

GCLMPO MTP
CHAPTER FOUR

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CHAPTER 4: PLAN DEVELOPMENT

The 2050 MTP has been developed to support state, regional, and local transportation priorities and is informed by local input and an approved project ranking methodology in order to plan out investments in the transportation system over the next 30 years. In general, the development of the MTP consisted of the following steps, with public involvement at several points in the process.

1. Identify Goals & Objectives
2. Collect Data
3. Develop Models with Socioeconomic Data
4. Identify Funding Sources and Make Projections
5. Identify and Prioritize Projects
6. Evaluate the Transportation System
7. Conduct an Analysis for Environmental Justice (EJ)
8. Analyze Air Quality Conformity
9. Create the Planning Document

The GCLMPO involved the public throughout the MTP development process, in adherence to the GCLMPO's Public Participation Plan, amended and approved September 24, 2020. The GCLMPO's Public Participation Plan (PPP) outlines procedures and policies for public participation.

The GCLMPO's Technical Coordinating Committee (TCC) and MPO Board, including elected officials, city/town managers, planning and engineering staff, and representatives from aviation, public transportation, and economic development agencies from the MPO's three counties, formed the backbone of outreach efforts to the community. All TCC and MPO Board meetings were open to the public, included a public comment period, and were advertised in local area newspapers. The handouts and public comment forms were also available in Spanish.



GOALS & OBJECTIVES

In the long range transportation planning process, goals describe characteristics of the desired future transportation system for the area and objectives identify steps that are expected to achieve the goals. For the 2050 MTP, GCLMPO staff developed a set of draft goals and objectives that address the ten (10) Federal Planning Factors. To ensure cohesiveness on the overall future vision in the Metrolina region, GCLMPO staff coordinated with the staff of partner MPOs regarding the goals. The TCC MTP Subcommittee, the Bicycle and Pedestrian Advisory Committee (BPAC),

TCC and MPO Board reviewed the draft goals and objectives in early 2021, and a public comment period was conducted January 29 – February 28, 2021. Public involvement materials, comments received and responses given can be found in Appendix B. Approved by the MPO Board on March 25, 2021, the adopted goals and objectives are listed in Chapter 1.

DATA COLLECTION

Information on demographics, travel patterns, land use, existing networks and services, safety, and natural and cultural resources were assembled as essential input. Chapter 3 includes additional details on this step of the planning process.

MODELING WITH SOCIOECONOMIC DATA

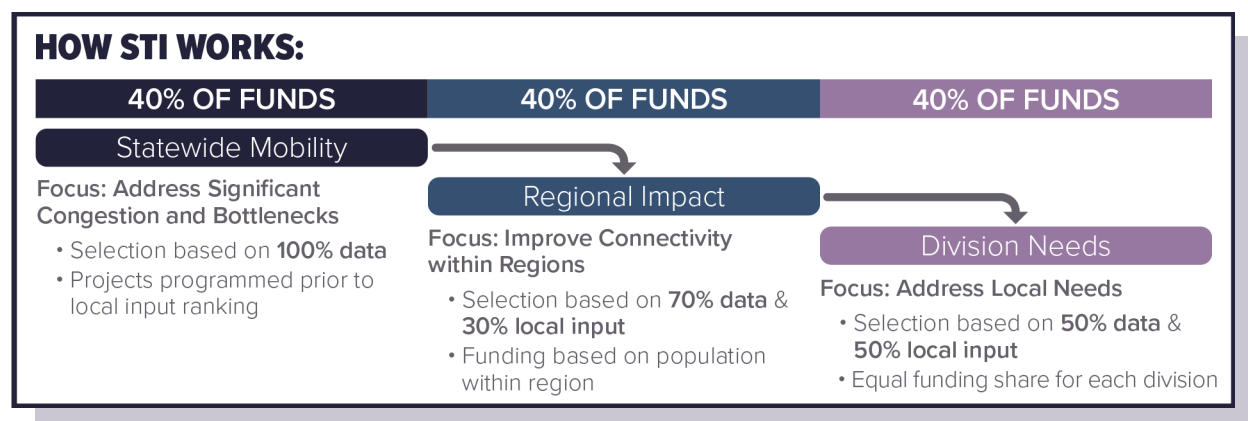
This step is completed as part of the Metrolina Regional Model update. In December of 2019, the MPO Board approved the baseline estimates for population, housing, and employment, as well as the projections for 2020-2050. More information about this process can be found in Chapter 3.

FINANCIAL ASSUMPTIONS

The MTP includes a financial plan, in accordance with federal regulations. The purpose of the financial plan is to demonstrate that proposed investments are reasonable in the context of anticipated future revenues, over the life of the plan and for future horizon years (2025, 2035, 2045, 2050). Balancing the estimated project costs against the anticipated revenues is called “fiscal constraint.” Anticipated revenues include funding from federal, state, and local sources. The following sections explain the sources of financial information and the methods for projecting future levels of funding.

TRANSPORTATION FUNDING PROCESSES IN NORTH CAROLINA

Much of the federal transportation funding for multiple modes of transportation flows through state Departments of Transportation. The federal funding, along with state and local funding, is allocated to specific projects or programs, in accordance with federal and state rules of eligibility, in the State Transportation Improvement Program (STIP). The MPO’s Transportation Improvement Program (TIP) serves the same purpose for the MPO’s planning area, and is incorporated into the STIP. The development of these documents, covering a period of at least four years, is guided by long range plans such as the GCLMPO MTP.



STRATEGIC TRANSPORTATION INVESTMENTS (STI)

Signed into law on June 26, 2013, the Strategic Transportation Investments (STI) law is a way of funding infrastructure investments that will better connect citizens to opportunities, increase jobs, and enhance economic development. Known as Strategic Prioritization, the process uses statewide data-driven scoring criteria while also providing flexibility to address local needs.

STI established the Strategic Mobility Formula, which allocates available revenues based on quantitative scoring and local input. The Formula served as the first step in addressing a decline in North Carolina transportation revenue and issues related to an increasing state population by allowing the North Carolina Department of Transportation (NCDOT) to more efficiently use existing funds.

The Strategic Mobility Formula takes a tiered approach to funding transportation improvements, with the statewide level receiving 40 percent of available funding (\$6 billion), the regional level receiving 30 percent of available funding (\$4.5 billion) and the division level also receiving 30 percent of available funding (\$4.5 billion) over the next 10 years. Projects are selected using a combination of quantitative data as well as local input, with local input weighing more heavily for division projects than for regional impact projects. Note that some projects, including Interstate Maintenance, Safety, Bridge, and Surface Transportation Block Grant – Direct Attributable (STBG-DA), are not selected through the mobility formula.

STI categorizes all projects, regardless of mode, into the following three functional categories, called “tiers.” These categories are listed below and shown in Table 4-1.

- Statewide Mobility Tier – Interstate and certain US routes, as well as large Commercial Service Airports and Class I railroad improvements.
- Regional Impact Tier – Remaining US routes and all NC routes, other Commercial Service Airports not included in the Statewide Tier, and public transportation and rail projects spanning more than one county. No bicycle or pedestrian projects are eligible at this tier.
- Division Needs Tier – All remaining NCDOT-maintained facilities, smaller airports, as well as all bicycle and pedestrian projects.

MODE	STATEWIDE	REGIONAL	DIVISION
Highway	Interstates (existing & future), NHS Routes, STRAHNET, ADHS Routes, Uncompleted Intrastate projects, Designated Toll Facilities	Other US and NC Routes	All County (SR) routes
Aviation	Large Commercial Service Airports (\$500K cap)	Other Commercial Service Airports not in Statewide Tier (\$300K cap)	All Airports without Commercial Service (\$18.5M cap)
Bicycle & Pedestrian	NA	NA	All Projects (\$0 state funds)
Public Transportation	NA	Service spanning two or more counties (\$10% cap)	All other service, including terminals and stations
Ferry	NA	Ferry expansion	Replacement vessels
Rail	Freight Capacity Service on Class I Railroad Corridors	Rail service spanning two or more counties not Statewide	Rail service not included on Statewide or Regional Tiers

Table 4-1: STI Eligible Projects

REVENUE PROJECTIONS

The FY 2020-2029 STIP budget (as “re-programmed” in August of 2020) provides the basis for the revenue projections. GCLMPO’s shares of each funding tier were calculated based on population, and a two percent annual growth rate was assumed, in order to estimate anticipated revenue beyond the STIP budget window, out to 2050.

For the 2050 MTP, the anticipated revenue and the estimated costs of projects are divided into horizon years. Horizon years are based on the Environmental Protection Agency (EPA) requirements for conducting transportation conformity within five- to ten-year increments, based on when projects will be constructed. For this plan, the Horizon Years are 2025, 2035, and 2045, and 2050. Therefore, all revenue projections and cost projections for projects are categorized on those horizon years. The MTP’s 2025 horizon group includes the first six years of the FY 2020-2029 STIP budget. The final four years of the STIP budget fall into the 2026-2035 horizon years of the MTP, a period that also includes another six years of revenue assumptions beyond the STIP window.

Table 4-2 summarizes the projected levels of revenue for the GCLMPO area, by STI funding tier and by horizon year. The following sections discuss each tier’s projections through 2050.

HORIZON YEAR	TOTAL	STATEWIDE	REGION	DIVISION
2022-2025	\$235,740,480	\$0	\$89,050,000	\$146,690,480
2026-2035	\$1,434,529,237	\$714,409,000	\$453,810,000	\$266,310,237
2036-2045	\$1,121,548,431	\$454,892,702	\$341,398,259	\$325,257,470
2046-2050	\$649,766,529	\$263,541,051	\$197,788,304	\$188,437,174
2022-2050	\$3,441,584,677	\$1,432,842,753	\$1,082,046,563	\$926,695,361

Table 4-2: GCLMPO Programmed & Projected STI Funding by Horizon Year

STATEWIDE MOBILITY TIER

For the development of the STIP, projects of statewide significance are allocated 40 percent of the total available revenue. Based on the inputs from the STIP budget for the 2022-2025 horizon, there is no funding at the Statewide Tier for GCLMPO projects. Right-of-way acquisition, utilities, and construction for I-85 widening project, from US 321 to NC 273, will begin in the first horizon, but because this project will not be completed until after 2025, this allocation has been moved down to the next horizon. Based on inputs from the STIP budget, and GCLMPO’s share of the Statewide funding based on population, the 2026-2035 horizon is programmed to be \$714 million. The majority of this also will be spent on the widening of I-85. In the 2036 to 2045 horizon, the MPO estimates \$455 million from that category to be available for the area. In the 2046-2050 horizon, covering only five years, \$264 million is projected for allocation in the GCLMPO area.

REGIONAL IMPACT TIER

Projects of regional significance (all US routes not on the Statewide Tier, and all NC routes) are allocated 30 percent of the total available revenue. The amount a region receives is based on regional population. Projects in this tier compete within their respective funding regions. As shown in Figure 4-1, the GCLMPO is located solely within Division 12 and must compete for Regional Impact Tier funding with the remainder of Division 12 and all of Division 11.

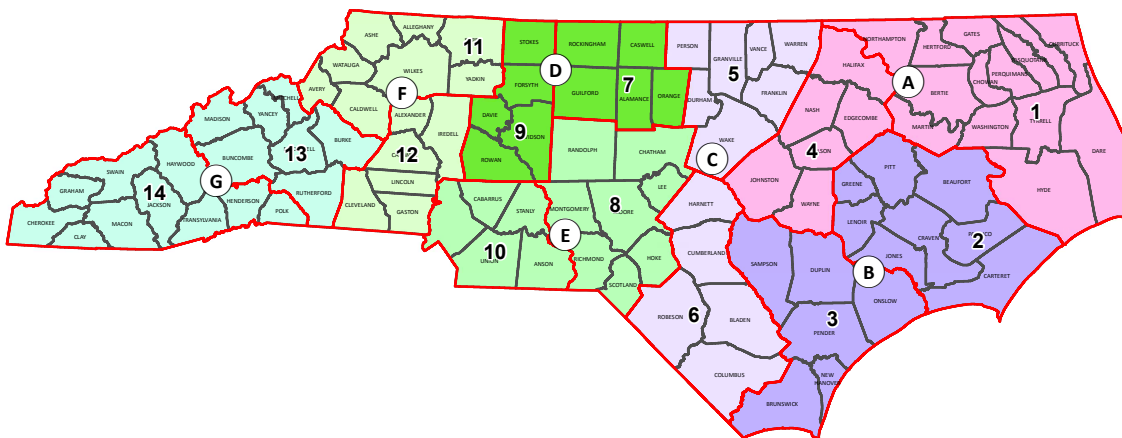


Figure 4-1: NCDOT Funding Regions

For the GCLMPO area, based on the inputs from the STIP budget, roughly \$89 million is programmed in the 2022-2025 horizon. In the 2026-2035 horizon, based on inputs from the STIP budget and GCLMPO’s share of Region F’s population, the projection is \$454 million, and \$341 million for 2036-2045. In the final five-year horizon, through 2050, approximately \$198 million of revenue is expected to be allocated for the area.

