-to-door service
- Extended paratransit service area
- Sustainability

Austin Best Practices

Pickup

Capital Metro utilizes a local rideshare option called Pickup. With the Pickup app, one can arrange curb-to-curb on-demand transit service within a service zone. There are 10 service zones in the Austin region. A request or reservation can be made in the app or by calling a local number. Passengers can travel anywhere within the one service area (but not between or outside of the other nine service areas). Eight-person vans with ADA access and wheelchair lifts are utilized for this service. The fare for each ride is $1.25 – the same fare as a fixed-route bus pass. Children ride free.

Why Innovative?
Pickup service offers:

- Mobile app reservations
- Curb-to-curb pick-up/drop-off locations
- Extended paratransit service area
- Sustainability

CARTS Same Day Reservation Service: CARTS Now

The Capital Area Rural Transportation System (CARTS) provides regional transportation within a 7,200-square-mile area around Austin, Texas. One of the newer services provided by CARTS is CARTS Now (powered by Via) is a low-cost, on-demand ride service that allows the citizens of Bastrop and Taylor to get from point A to point B on their own time, with a same day reservation. CARTS Now has no predetermined routes or schedules, and rides are available within 15 minutes of scheduling. This service provides curb-to-curb transportation between any two points within the Bastrop or Taylor City Limits. Users can request a ride from anywhere in town and meet their driver at a nearby curb or corner to be dropped off at a curb near their destination. The service is not limited to trips that bring riders to and from CARTS stations or transit stops. Operating hours are Monday – Friday, 7 AM – 7 PM. Riders can download the CARTS Now app and request a ride or call a direct line. Users will be able to choose whether to ride in an open-air electric cab or in a CARTS Now van. Electric cabs with open windows are available at no cost to the user within a limited service area in Central Bastrop. CARTS Now vans operate in an area extending outside of Central Bastrop for a fare of $2 per ride.

Why Innovative?

CARTS Now service offers:

Mobile app reservations

Curb-to-curb pick-up/drop-off locations

Extended paratransit service area

Free to the user (electric vehicles only)

Sustainability

CARTS Community Transportation/Advanced Reservation Service: Country Bus

The Capital Area Rural Transportation System (CARTS) provides on-demand transportation services within a wide area around Austin, Texas. Only a small portion of this area, in Bastrop and Taylor, is covered by "CARTS Now" services. Country Bus is community transportation/on-demand transportation with advanced reservation provided throughout the CARTS service area. Country Bus service offers the convenience of having a CARTS bus pick riders up at your home, take them to their destinations, and then back home again. Ideal for disabled individuals or others requiring special assistance, Country Bus service provides curb-to-curb transportation throughout Central Texas. Reservations are made by phone. Rides are scheduled Monday thru Friday, from 7 AM to 4 PM. Twenty-four-hour advance reservations are recommended. Same day reservations can be made based on availability. Fares range from $2 to $6. CARTS provides advance reservation, shared ride van service with its Country Bus (Community Transportation) system to thousands of Central Texas customers. Sixty mini-buses and vans operate this flexible public, elderly, and disabled paratransit service throughout the region.

Why Innovative?

County Bus service offers:

- Door-to-door or curb-to-curb pick-up/drop-off locations
- Extended on-demand/community transportation service area
- Sustainability

Indianapolis Best Practices

Open Door

Open Door is a reservation-based, shared-ride service. IndyGo provides Open Door services to those who meet ADA criteria. Although federal regulation requires service within only ¾ of a mile, IndyGo Open Door operates throughout all of Marion County, seven days a week and with the same hours as local fixed-route bus service. Vehicles are 16 passenger shuttle buses. Reservations are made by phone.

Why Innovative?

Open Door service offers:

Door-to-door pick-up and drop-off locations

Extended paratransit service area

Sustainability

Johnston County Zip Connect

Zip Connect is a flex feeder into a Zip Line that extends service in the City of Franklin and one mile on either side of US 31. Either the rider's pick up or drop off must be at a Zip Line bus stop. Transfers from one Zip Line to another are free. Each ride is $2 with additional purchase options. It operates Monday – Friday. Reservations are made by phone and require 24 hours' notice.

Why Innovative?

Zip Connect service offers an extended paratransit service area.