Table 4-2 includes a column for the Regional Impact Tier, summarizing these funding projections by horizon year.

DIVISION NEEDS TIER

Transportation projects that are funded in the STIP through the Division Needs level will receive 30 percent of the total revenue available through the STI process. This is allocated equally among NCDOT’s 14 Divisions, which are identified on the map in Figure 4-1. Projects that address safety, congestion, and connectivity will be prioritized at this level. Additionally, Statewide and Regional Tier projects that did not receive funding at their respective levels will be considered at this level. A more thorough explanation of the Strategic Transportation Investments legislation can be found at: <https://www.ncdot.gov/initiatives-policies/Transportation/stip/Pages/strategic-transportation-investments.aspx>.

The GCLMPO area falls entirely within NCDOT Division 12. Using the same revenue assumptions and method described above, funding levels were projected for the GCLMPO portion of the division through 2050, and grouped into horizon years.

Approximately \$147 million is programmed and forecasted in the 2022-2025 horizon. The 2026-2035 horizon includes about \$266 million of projected revenue for the area. In the 2036-2045 horizon, the projection is \$325 million, and the final, smaller horizon group has \$188 million projected. These figures are summarized in the Division Needs column in Table 4-2.

The MTP addresses not only the highway needs, but also the needs of many other modes, which the financial plan terms “non-highway.” Bicycle and pedestrian projects are eligible for funding only in the Division Needs tier. Likewise, the particular types of public transportation projects and aviation projects identified in the GCLMPO area are only eligible in that tier. Therefore, in the MTP, “Non-highway” is a sub-category within the Division Needs tier, but not within the other funding tiers.

For the 2050 MTP, GCLMPO has chosen to dedicate 20% of the projected revenue in the Division Needs tier towards the non-highway modes. Table 4-3, below, shows the financial figures that result. Thus, highway projects in the GCLMPO area will be allocated 80% of the revenue from Division tier, as well as 100% of revenues in the Statewide and Regional tiers.

HORIZON YEAR	STATEWIDE		REGION		DIVISION	
	HIGHWAY	NON-HIGHWAY	HIGHWAY	NON-HIGHWAY	HIGHWAY	NON-HIGHWAY
2022-2025	\$0	\$0	\$89,050,000	\$0	\$103,526,871	\$43,163,609
2026-2035	\$714,409,000	\$0	\$453,810,000	\$0	\$213,048,190	\$53,262,047
2036-2045	\$454,892,702	\$0	\$341,398,259	\$0	\$260,205,976	\$65,051,494
2045-2050	\$263,541,051	\$0	\$197,788,304	\$0	\$150,749,739	\$37,687,435
2022-2050	\$1,432,842,753	\$0	\$1,082,046,563	\$0	\$727,530,776	\$199,164,585

Table 4-3: GCLMPO Highway Funding vs. Non-Highway Funding, by STI Funding Tier

BOND REVENUES

There are two types of bond revenues available: local and state. The City of Gastonia has dedicated bond funding towards local road projects within its jurisdiction. State bond funds are allocated to several projects in the GCLMPO planning area: Portions of the Shelby Bypass; the Catawba River Bridge replacement on US 74; the South Fork bridge replacement on US 74 with widening from Market Street to Alberta Drive; and the widening of S New Hope Road from Titman Road to Union New Hope Road.

STATE ROADWAY MAINTENANCE REVENUES

State roadway maintenance revenues are financed by the same sources as capital projects in the STI process, which reduces the amount of funds available for capital improvements. The maintenance revenue projection for the GCLMPO area includes funding for state projects, as well as local projects through the Powell Bill. See Table 4-4 for the breakdown of maintenance funds for the GCLMPO area. The two percent annual growth rate used in other revenue calculations for the 2050 plan was likewise used to forecast the maintenance revenues.

HORIZON YEAR	STATE MAINTENANCE	POWELL BILL
2022-2025	\$116,321,824	\$21,590,028
2026-2035	\$227,386,813	\$62,085,511
2036-2045	\$277,183,256	\$75,681,891
2045-2050	\$160,585,488	\$43,846,131
TOTAL	\$781,477,380	\$203,203,560

Table 4-4: GCLMPO Share of Maintenance Funds

CONGESTION MITIGATION AND AIR QUALITY (CMAQ) FUNDING

While much of the federal and state funds are allocated through the STI process, CMAQ funds

are allocated through a separate process, due to specific limitations regarding eligible entities and projects. Gaston and Lincoln counties continue to be in the Ozone maintenance areas for the Metrolina region. Because of this designation, the GCLMPO receives an annual allocation of Federal CMAQ funds from NCDOT to assign to eligible projects using an adopted ranking process. The MPO currently receives an average of \$1.43 million per year, in the last three rounds. GCLMPO allocates the funds by conducting a call for projects periodically. Due to the unpredictable nature of project submissions, the MPO has not identified a list of projects beyond the most recent FY 2022 allocation. The CMAQ projects previously selected and continuing into the 2050 MTP's timeframe are:

- C-5505 Belmont Rail Trail
- C-5606B NC 161 Sidewalk, from Boston Ave to S 13th Street
- C-5606J Poston Park Sidewalk Connector
- C-5606K Rankin Lake to Technology Parkway Greenway
- C-5606M Neal Hawkins Road Sidewalk
- C-5622 Highland Branch Greenway, Phase I
- C-5704 Cramerton-McAdenville Greenway
- BL-0033 Sidewalk on Tryon Courthouse Road



PROJECT IDENTIFICATION AND PRIORITIZATION

The MPO staff began the project identification process by starting with projects from the previous plan, the 2045 MTP, and projects that had been submitted in 2020 during the most recent NCDOT prioritization process, and reviewed them with the TCC and MPO Board in several meetings between March and September 2021. MPO staff also solicited projects in May 2021. Staff then loaded the project information into a project database for ranking.

PROJECT RANKING PROCESS

The STI program strives to be data-driven and transparent about how projects are selected and funded, regardless of mode. Because the STI drives funding decisions, the MPO chose, for the most part, to model its project ranking process on how the STI program is evaluated.

REGIONAL IMPACT TIER HIGHWAY PROJECTS

All NC routes, US 29, and US 74 east of I-85 in Gaston County are found on the Regional Level. These highway projects were evaluated by the criteria and scoring as detailed in Table 4-5.

REGIONAL IMPACT TIER HIGHWAY PROJECTS (MAX TOTAL SCORE: 110 POINTS)					
CRITERIA	0 POINTS	5 POINTS	10 POINTS	15 POINTS	20 POINTS
Existing Congestion (20 max)	Volume to capacity less than 0.6	Volume to capacity btw 0.6 and 0.85	Volume to capacity btw 0.86 and 1.0	Volume to capacity btw 1.01 and 1.1	Volume to capacity over 1.1
Existing Safety (20 max)	SPOT safety points less than 30	SPOT safety points btw 31-50	SPOT safety points btw 51-65	SPOT safety points btw 66-80	SPOT safety points over 80
Cost-Effectiveness (15 max)	Cost per vehicle/ equivalent greater than \$1,500 per mile	Cost per vehicle/ equivalent btw \$1,000-\$1,500 per mile	Cost per vehicle/ equivalent btw \$500-\$999 per mile	"Cost per vehicle/ equivalent less than \$499 per mile"	-----
Cost (10 max)	Cost over \$50 million	Cost \$25-49 million	Cost less than \$25 million	-----	-----
Freight Volume (10 max)	Less than 500 trucks/equivalent per day	Btw 500-1,000 trucks/equivalent per day	More than 1,000 trucks/equivalent per day	-----	-----
Plan Consistency (10 max)	Project is not in an adopted land use, transportation, transit or other plan	Project type, such as intersections, not considered in plans	Project supports an adopted land use, transportation, transit or other plan	-----	-----
Multimodal Accommodation (5 max)	Project does not include bike/ped/ transit/ rail facilities	Project includes bike/ped/transit/ rail facilities	-----	-----	-----
Supports Environmental Justice (EJ) (5 max)	Project adds capacity or accessibility where growth is not encouraged	Project adds new capacity or accessibility in support of EJ	-----	-----	-----
Supports Economic Development (5 max)	Project does not support economic development	Project supports economic development	-----	-----	-----
Local Funding Contribution (5 max)	No local funding	At least 5% local funding of total project cost (or 25% for locally-administered projects)	-----	-----	-----

Table 4-5: Regional Impact Tier Highway Project Scoring Criteria

DIVISION NEEDS TIER HIGHWAY PROJECTS

All highway projects on SR roads and local roads were evaluated by the criteria and scoring as detailed in Table 4-6.

DIVISION NEEDS TIER HIGHWAY PROJECTS (MAX TOTAL SCORE: 105 POINTS)					
CRITERIA	0 POINTS	5 POINTS	10 POINTS	15 POINTS	20 POINTS
Existing Lack of Capacity (20 max)	Volume to capacity less than 0.5 (roads and rail), existing facilities available (other modes)	-----	Volume to capacity btw 0.51 and 0.75 (roads and rail), intermittent or incomplete facilities/transit available (other modes)	-----	Volume to capacity over 0.75 (roads and rail), no facilities/transit available (other modes)
Cost-Effectiveness (20 max)	Cost per daily user greater than \$4,000 per user per mile	Cost per daily user btw \$2,000-\$4,000 per user per mile	Cost per daily user btw \$1,500-\$1,999 per user per mile	Cost per daily user btw \$1,000-\$1,499 per user per mile	Cost per daily user less than \$999 per user per mile
Total Cost (10 max)	Cost over \$10 million	Cost \$5-10 million	Cost less than \$5 million	-----	-----
Plan Consistency (10 max)	Project is not in an adopted land use, transportation, transit or other plan	Intersections not improving recommended corridors	Project supports an adopted land use, transportation, transit or other plan	-----	-----
Project Readiness (10 max)	Significant ROW, EJ or environmental impacts	Moderate ROW, EJ or environmental impacts	No ROW, EJ or environmental impacts	-----	-----
Multimodal Accommodation (10 max)	Project does not include bike/ped/transit/ rail facilities	-----	Project includes bike/ped/transit/ rail facilities	-----	-----
Supports Environmental Justice (EJ) (5 max)	Project adds capacity or accessibility where growth is not encouraged	Project adds new capacity or accessibility in support of EJ	-----	-----	-----
Supports Economic Development (5 max)	Project does not support economic development	Project supports economic development	-----	-----	-----
Local Funding Contribution (10 max)	No local funding	At least 5% local funding of total project cost (or 25% for locally-administered projects)	At least 10% local funding of total project cost (or 30% for locally administered projects)	-----	-----

Table 4-6: Division Needs Tier Highway Project Scoring Criteria

DIVISION NEEDS TIER BICYCLE/PEDESTRIAN PROJECTS

The ranking criteria for bicycle/pedestrian projects for the 2050 MTP are illustrated on page 76 in Table 4-7. This method differs slightly from the STI criteria for bicycle and pedestrian projects, as the data needed for the measures in STI prioritization was not available for use in the 2050 MTP ranking process.

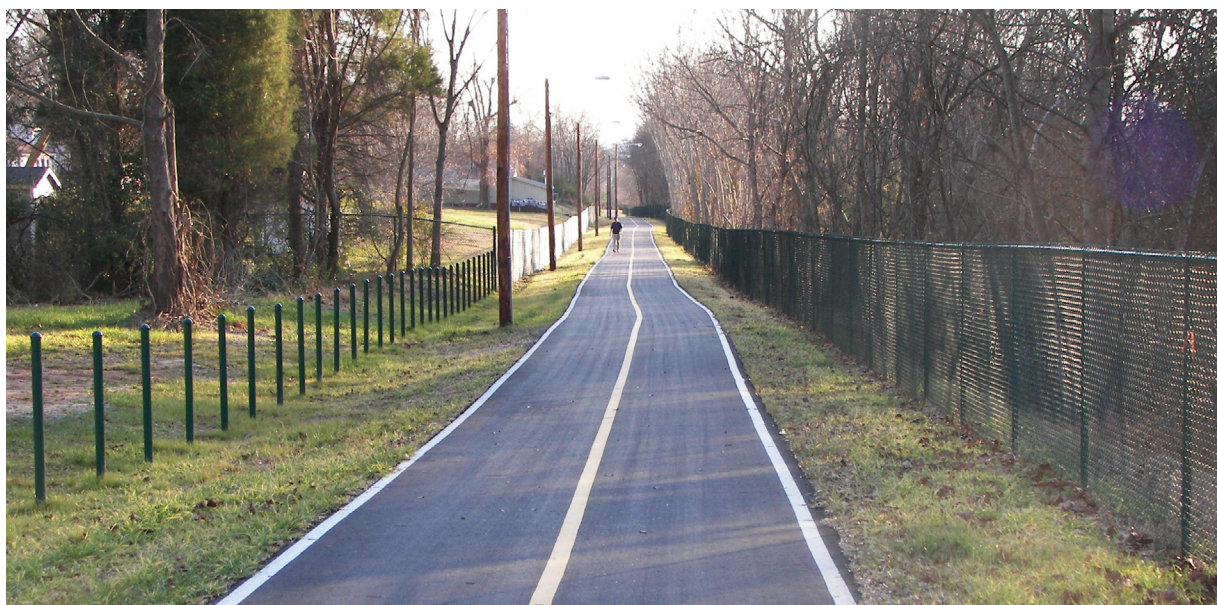
BICYCLE AND PEDESTRIAN PROJECTS (MAX TOTAL SCORE: 120 POINTS)					
CRITERIA	0 POINTS	5 POINTS	10 POINTS	15 POINTS	20 POINTS
Safety: Motor Traffic Volume (10 max)	AADT ≤ 2,000 or >40,000	"AADT 2,001-15,000"	"AADT 15,001-40,000"	-----	-----
Safety: Motor Traffic Speed (10 max)	"Posted speed ≤ 25 mph or ≥ 60 mph"	"Posted speed 30 – 40 mph"	"Posted speed 45 – 55 mph"	-----	-----
Network Connectivity (20 max)	No connections to existing infrastructure	1-3 connections	4-6 connections	7-10 connections	More than 10 connections
Tourism and Economic Development (10 max)	Not on or connecting to a state or regional bicycle and/or pedestrian route	Connects to a state or regional bicycle and/or pedestrian route	On a state or regional bicycle and/or pedestrian route	-----	-----
Transportation-challenged Populations (20 max)	"Project touches block group having: ≤ 10% of HH under poverty line"	"Project touches block group having: >10% but ≤ 20% of HH under poverty line"	"Project touches block group having: >20% but ≤ 30% of HH under poverty line"	"Project touches block group having: >30% but ≤ 40% of HH under poverty line"	"Project touches block group having: >40% of HH under poverty line"
"Density: Population (20 max)"	Project touches block group having ≤ 500 pop/sq mi	Project touches block group having >500 but ≤ 1000 pop/sq mi	Project touches block group having >100 but ≤ 2500 pop/sq mi	Project touches block group having >2500 but ≤ 5000 pop/sq mi	Project touches block group having >5000 pop/sq mi
Density: Employment (20 max)	Project touches thermal area in lowest stratification of jobs/sq mile	Project touches thermal area in the moderately low stratification of jobs/sq mile	Project touches thermal area in the middle stratification of jobs/sq mile	Project touches thermal area in the moderately high stratification of jobs/sq mile	Project touches thermal area in highest stratification of jobs/sq mile
Cost Effectiveness (10 max)	"For each project, the sum of the scores above is divided by the cost of the remaining phases per \$100,000. Then the scores are indexed to a 0-10 scale, with the highest scoring project receiving 10 points."				

Table 4-7: Division Needs Tier Bicycle and Pedestrian Project Scoring Criteria

DIVISION NEEDS TIER PUBLIC TRANSPORTATION PROJECTS

Public transportation projects were evaluated by the criteria and scoring as detailed in Table 4-8. The following types of public transportation projects were scored:

- Operations – includes funding for administration of a system, as well as maintenance and operation of a transit system.
- Expansion Vehicles – project types are focused on increasing efficiency. Example projects include:
 - » New bus routes and/or services (demand response, headway reductions)
 - » Purchase of new buses or vans
- Facilities – project types are focused on replacing, improving, or constructing new transit-related facilities. Examples of projects include:
 - » Transit-related facilities
 - » Park and Ride Lots
 - » Bus Shelters
 - » Bicycle racks for installation on buses



PUBLIC TRANSPORTATION PROJECTS (MAX TOTAL SCORE: 100 POINTS)					
CRITERIA	0 POINTS	5 POINTS	10 POINTS	15 POINTS	20 POINTS
Interagency Coordination (10 max)	Project involves only one transit/municipal agency	-----	Project involves two or more transit/municipal agencies	-----	-----
Ridership Impact (15 max)	Project does not increase or has no impact on ridership	Project increases ridership by 0-5%	Project increases ridership by 5.1-10%	Project increases ridership by more than 10%	-----
Capacity Impact (15 max)	Project does not decrease headway or increase frequency on an existing transit route that is near or at capacity	-----	-----	Project decreases headway or increases frequency on an existing transit route that is near or at capacity	-----
Serves Activity Center(s) (10 max)	Project does not serve an activity center	-----	Project does serve activity center(s)	-----	-----
Multimodal Accommodation (10 max)	Project does not include bike/ped facilities	-----	Project includes bike/ped facilities	-----	-----
Plan Consistency (20 max)	Project is not in an adopted plan	-----	Project is included in an adopted plan	-----	Project is included in an adopted plan
Local Support (5 max)	Project does not have local support as evidenced by public input or elected Board support	Project does have local support as evidenced by public input or elected Board support	-----	-----	-----
Local Funding Contribution (15 max)	No local match above the required 10%	Local match exceeds the minimum requirement of 10% but is <20%	-----	Local match equals or exceeds 20%	-----

Table 4-8: Division Needs Tier Public Transportation Project Scoring Criteria

DIVISION NEEDS TIER AVIATION PROJECTS

All aviation projects were evaluated by the criteria and scored as detailed in Table 4-9.

For more details about the ranking process, please refer to Appendix C of this plan. To review the results of this process, please refer to the fiscally-constrained project lists in the chapters that follow.

AVIATION PROJECTS (MAX TOTAL SCORE: 100 POINTS)					
CRITERIA	0 POINTS	5 POINTS	10 POINTS	15 POINTS	20 POINTS
Economic Development (20 max)	Does not improve aircraft size capacity or space availability for based aircraft	-----	-----	Increases capacity for heavier aircraft and/or increases space available for new based aircraft	Creates capacity for larger aircraft and/or creates employment
Safety (20 max)	No safety improvements	-----	Improves safety requirements outside of the runway and taxiway areas	Improves taxiway/ taxiway safety area grades and obstacle free zones	Improves required runway safety area grades and runway approach obstruction clearing
Cost of Project (20 max)	Total Project Cost is greater than \$500,000	-----	Total Project Cost is between \$250,000 and \$499,999	-----	Total Project Cost is less than \$250,000
Local Funding Contribution (10 max)	No local match above the required 10%	Local match exceeds the minimum requirement of 10% and is between 11-19%	Local match exceeds the minimum requirement by at least 20% of project cost	-----	-----
Plan Consistency (20 max)	Project is not in an adopted plan	-----	Project is included in the adopted MTP OR local aviation plan	-----	Project is included in the adopted MTP AND local aviation plan
Project Readiness (10 max)	Significant ROW, EJ and/ or environmental impacts	Moderate ROW, EJ and/ or environmental impacts	No ROW, EJ or environmental impacts	-----	-----

Table 4-9: Division Needs Tier Aviation Project Scoring Criteria

BALANCING REVENUES WITH PROJECT COSTS

The intent of a fiscally-constrained plan is to balance revenues with project costs. In addition to the forecasted revenues including a two percent inflation adjusted annual increase after 2029, estimated construction costs also included a two percent inflation adjusted annual increase for projects after 2029. The projects were ranked using cost estimates that were developed utilizing the standard NCDOT project cost calculation template or, where possible, relied on costs from the STIP. For Statewide, Regional and Division Tiers, once all cost estimates were calculated and projects ranked, the costs of the top ranked projects were subtracted from the financial projections until the project costs equaled the financial projections. In July 2021, the MPO's TCC and MPO Board approved the release of a Fiscally-Constrained Draft Project List for a 30-day public comment period from August 1 – August 30. During this time an online, interactive map was added to the MPO website to allow for public comment. Public involvement materials, comments received and responses given can be found in Appendix B.

EVALUATION

Evaluating how well investments and strategies are meeting goals is a key part of the planning process. As discussed in Chapter 2, MPOs are required to consider certain factors in the transportation planning process. In addition, federal performance measures cover highway and transit safety, highway infrastructure condition, highway system performance, age of transit vehicles and equipment, condition of transit facilities, and air quality. Evaluating the performance of projects included in the MTP based on the planning factors and performance measures helps us to understand the impacts that these investments are having on the regional transportation system, and to what extent the investments are meeting the defined goals. More information regarding this evaluation is included in the specific mode chapters.

ENVIRONMENTAL JUSTICE (EJ)

In 1994, President William Clinton issued Executive Order (EO) 12898, Federal Actions to Address Environmental Justice (EJ) in minority and low-income populations. EO 12898 directed every Federal agency to make EJ part of its mission.

“Each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” EO 12898.

The USDOT, NCDOT, and the GCLMPO are all committed to a comprehensive, inclusive approach to accomplishing this mission. Accordingly, the GCLMPO will strive to achieve EJ by identifying and addressing, as appropriate, disproportionately high and adverse human health and environmental effects of its programs, policies, and activities on minority and low-income populations.

EO 12898 and the accompanying Presidential Memorandum underscores the importance of utilizing existing laws including National Environmental Policy Act (NEPA) and Title VI of the Civil Rights Act of 1964 to ensure that all persons live in a safe and healthy environment. Specifically, Title VI prohibits discrimination on the basis of race, color, or national origin in programs or activities receiving Federal financial assistance. Consistent with Title VI and the EO, **the USDOT Order emphasizes the importance of ensuring that programs or activities funded by USDOT which affect human health or the environment do not discriminate on the basis of race, color, or national origin.**

FUNDAMENTAL PRINCIPLES OF ENVIRONMENTAL JUSTICE

The three fundamental EJ principles that guide USDOT (affiliated) actions are¹:

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including interrelated social and economic effects, on minority and low-income populations.*
- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.*
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.*

¹ Source: Environmental Justice at Department of Transportation. FHWA.
https://www.fhwa.dot.gov/environment/environmental_justice/ej_at_dot/. (October 2021)

DEMOGRAPHIC PROFILES

Understanding the demographic profiles of the GCLMPO planning area is foundational to effectively assessing EJ impacts. The GCLMPO examined the following demographic groups in order to get a baseline understanding of the population located within the MPO's three-county planning area:

- **Black/African Americans** – a person having origins in any of the black racial groups of Africa.
- **Hispanics/Latinx** – a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.
- **Asian** – a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands.
- **American Indians and Alaskan Natives** – a person having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition.
- **Limited English Proficiency (LEP)** - the Census Bureau has a range of four classifications of how well people speak English. The classifications are 'very well', 'well', 'not well', and 'not at all'. For GCLMPO's purposes, we are considering people that speak English 'not well' or 'not at all' as Limited English Proficient persons.
- **Low-income** – a person whose household income (or in the case of a community or group, whose median household income) is at or below the U.S. Census poverty thresholds guidelines.
- **Seniors** – a person aged 65 years or over.
- **Disabled** – a person having one or more of the following disabilities: hearing difficulty, vision difficulty, cognitive difficulty, ambulatory difficulty, self-care difficulty, independent living difficulty.

The GCLMPO planning area has a total population of 424,000 based on the American Community Survey (ACS) 5-year estimates. The total population is comprised of the following races and ethnicities: 74.4% White, 14.2% Black or African American, 5.8% Hispanic or Latinx, 1.2% Asian, 0.3% American Indian and Alaska Native, 2.0% Other, and 2% Two or More Races. See Figure 4-2 for more information.