Midtown-Get-Around

The Midtown-Get-Around was designed as a circulator and door-to-door neighborhood transit service intended to reduce transportation barriers and increase user confidence with transit. Rides are $2 and reservations are made by phone and need to be made several hours advance. As COVID ravaged the country and the needs of the community changed, IndyGo and the MLK Center worked together to adjust the pilot scope to meet those needs. With that in mind, the focus of the Midtown-Get-Around shifted to grocery and prescription deliveries to those unable to access these essential services on their own. The vehicles are also used to provide no contact nonperishable food deliveries to families in need. Every week, drop offs are made at schools, homes, and senior living facilities.

Why Innovative?
Midtown-Get-Around service offers:

- Door-to-door pick-up and drop-off locations
- Extended paratransit service area
- Sustainability

Orlando Best Practices

NeighborLink

NeighborLink offers 12 community circulators across the region to provide curb-to-curb connections to destinations anywhere within the designated service area, or to a LYNX local bus stop. Vehicles are mini-buses with a 16-person capacity. Reservations and pick up requests are made on the app or by phone (phone requires 2 hours' advance reservation).

Why Innovative?
NeighborLink service offers:

- Mobile app reservations
- Curb-to-curb pick-up and drop-off locations
- Extended paratransit service area

- Sustainability

Raleigh/Durham Best Practices

GoCary Door-to-Door

GoCary Door-to-Door is a paratransit service for individuals with disabilities that prevent them from using Fixed Route service, or for Cary residents aged 60 and older. GoCary Door-to-Door is a shared ride, reservation-based service. It includes three tiers of ridership:

- Tier 1: Complementary paratransit service for trips within 3/4 mile of any GoCary fixed route. This service is available to anyone with a disability that prevents them from using fixed route service, or for any Cary resident aged 60 and older.
  Fare: $3
- Tier 2: Trips with an origin or destination outside of the ¾-mile fixed route boundary, but still within Cary town limits. This is a premium service available to Cary residents that have a disability which prevents them from using fixed route service, or for any Cary resident aged 60 and older.
  Fare: $4
- Tier 3: Trips with an origin within Cary town limits, but a destination in another community. Trips are limited to medical, educational, and employment trips only. This is a premium service available to Cary residents that have a disability which prevents them from using fixed route service, or for any Cary resident aged 60 and older.
  Fares: Apex and Morrisville: $6; Raleigh: $7; Raleigh +10 miles: $8; Raleigh +15 miles: $9; Durham: $8; and Chapel Hill: $9
- Note: Tier 2 and Tier 3 trips are made on a space available basis for those not needing paratransit.

Why Innovative?
GoCary Door-to-Door service offers:

- Door-to-door or curb-to-curb pick-up/drop-off locations
- Extended paratransit service area

RTP Connect

RTP Connect is a pilot program for commuters who are traveling to Research Triangle Park (RTP) through the Regional Transit Center by bus and want to use a Lyft or Uber as their last-mile solution. Through RTP Connect, GoTriangle will subsidize up to $10 per Uber or Lyft trip on any trip within the service boundaries that a passenger begins or ends at the Regional Transit Center (RTC) or Boxyard RTP. Rides may be requested through the Uber and Lyft mobile apps weekdays from 6:30 AM to 10 PM (trips must be reserved by 10 PM the evening before travel). A wheelchair accessible shuttle is available. Passengers requiring a wheelchair accessible shuttle must call in advance to arrange the trip.

Why Innovative?
RTP Connect service offers:

- Mobile app reservations
- Door-to-door or curb-to-curb pick-up/drop-off locations
- Free to the user

Morrisville Smart Shuttle

The Morrisville Smart Shuttle Service provides residents, commuters, and visitors free, on-demand transit throughout the Town of Morrisville. The service connects residents with 14 locations in Morrisville, called nodes. An additional node is located at the Regional Transit Center near RTP. A Morrisville Smart Shuttle rider can schedule their pick-up and drop-off from their computer or smartphone. All pick-ups and drop-offs are at one of the 14 nodes. There is no cost to use this shuttle service. The services' two shuttles run seven days a week. Select nodes connect to GoCary and GoTriangle transits. The Morrisville Smart Shuttle vehicles are provided by the GoCary, the transit provider for the Town of Cary. The Morrisville Smart Shuttle mobile app and scheduling technology are powered by Via. The vehicles are Morrisville branded vehicles that seat at least 16 passengers and include ADA accommodations and bike racks.

Why Innovative?

Morrisville Smart Shuttle service offers:

- Mobile app reservations
- Free to the user
- Sustainability