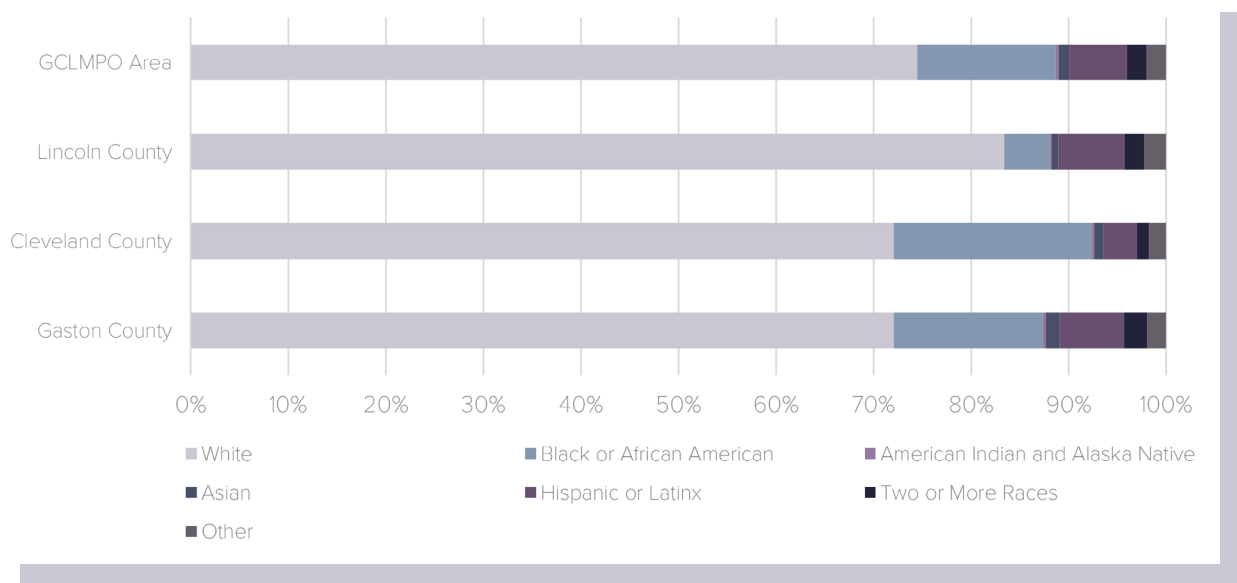


Figure 4-2: Race & Ethnicity Profile for the GCLMPO Area
Source: 2019 Race and Hispanic Origin (ACS 5-Yr)

In order to best serve the population in the GCLMPO's three-county planning area, it is also important to understand where the low-income populations are located. Low-income households are those households where the income is below the poverty level. Out of a total of 165,075 households in the GCLMPO area, 22,991 (13.9%) are considered low-income. Of the households considered low income, 51% are located in Gaston County, 32% are in Cleveland County, and 17% are in Lincoln County. It is also important to know where the zero vehicle households are located. See Tables 4-10 and 4-11 for more information.

<i>JURISDICTION</i>	<i>HOUSEHOLDS INCOME BELOW POVERTY</i>	<i>TOTAL OCCUPIED HOUSING UNITS (2019)</i>
Gaston County	11,755	83,735
Cleveland County	7,284	35,638
Lincoln County	3,952	32,894
GCLMPO Area	22,991	152,267

Table 4-10 Demographic Profile - Low-Income Population
Source: 2019 Households: Income Below Poverty Level (ACS 5-Yr)

<i>JURISDICTION</i>	<i>HOUSEHOLDS WITH ZERO VEHICLES</i>	<i>TOTAL OCCUPIED HOUSING UNITS (2019)</i>
Gaston County	4,632	83,735
Cleveland County	2,840	35,638
Lincoln County	1,173	32,894
GCLMPO Area	8,645	152,267

Table 4-11 Demographic Profile - Households with Zero Vehicles
Source: 2019 Owner and Renter Households with 0 Vehicles (ACS 5-Year)

In addition to race and income demographics, the MPO also needs to recognize the age makeup of the residents living in the planning area, specifically those age 65 and older. The population of the United States is aging, and that also is true for the GCLMPO area. "Mobility has a profound impact on elderly well-being, and the transportation needs of older people will only increase as the baby boomer generation ages in the suburbs" (Holly 2011)². According to the ACS 5-year estimates, roughly 16% of the total population in the GCLMPO planning area are age 65 and older. While this seems to be a lower percentage, statewide, the older adult population (65+) is increasing by 19% annually and the GCLMPO three-county area is expecting to see similar growth over the next decade. See Table 4-12 for more information.

<i>JURISDICTION</i>	<i>SENIOR POPULATION</i>	<i>TOTAL POPULATION</i>
Gaston County	34,718	219,272
Cleveland County	17,692	97,282
Lincoln County	14,101	82,919
GCLMPO Area	66,511	424,000

Table 4-12 Demographic Profile - Senior Population
Source: 2019 Total Population 65+ Years (ACS 5-Yr)

² Chase, Holly. June 2011. *Transportation Planning Options for Elderly Mobility*. www.aarp.org.

As with race, income, and age, it is also beneficial to understand where households are located that have a disability. Out of the 165,075 total households in the GCLMPO area, 46,086 (27.9%) have one (1) or more persons with a disability. Of the households with a disability, 55% are located in Gaston County, 25% are in Cleveland County, and 20% are in Lincoln County. See Table 4-13 for more information.

JURISDICTION	HOUSEHOLDS W/1 + PERSONS W/ DISABILITY	TOTAL OCCUPIED HOUSING UNITS (2019)
Gaston County	25,270	83,735
Cleveland County	11,388	35,638
Lincoln County	9,428	32,894
GCLMPO Area	46,086	152,267

Table 4-13 Demographic Profile - Disabled Population

Source: 2019 Households with 1 or more Persons with Disability (ACS 5-Yr)

Figures 4-3 through 4-13 show the GCLMPO distribution of population by race & ethnicity, income, age, and households with a disability. In addition, this information and how the EJ populations are served by public transportation can be viewed on an interactive online GIS Map here: <https://tinyurl.com/e63n6we8>.

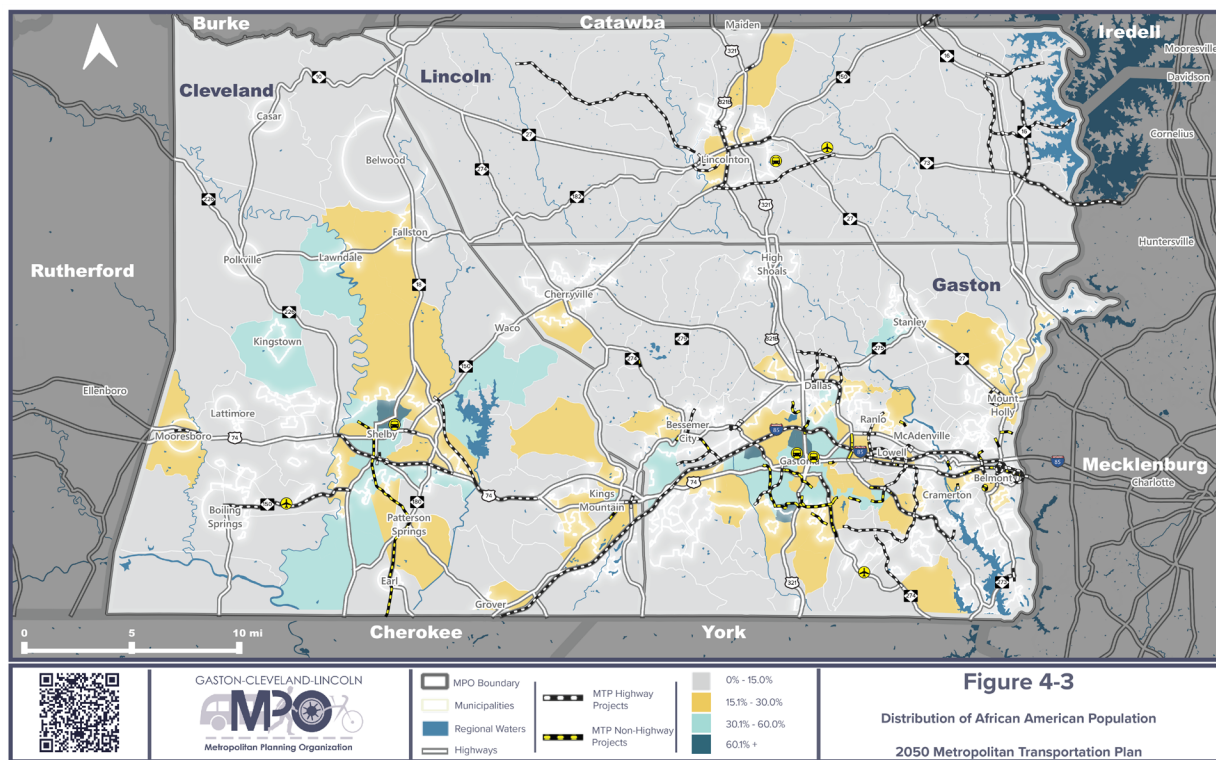


Figure 4-3: GCLMPO Black/African American Population Percentage

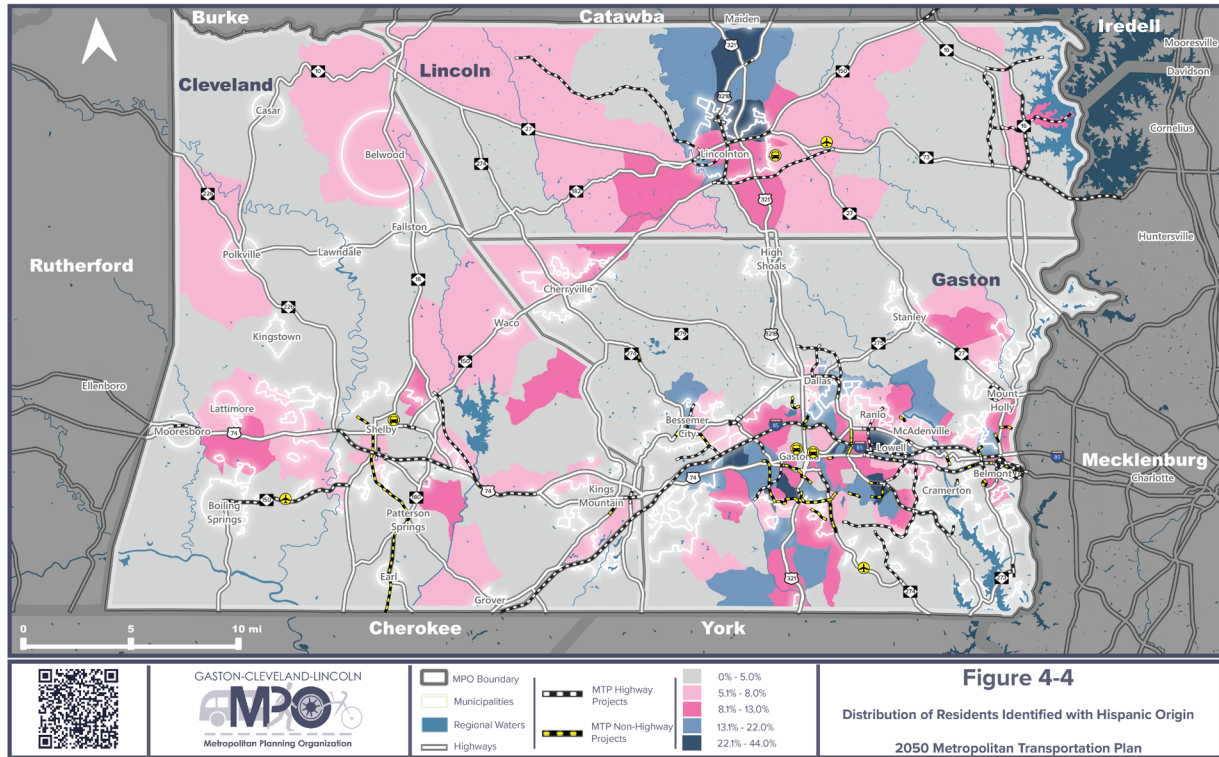


Figure 4-4: GCLMPO Hispanic/Latinx Population Percentage

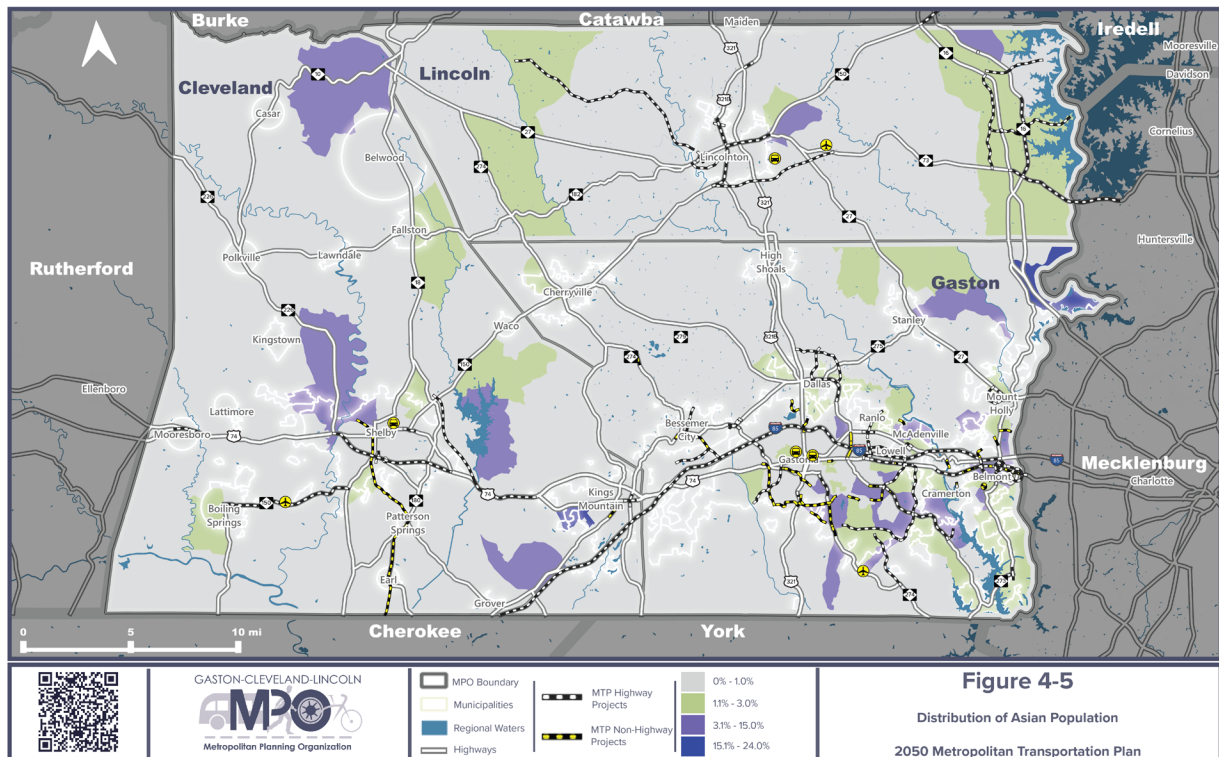


Figure 4-5: GCLMPO Asian Population Percentage

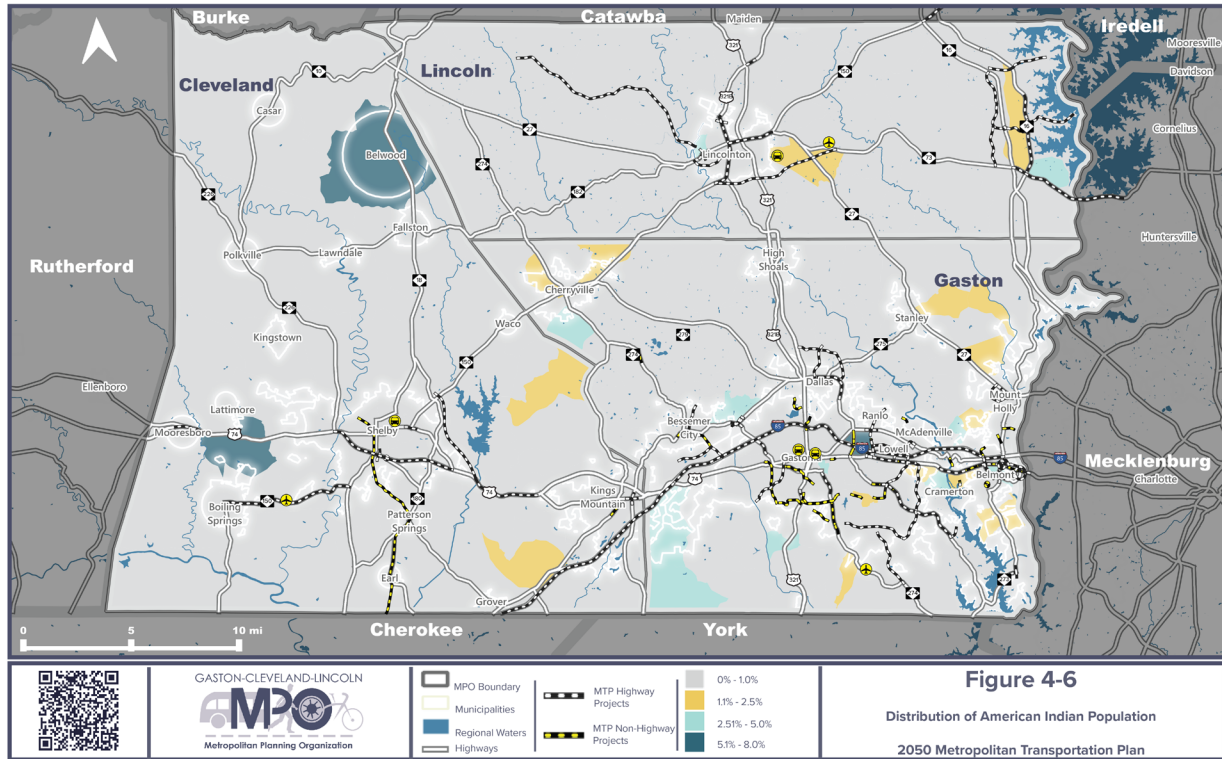


Figure 4-6: GCLMPO American Indian & Alaskan Native Population Percentage

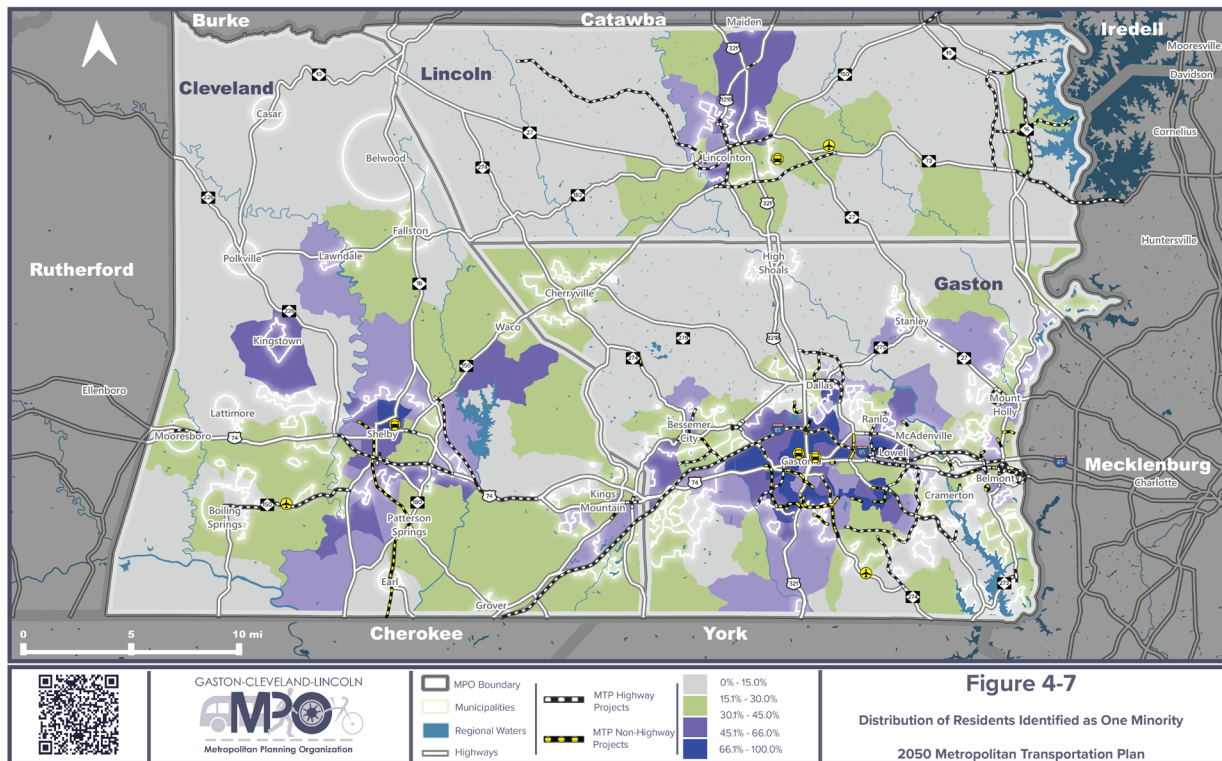


Figure 4-7: GCLMPO Population Identifying as a Minority

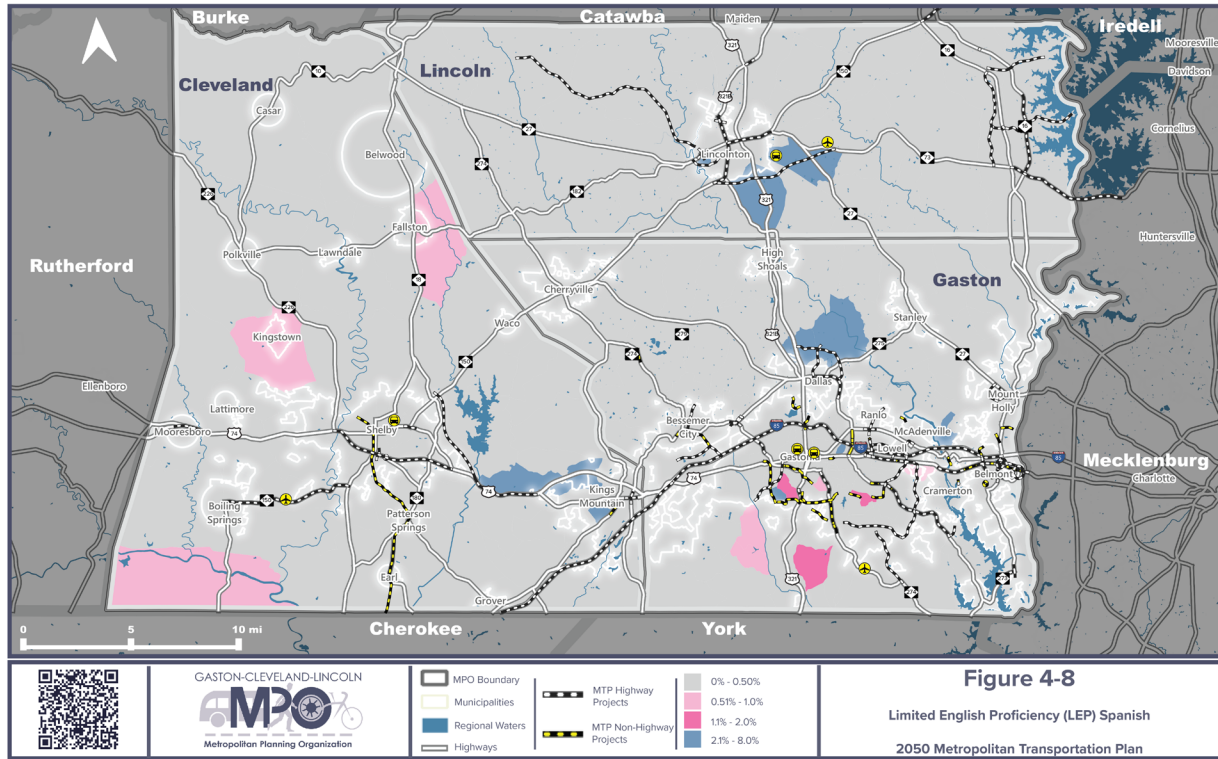


Figure 4-8: GCLMPO Population with Limited English Proficiency (LEP) and Spanish Fluency

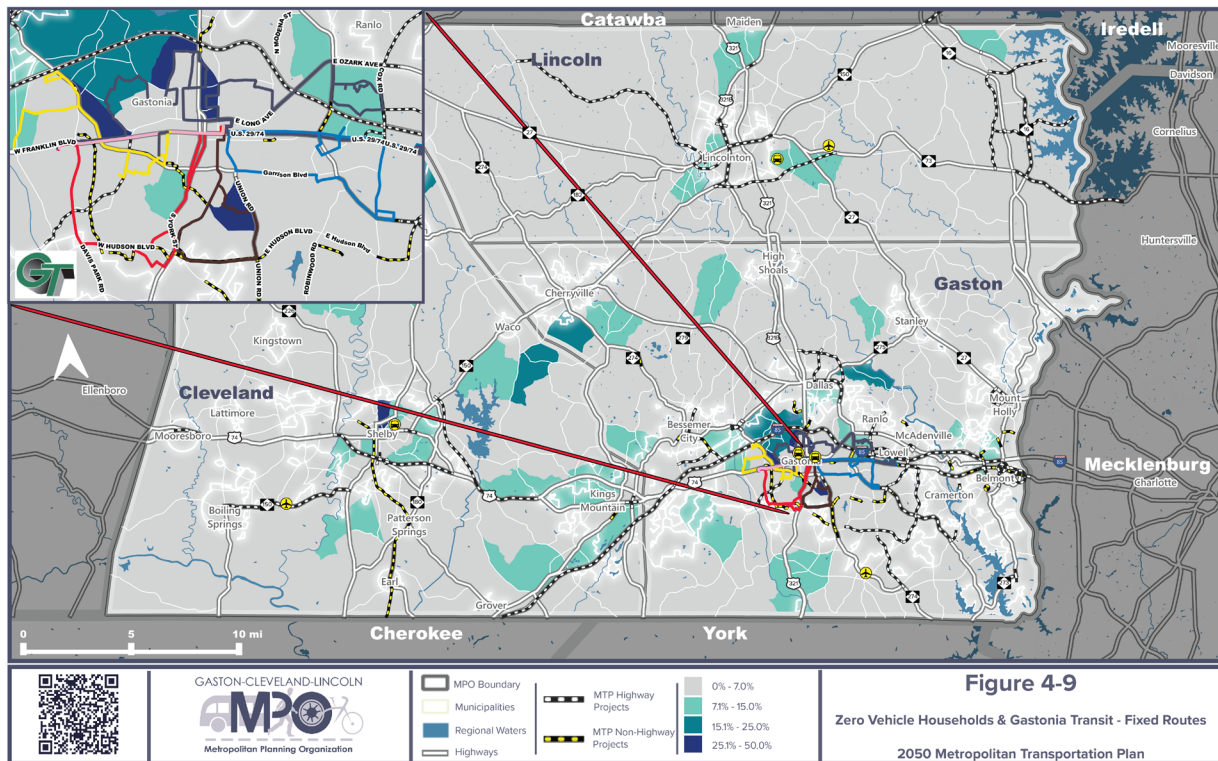


Figure 4-9: GCLMPO Households Without Vehicle Access

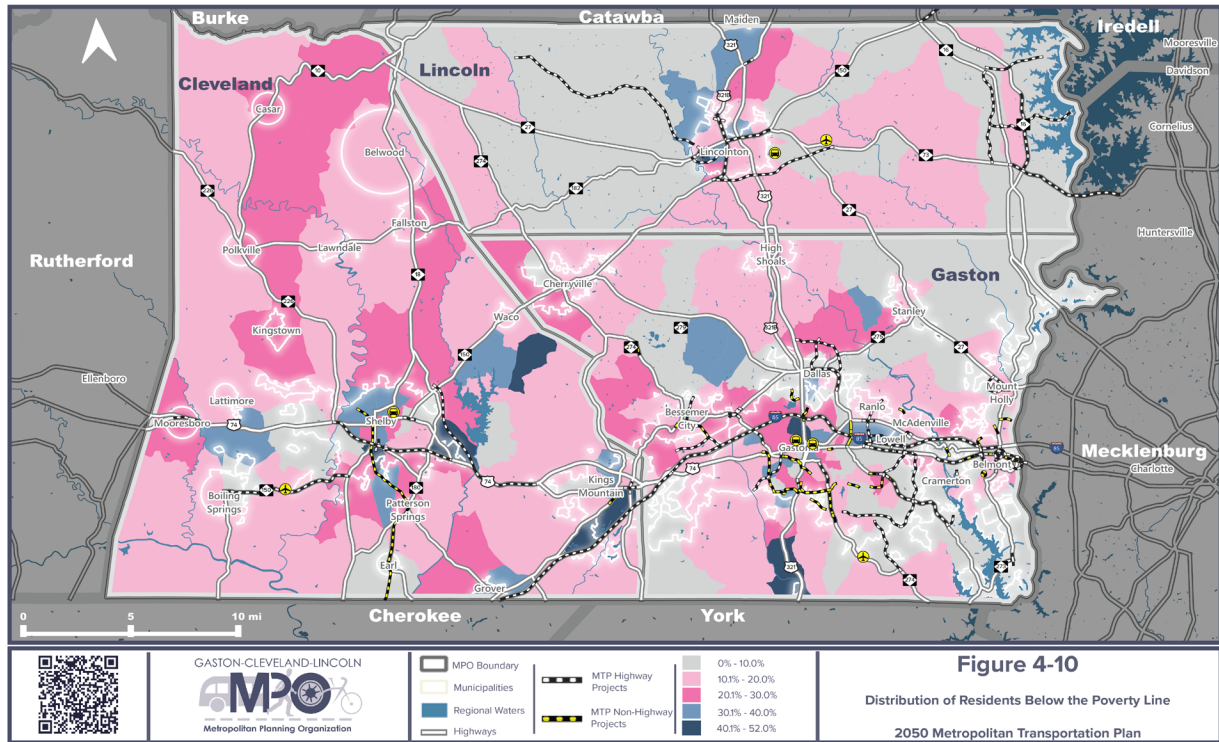


Figure 4-10: GCLMPO Households Below the Poverty Line

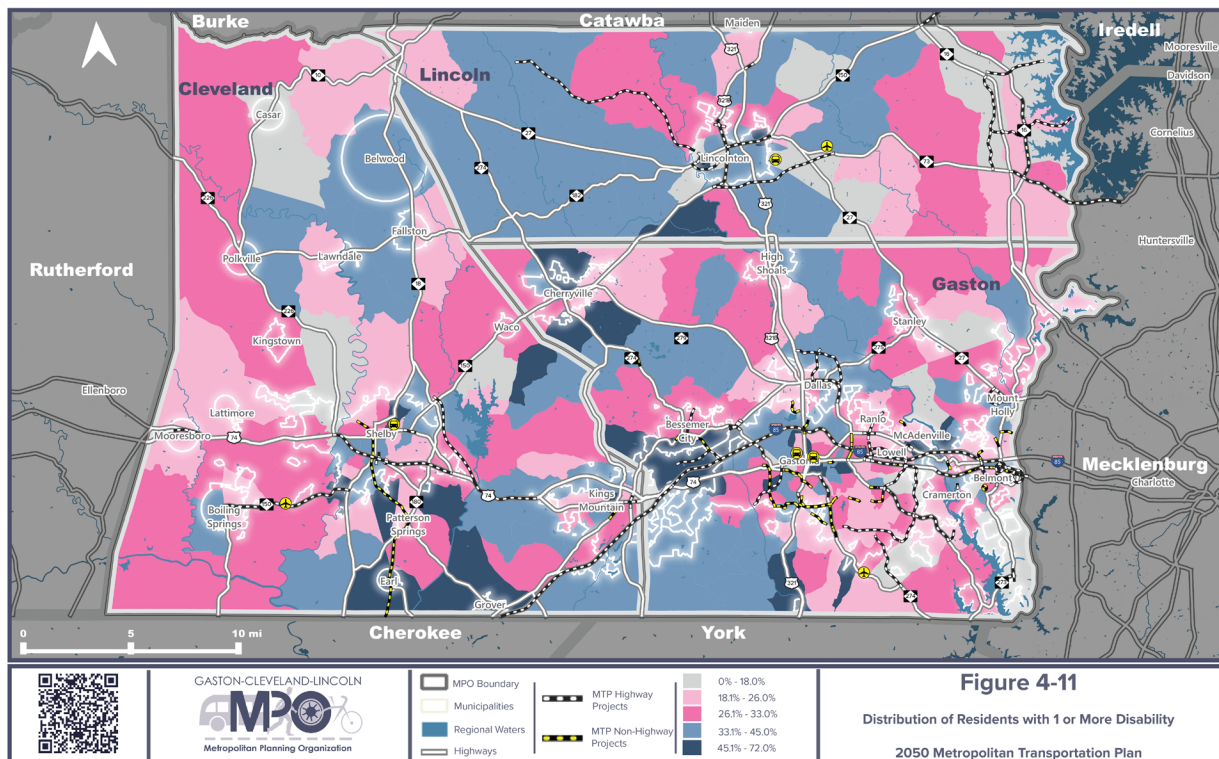


Figure 4-11: GCLMPO Households with a Resident with One or More Disability

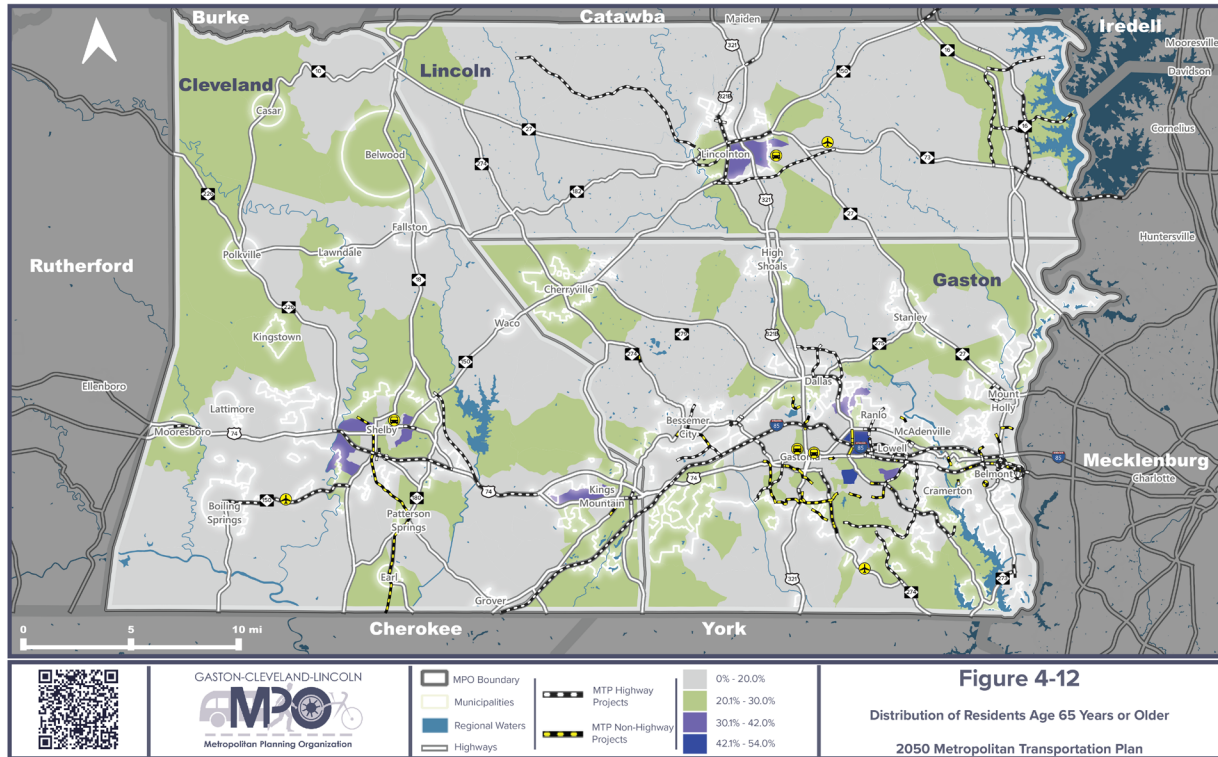


Figure 4-12: GCLMPO Population Over Age 65

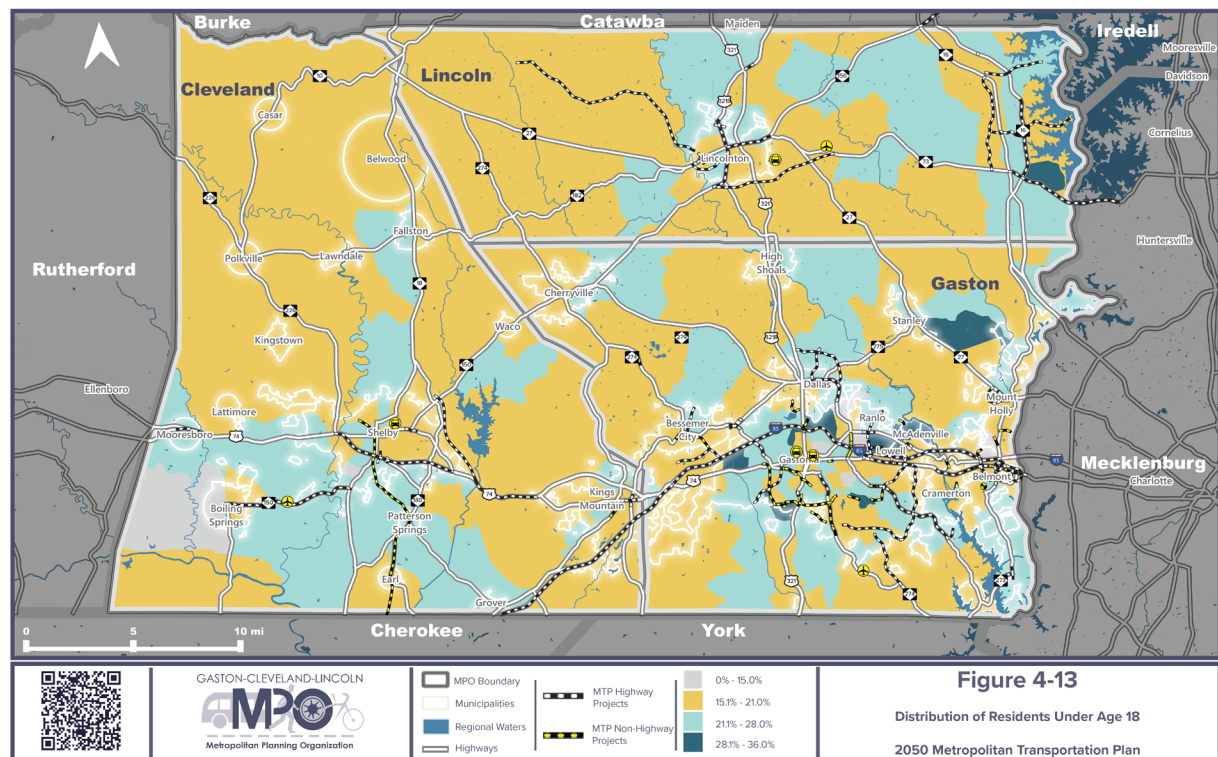


Figure 4-13: GCLMPO Population Under Age 18



EJ ANALYSIS

Transportation investments can have both positive and negative impacts on the communities in which the projects are located. To achieve EJ, GCLMPO programs will be administered so as to identify and avoid disproportionately high and adverse effects on vulnerable populations by:

1. Identifying and evaluating environmental, public health, and interrelated social and economic effects of our programs, policies and activities;
2. Proposing measures to avoid, minimize and/or mitigate disproportionately high and adverse environmental and public health effects, and interrelated social and economic effects, and providing offsetting benefits and opportunities to enhance communities, neighborhoods, and individuals affected by our programs, policies and activities, where permitted by law;
3. Considering alternatives to proposed programs, policies, and activities, where such alternatives would result in avoiding and/or minimizing disproportionately high and adverse human health or environmental impacts to minority and/or low-income populations; and
4. Eliciting public involvement opportunities and considering the results thereof, including soliciting input from affected minority and low-income populations in considering alternatives.

EJ analyses will be conducted to determine if our programs, policies, or activities will result in disproportionately high and adverse human health and environmental effects on minority populations and low-income populations. EJ applies to our policies, such as where public meetings will be held, and our projects, such as when we plan to construct or expand a facility. Thus, we will look at various alternatives and seek input from potentially affected communities before making a final decision.

Utilizing the Equity Analysis for the Greater Philadelphia Region³ as a guide and demographic data from the US Census Bureau, the GCLMPO uses the following eight factors to generate an Indicators of Potential Disadvantage (IPD) Score for each Census Block Group within the MPO planning area.

1. Residents under age 18
2. Residents age 65 years or older
3. Residents identified as one minority
4. Residents identified with Hispanic Origin
5. Limited English Proficiency Spanish
6. Residents with 1 or more disability
7. Residents below the poverty line
8. Zero Vehicle Households

Using the eight (8) factors above, concentrations of these populations were mapped for each Census Block Group in the GCLMPO planning area. An IPD Score was then calculated by determining standard deviations relative to the indicator's regional average. The IPD Score categorizes the concentration of the EJ populations present in each Census Block Group, indicating the possibility of discrimination or disproportionately high adverse impacts on these populations. This analysis attempts to show decision makers where it may be necessary to conduct further evaluations of the proposed transportation network. More information on the methodology used for the EJ Analysis can be found in Appendix D.

The GCLMPO planning area is made up of 318 Census Block Groups with the following concentrations of EJ populations:

CONCENTRATION	CENSUS BLOCK GROUPS	AREA (SQUARE MILES)
Extremely High Concentration	6	18.12
High Concentration	22	68.70
Moderate Concentration	60	211.82
Low Concentration	155	618.76
Slight Concentration	75	219.33
No Concentration	0	0
TOTAL	318	1,136.72

Table 4-14: Concentration of EJ Populations (Block Groups)

Less than 9% of the Census Block Groups within the GCLMPO planning area have High to Extremely High concentrations of EJ populations, covering 7.6% of the total planning area. The high to extremely high concentration areas cover 86.8 square miles of the total 1,138.7 square mile planning area.

The analysis also includes a review of the proposed transportation investments in the High to Extremely High EJ concentration areas in comparison to the total investments in the planning

³ Source: Equity Analysis for the Greater Philadelphia Region. Delaware Valley Regional Planning Commission. <https://www.dvrpc.org/webmaps/ipd/>. (September 2021)

area. It is important to note that the method of calculation does impact the total investment reported for each of the concentration groups. For the purposes of this analysis, the full cost of each transportation project was allocated to each Census Block Group in which it intersects.

The analysis reveals that planned MTP investments for highway and bicycle and pedestrian projects within High to Extremely High Concentration Block Groups is roughly three times more than the average expenditure per square mile for the total planning area.

The average transportation investment for High to Extremely High Concentration Block Groups in the GCLMPO planning area is roughly \$14.9 million per square mile, whereas the average transportation investment per square mile across the planning area is \$5.5 million.

The analysis of these Census Block Groups as it relates to the proposed investments in highway and bicycle and pedestrian projects in the 2050 MTP indicates that there is no discrimination, with equitable investment across the planning area. The analysis also indicates that there are no disproportionately high adverse impacts to these areas.

In addition, the GCLMPO evaluated MTP highway and bicycle and pedestrian projects that are currently committed (programmed within the first six (6) years) of the 2020-2029 STIP in relation to their proximity to the Census Block Groups with higher concentrations of EJ populations in order to assess the distribution of impacts (benefits and burdens) of the transportation investments. Only highway and bicycle and pedestrian projects were evaluated because these projects can be tied to a specific geographic location. Public Transportation projects were not included because the scope of work is often not tied to a specific location (i.e. maintenance, operations, and programs). The evaluation included 32 highway projects and 19 bicycle and pedestrian projects. See Figure 4-14 below and Figures 4-15 and 4-16 (pages 94 through 97) for more information.

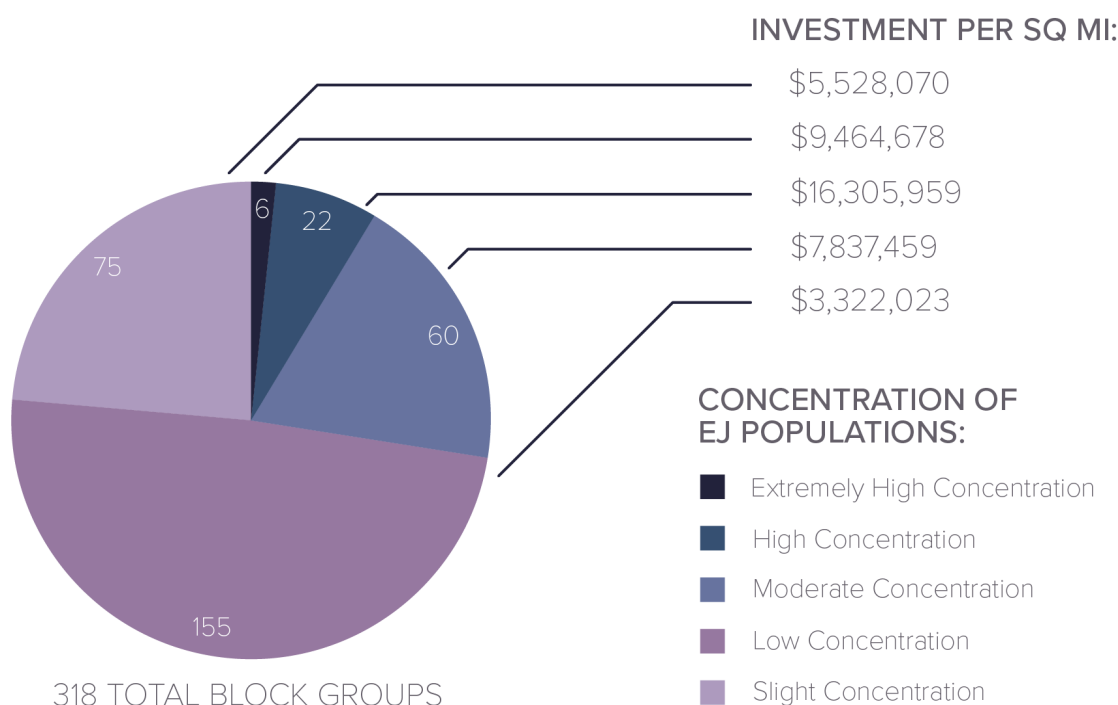


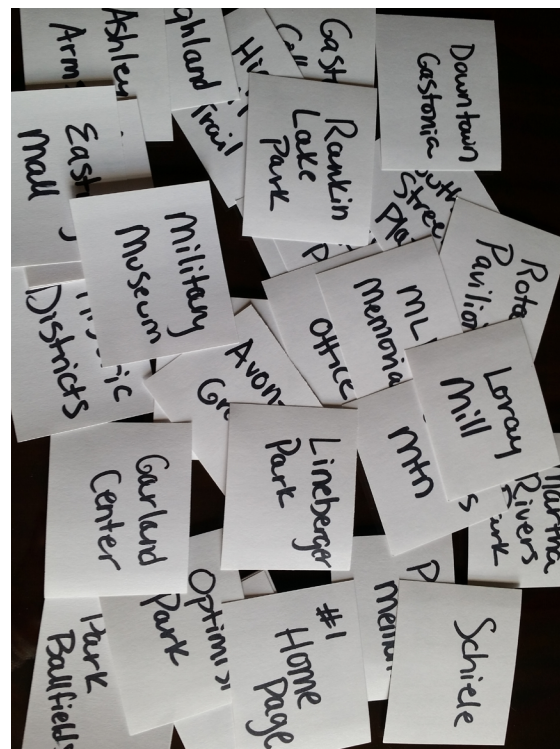
Figure 4-14: Overview of GCLMPO EJ Analysis

For the committed highway TIP projects that were evaluated, a total of 15 (46.9%) directly impact Block Groups with high to extremely high concentrations of EJ populations. While increased accessibility and mobility are measured benefits of these projects, burdens that need to be considered are potential displacements, negative social impacts, and environmental impacts. For the highway projects impacting the higher concentrations of EJ populations, it will be necessary to conduct enhanced study during individual project development.

For the committed bicycle and pedestrian projects that were evaluated, a total of eight (8) bicycle and pedestrian projects (42.1%) directly impact Block Groups with high to extremely high concentrations of EJ populations. Neighborhoods typically benefit from proximity to these types of projects (new sidewalks, on-street bicycle facilities and greenways), with increased access, mobility, and safety, but it will still be important to conduct more study during further project development.

EJ PUBLIC OUTREACH

Public engagement and participation in decision-making is a fundamental principle of EJ, and is critical to achieving outcomes that reflect the needs of all affected stakeholders to the greatest extent possible. Low-income and minority communities have historically borne disproportionately high or adverse human health or environmental effects of infrastructure projects. Active participation of all affected communities will help ensure that transportation plans and projects avoid, minimize, or mitigate these impacts on low-income and minority populations. For this reason, the GCLMPO is committed to engaging low-income and minority populations in the transportation decision making process from the earliest stages of planning through project implementation in geographic areas with high concentrations of low-income and minority populations.




INVOLVING TRADITIONALLY UNDERSERVED POPULATIONS

The GCLMPO Title VI Policy Statement states:

“It is the policy of the Gaston-Cleveland-Lincoln Metropolitan Planning Organization (GCLMPO) to ensure that no person shall, on the ground of race, color, sex, age, national origin, or disability, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity as provided by the Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, and any other related non-discrimination Civil Rights laws and authorities.”

To respond to the ever-changing demographics of our population a range of methods is used to reach all populations. The end goal is to involve minority, low-income, senior, disabled, and limited English proficiency populations in the transportation decision-making process. Differing



techniques are utilized for adequate, effective, and meaningful participation of these populations to assist in understanding unique needs, cultural perspectives, and financial limitations of different socioeconomic groups.

The GCLMPO staff continues to explore traditional and nontraditional strategies for engaging low-income and minority populations. GCLMPO strives to ensure that geographic areas or communities with LEP populations have access to information to the fullest extent feasible and that their participation in providing input into decision-making is encouraged. The MPO attempted to increase participation by these groups by translating public documents into Spanish.

Unfortunately, due to COVID-19, the MPO was not able to hold in-person public input meetings. All public comment opportunities were held virtually over a 30-day period, with information easily accessible on the GCLMPO's website (www.gclmpo.org). The requests for public input were advertised via the MPO's social media pages (Facebook and Twitter) and a direct email to over 400 staff, elected officials, business leaders, media contacts, and members of the general public. The public comment opportunity for the Draft Fiscally-Constrained Project Lists included an interactive web map through ArcGIS Online. In addition to the various 30-day public comment periods for the Goals & Objectives, Draft Fiscally-Constrained Project Lists and Draft MTP, public comment was allowed at each TCC and MPO Board Meeting. A GCLMPO staff member fluent in Spanish was present at all public meetings. Public involvement materials, comments received and responses given can be found in Appendix B.

OTHER EJ LEGISLATION AND GUIDANCE RESOURCES

- *Title VI Requirements in Metropolitan and Statewide Planning*
- *Title VI of the 1964 Civil Rights Act*
- *Title VI Regulation 49 CFR 21*
- *23 U.S.C. 140 -- Nondiscrimination*
- *Executive Order on Environmental Justice*
- *DOT Order on Environmental Justice*
- *FHWA Order on Environmental Justice*
- *23 CFR 200.5 -- Title VI Definitions*
- *23 CFR 200.7 et.al. -- Title VI Policy and State Responsibilities*
- *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970*
- *Impacts of the Civil Rights Restoration Act of 1987 on FHWA Programs*
- *Title VI Legal Manual, US. Department of Justice, Civil Rights Division*
- *The Council on Environmental Quality coordinates federal environmental efforts and works closely with agencies and other White House offices in the development of environmental policies and initiatives*

Along with the federal and state resources listed on this page, the GCLMPO maintains a Title VI Complaint Form and Investigation Procedures. The Title VI Complaint Procedures can be found in Appendix E.



AIR QUALITY CONFORMITY ANALYSIS

As discussed in Chapter 2, the GCLMPO must approve and adopt a Transportation Conformity Analysis and Determination for the Metrolina Area 2050 MTPs and for their 2020-2029 TIPs. The GCLMPO released the draft MTP, 2020-2029 TIP Amendments and supporting conformity document on January 28, 2022 for a 30-day public comment period. Comments were received and presented to the TCC and MPO Board for consideration at their March 2022 meetings. Public involvement materials, comments received and responses given can be found in Appendix B. The TCC recommended and the MPO Board approved the conformity determination and supporting reports at their respective March 9 and March 24, 2022 meetings.

PLANNING DOCUMENT

The MTP planning document is the result of all the steps outlined above. The TCC recommended and the MPO Board approved the conformity determination and supporting reports at their respective March 9 and March 24, 2022 meetings.

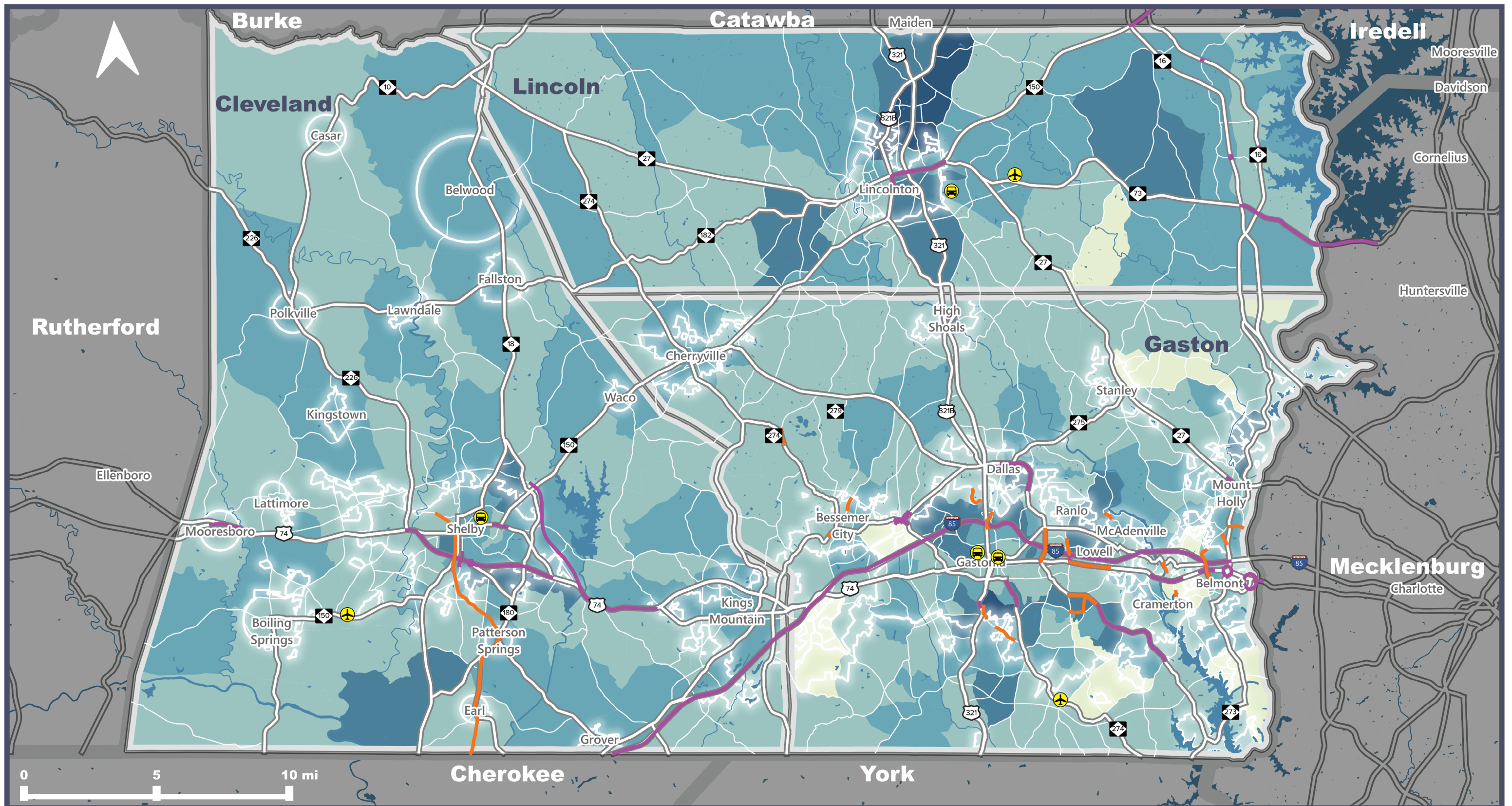


Figure 4-15

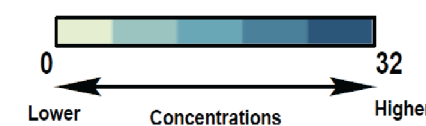
Environmental Justice Analysis

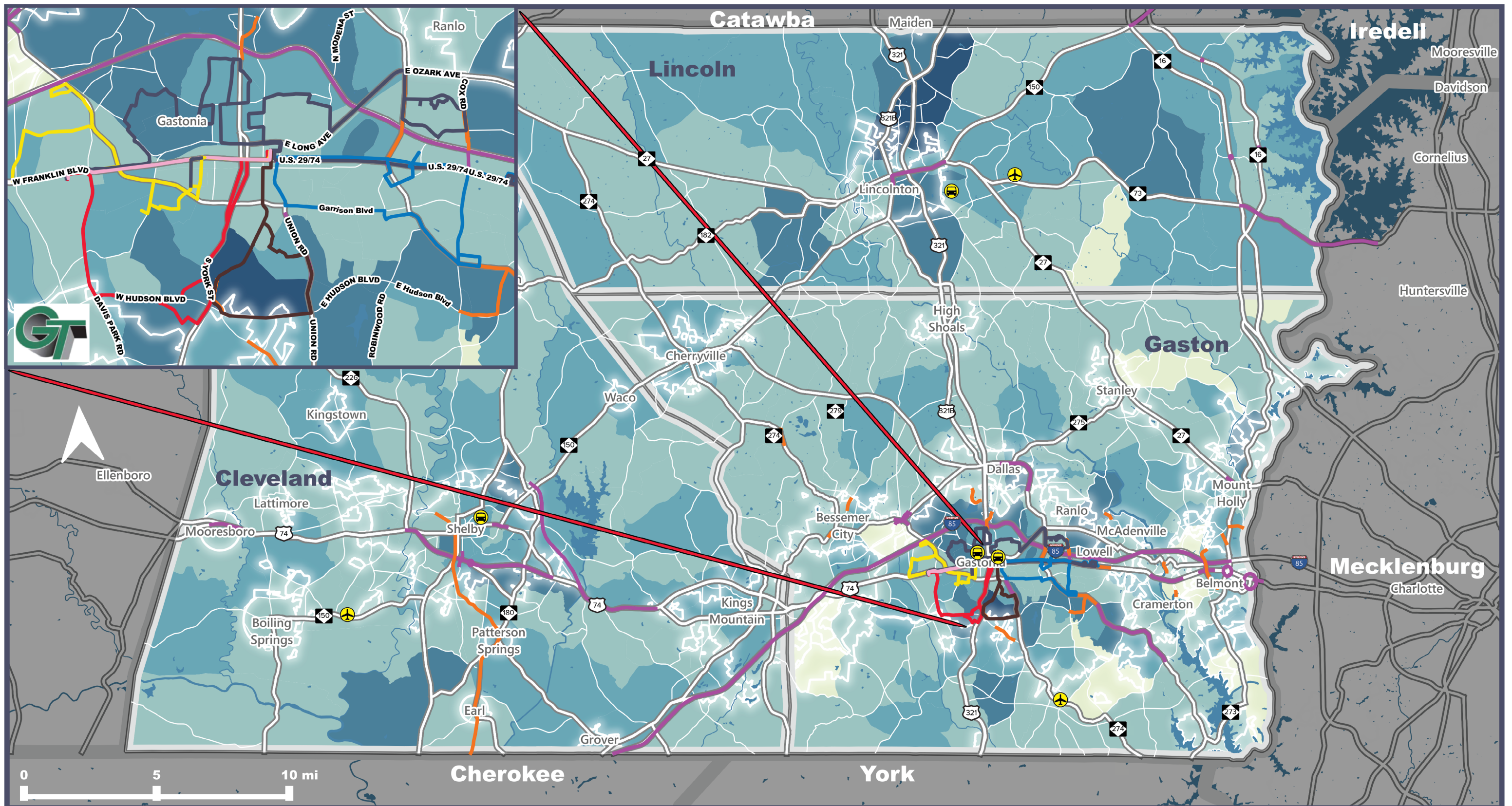
2050 Metropolitan Transportation Plan



- MPO Boundary
- Municipalities
- Regional Waters
- Highways
- TIP Committed Highway Projects
- TIP Committed Bike/Ped Projects

Environmental Justice Score





- MPO Boundary
- Municipalities
- Regional Waters
- Highways
- TIP Committed Highway Projects
- TIP Committed Bike/Ped Projects

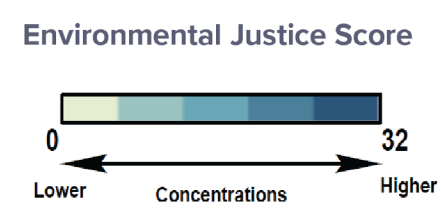


Figure 4-16

Env. Justice Analysis & Gastonia Transit - Fixed Routes

2050 Metropolitan Transportation Plan



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